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

CARIBBEAN REGIONAL
PROJECT PAPER
EPIDEMIOLOGICAL SURVEILLANCE AND TRAINING

LAC/DR:79-015

Project Number:538-0027

UNCLASSIFIED

AGENCY FOR INTERNATIONAL DEVELOPMENT PROJECT PAPER FACESHEET	1. TRANSACTION CODE <input type="checkbox"/> A A = ADD <input type="checkbox"/> C C = CHANGE <input type="checkbox"/> D D = DELETE	PP 2. DOCUMENT CODE 3
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3. COUNTRY/ENTITY Caribbean Regional	4. DOCUMENT REVISION NUMBER <input type="checkbox"/>
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5. PROJECT NUMBER (7 digits) <input type="text" value="538-0027"/>	6. BUREAU/OFFICE A. SYMBOL B. CODE <input type="text" value="LAC"/> <input type="text" value="05"/>	7. PROJECT TITLE (Maximum 40 characters) <input type="text" value="Epidemiological Surveillance and Training"/>
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8. ESTIMATED FY OF PROJECT COMPLETION FY <input type="text" value="8"/> <input type="text" value="2"/>	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="82"/> (Enter 1, 2, 3, or 4)
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10. ESTIMATED COSTS (\$000 OR EQUIVALENT \$) -						
A. FUNDING SOURCE	FIRST FY			LIFE OF PROJECT		
	B. FX	C. L/C	D. TOTAL	E. FX	F. L/C	G. TOTAL
AID APPROPRIATED TOTAL						
(GRANT)	(163.0)	(225.9)	(388.9)	(486.0)	(674.0)	(1,160.0)
(LOAN)	()	()	()	()	()	()
OTHER						
U.S.						
MOST COUNTRY						
OTHER DONOR(S)	-	135.1	135.1	-	419.0	419.0
TOTALS	163.0	361.0	524.0	486.0	1,093.0	1,579.0

11. PROPOSED BUDGET APPROPRIATED FUNDS (\$000)									
A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE		E. 1ST FY <u>79</u>		H. 2ND FY <u>80</u>		K. 3RD FY <u>81</u>	
		C. GRANT	D. LOAN	F. GRANT	G. LOAN	I. GRANT	J. LOAN	L. GRANT	M. LOAN
(1) PH	510	500		388.9		400.1		371.0	
(2)									
(3)									
(4)									
TOTALS				388.9		400.1		371.0	

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)					1,160.0		
(2)							
(3)							
(4)							
TOTALS					1,160.0		

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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.

1 1 = NO
 2 2 = YES

14. ORIGINATING OFFICE CLEARANCE SIGNATURE <i>William B. Wheeler</i> TITLE WILLIAM B. WHEELER AID REPRESENTATIVE	15. DATE DOCUMENT RECEIVED IN AID/W OR FOR AID/W DOCUMENTS. DATE OF DISTRIBUTION <i>050479</i> DATE SIGNED MM DD YY 15 14 79
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memorandum

DATE: April 17, 1979

REPLY TO
ATTN OF: Paula Feeney
THRU: Dwight B. Johnson
SUBJECT: Authorization of a Grant of \$1,160,000 to the Pan American Health Organization to assist the Caribbean Epidemiology Center (CAREC).

~~X~~ ACTION MEMORANDUM FOR THE AID REPRESENTATIVE, RDO/C.

Name of Project - Epidemiological Surveillance and Training Project.
Project Number - 538-0027
Appropriation No. - 72-1191021
Allotment No. - 948-54-538-00-69-91
First Year Obligation - \$388,912
Life of Project Funding - \$1,160,000

The attached Project Paper was reviewed and approved by the RDO/C Project Review Committee consisting of yourself as Chairman, Dwight Johnson, CRDO; Terry Liercke, Program Officer; Robert Meighan, Regional Legal Officer; Darwin Clarke, Program Assistant; Donald Boyd, Asst. Capital Projects Officer; Mark Laskin, LAC/DR; and Gerald Wein, Program Economist.

All issues and comments raised in the Project Committee Review, the DAEC PID Review Cable, and by the bi-lateral USAID Missions in the Caribbean have been covered in the Project Paper and resolved in accordance with the instructions of the Project Review Committee.

The project did not appear in the FY 79 Congressional Presentation; however, an Advice of program change was forwarded to Congress and the waiting period expired on March 28, 1979. All statutory requirements have been met, and the allotment of funds has been received. Your authority to authorize this grant was confirmed by State Cable 052252 of March 3, 1979.

We have requested AID/W to grant (i) a waiver from Code 000 to Code 935 for AID financing of shipping costs, and (ii) a waiver of the 50-50 shipping requirement. We anticipate a response in the near future, but see no reason to delay authorizing the grant until these waivers are approved.

Recommendation: That you sign the attached Project Authorization for the Epidemiological Surveillance and Training Project authorizing a grant in the amount of \$1,160,000.

Clearances:

Robert B. Meighan, Regional Legal Advisor
Terry Liercke, Program Officer
Gerry Wein, Program Economist
W.F. Schrider, Controller
Donald Boyd, Asst. Capital Projects Officer

[Handwritten signatures and initials over horizontal lines]

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan



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PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

Name of Entity: Pan American Health Organization
Name of Project: Epidemiological Surveillance and
Training Project
Project Number: 538-0027

Pursuant to Part I, Chapter I, Section 104 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Grant to the Pan American Health Organization ("PAHO") of not to exceed Three Hundred and Eighty Eight Thousand, Nine Hundred United States Dollars (US\$388,912) (the "Authorized Amount") 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 will provide an increased capability to the Caribbean Epidemiology Center (CAREC), a collaborating subregional Center of PAHO, to assist Caribbean member countries in the detection, prevention and control of communicable and infectious diseases. ("The Project"). The entire amount of A.I.D. funding authorized for the Project will be obligated when the Project Agreement is executed.

I approve the total level of A.I.D. appropriated funding planned for this Project of not to exceed One Million, One Hundred and Sixty Thousand United States Dollars (US\$1,160,000) to be grant funded, including the funding authorized above, during the period FY 1979 through FY 1982. I approve further increments during that period of Grant funding up to \$771,000 subject to the availability of funds in accordance with A.I.D. allotment procedures.

I hereby authorize the initiation of negotiation and execution of a Project Grant 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 conditions; together with such other terms and conditions as A.I.D. may deem appropriate:

A. Source and Origin of Goods and Services

Except for ocean shipping, goods and services financed by A.I.D. under the Grant shall have their source and origin in the United States or in member countries of CAREC. Except as A.I.D. may otherwise agree in writing, ocean Shipping financed under the Grant shall be procured in the United States.

B. Special Covenants for Project Grant Agreement

1. The Grant Agreement will specify the amount which is to be paid to PAHO for indirect costs of program support for the Project.
2. PAHO will agree that AID funding of Travel and Per Diem be utilized for laboratory and surveillance training of nationals only from the countries of: Antigua, Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica,

Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts/Nevis/Anguilla, St. Lucia, St. Vincent, Turks and Caicos and Suriname. Such activities for other CAREC member countries will be financed by those governments or through the CAREC core budget.

3. PAHO will agree to establish an evaluation program for the project at midpoint and prior to project termination. AID, PAHO, CAREC and participating CMCs will collaborate in conducting these evaluations during the life of the project covering:
 - i) Progress toward attainment of objectives of the Project.
 - ii) Identification and evaluation of problems and constraints which may inhibit such attainment.
 - iii) Assessment of how such information may be used to help overcome such problems; and
 - iv) Evaluation, to the degree feasible, of the overall development impact of the Project.
4. PAHO will agree to establish a training unit in CAREC and to incorporate it within the annual budget in order that formalized training activities continue after the termination of the project.
5. PAHO will agree to incorporate the costs of maintaining a computerized information system within the annual budget of CAREC in order that such an activity continues after the termination of the project.
6. PAHO will agree to conduct periodic consultation with CARICOM in the planning, implementation and evaluation of the project.

Clearances:

D.B. Johnson, CRDO _____
Robert B. Meighan, RLA _____
Terry Liercke, PO _____
Gerry Wein, PE _____
W.F. Schrider, CONTROLLER _____
Donald Boyd, ACSDO _____



William B. Wheeler
AID Representative

May 4, 1979

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PROJECT PAPER

CARIBBEAN EPIDEMIOLOGICAL AND SURVEILLANCE TRAINING PROJECT

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LIST OF ABBREVIATIONS
AND ACRONYMS

CARICOM	Caribbean Community Secretariat
CAREC	Caribbean Epidemiology Centre
CFNI	Caribbean Food and Nutrition Institute
CYC	CAREC Member Countries
CMRH	Conference of Ministers Responsible for Health
LDC	Less Developed Country
MDC	More Developed Country
MOsH	Medical Officers of Health
MRC	Medical Research Council
PAHO	Pan American Health Organization
PHI	Public Health Inspector
PHN	Public Health Nurse
PT	Proficiency Testing
SAC	Scientific Advisory Committee
SSO	Surveillance Statistical Officer
WHO	World Health Organization

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EPIDEMIOLOGICAL SURVEILLANCE AND
TRAINING PROJECT
BETWEEN
THE CARIBBEAN EPIDEMIOLOGY CENTRE
AND
THE REGIONAL DEVELOPMENT OFFICE/CARIBBEAN

PART I

PROJECT SUMMARY AND RECOMMENDATIONS

1. Face Sheet See preceding face sheet for summary of fiscal data.

2. Recommendations The Regional Development Office/Caribbean recommends authorization of grant financing of \$1,160,000 for the Epidemiological Surveillance and Training Project to be implemented by the Pan American Health Organization/Caribbean Epidemiology Centre.

3. Grantee The Grantee for the project will be the Pan American Health Organization (PAHO). The executing agency will be the Caribbean Epidemiology Centre (CAREC) in Port of Spain, Trinidad. CAREC is a center of the Pan American Health Organization, established in 1975 for the purpose of improving epidemiological services to its member countries and the Caribbean Region as a whole. CAREC Member Countries (C/Cs) include; Antigua, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts/Nevis/Anguilla, St. Vincent, St. Lucia, Suriname, Trinidad & Tobago, Turks and Caicos.

4. Project Summary

The goal of this project is to improve the health status of Caribbean populations through a reduction in the incidence and prevalence of communicable/infectious diseases. The purpose of the project is to improve CAREC Central and C/C local epidemiological services. The sub-purposes of the project are:

- To increase CAREC capability to assist CAREC Member Countries (C/Cs) in laboratory and surveillance activities.

- To improve the accuracy and efficiency of C/C laboratory identification and surveillance of communicable disease.

- To further develop West Indian middle management at CAREC.

The principal portion of the AID grant will be devoted to training and related technical assistance carried out by the CAREC core staff. Much of this activity will be carried out in on-the-job situations, dealing with the day-to-day problems confronted by CMC nationals. The training component may be divided into essentially the following parts:

- A 3 person training unit will be established at CAREC to provide overall logistical arrangements, preparation of teaching and audio visual materials for the project.
- Surveillance traineeships will be offered: CMC Personnel traineeships for individuals returning from CAREC immediately to their respective Ministries of Health; CAREC traineeships aimed at developing potential regional West Indian staff at CAREC; and student clerkships for third, fourth and fifth year medical students for short attachments to CAREC.
- Surveillance training courses will be provided for designated epidemiologists, statistical surveillance officers and primary health care workers at CAREC and on-site.
- Laboratory training courses will be provided in the form of short term training at CAREC for laboratory technicians and laboratory directors. In addition, courses will be provided regionally with on-site follow-up of the training courses for each CMC by senior CAREC laboratory staff.
- On-site strengthening of laboratory management and laboratory techniques will be provided to CMC laboratory personnel in the form of technical assistance in order to promote laboratory self-sufficiency.

Complementing the above training, the grant will assist in the development by CAREC of a proficiency testing program in bacteriology and parasitology for CMC laboratories and will provide limited teaching and safety equipment and emergency laboratory supplies.

Cold chain immunization equipment will be provided to ensure administration of potent vaccines in areas outside of capital cities in the CMCs.

A data processing and information system will be instituted at CAREC to improve and sustain CAREC's administrative and surveillance functions.

A study of zoonotic surveillance needs will be undertaken.

CMC capability in surveillance would also be improved, with continuing technical expertise for outbreak investigation and data collection being made available through CAREC. In sum, the project is aimed at strengthening CMC capability to accurately perform routine laboratory diagnostic services, such that CAREC would be relied upon for the more complex, less frequent centralized laboratory requirements (e.g. biology, mycology)

5. Summary Findings

The Epidemiological Surveillance and Training Project is feasible, needed and ready for implementation. The project has been found to be technically, socially, economically and financially sound.

The project represents a portion of the RDO/C integrated health strategy to address the problems of malnutrition, ineffective management of health services, communicable diseases and water supply/sanitation problems. As a social sector project and given the small islands' present contribution to CAREC and their inability to finance further debt, it is recommended that this project be grant funded.

6. Project Issues

a. The "Brain Drain"

A serious consideration in the design of any health project in the Caribbean region is the effect of out-migration of health professionals to the United States, Canada, and Great Britain. This problem is further aggravated by the geographical proximity of the Caribbean to North America, a North American demand for the services these professionals can provide, and a lack of a language barrier. Despite the efforts of Caribbean governments, opportunities for advancement in the North American and European context have proved too great an incentive to deter the upward trend of outmigration.

In the design of the Epidemiological Surveillance and Training Project, every effort has been made to minimize the potential brain drain. In the training courses provided under the grant, short term (1-2 weeks) training rather than long term training, preferably on-site in the LDCs, has been designed. No official credentialling or degrees will be awarded as a result of the project. The emphasis in training will be continuing education for laboratory technicians, public health inspectors, medical officers, public health nurses and statistical surveillance officers.

In the trainee program devised, 9 three-month fellowships will be awarded during the course of the project to senior medical officers, currently in decision-making roles within their Ministries of Health and who will return to their positions following the training. The medical epidemiology trainees will be carefully selected to minimize the potential of their out-migration. A career pattern for some of these individuals is envisioned at CAREC at a competitive salary level. In addition, a bonding agreement similar to that utilized by the Caribbean governments will be considered. Participants under a bonding agreement are required to repay training costs if they migrate within a given number of years following training.

While these precautions may not totally alleviate the brain drain problem, it is thought that they will act to minimize the problem and maximize the impact of the project.

b. Broader Regional Involvement by CAREC

CAREC was originally formed by request of the English-speaking countries of the Commonwealth Caribbean. Since its inception, however, CAREC has maintained relationships with all nations in the Caribbean. Clearly, disease and public health concerns are not restrained by national boundaries or language difference.

CAREC regularly receives surveillance reports from the non-English speaking Caribbean countries and sends reports and alerts to these countries - (Netherlands Antilles and the French Departments of Guadeloupe, Martinique and French Guiana).

CAREC relates to the Dominican Republic and Haiti via its PAHO country representatives stationed in these countries. National representatives from the Dominican Republic and Haiti have attended conferences and workshops at CAREC. CAREC staff was made available to investigate a recent outbreak of poliomyelitis in the Dominican Republic.

CAREC presently serves 19 countries with a total population of approximately 4.6 million. If its scope included the entire Caribbean region it would have to provide services to more than 28 million people. Thus, CAREC is not geared to this magnitude of activity, nor will it be in the foreseeable future. Continued involvement of other Caribbean nations in CAREC annual meetings of Designated Epidemiologists and continued exchange of surveillance data and laboratory directors is desirable and will be continued. Requests for epidemic assistance from these nations will also continue to be responded to by CAREC staff. However, both Haiti and the Dominican Republic rely primarily upon the back-up laboratory services of CDC in Puerto Rico in part due to its geographic proximity, and this relationship is expected to continue. Increased involvement by CAREC in training of local staff, information system upgrading, and other CAREC services provided for CMCs, however, does not appear feasible at this time.

c. Program Support

The question of the amount and disposition of program support costs furnished by AID to PAHO has been given serious consideration during project development. Clearly, indirect costs will be incurred by PAHO in providing budgetary, legal and procurement services as well as financial and technical monitoring under the project. The current program support charge for PAHO projects, as established in an agreement with the U.S. Department of Health, Education and Welfare and accepted by other U.S. Government agencies, is 31.5% of total project costs. (See PAHO's Negotiation Agreement: Non-Profit Institutions, November 15, 1977) (Attachment XIV). However, under the subject AID project, PAHO has determined it appropriate to share some of the project support costs involved, as a contribution by PAHO to the project. PAHO has waived a portion of the total program support costs through the application of only a 20% rate against total direct costs of the project. (Attachment XVI).

7. Conditions and Covenants

In addition to the standard conditions applicable to AID grants, the following conditions and covenants will apply to the Project.

a. Source and Origin of Goods and Services

Except for ocean shipping, goods and services financed by AID under the Project shall have their source and origin in Geographic Code 000 (foreign exchange costs) and the member countries of CAREC (local costs), except as AID may otherwise agree in writing.

Ocean shipping financed under the grant shall be from Geographic Code 935.

b. Covenants

1. The Grant Agreement will specify the amount which is to be paid to PAHO for indirect costs of program support for the Project.
2. PAHO/CAREC will agree that AID funding be utilized for travel and per diem costs related to training of nationals from the countries of: Antigua, Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts/Nevis/Anguilla, St. Lucia, St. Vincent, Suriname, and Turks and Caicos. Such costs for other CAREC member countries will be financed by those governments or through the CAREC core budget.
3. PAHO/CAREC will agree to establish an evaluation program for the project at midpoint and prior to project termination. AID, PAHO/CAREC and participating CMCs will collaborate in conducting these evaluations during the life of project covering:
 - i) Progress toward attainment of objectives of the Project.
 - ii) Identification and evaluation of problems and constraints which may inhibit such attainment.
 - iii) Assessment of how such information may be used to help overcome such problems; and
 - iv) Evaluation, to the degree feasible, of the overall development impact of the Project.
4. PAHO/CAREC will agree to establish a training unit and to incorporate it within the annual budget in order that formalized training activities continue after the termination of the project.
5. PAHO/CAREC will agree to incorporate the costs of maintaining a computerized information system within the annual budget in order that such an activity continues after the termination of the project.
6. PAHO/CAREC will agree to conduct periodic meaningful consultation with CARICOM in the planning, implementation and evaluation of the project.

8. Requested Waivers

In order to accomplish the objectives of the Project and to prevent substantial delay in implementation, it is judged necessary that waivers of normal AID regulations be approved. The following waivers will be requested:

- a. Waiver from Code 000 to Code 935 for AID financing of Shipping Costs

The Caribbean Region and particularly the LDCs which will

participate in this Project are simply not able to comply with the normal shipping source requirement. American flag carriers do not call at these islands with sufficient frequency to enable project commodities such as input supplies and laboratory materials to be secured in a timely manner. Although these commodities do not compose a large portion of the proposed project budget, they are critical to the entire program and their delay in arrival would significantly jeopardize implementation. These countries are well serviced by other Code 935 flag carriers, however.

b. Waiver of 50-50 shipping requirement

Because of the scarcity of U.S. flag carriers servicing the countries participating in the project, it is impossible to expect that 50% of the gross tonnage and 50% of the gross freight revenue generated by ocean shipment for project goods be on U.S. flag vessels.

9. Summary Financial Plan

The total cost of the project is \$1,578,577* of which AID is contributing \$1,160,000 and PAHO's contribution is estimated at \$418,577 over the life of the project. The activities under the project will be implemented over 36 months from the date of signing of the project agreement. The project assistance completion date (PACD) will be 3 years from the date of signature. The PAHO/CAREC contribution to the project represents the portion of total PAHO-funded staff time and resources which will be spent on this project as estimated in the detailed financial plan. The total regular PAHO budget for CAREC in 1979 is \$288,640. Member contributors to CAREC will provide \$1.5 million of support to the CAREC core budget over the 3 years of the AID Project. The U.K. Overseas Development Ministry will also provide \$441,000 in core budget support to CAREC over the life of the AID project.

*Life of project total reflects a rounding upward of the AID contribution to the nearest ten thousand.

PROJECT FINANCIAL SUMMARY

<u>Component</u>	<u>AID</u>	<u>PAHO</u>	<u>TOTAL</u>
I. Training ¹			
A. Training Unit	126,430	22,000	
B. Traineeships	206,718	141,500	
C. Training Courses	349,015	144,700	
D. Strengthening of Laboratory Management/ Techniques	21,000		
Sub Total	703,163	308,200	1,011,363
II. Equipment & Supplies			
A. Laboratory Equipment	41,000		
B. Laboratory Supplies	30,759		
C. Immunization Equipment	14,476		
D. Information System	58,700		
	144,935		144,935
III. Other Activities			
A. Audio Visual Training Materials/TA	16,000		16,000
B. Zoonoses Surveillance Study	25,000		25,000
C. Evaluation	25,000		25,000
IV. Contingency (5% of total AID Contribution to I-III)	45,705		45,705
V. Program Support Costs	191,961 ²	110,377 ³	302,338
Total Contribution	1,151,763.6	418,577	1,570,341

¹an annual inflation factor of 10% has been included in cost estimates for the training component.

²20% of project costs.

³11.5% of total indirect costs to be absorbed by PAHO

10.

PROJECT DESIGN TEAM

Donald Boyd, CP/IDI, RDO/C Bridgetown, Barbados

James Doster, Program Economist, LAC/DR/HN, AID/Washington

Brian Dugan, Program Consultant, Center for Disease Control,
Atlanta, Georgia.

Paula Feeney, MPH, Public Health Advisor, RDO/C

Patrick J. S. Hamilton, B.A., MB, CHB, DPH, DIM&H, MFCM, Director,
PAHO/Caribbean Epidemiology Center,
Port-of-Spain, Trinidad.

Jeffrey Koplan, M.D., Epidemiologist, Center for Disease Control,
Atlanta, Georgia.

Mark Laskin, Project Co-ordinator, Public Health Advisor,
LAC/DR/HN, AID/Washington

11.

PROJECT REVIEW COMMITTEE, RDO/C

William Wheeler, AID Representative, RDO/C

Darwin Clarke, Program Assistant, RDO/C

Dwight B. Johnson, Capital Resources Development Officer, RDO/C

Terry Liercke, Program Officer, RDO/C

Robert Meighan, Regional Legal Adviser, RDO/C

Gerald Wein, Program Economist, RDO/C

PART II PROJECT BACKGROUND AND RATIONALE

1. AID Role in the Caribbean Health Sector

The RDO/C health sector strategy in the Caribbean focuses on the basic health problems whereby much of the morbidity and mortality among lower income populations, especially mothers, infants and children, in the Caribbean region is caused by a combination of malnutrition, parasitism, infectious diseases, and poor environmental conditions. (These problems are aggravated by inefficient and ineffective management of the health services, often causing misallocation of scarce resources. However, this strategy does not view these problems as isolated, disparate phenomena but rather as factors which interact with many other areas of regional and national growth. In addition, it recognizes the scarcity of the resources available to national governments in meeting basic human needs, and thus the desirability of finding common approaches to services in the region, and in the case of health, stressing preventive versus curative approaches.

Beginning in 1976-77, with the development of an AID Health Sector Study undertaken by the Office of International Health (OIH) at HEW, AID has committed itself to several important programming emphases. These respond to the needs identified in the study, as well as to the priorities expressed by the Caribbean Conference of Ministers responsible for Health (CMRH). The Caribbean Regional Nutrition Project with the Caribbean Food and Nutrition Institute (CFNI), for example, is increasing countries' abilities to design, implement and evaluate national food and nutrition policies and programs through CFNI's technical assistance, training and dissemination of educational materials. The Basic Health Management Training Project is providing technical assistance through CARICOM to Ministries of Health in health planning, organizational assessment and analysis and management information systems along with training for MOH personnel in basic and middle-level management skills. The planned FY 80 Community Water Supply and Sanitation Project would improve the operational effectiveness of national water authorities, extend potable water to unserved areas and undertake community-level sanitation programs.

This approach synergistically addresses the region's health problems by simultaneously contending with the principal interactive problems of health, whose resolution will impact favorably upon improving poor health and nutrition. Because this strategy must account for the needs of the LDC's (Leewards and Windwards) and the MDC's (Jamaica, Guyana and Barbados) and given the wide variance in levels and quality of services delivered, this is not easily achieved. Yet the utilization of regional institutions to identify, plan and implement development projects offers significantly greater potential for long range success than to call forth individuals and separate national responses. CAREC, CFNI, and CARICOM, relying upon the CMRH to generate consensus on program priorities, each can provide broader scope and sophistication of activity than most of their member countries can do alone. Moreover, these institutions can and have become highly valued and specialized repositories of expanding knowledge aiding specific country requests for assistance to which the countries cannot themselves respond.

The proposed project with CAREC, therefore, is consistent with and reflective of RDO/C's strategy in the health sector.

2. Problem Summary (See detailed Background/Problem Statement Annex X)

Infectious and parasitic diseases are a major cause of death in the Caribbean region, responsible for twenty to thirty percent of all deaths in the region. Morbidity due to these causes is much higher, affecting disproportionately lower income populations, especially mothers, infants and children.

The major medical and public health advances in the past century have been in the diagnosis and control of communicable diseases. The improved quality of life and prolonged life span seen in developed nations have been due in large part to the decrease in morbidity and mortality attributable to these factors. Similarly the lower predicted life span and greater morbidity seen in developing nations are the result of these factors continued high incidence and prevalence. Among the major diseases that have had significant effect on the health of Caribbean populations in recent years are typhoid, dengue fever, tetanus, malaria, viral hepatitis, tuberculosis and especially gastroenteritis. Other serious infectious diseases that remain endemic in the region are yellow fever, measles, influenza, viral encephalitis and rabies as well as high incidence rates of venereal diseases.

The first step in the amelioration of the health problems associated with these infectious and parasitic diseases is the identification of their location, their seriousness and methods for their control. This is accomplished through epidemiological surveillance, laboratory diagnosis, and epidemiological follow-up by public health inspectors/public health nurses and/or physician epidemiologists.

This project will support all of these activities by providing:

- (1) Training to CMC and certain CAREC surveillance, laboratory resources and public health personnel
- (2) Certain specific laboratory equipment and materials to CAREC and the CMC's necessary to better performance in these activities
- (3) On-site technical assistance to the CMC's in laboratory management and maintenance
- (4) Equipment and training for the automatic processing of surveillance data.

3. Patterns of Surveillance in LDCs vs. MDCs of the Region

From the operational viewpoint a distinctly different pattern of epidemiological surveillance exists in smaller (<125,000 population) and larger (>125,000 population) territories. In the smaller territories the designated epidemiologist is often also the Chief Medical Officer (CMO). The CMO is also frequently the only physician employed full-time by the Ministry of Health and therefore has very little time to devote to full scale epidemiology and surveillance. Although the medical departments of these small territories have statistical surveillance officers (SSOs), these individuals also frequently have broad responsibilities and may serve as Assistant Registrar General and/or Chief Medical Record Librarian.

Instead of a centralized "local" health unit, the Medical Departments of the larger territories develop central staff services as well as policy making and coordinating roles. Program operations are decentralized to regions or districts. Each region is analogous to the "local" health unit. Bahamas, Barbados, Belize, Guyana, Jamaica, and Trinidad and Tobago fit this more complex surveillance pattern.

Even though there is a great deal of diversity among epidemiologic capability and methods of reporting between LDCs and MDCs, the need remains (a) for a central resource for complex laboratory services (especially virology) (b) for centralized surveillance reporting, and (c) for technical assistance when outbreaks occur.

4. The Caribbean Epidemiology Centre (CAREC)

Just as the Center for Disease Control in Atlanta, Georgia, serves as a common service base for all of the United States in the diagnosis, investigation and control of communicable diseases by providing back-up laboratory surveillance, and technical expertise, so the Caribbean Epidemiology Centre was developed (on a much more modest scale) to serve the central common service role for its member countries. The type of services offered by CAREC are services which the majority of its member countries find themselves unable to provide for themselves. The sophisticated level of equipment and particularly technical expertise can be made available through a common service arrangement such as CAREC provides. Each CAREC member country (CMC) thus has access to an operational referral base with minimal resource expenditure. Member governments contribute to CAREC at an agreed upon scale. (The multilateral Agreement is valid until Dec. 31, 1984).

CAREC was originally formed Jan. 1, 1975 in response to the need for improved epidemiological activity in the region as expressed by Resolution 14 of the 6th Conference of Ministers responsible for Health. The institution was established as a collaborating center of the Pan American Health Organization (PAHO), regional office of the World Health Organization (WHO) for the Americas, the Center is organized into divisions of laboratories, surveillance, training and research. It occupies seven acres of the St. Clare section of Port-of-Spain, Trinidad in buildings previously housing the Trinidad Regional Virus Laboratory of the Rockefeller Foundation. The Center currently employs 83 persons, which includes 15 professional staff. The majority of the senior staff are international employees of PAHO/WHO.

CAREC requested that AID help to continue surveillance and training efforts begun in the CDC grant. A team of CDC and AID technicians investigated the feasibility of such support to CAREC. For two months they reviewed CAREC's programs and visited both CAREC in Trinidad and various CMCs. Their findings are reflected in this report.

5. Project Rationale

CAREC serves both as a central source of qualified staff for CMCs and a laboratory referral source for specimen confirmation. Additionally, it performs the more highly technical forms of laboratory analysis that would not be cost-effective for small laboratories to conduct (e.g. virology, mycology) due to the low volume of demand in each country individually and the necessity for extensive investment in equipment and supplies.

CAREC then as a central resource can provide these services, that are of common interest to all governments, at a lower cost and higher quality than the individual country laboratories could provide themselves.

It is not, however, cost effective for the individual country laboratories to rely on CAREC for processing of routine public health microbiological specimens which are high volume demands. Rather, capability must be developed in each country to provide routine services through laboratory technicians and directors appropriately trained and in place in-country. The current level of staff knowledge is not sufficient to perform these functions to any degree of proficiency in most areas. For that reason there is an expressed need, as defined by the CDC/AID project feasibility assessment, for the further development of national surveillance teams in the CMCs. This can only be accomplished by investment in training the individual members of the team, which includes both laboratory staff, epidemiologists and statistical officers, etc., in order to upgrade their skills in their specific technical areas. However, training will also focus on establishing the necessary inter-relationship among the team members in order to achieve effective surveillance of the communicable diseases in the CMC populations.

This project, then, will consolidate the work begun under the 1975-1978 CDC grant to CAREC, to upgrade skills of in-country laboratory personnel through continuing education and on-site training.

One of the major reasons for the establishment of CAREC has been that small island governments have had a great deal of difficulty in the past attracting and retaining qualified staff (pathologists, microbiologists, senior laboratory staff.) This lack of staff has been a serious constraint in improving epidemiological laboratory and surveillance services and subsequently reducing the levels of communicable diseases.

Laboratory services, however, are only one portion of the requirements for an effective epidemiology service. Effective epidemiology depends heavily on timely and accurate data provided by clinicians and primary health workers and a central point for aggregation and reporting to the statistical surveillance officer. Unusual outbreaks of disease reported to the statistical surveillance officer after laboratory diagnosis by a qualified technician requires timely follow-up action by the designated epidemiologist and the deputy epidemiologist. In this manner corrective action to minimize the effects of disease outbreaks can be accomplished.

Through support of this team approach to epidemiology, AID will assist CAREC to reduce the toll of communicable diseases in the region. Specifically, AID will support continuing training for extant laboratory technicians, public health inspectors/nurses, physicians, statistical officers and others to provide a basic level of expertise and sensitivity to epidemiology in the region.

The necessity of the services provided by these individuals is critical to the health service network in the region. Rather than developing a new cadre of personnel to deal with problems of communicable diseases, a plan, devised to utilize existing personnel at no additional expense to the host governments, has been designed to identify disease outbreaks at an early stage and take corrective action before costly large-scale outbreaks develop. In order to prevent and to measure the incidence of communicable disease a limited quantity of basic equipment and supplies is necessary to support the training and surveillance effort.

The role of A.I.D. in the sector for strengthening the central service surveillance and laboratory efforts and providing short-term training for extant professionals and para-professionals has been designed to synergistically interact with a proposed UNDP project. This project will provide longer term training through PAHO/WHO fellowships for laboratory staff in basic hospital laboratory practices notably biochemistry and hematology. In addition, UNDP will assist LDC laboratories to upgrade their present facilities and equipment. The functional breakdown for support of CAREC activities will have UNDP funding LDC laboratory upgrading, the U.K. Medical Research Council, Rockefeller University and other donors assisting with specific research projects and member governments, PAHO/WHO and U.K. Overseas Development Ministry providing support for central laboratory and surveillance services. As requested by CAREC Member Countries, the A.I.D. project will assist in the training component reaching across each sub-section of CAREC's activity areas (i.e. surveillance, laboratory, and research.) Without properly trained staff to perform epidemiological services in the CMCs the basis on which CAREC is established will be severely weakened.

The Epidemiological Surveillance and training Project is aimed at improving the Caribbean capability to recognize disease patterns in the region and address them at the preventive stage before they become epidemic and hence unmanageable. The support of CMC laboratory and surveillance networks through CAREC is eminently consistent with AID objectives in benefitting lower income populations, stressing the less costly preventive versus curative services and working in alignment with the Health Sector Study and the RDO/C CDSS of 1979.

PART III. PROJECT DESCRIPTION

The AID grant will provide capability to CAREC to assist the CMCs of the Caribbean in their training and laboratory services. In addition to the establishment of a training unit that will administer the training proposed under the project and produce epidemiological and laboratory procedural manuals, AID funding will support a number of short term traineeships for public health inspectors, public health nurses, medical officers of health, medical students, medical epidemiologists, biostatisticians and statistical surveillance officers.

Along with the surveillance traineeships, courses in surveillance will be conducted by CAREC staff through designated epidemiologist workshops, statistical surveillance officers' training, and on-site surveillance follow-up with primary health workers and other members of the health care delivery team.

To improve laboratory standards, laboratory courses will be held at CAREC and on-site in the CMCs. Twenty-one laboratory technicians will be stationed at CAREC for two weeks in short term traineeships to learn specific laboratory techniques over the life of the project. In addition, CAREC will provide on-site follow-up by Senior Laboratory Specialists from CAREC to ensure the skills learned in the laboratory training courses are being utilized. The AID grant will also sponsor an annual laboratory directors' training workshop. The training outlined below will assist in developing indigenous West Indian capability to recognize disease outbreaks at an early stage and prevent their spread to epidemic proportion.

In addition to training in epidemiological surveillance and laboratory technique, the grant will provide limited laboratory supplies and equipment for training, laboratory safety, and epidemic assistance. It will also provide cold chain equipment for the expanded program of immunization administered by CAREC, and an information/data processing system to assist in both surveillance and administration.

1 Training Program

In order to ensure adequate epidemiological services in each CAREC member country, certain critical personnel skills are essential. While this requirement varies according to country size, a core staff of a designated epidemiologist (medical officer), a deputy epidemiologist (public health nurse or public health inspector), a statistical surveillance officer, and a laboratory technician skilled in microbiology are an essential minimum. In the larger countries this core staff will need additional capability at the parish level for reporting, for specimen analysis, and for outbreak investigation and follow up.

For the achievement of the objective of West Indian self-sufficiency in epidemiology, it is necessary to train all components of the health care team. District nurses, health assistants and physicians must all be made aware of what epidemiology is and how it can aid disease control in their community. In turn, these health care providers will more actively participate in disease reporting. Public health staff, including medical officers of health, public health nurses and inspectors who will actually be doing epidemiologic

activities will require more specialized training in order to develop the proficiency required for an efficient epidemiological surveillance system.

The type and length of each type of training to be provided by the project have been based on CAREC's assessment of the level of skills needed by the individuals to be trained.

A major objective, in addition to developing a public health professional with new skills, is to maximize the likelihood that these skills will be put to use in the CMCs of the West Indies. Thus no certificates or degrees are awarded from the training. This avoids providing a credential to be used for job hunting abroad.

All training to be conducted under the project will be done by CAREC staff members who view teaching as an integral part of their positions at CAREC. Except for laboratory "bench" training, formal classroom types of instruction will be less heavily emphasized than technical on-the-job assistance in epidemiology. The individuals being trained are staff members of their respective ministries of health. No new positions for epidemiologists or deputies are being created, in order to minimize recurring costs to the member country governments.

AID support will be in the form of:-

- (i) A Training Unit to administer and organize the training program to be conducted under the grant;
- (ii) Surveillance Training - Traineeships of three types:
 - short term traineeships (5 weeks to 2 months) for CMC health staffs to become familiarized through projects and on-the-job training with epidemiological methods (medical officer of health, deputy epidemiologists);
 - long term traineeships (1-3 years) in biostatistics and medical epidemiology to provide in-house training of West Indians to assume positions currently held by expatriates at CAREC; and
 - student clerkships to sensitize third, fourth and fifth year medical students to epidemiological methods and public health activity.
- (iii) Surveillance Training Courses - courses will be conducted both at CAREC and on-site by CAREC staff for designated epidemiologists (annually), statistical surveillance officers (biannually), and primary health workers and other members of the health care delivery team to develop improved surveillance reporting systems in the CMCs.

(iv) Laboratory Training - training will be provided both at CAREC and on-site in the CMCs in laboratory technique for laboratory technicians. On-site follow-up of CAREC based courses will be provided as well as annual training workshops for laboratory directors. Seven laboratory technicians a year will receive individual training in specific laboratory techniques through two-week traineeships at CAREC.

a. Training Unit

The training unit proposed under the AID grant will be composed of a training officer, an audio-visual technician and a secretary, who will be responsible for providing administrative support and educational expertise to CAREC staff members with technical/scientific responsibilities for training activities. The training unit will co-ordinate the overall training activities of the Centre, provide administrative and logistical support for specific courses held at CAREC and in the territories, assist in the design of training manuals, course materials, and audio-visual materials in sufficient quantities to satisfy the needs of the training program.

During the period of the CDC grant (1975-78), there was no formal "training unit" per se. The CDC-sponsored public health advisor assisted with course organization and implementation, along with numerous other activities. With the AID grant, training of West Indian professionals to assume CAREC positions will be a major activity at CAREC. The number of trainees of all types will increase considerably and at the same time the sophistication and intensity of the training will increase to meet the objective of replacing expatriate staff with West Indians throughout the Centre. Similarly, CAREC expects to have a West Indian training officer. It is desirable to allow adequate overlap of a new West Indian training officer with the CDC-sponsored public health advisor/training officer (who will probably complete his tour, June 1980). An overlap will allow proper transfer of technical and organizational knowledge and operational skills.

Training will continue to be an integral though less intensive function of the centre after the AID grant ends, and this unit is expected to continue under PAHC/CAREC support at that time. A detailed description of the responsibilities of the individuals to be provided for the training unit are shown in Annex XII.

b. SURVEILLANCE TRAINING/TRAINESHIPS

Medical Officers of Health Traineeships

Medical Officers of Health (MOsH) are physicians with responsibility for all public health and government curative health services at the county or parish level in larger countries and for the whole country in the small CMCs. They are in charge of the public health inspectors, the public health and district nursing services, the statistical unit and all health care centres. They should be capable of recognizing disease patterns and unusual problems, investigating outbreaks, identifying high risk geographic areas or population groups,

and taking action. Usually, the MOsH have had little background in epidemiology and thus outbreaks are not recognized or investigated and public health problems are inadequately assessed.

[AID funds will support three MOsH from CMCs per year for each of three years. They will spend six weeks at CAREC developing epidemiological knowledge and developing under CAREC staff supervision an epidemiological project based on data collected in their district or a problem they want to address (e.g. devising a program to eliminate gastroenteritis in 0-4 year olds or designing a survey to determine the immunization level of a particular population and a plan to correct gaps).

The objectives of this attachment would be to:-

1. encourage MOsH to incorporate epidemiology into their area activities and, by so doing, improve disease control and preventive efforts.
2. increase the knowledge/skills/awareness of MOsH in epidemiology and encourage the dissemination of this information to other health workers in the district.
3. enable MOsH to pursue an epidemiologic interest in a setting with close supervision and support.
4. sensitize the MOsH to understand the role CAREC can play in assisting in epidemiology.

Deputy Epidemiologist Traineeships

Deputy epidemiologists, who are usually senior public health inspectors (PHIs) or public health nurses (PHNs), will be doing most of the field work and taking more responsibility for epidemiological investigation in each country.

The deputy epidemiologists will have responsibilities similar to the designated epidemiologist, but will not be distracted by other administrative responsibilities or clinical practice. With training, CAREC expects the deputy epidemiologist to review weekly surveillance data, recognize unusual increase in cases, improve completeness of reporting, initiate investigations and maintain close communications with CAREC. In addition, the deputy epidemiologist will train the other health professionals in their areas and serve as a national resource for training and consultation in epidemiology.

The training program for deputy epidemiologists will consist of five-week courses for eight persons (to be held annually for the three years of the project). The course will train these individuals in surveillance, epidemic investigations, basic statistics and relations with laboratories. Reference materials will be provided at the workshop and self-help instructional aids will be developed and provided as "correspondence" follow-up. They will also be provided with ongoing guidance by CAREC staff through field visits.

Medical Epidemiologist Traineeships

In addition, AID funds would support twelve month traineeships for CMC medical officers at CAREC. Two individual medical officers would be selected and, if their performance over the first year of their traineeship is satisfactory, they could be renewed for a second year. At the discretion of CAREC, the traineeship would be limited to one year and refilled by other applicants. These traineeships would be established with the particular objective of taking Medical Officers with particular interest and aptitude for epidemiology and training them in a manner such that they would be capable of functioning effectively as national epidemiologists in their home country or as a regional resource (e.g. CAREC staff). The one to two years of training at CAREC would permit these individuals to become involved in all aspects of epidemiology in the West Indies, including teaching, field investigation, survey design and implementation, statistical methods and analysis, management techniques, immunization theory and practice, etc.

An attachment to CAREC working in the West Indies under qualified supervision is considered far preferable to sponsoring an individual for training in epidemiology abroad (e.g. a Masters in Public Health at a university in North America or England), for the following reasons:-

- Very few of the post-graduate courses in epidemiology are practically oriented to public health work in the developing world.
- The training is done using examples and under circumstances that are foreign and often irrelevant to West Indian conditions.
- Training abroad, particularly with the provision of a marketable degree, would increase the likelihood of dissatisfaction with less luxurious conditions (both work and personal) at home and thus the likelihood of eventual emigration from the CMCs.

Bio-Statistical Traineeships

One of the keys to the successful identification, investigation and control of communicable disease is the collection and analysis of data. At the present time this role is being performed in the CMCs by Surveillance Statistical Officers and at CAREC by an expatriate senior statistician and an assistant.

The statistical trainee (three person years) provided by the grant will be a West Indian individual(s) who has completed at least a bachelor's degree in statistics who will work with the senior statistician to learn the appropriate utilization of biostatistics for epidemiological surveillance activities. One individual will initially be appointed to the

traineeship for one year subsequently renewing at CAREC's discretion for each of two additional years. The trainee will assist the senior statistician to:

- monitor the work of the country's statistical officers and their role in the epidemiology unit of the country, providing training as necessary;
- recommend improvements to all information systems related to epidemiology and their utilization in disease control and evaluation of control program, and monitoring the indicators of such improvements;
- provide in-service training to other local staffs, both medical and para-medical, in the use of simple statistical methods in epidemiology.

Assistance will also be offered to other CAREC staff in the collection, presentation, and analysis of data from specific surveys or research activities. It is expected that this individual will take on a more senior role in the epidemiological statistical services provided by CAREC either on the PAHO staff or local CAREC staff at the conclusion of the AID Grant.

Laboratory Technician Traineeships

CAREC will provide individual training for two weeks in specific laboratory techniques for approximately seven CMC laboratory personnel each year. The traineeships will pay travel and per diem for these courses which will be conducted at CAREC.

Medical Student Elective Clerkships

The AID grant will permit two West Indian medical students per year for three years to be attached to CAREC for 10 week periods, under the tutelage of CAREC staff. They will pursue a particular epidemiological project and participate in the full range of CAREC activities. The grant funds will provide a small living stipend, travel support (to enable the student to learn from actual field study and spend large parts of his time in the LDCs) and support for reference material/texts, etc.

The objectives of this program are to interest medical students in a career in epidemiology/public health prior to their making long-term career decisions. They will observe the range of activities in which they can participate and use their ability to affect positively the health of populations. They will observe that public professional opportunities exist in their own geographic area. Rather than encourage study abroad or the attractions of the medical centres of the world, these elective traineeships are an excellent opportunity to demonstrate the potential of epidemiology in the Caribbean area.

C. Surveillance Training Courses

1) Designated Epidemiologist Training Workshops

Each CAREC member country has a medical officer of health designated epidemiologist who maintains close communication with CAREC.

AID grant funds will permit a yearly training workshop for these epidemiologists, including observers from Haiti, and the Dominican Republic. The objectives of the workshop will be to:-

- obtain regional agreement on necessary action;
- facilitate international communication on epidemiological matters;
- improve epidemiological skills and knowledge;
- improve epidemiological services; and
- assess progress, evaluate programs and identify areas of particular need and correction.

AID funds will provide travel and per diem costs for this five-day workshop for approximately twenty-five participants annually for three years. AID grant funds will also support in-country follow-up training/consultation for CMC epidemiologists.

2) Surveillance Statistical Officers Training Workshops

Surveillance statistical officers (SSOs) are also crucial in the epidemiology system. They require training in encouraging complete national reporting, collating and tabulating the data and passing it on promptly to their national public health staff and CAREC. The clarity of their tables and graphic displays will make it easier for the other epidemiological staff to interpret and analyze the data and thus recognize disease outbreaks in their early stages and determine appropriate control measures.

Within each country, data on cases of communicable disease are sent either daily or weekly from health units and hospitals to the Statistics Section of the Health Ministry. The data is collated, recorded onto record cards and tabulated weekly by the Surveillance Statistical Officer.

At the 1978 Workshop held at CAREC, utilization of this information was reviewed. Their training included assistance in the use of statistical data for detection of the start of epidemics, monitoring the progress of epidemics, including the assessment of control programs and presenting the data in suitable tables, charts and graphs for utilization methods in many countries on follow-up visits. The collection, collation and presentation of immunization and mortality information is also the responsibility of the Surveillance Statistical Officers. The methods of collection, collating and simple processing (e.g. coverage rates of the immunization data) was reviewed at the 1978 workshop and better utilisation in most Caribbean countries has been seen. (Prior to this Workshop, nearly all Caribbean countries' immunization coverage rates and hence the effectiveness of their immunization programs were unknown.) The knowledge of the often low coverage rates has already stimulated increased activity in countries' immunization programs, with improved information systems for monitoring the effectiveness. Mortality information and its utilisation in disease surveillance, especially with reference to accidents, will be reviewed in the 1979 workshop.

The surveillance officers have all expressed appreciation of the past workshops which helped them to co-ordinate their activities. Continuation of these workshops is thus important to both continue training of these officers and to give a meeting place to discuss problems faced and overcome, and achievements made by each of the officers and their application to other countries.

AID funds will support two yearly sub-regional workshops (1 for the more northern CMCs and 1 for the southern CMCs), for SSOs for each of three years as well as yearly follow-up visits by CAREC statisticians of each of the CMCs.

3) On Site Surveillance Training

Primary health care personnel will also have to be trained in aspects of epidemiology pertinent to their work (e.g. what to do in breakdown in water supplies, etc.). For example, district visiting nurses will be trained in how vaccines should be stored and handled, the importance of reporting cases of immunizable diseases and other diseases (e.g. gastroenteritis), the relationship between empty, discarded containers/tires/vessels and the mosquito carriers of dengue and yellow fever, etc. Primary health care workers will be given training to increase the preventive aspects of their work.

AID funds will provide supplies and training materials for annual in-country workshops, conducted by CAREC staff, in each country for the health inspectors and nurses, district nurses, and community health aides.

The objectives of the workshops would be to:-

- increase these health workers' awareness of their role in the surveillance system and how surveillance and epidemiology can assist them in their work; and
- provide specific training in epidemiologic matters that will be helpful in their primary health care activities. (e.g. workshops on gastroenteritis, immunizations, malnutrition, or diseases that were specific problems in their area).

In the larger countries (i.e. Jamaica, Belize, Suriname and Guyana) AID support would go beyond training materials and include travel and per/diem expenses for participants, in that many participants would have to travel some distance and stay overnight to attend such a workshop.

Two workshops would be held at parish level in Jamaica annually for three years and one annually in Guyana in three locations with approximately 50-70 total participants in each; one per year for Suriname as well for 50 participants and possibly other territories.

D) LABORATORY TRAINING COURSES

1) Laboratory Directors Training/Workshop

In the same manner as the designated epidemiologists, each year all the laboratory directors will meet (every other year at CAREC).

These individuals will receive continuing education at CAREC, taught by CAREC staff in techniques of microbiology. These courses will be followed-up by visits from CAREC laboratory staff to each CMC to provide on-site instruction.

2) Laboratory Courses at CAREC

The AID grant will finance 25 individuals for approximately 2 weeks per year for each of three years to attend classroom laboratory training courses at CAREC. These individuals will receive continuing education at CAREC, taught by CAREC staff in techniques of microbiology. These courses will be followed-up by visits from CAREC laboratory staff to each CMC to provide on-site instruction.

3) CMC On-site Laboratory Courses

In addition to formal laboratory courses conducted at CAREC in Trinidad, localized on-site training will be provided by CAREC staff members under the AID grant. These courses will be conducted for 5-7 individuals in seven CMC sites per year.

4) On-Site Laboratory Follow-up

In order to provide an accurate assessment of technical ability of the CMC laboratory technicians, CAREC will undertake a study of each CMC laboratory in follow-up to the laboratory courses at CAREC. The senior staff bacteriologist will schedule visits to all the CMC laboratories, and while there will determine technical needs and provide direct training. The initial visit will be followed by repeated visits by the bacteriologist or a senior staff technician (bacteriology) twice yearly to ensure that training is implemented and reinforced.

2. OTHER PROJECT ACTIVITIES

a. Laboratory Services

The CMC laboratories generally have been unable to overcome in recent years their problems of inadequate laboratory space, poorly trained staff, and limited equipment. There have been changes, however, in some of these areas. In the past three years, CAREC has seen a slow build-up of staff with satisfactory basic training in the LDCs. This is due to technicians returning from two year Certificate courses in the MDCs. Conditions for retaining the few more highly-trained technicians have improved with the recent decrease in opportunities for emigration to North America and Europe. It should be noted that laboratory standards of proficiency in these small laboratories are very vulnerable to staff changes, and wastage can still occur without emigration since unattractive career structures and few opportunities for promotion lead trained staff into other fields. This is most likely when morale is poor. One of the main supports for technicians' morale in the small laboratories is the close interest of the clinicians in the laboratories' work but this, understandably but regrettably, is absent in a number of the countries.

The frequent presence of CAREC staff members will be vital in providing this support and in stimulating the interest of the medical profession. The training activities of the CAREC laboratories will aim to convert basically-trained staff into technicians capable of reliable independent work in parasitology and bacteriology at levels appropriate to the size of their laboratories.

1) Proficiency Testing Program

One of the means for upgrading CMC laboratory skills in addition to the training indicated earlier is through a proficiency testing program which will assess technical capabilities to handle routine diagnostic specimens. Initially, the specimens sent to the laboratories for assessment will be the routine types of disease agents in bacteriology, and parasitology. As these laboratories progress through training and assistance, they will receive proficiency testing specimens that will require a higher level of competence in analysis. When fully developed and with freeze-drying equipment capacity provided by the grant, the CAREC proficiency testing scheme will ship a minimum of three (3) issues of samples per year in bacteriology and parasitology, with additional issues covering syphilis serology and other serological tests. The bacteriology samples will cover the whole range of pathogenic organisms which the CMC laboratories should be capable of isolating and identifying. The aim is for a high level of participation, but this is not ultimately under CAREC's control. All laboratories will be urged to participate, and the material distributed will increase in complexity as the capacity of the CMC laboratories increases. Increasing proficiency levels will be adjusted according to the baseline level of proficiency of the laboratories.

Montserrat's Laboratory, for example, would have a different proficiency scale than Jamaica as the range of organisms to be identified is extended. The proficiency level target reached at the end of a three-year period should be 90% correct responses within the laboratories' capabilities.

The sum total of these efforts will be toward upgrading laboratory technicians through the use of training courses, technical assistance, and proficiency testing programs. All of these efforts will impact on the CMC laboratory technicians in their own laboratory.

2) Surveillance and Laboratory Supplies

Proficiency testing samples are a measurement tool by which an individual's laboratory performance can be measured. The supply cost to develop and maintain this service from CAREC to the CMC laboratories is minimal each year. In fact, the bulk of the costs for this service are incurred in mailing the specimens to the laboratories (estimated to be \$600/year). It is estimated that the total cost of the proficiency testing supplies is \$850 per year.

Adequate laboratory supplies are critical to the success of the CAREC interaction with the CMC laboratories. These small laboratories have looked to CAREC in epidemic or emergency situations for direct and immediate support in terms of supplies that have been temporarily exhausted (slides, flasks, pipettes, etc.) or test reagents (media, typing and identifying serums, etc.). Provision of these supplies by CAREC as a central resource with quick response time often enables the laboratory to continue to perform tests that ordinarily would be discontinued sometimes indefinitely. This cost to CAREC is approximately \$1,500 per year. It is anticipated that this expense should not recur after year 1 due to improved CMC lab management.

When an investigation of an epidemic disease situation is undertaken by the CAREC Surveillance Unit, a larger amount of laboratory supplies must be available to assist in disease identification and surveillance. The laboratory tests and the supplies that are used would not be present in the needed quantity in any of the CMCs. It is necessary, therefore, to provide from CAREC all of the needed laboratory supplies in order to conduct and complete a thorough epidemic investigation. It is estimated that these supplies will cost approximately \$550 for each investigation and that approximately 10 situations will require this assistance each year.

Laboratory training efforts at CAREC are directed toward upgrading the laboratories of the CMCs. The training facility at CAREC will be equipped to provide assistance to twenty-five individuals for each course. Supplies for courses for these technicians are estimated to cost \$1,000 each time laboratory training is offered at CAREC and \$300 for laboratory courses held in a CMC laboratory (five to seven laboratory technicians). Estimated cost per year: \$1300.

Additional laboratory supplies are needed to support all of the above activities. These supplies are utilized by the CAREC laboratories in proficiency testing and in laboratory training courses as well as to support the Surveillance Unit's epidemic investigation.

3) On Site Strengthening of Laboratory Management and Laboratory Techniques.

The grant will provide to the CMCs the technical services of a laboratory technician skilled in laboratory management for 18 months. The technician will visit CMCs and assess the laboratory management procedures in order to recommend cost-saving techniques. The CMCs are generally dependent on imported laboratory supplies, many of which are expensive, and to obtain them demands significant "lead time". It is anticipated that with improved laboratory management the CMC laboratories may be able to decrease demand on emergency lab supplies from CAREC. Also, where feasible laboratory techniques will be introduced to reduce usage of disposable or "throw-away" supplies and introduce cost saving reusable items.

This activity will attempt to introduce appropriate technologies in the laboratory setting in order to promote self sufficiency.

The following table indicated the level of supplies to be provided by the grant and their usage.

LABORATORY SUPPLY COST ESTIMATES

TABLE B

Type of Supplies by Category of Use	Cost estimates per Year ('79)	Utilization		
1. Proficiency testing supplies	\$ 850	Lab supplies, packing, and mailing costs for 4 shipments per year to all the CMC labs in Bacteriology and Parasitology.		
2. Emergency lab supply requests	\$ 1,500	For use in CMC labs where critical test supplies have been depleted. This expense should not recur after Year 1 because of improved laboratory management.		
3. Lab supplies for epidemic investigations	\$ 5,500	An estimated 10 investigations each year require approximately \$550 each of lab supplies - media, containers, reagents, etc.		
4. Lab supplies for training courses at CAREC and in the LDC labs	\$ 1,300	CAREC lab course for 25 lab technicians (7-10 days) will require \$1,000 supply, CAREC lab course in the LDC lab (5 days-7 people) will require \$300 lab supplies.		
5. Other lab supply items	\$ 1,165	Shipping containers, stationery and lab manuals, labels, boxes for transporting specimens, misc.		
<hr/>				
Annual Total for Lab Supplies	10,315			
<hr/>				
Supply Cost* Projections	Year I \$10,315	Year II \$9,735	Year III \$10,709	LOP Cost \$30,759

*Includes 10% annual inflation each year.

Also, the '79 estimate reflects a built-in inflation of 5%

b. Laboratory Equipment

The AID Project funds will enable CAREC to purchase needed equipment to carry out its mission to assist the CMC laboratories. (See Table C). The items of equipment to be provided are:

- Items needed to increase technical capabilities in the CMC laboratories through proficiency testing and training.
- Equipment to support surveillance investigations and,
- Equipment to assist CAREC in its role as a reference laboratory for viral and other disease agents.

Table C indicates the type of equipment to be purchased under the grant and a summary of its usage. (See page 31)

LABORATORY EQUIPMENT FOR CAREC

Freeze Drying Equipment

At the present time CAREC has only a limited capacity to monitor laboratory performance in the CMCs.. There is no equipment at CAREC to prepare the type of specimens that should be sent to these laboratories. The purchase of freeze-drying equipment will enable CAREC to prepare a wide range of specimens for use in its bacteriology proficiency testing program. The purchase of this equipment item is critical to the development of a program to upgrade technical competence in the CMC laboratories.

Microscopes

The CAREC training laboratory is now being utilized for a variety of short and long term training courses. During these courses, it is important that the training laboratory be self-sufficient and function as a separate entity. At the present time, it does not have enough microscopes so that each student can be trained at his/her own microscope.

The present laboratory training facility at CAREC has twenty-one microscopes for student use. The AID project funds will be utilized to purchase an additional four microscopes. Since class sizes are to be twenty-five students, these additional microscopes will enable each student to use one scope. In the past, when a course was offered, additional microscopes would be "borrowed" from other CAREC laboratories. This is a problem when training extends as long as ten days and the microscopes are needed for daily work in two separate locations. The purchase of these scopes will put an end to "borrowing" and enable the training facility to be self-sufficient.

At the present time, when the laboratory training instructor wants to illustrate a particular point in microscopic analysis, a student's microscope is used first by the instructor and then by the student. It is very difficult to teach using this method. To correct this problem AID will provide project funds to purchase one instruction microscope that will enable both student and instructor to see the same microscope field simultaneously. This microscope will be taken to the CMC laboratories for training courses and technical assistance. Thus, the CAREC laboratory scientist will be able to give greater assistance in microscopic analysis in the CMC laboratories.

Water Analysis Training Equipment

Disease problems due to water contamination are all too frequent in the CMCs. The spread of disease by water is frequently a source of epidemics and, therefore, often a focus of the CAREC Surveillance investigations. The purchase of water testing kits under this project will enable the surveillance team to perform water analyses in the field as well as to take better samples of water in these field investigations. At the present time, the laboratory support for these investigations is almost non-existent in the field and must rely on samples taken to the nearest laboratory. Many of these disease organisms will not remain viable for the time it takes to transport the sample to the laboratory from the field investigation. An improved system of sampling will improve disease investigation techniques.

Storage Freezer

CAREC has limited capacity to store viral specimens, samples and reference cultures for laboratory use. These items should be kept at very low temperatures (-70°C) or they will deteriorate very rapidly. For many of these specimens CAREC is the only laboratory in the Caribbean capable of providing these analyses. The addition of a new -70°C freezer is included in this project in order to store proficiency samples and reference virus specimens and serums adequately at CAREC. Without this capacity, CAREC cannot accept viral specimens as a reference laboratory for the CMCs.

Double Ended Autoclave

CAREC is reconstructing an area using core budget funds to serve as a maximum security laboratory. In this facility, work with highly infectious diseases will be accomplished. Because of the infectious nature of these diseases, all precautions must be taken to prevent the spread of these viruses and bacteria. It will be necessary to sterilize all equipment that will be used in this area as it enters the laboratory and before it can be taken from the laboratory. A double-ended autoclave will allow a pass-through situation to be established such that all materials and supplies can be sterilized before and after use in the maximum security laboratory.

Laboratory Equipment for CMCs

Microbiological Safety Hoods

Tuberculosis is a chronic bacterial disease which commonly affects the respiratory system. The air borne route is the predominant mode of spread. The safety hood is used by laboratory technicians when working with material from suspect tuberculosis cases. The hoods will provide security to both the laboratory worker and others at the facility. Proper installation and use of the equipment will complete the precautions needed for offering this service in a CMC. CAREC technicians will determine where the two safety hoods will be installed.

Autoclaves

The most important equipment in a microbiology laboratory are incubators, cold stores and autoclaves. Two small autoclaves will be purchased to enhance the self-sufficiency of the CMC laboratory. It is anticipated that with improved autoclave capacity the CMC laboratory will not need to depend on CAREC to provide simple services due to lack of basic microbiology laboratory equipment. CAREC technicians will determine where the autoclaves will be installed.

c. Immunization Support

In the interest of disease prevention, the purchase of several freezers and refrigerators to be distributed to the countries shown below is included in the project. This would significantly improve vaccine storage facilities in the countries mentioned and enable health workers to store and administer more potent and effective vaccines to the population they serve.

Since vaccines have to be transported to health centers and other peripheral health units, a supply of vaccine carriers is also recommended. With such vaccine carriers, immunization can be effectively extended to those remote areas where the most susceptible populations are usually not reached.

Vaccines being used in the countries referred to in the attached table are all provided on a regular basis from their limited resources. They have intensified their immunization effort to protect at least 80% of all children 0 to 2 years old and aim at having all children fully immunized (in accordance with their national policies) by school entry age (5 years).

This effort continues to be impeded because of insufficient funds to provide adequate and proper storage facilities for the vaccines. Vaccines have to be ordered from manufacturers in foreign countries.

These vaccines have to arrive and be immediately stored under optimum low temperature conditions in the countries in which they will be used. From central storage they are distributed to health centers and other peripheral units for storage and use. Distribution requires careful packing and holding temperature until the destination is reached, and where proper storage is again required until the vaccine is administered. It is, therefore, essential that refrigerators be available on a routine basis. In addition, the vaccine carriers are required to transport vaccine from the central level to health centers and other peripheral levels where immunization is carried out. (See page 32, TABLE C-a).

d. Data Processing and Information Systems

Data processing within CAREC is at present carried out on a SIMLCOCK P445 desk-top calculator. This is a small machine with a memory of five hundred and twelve registers capable of holding one number or one program step in each register. The present machine's maximum capacity is simple processing of data from small jobs. This considerably limits activities at CAREC in the storage, processing and analyzing of surveillance and administrative data.

one

Under the grant AID will provide / desk-top mini-computer for the surveillance and administration sections at CAPEC to assist in (a) collection, processing and analysis of disease surveillance data received from the 23 countries reporting to CAREC; (b) statistical analysis of data collected under CAREC sponsored research in parasite and poliomyelitis sero-surveys in school children, gastroenteritis in children, and other research; (c) computer modeling of optimization control methods; (d) trend analysis of disease data; (e) data on immunization coverage, and (f) administration of the center (particularly inventory, word processing, payroll, and financial functions).

Annex XI contains a detailed description of the current problems associated with the existing CAREC information system and expected usage of the mini-computer in their resolution.

In addition to the basic mini-computer and accessories for printing, plotting and disk/tape storage; the AID grant will provide 18 months of assistance to CAREC to program the system, provide instruction in its use to the senior statistician and his assistant, and enter existing surveillance and administrative data into the machine. The project will also provide a maintenance contract with an existing computer dealer in Trinidad to ensure minimal down time of the machine. Procurement of the computer should be based on a combination of cost and quality factors bearing closely in mind the necessity for on-the-spot servicing requirements.

Instructional training in the computer's use will be initially provided by the AID grant to two members of the CAREC staff either on-site in Port-of-Spain or at a training center of the equipment manufacturer.

e. Zoonoses Surveillance

Within the recent past, the countries of the Caribbean have been paying increasing attention to animal health and veterinary public health both as a means of reducing heavy dependence on imported foods with consequential effects on balance of payments, as well as a means of improving nutritional standards in animals through increased protein intake.

In addition, although the incidence of the zoonoses in humans is not accurately known, there is little doubt that rabies, leptospirosis, tuberculosis, to mention a few, are diseases of concern to Caribbean target populations.

This growing awareness has led to the initiation of several innovative approaches to obtaining solutions to these problems. At national level efforts have been made to stimulate the development of Veterinary Public Health Units within Ministries of Health (Jamaica, Barbados, Trinidad and Tobago, Guyana) and establish or support veterinary diagnostic laboratories. At regional level a school for training animal and veterinary public health assistants was established in Guyana in 1975 and has to date produced about 70 graduates, many of whom are from the smaller territories; a project to develop laboratory services in the LDCs commenced in 1977 and is on-going, while annual veterinary public health seminars have served as a means of continuing education for veterinary and medical professional personnel and of

promoting closer working relationships with epidemiologists in the Ministries of Health.

With the establishment of the PAHO office of the Caribbean Program Co-ordinator in Barbados in April 1978, more emphasis is being placed on team work as a modus operandi. In this context, a closer working relationship between Veterinarians and CAREC, especially in the area of surveillance, is being explored.

The already identified zoonoses epidemiological situation currently existing in the Caribbean is such that increasing attention must be directed to maintaining a high level of surveillance supported by a diagnostic laboratory capability.

Foot and Mouth Disease in Guyana and Curacao (sporadic outbreaks)

Rabies in several territories - Grenada, Suriname, Trinidad and Tobago

African Swine Fever - Dominican Republic, Haiti

Tuberculosis - Barbados and other territories

Swine Fever -- Commonwealth of Dominica (Hog Cholera)

Leptospirosis - Barbados, Guyana

Up to the present time constraints of financial resources only permitted continued funding of limited laboratory activities. Nevertheless it is clear that the twin activities of surveillance and laboratory diagnosis are the bases on which an effective regional surveillance system must be built with the objective of reducing the incidence of zoonoses, improving standards of food hygiene, improving nutritional levels, and providing economic benefits to the territories. PAHO has established a Caribbean post for a veterinarian. The AID grant will provide funding for a short term consultant for five (5) person-months who will work closely with the PAHO veterinarian in mapping a strategy for zoonoses surveillance in the region.

TABLE C

EQUIPMENT TO BE PURCHASED
TO PROVIDE LABORATORY SUPPORT AND TRAINING /

ITEM	UNIT COST	UTILIZATION
1. Freeze-drying Equipment (basic equipment, ampules, sealer torch, etc.)	1 <u>\$5,000</u>	To prepare laboratory proficiency testing samples for shipment to the CMC laboratories from CAREC.
2. Student microscopes	4 @ \$1,200 <u>4,800</u>	To use in lab training courses at CAREC
3. Instruction microscope	1 @ \$3,000	To use in training courses at CAREC and in the LDCs
4. Water Analysis Training Equipment	\$ 500 <u> </u>	To use in investigation of epidemics where water analysis is needed.
5. -70°C Storage Freezer	1 @ \$5,000	For storage of virus and other specimens, and proficiency testing samples at CAREC.
6. Double-ended Auto-clave	1 \$7,000	To use in the maximum security lab for sterilizing incoming equipment and supplies as well as decontaminating specimens, supplies and equipment that leave the lab area.
7. Microbiological Safety Hoods	2 @ 1,500 <u>3,000</u>	To use when working with material from suspect tuberculosis cases in CMCs
8. Autoclaves	2 @ 2,000 <u>4,000</u>	To use in CMC laboratories for sterilizing equipment and supplies.
<hr/>		
<u>Freight</u>	S	
Estimate of spare parts and maintenance costs (20% for 3-year period)	2,500 <u>\$6,200</u>	
TOTAL Equipment Costs	<u>\$41,000</u>	

/ The unit cost estimates for '79 purchase include an inflation factor of 5%.

TABLE C-a

PROPOSED DISTRIBUTION AND ESTIMATED COST (INCLUDING SHIPMENT) OF COLD CHAIN APPLICANCES FOR SOME COUNTRIES IN THE CARIBBEAN AREA *

COUNTRY	Refrigerators 10 cu ft electric top opening		Freezers 10 cu ft electric top opening		Vaccine carriers Model 3504, 4.35 litre		TOTAL COST US\$
	Units	Cost US\$	Units	Cost US\$	Units	Cost US\$	
Antigua	1	400	-	-	4	84	484
Bahamas	2	800	1	600	12	242	1,642
Belize	2	800	1	600	12	242	1,642
Cayman Is.	-	-	-	-	-	-	-
Dominica	1	400	-	-	6	126	526
Grenada	1	400	-	-	6	126	526
Guyana	2	800	1	600	12	242	1,642
Jamaica	2	800	1	600	12	242	1,642
Montserrat	1	400	-	-	2	42	442
St. Kitts/Nevis/Anguilla	3	1,200	-	-	6	126	1,326
St. Lucia	2	800	-	-	6	126	926
St. Vincent	2	800	-	-	6	126	926
Suriname	2	800	-	-	8	163	968
T'dad & Tobago	-	-	-	-	-	-	-
Turks & Caicos	1	400	-	-	4	84	484
Virgin Is. (UK)	-	-	-	-	-	-	-
TOTAL	22	8,800	4	2,400	96	1,976	13,176

*Includes a built in inflation factor of 5%.

PART IV. END OF PROJECT STATUS

Table D outlines the present status of capability in surveillance, outbreak recognition and laboratory services in the 19 CAREC Member countries and expected improvements in that capability at the end of the AID grant. The training component of the AID grant will play a major role in that improved capability through provision of on-site technical assistance and training geared to improvement of specific limitations of the CMCs. The addition of certain laboratory equipment, an information system capability and the other project components are all geared to assist in the improvements noted in Table D. The numerical levels of capability indicated on the Table refer to the levels of capability listed on page 37.

Training Unit

The training unit established under the grant should have developed into a regional information resource that will be carried on through CAREC core budget functions at the end of the project. This training unit will form the continuity for limited further training carried out by CAREC after the grant period.

Surveillance Training

Through AID sponsored traineeships and surveillance training courses a core staff of designated epidemiologist, deputy epidemiologist and statistical surveillance officers should exist in each CMC. All countries should have designated epidemiologists, trained in the fundamentals of surveillance and outbreak investigation. These public health physicians should look upon epidemiology as one of their major responsibilities and resources, recognize and investigate disease outbreaks, analyze surveillance data and initiate disease control activities. They should provide leadership and direction for all health workers in epidemiologic aspects of public health care delivery.

Each Caribbean CMC should have at least one deputy epidemiologist who does the daily tasks required for proper disease surveillance and outbreak investigation. Where physician-epidemiologist may be distracted by other responsibilities, the deputy epidemiologist should provide continuity and persistent concern for epidemiologic matters. The deputy epidemiologists will be trained in the fundamentals of surveillance and outbreak investigation by CAREC. They will appreciate the need for close liaison with their microbiology laboratory, with people delivering primary health care, and with CAREC surveillance staff. It is expected that the bulk of "shoeleather" epidemiology (laborious interviewing, house visiting, contact tracing etc.) will be done by the deputy epidemiologists. CAREC workshops and communications with Ministers of Health and the designated epidemiologists will help confer legitimacy and real authority to the position of deputy epidemiologists. The deputy epidemiologists themselves should develop a self-confidence and through their annual workshops a sense of professional identity.

These epidemiologists, together with statistical surveillance officers and other public health staff, should improve CMC epidemiologic services in a number of ways. All CAREC member countries should routinely send their weekly morbidity and mortality reports to CAREC within the following week. The reports should represent a yearly increase in "percentage of reporting units providing reports".

Similarly, there should be increasing self-reliance of the CMCs in outbreak recognition and investigation. There should be yearly improvements made in the number of nationally investigated outbreaks in each country in terms of level of activity of local staff as indicated in the EOPs Table. In particular, we expect there to be far fewer "level 1" outbreaks recognized by CAREC rather than in CMCs.

Considerable numbers of health care personnel in each CMC should have had adequate exposure to workshops and training sessions such that they are familiar with the value and role of epidemiology and disease surveillance.

There should also be several grant-supported CAREC trainees assuming full staff positions at CAREC or in national health departments including at least two medical officers, trained as epidemiologists, a statistician and a training officer. With the placement of these individuals, a major advance will have been made in filling positions with West Indians.

Laboratory Training, Equipment and Supplies

Significant increasing laboratory capability should be in place at the end of the AID project. The following conditions should be present in the CMC laboratories:-

1. At least one technician who is trained in bacteriology and parasitology will be in each laboratory. The individual(s) will demonstrate a high degree of competency in the proficiency testing program from CAREC. It will also be the responsibility of this individual to train another technician in the laboratory to assist when workload increases or absence of the first technician due to training courses, illness, or vacation occurs. This will ensure a continuity of technical services for bacteriology and parasitology.
2. The laboratories will require fewer extended technical assistance visits. These will be shorter in duration and directed toward refining techniques and introducing new procedure rather than teaching basic techniques.
3. All of the CMC laboratories will participate in the CAREC proficiency testing program. The results of this program will reflect the training efforts and technical assistance given by CAREC. Fewer laboratories will report results below the acceptable level of performance.
4. Several of the CMCs will receive technical assistance to strengthen laboratory management and laboratory techniques.

With improved management and increased self-sufficiency it is anticipated that less demand will be placed on CAREC to replace depleted lab supplies on an emergency basis.

The type and magnitude of the problem facing the CMC laboratories have existed for a long period of time. During the course of this project's three year funding, all of the current problems facing the CMC laboratories will not be completely resolved. However, it will be possible to effect changes in upgrading laboratory technical capability through training, technical assistance and proficiency testing.

Other Equipment and Information System

By the end of the grant period, the CMCs should all have adequate "cold chains" to provide for potent vaccines with the help of Grant-purchased refrigerators, cold boxes and freezers. Routine coverage of infants with DPT and OPV vaccines should be obtained with satisfactory records (central and parental) of vaccinations received. There should be few, if any, childhood cases of diphtheria, tetanus, pertussis or poliomyelitis.

In addition to upgraded surveillance and laboratory capability provided through CAREC, a data processing/information system capability will be in place in the collection, processing and timely analysis of data as well as streamlining previously laborious administrative functions. Data presentation and reports at EOPS should be more timely, better graphically displayed, more accurate, and of greater statistical significance.

A comprehensive survey of zoonotic epidemiological problems in the CMCs will have been conducted, recommending alternative courses of action for CAREC and PAHO.

EOP CAPABILITY PROJECTIONS

TABLE D

KEY TO TABLE

DE - Designated Epidemiologist (MD)
 DDE - Deputy Designated Epidemiologist (Public Health Inspector or Public Health Nurse)
 SSO - Statistical Surveillance Officer
 PHI - Public Health Inspector
 PHN - Public Health Nurse
 CMO - Chief Medical Officer

CAREC MEMBER COUNTRY	CURRENT AND PROJECTED EPIDEMIOLOGY SURVEILLANCE (1) STAFF LEVEL		1979 CAPABILITY* ANALYSIS			EOPS CAPABILITY LEVEL			COMMENTS
	1979	EOPS	(A) SURVEIL-LANCE	(B) OUTBREAK	(C) LABORA-TORY	(A) SURVEIL-LANCE	(B) OUTBREAK	(C) LABORA-TORY	
ANTIGUA	1-DE 1-SSO	1-DDE (80)	3	2	2	4	3	3	Chief Medical Officer (MD) is Designated Epidemiologist
BAHAMAS	1-DE 1-SSO	1-DDE (80)	2	3	3	4	4	4	Newly appointed SSO needs further training
BARBADOS	1-DE 1-DDE 1-SSO	1-MO (80)	4	4	4	5	MAINTAIN 4	MAINTAIN 4	DDE is nurse trained 1977 at CAREC and is working in epidemiology
BELIZE	1-DE 1-SSO	1-DDE (82)	2	1	2	3	3	3	
BERMUDA	1-DE 1-SSO	1-DDE (81)	4	3	3	MAINTAIN 4	4	3	CMO is also DE
BRITISH VIRGIN ISLANDS	1-DE 1-SSO	1-DDE (81)	4	3	2	MAINTAIN 4	4	3	CMO is also DE
CAYMAN ISLANDS	1-DE 1-SSO	1-DDE (82)	2	2	2	3	3	3	CMO is also DE - SSO is also hospital medical records librarian

* SEE KEY TO LEVELS OF CAPABILITY (Page)

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CAREC MEMBER COUNTRY	CURRENT AND PROJECT ED EPIDEMIOLOGY SURVEILLANCE (1) STAFF LEVEL		1979 CAPABILITY ANALYSIS			EOPS CAPABILITY LEVEL			COMMENTS
	1979	EOPS	(A) SURVEILLANCE	(B) OUTBREAK	(C) LABORATORY	(A) SURVEILLANCE	(B) OUTBREAK	(C) LABORATORY	
DOMINICA	1-DE 2-DDE 1-SSO		2	2	3	4	4	4	1 DE is District MO 1 DDE is Chief PHI and will be formally named DDE in 79. 1 DDE is district health nurse still in district. SSO is also Family Planning Administrator.
GRENADA	1-DE 2-DDE 1-SSO	1-DDE (80)	2	2	2	4	3	3	DE is also CMO. 1-DDE-PHI in US on long term studies. Other DDE is nurse with other responsibility
GUYANA	1-DE 2-DDE 1-SSO		4	4	3	5	4 MAINTAIN	4	DDEs are two nurses and 1 inspector, two of the three working in surveillance
JAMAICA	1-DE 2-DDE 1-SSO (national)		4	4	4	5	4 MAINTAIN	4 MAINTAIN	One DDE is PHN, other PHI. Both assigned to Central Unit. Sentinel stations at parish level are identified and need to be developed. No posts for SSOs have been established in budget.
MONTSERRAT	1-DE 1-DDE 1-SSO		1	2	2	3	3	3	DE is CMO. DDE is Chief PHI SSO soon to be released from Medical Record activity

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CAREC MEMBER COUNTRY	CURRENT AND PROJECT ED EPIDEMIOLOGY SURVEILLANCE (1) STAFF LEVEL		1979 CAPABILITY* ANALYSIS			EOPS CAPABILITY LEVEL			COMMENTS
	1979	EOPS	(A) SURVEIL- LANCE	(B) OUTBREAK	(C) LABORA- TORY	(A) SURVEIL- LANCE	(B) OUTBREAK	(C) LABORA- TORY	
ST. KITTS NEVIS ANGUILLA	2-DE 1-DDE 2-SSO	1DDE (80)	1-2	2	1-2	3	3	2-3	DE is CMO; DDE is PHI with long- term training at CAREC and represents St. Kitts at annual meeting - SSO requires extensive further training. In Anguilla the Lab Director is also DE, there is no DDE
ST. LUCIA	1-DE 1-DDE 1-SSO		3	3	2	4	4	3	DE is CMO. DDE is PHI with long term training at CAREC and represents St. Lucia at annual meeting
SURINAME	1-DE	1-DDE (82)	2	3	3	4	4	4	No DDE plans. No coordination of health statistics at present
ST. VINCENT	1-DE 1-SSO	1-DDE (80)	1	1	2	3	3	3	SSO needs to be relieved of medical records responsibility
TRINIDAD & TOBAGO	1-DE 1-SSO 5-DDE		3	3	4	5	4	4 MAINTAIN	None of DDE's work in EPI Unit full time. Only brought in during emergencies.
TURKS & CAICOS	1-DE 1-SSO	1-DDE (80)	1	1	1	3	2	2	

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KEY TO LEVEL OF CAPABILITY*

(IN TABLE D)

(A) Routine Reporting and Surveillance Capability

- Level: 1 Simple collection, collation, and tabulation of communicable disease data.
- Level: 2 Collection of above data with interpretation, but without additional investigative capacity
- Level: 3 Capability for collecting and presenting all types of data (acute and chronic disease, morbidity and mortality data, water quality, etc).
- Level: 4 Collection of all types of data with interpretation and initiation of investigation.
- Level: 5 Recognition of need for surveys and capability to perform them.

(B) Outbreak Recognition Capability

- Level: 1 Outbreak not readily recognised in early stages by national staff.
- Level: 2 Outbreak recognised by national staff; CAREC performs investigation
- Level: 3 Outbreak recognised and investigated by national staff; CAREC provides onsite assistance.
- Level: 4 Outbreak recognised, investigated, and controlled by national staff, CAREC provides phone or cable communication liaison.

(C) Laboratory Services Capability

- Level: 1 No culture work, able to do gram stains; unable to identify pathogens of public health importance such as Shigella, Salmonella, Streptococcus Staphylococcus)
- Level: 2 Limited culturing and identification of most common pathogens (can identify for example Staphylococcus, Shigella, Salmonella)
- Level: 3 Moderate culturing capability and identification (can identify and group common pathogens such as Salmonella, Shigella)
- Level: 4 Full culturing and identification capabilities; anaerobic capability; TB culture capability; uses CAREC as virology reference (to identify dengue, hepatitis, yellow fever, anthropol borne, arboviruses, influenza, poliomyelitis, leptospirosis, rabies, etc)

PART V PROJECT ANALYSIS

1. Financial Plan

The total cost of this project is estimated to be \$1,578,577 of which the AID grant will finance \$1,160,000. Table F provides detailed project cost breakdowns by source of funding and project component.

The major cost of the project is the training component that will finance both short term courses and workshops in epidemiological surveillance and laboratory procedures as well as longer term (2 weeks to 1 year) traineeships for laboratory technicians, public health inspectors, public health nurses, physicians, medical students, and primary health care workers.

SOURCES AND PROJECT FUNDING

AID will provide funding for a substantial portion of the training function conducted by CAREC which reaches across its activities in epidemiological surveillance, laboratory services and applied research. AID is one of several multilateral and bilateral donors that contribute to the CAREC budget. The following table represents an estimated percentage of time CAREC staff members will spend in teaching, administering, or providing technical assistance under the grant as well as a cost estimate for each.

TABLE E PAHO ESTIMATED CONTRIBUTION

<u>BASE</u>	<u>POSITION</u>	<u>%TIME</u>	
(60,000)	Director CAREC	18%	34,800
(55,000)	Chief/Surveillance	25%	41,250
(52,000)	Chief/Laboratories	25%	39,000
(4@15,000)	Laboratory Technicians	30%	54,000
(50,000)	Administration Officer	20%	30,000
(10,000)	Administration Assistant	50%	15,000
(23,000)	Statistician	35%	29,400
(13,000)	Maintenance Officer	15%	5,850
	Other CAREC Staff	-	58,900
	Total CAREC/PAHO Contribution		<u>308,200</u>

In addition to PAHO/WHO contribution to CAREC, the member governments contribute according to the scale in Annex III-I. As can be seen the contribution of Trinidad and Tobago represents greater than 63% of the total member government contribution. Although no member country contributions are included in the project financial plan, much of the core support for the operation of CAREC is derived from these sources.

TABLE F
SUMMARY COST ESTIMATE AND FINANCIAL PLAN
 (US \$000)

SOURCE OF FUNDS TYPE OF EXPENDITURE	AID		PAHO/CAREC		TOTAL
	FX	LC	FX	LC	
Training	80	623.1		308.2 ¹	
Equipment and Supplies	144.9				
Other Activities					
a) Audio Visual	16				
b) Zoonoses Surveillance	25				
c) Evaluation	25				
Contingency		45.7			
Program, Support Costs	191.9 ²			110.4 ³	
TOTAL	482.8	668.8 =	(151.6)	418.6	1,570.2

1 Estimate of Contribution by PAHO

2 20% of Project Costs

3 11.5% of total indirect costs to be absorbed by PAHO

2. Costing of Project Inputs/Outputs

a. Training Component

Training Unit

Professional Staff

The AID grant will finance only one additional full-time professional staff member at CAREC during the course of the project. The training officer will be funded at the PAHO salary scale level of a P3 (1st year \$40,500, 2nd year \$42,900).

Support Staff

In addition to the professional staff member indicated above, the AID grant will finance a secretary and an audio-visual technician for three years. These individuals have been funded at a CAREC local scale level (Year 1 \$6,500; Year 2 \$7,150; Year 3 \$7,865).

Traineeships

Several traineeships of varying length and professional skill levels have been included in the AID grant. The detailed AID financial plan (Annex III) indicates the length of time and cost of each of these traineeships to which AID will contribute \$228,895. Salary is not provided for the trainees, except the two medical epidemiologists who will be assigned for two years to CAREC. Member governments who currently employ the medical officers of health, public health nurses, public health inspectors, and laboratory technicians will release staff on salary for CAREC training as they have in past years. Per diem and travel expenses will be covered by the AID grant. The medical student clerkships will provide a modest stipend for the 10 weeks of training in lieu of per diem expenses. Grant funding of travel and per diem expenses for CAREC staff to provide on-site training and follow-up is provided. Travel and per diem expenses will be provided for non-Trinidadian participants in CAREC-based training. In large countries, such as Jamaica, where overnight travel for some participants is required, travel expense and per diem will also be included.

Training Courses

The detailed breakdown and extent of these courses for laboratory directors and on-site laboratory training, formal CAREC laboratory instruction, laboratory technician traineeship and on-site follow-up may be found in the Detailed AID Budget in Annex III-2. Total cost to AID will be \$326,838. As with the traineeships, travel and per diem are included in the grant.

On Site Strengthening of Laboratory Management and Laboratory Techniques.

A West Indian technician will be recruited early in the project and will be assigned for 18 months under the CAREC Chief of Laboratories. The technician will travel to LDCs to offer on-site technical assistance in laboratory management and laboratory techniques in order to increase

the LDCs' self-sufficiency. A limited amount of funds for miscellaneous supplies will be made available in order to introduce cost-saving mechanisms. Detailed AID Budget in Annex III indicates total cost to AID of \$21,000.

b. Equipment and Supplies

Laboratory Supplies and Equipment

In order to allow CAREC to respond in urgent situations to CMC requests for supply assistance, as in epidemic investigation, the AID grant will provide funding for laboratory supplies as outlined in Table B, over the life of the project. These supplies will total approximately \$30,759. Additionally, for purposes of teaching, safety and proficiency testing, AID will supply \$41,000 worth of laboratory equipment per Table C. This equipment will allow CAREC to upgrade the services it provides CMCs and to test/upgrade their proficiency in laboratory services.

Immunization Supplies

Without minimal cold storage equipment, efforts to provide immunization for target population may be fruitless. With the minimal logistical support of some freezers, refrigerators and vaccine carriers for health clinics in the CMCs, the potency and availability of vaccine can be substantially improved. The AID grant will fund the purchase of 4 freezers, 22 refrigerators, and 96 vaccine carriers as well as support for their shipment and installation. The estimated cost is \$14,476.

Information System/Data Processing System

To provide capability to CAREC for statistical storage/analysis of surveillance data and administrative functions, the AID grant will support the purchase of a mini-computer (hardware and software), training for two statistical officers, a maintenance contract for the life of the project and 18 months of programming assistance to initiate the computer and program data for future use. The computer, maintenance contract, software accessories, and training will be purchased in the initial fiscal year for \$45,200 and programming assistance will begin immediately after the computer is installed at a cost of \$13,500. The total information system component will cost \$58,700.

c. Other Activities

Audio-visual Training Materials

The AID grant will provide \$6,000 for audio visual teaching equipment such as projectors, blackboards, etc. The majority of the purchased audio-visual materials will be portable and self-contained to promote facile transport to on-site training facilities. Two person months (\$10,000) of audio-visual technical assistance are also provided by the grant to assist the training unit audio-visual technician improve display techniques for training purposes.

Zoonoses Surveillance

As discussed in Section III-2, an estimated 5 person-months of assistance (\$25,000) will be provided under the AID grant to conduct a survey in the CAREC service area of veterinary epidemiological needs and to recommend to CAREC an appropriate course of action for Zoonoses Surveillance.

Evaluation

The costs of two evaluations under the project, one at mid-project point, and a final evaluation are included in project funds, \$25,000.

Contingency and Inflation

A 10% annual rate of inflation has been included within training component costs. Equipment and supplies figures are adjusted for 5% anticipated inflation. Virtually all such items will be purchased at the project's outset. A contingency factor of 5% of training equipment and supplies, other materials, the Zoonoses Surveillance Study and evaluation costs have been provided for in the AID budget.

Program Support Costs

Every project in addition to incurring specific direct costs related to the individual components also incurs indirect costs associated with the administration, management and support of the technical inputs. The Department of Health, Education and Welfare, as negotiating agent for the U. S. Government in the field of health, has agreed to an indirect cost rate of 31.5% of project costs for grants to the Pan American Health Organization. For this AID grant this would ordinarily amount to \$302,337.9. However, PAHO has agreed to an indirect cost rate of 20%. The support cost charge to AID is therefore \$191,961.

3. CAREC Recurrent Budget

The Caribbean Epidemiology Center (CAREC) was established on January 1, 1975 under the technical and administrative supervision of the Pan American Health Organization (PAHO) at the request of the Caribbean Health Ministers Conference (CHMC). It incorporated the Trinidad Regional Virus Laboratory. During 1977 Suriname was admitted as a fully participating member of CAREC.

The center is funded by PAHO, the governments of Trinidad and Tobago, Antigua, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts-Nevis-Anguilla, St. Vincent, St. Lucia, Suriname, Turks and Caicos and the Overseas Development Ministry of the United Kingdom. In addition, the center received financial assistance from the Caribbean Community (CARICOM) through grants from the Center for Disease Control (CDC), Atlanta. However, the CDC grant assistance ended in December, 1978. Research work is supported by grants from the Medical Research Council of the United Kingdom, the International Development Research Center, Canada, the Rockefeller University, New York, the American

Heart Association and the National Institutes of Health of the United States.

The program priorities for the center have been clearly defined as the development of communicable disease surveillance, laboratory support for surveillance and the provision of surveillance and laboratory training for all members of the health team and research applicable to the Caribbean region.

The financial history of the Centre reveals that the Rockefeller Foundation and CDC have been important sources of funds in the past. Although the total CAREC annual budget has been increasing over the years, it has not enabled CAREC to satisfy the increasing demands for services. The AID grant will increase CAREC operating funds in 1979 by approximately \$344,000 which represents about one-third of the total budget in 1979. Grant funds for CAREC's 1980 and 1981 operating funds will be increased by approximately \$313,612 and \$302,200 respectively. These amounts do not represent permanent recurring costs requirements beyond this period, since the level of training required after the AID grant program has been completed will be substantially reduced.

During the life of this project, CAREC plans to seek additional sources of funding to enable it to advise and assist Caribbean governments in the establishment and maintenance of sound epidemiology and surveillance practices provided under the AID grant. At the end of the three year AID project it is expected that at least three staff members will have been added to the core staff of CAREC. Qualified West Indians trained under the project will be encouraged to replace expatriates on the CAREC core staff, thus enabling CAREC, as a West Indian institution, to continue to provide high quality services to governments of the region. The core level of support from PAHO/WHO and member governments' regular contributions as well as continuing grants' funds from other sources should be adequate to continue to provide CAREC core services under this grant.

CAREC's 1980 budget estimates (prepared in March 1979) show a difference of \$255,600 between the budget ceiling and the estimate of operating expenses. The budget ceiling assumes a 10% quota contribution increase over 1979. The 10% increase is to cover inflation only. The uncovered budget request was to have funded an expansion of CAREC's existing activities, which will have to be delayed until CMC's are able to make larger contributions. This delay will have no impact on the subject project.

Meanwhile, the CAREC Council will refer the CAREC proposed 1980 budget (with the anticipated deficit) to the Caribbean Ministers of Health Conference for consideration and action.

The AID project's covenants reflect the recurring costs to CAREC of the training unit and the computer technician. These were presented to the CAREC Council at the 1979 annual meeting March 22-23, 1979 and approved by the Council for transmittal to the Caribbean Ministers of Health Conference later this year.

Over the longer term, it is impossible to assess when and if the member countries will be able to assume full financial support for CAREC. Presently, with the exception of Trinidad and Tobago which provides a large proportion of the financial support, the member countries are in the midst of a serious recession and unable to provide significant increased support to CAREC, to other common services program, or to their internal investment programs. Their ability to assume these additional burdens in the future will depend on their success in recovering from the current recession and achieving reasonable levels of economic growth. These in turn will depend not only on their own efforts but foreign assistance. In the short-term, however, it is reasonable to assume that the member countries and the international donor support will be adequate to support CAREC's activities.

4. Technical Analysis

Project Analysis

This project constitutes an appropriate response to the nature and levels of communicable disease problems in the CAREC Member Countries (CMCs). By simultaneously addressing communicable disease problems on a public health and individual case basis, a significant impact on incidence and prevalence can be achieved. The concept of a central common service epidemiology activity for centralized reporting, centralized virology and microbiology laboratory confirmation functions, and a centralized repository of high level epidemiological expertise are sound technical approaches.

In addition to developing central capability to respond to CMC's epidemiological needs, the project is designed to strengthen in-country CMC capability in surveillance and laboratory service. Strengthening of either the central or local epidemiological function without the other would be technically inconsistent. Due to site and levels of demand it would not be technically or economically feasible for all CMCs to provide high level surveillance expertise or complex laboratory capability. Neither would it be logistically, technically or economically feasible for CAREC to provide all the surveillance and laboratory needs of the CMCs. The adjusted level of central and local services has proved highly effective in the three years of CAREC's existence.

The commitment of member governments to regional epidemiology efforts is crucial to the continued success of CAREC. Indications from CMC ministry officials to the project team and RDC/C staff demonstrate a high level of commitment and satisfaction with CAREC initiatives.

Analysis of Alternatives

Three alternatives have been considered in the formulation of the present project. The first would center on the development of laboratory and surveillance capability to a completely self-sufficient level in each of the present CAREC member countries. Due to the lack of presently available or retainable personnel, the high initial and continuing investment in facilities, equipment, operating costs and personnel,

this alternative was considered infeasible.

The alternative of providing training either outside of the Caribbean or through another Caribbean institution was also considered. Training outside the Caribbean poses serious out-migration issues and would not provide a level of expertise consonant with the activities these individuals will be performing when they return. No other Caribbean institution was felt to have the necessary skills or staff capable of providing both the required types of training and the required on-site follow-up required for surveillance and laboratory improvement. For these reasons this alternative was not considered further.

Finally, the alternative of "no action" was considered. Due to the levels of communicable diseases in the region, the expressed interest of member governments in improvement of epidemiological services, and the perceived impact the proposed project will have on reductions in morbidity and mortality associated with communicable disease, the grant described in this project paper document was proposed.

5. Economic Analysis

Nature, Magnitude and Distribution of Benefits

From an economic perspective, health conditions influence both the level and distribution of income. Numerous studies have demonstrated, for example, that illness often leads to economic costs in terms of decreased productivity on the job, absenteeism, forced withdrawal from specific types of employment or forced withdrawal from the labor market. Conversely, the economic benefits generated by preventive or curative health services include increased worker productivity. Benefits accrue with respect to both remunerated and non-remunerated labor; persons working without remuneration (e.g. housewives, volunteers, students) are not included in national income accounts, but their efforts contribute to the welfare of the population and should thus be assigned an economic value.

In addition to the productivity effects of health programs, such programs also result in direct consumption benefits, i.e. making people feel better has an economic value. These effects or benefits are equal to the value individuals place on avoiding or reducing the pain and discomfort caused by illness. Although difficult to quantify, the value one places on being and feeling healthy, aside from the effect health has on productivity, is a real income benefit derived from health services.

A third type of economic benefit resulting from disease prevention or control programs is the reduction in the real resources which would otherwise be allocated to curative services. Thus potential saving is very large and is often sufficient by itself to justify investment in environmental health, immunization and disease identification, surveillance and control programs.

Finally, the health status of the Caribbean region has an important indirect impact on tourism - one of the region's leading industries in terms of employment, contribution to GDP and sources of foreign exchange. An outbreak of disease in a tourist area, or the reported threat of one, can cause a sharp and immediate curtailment in tourist demand. The effect on tourism of a real or threatened epidemic, indeed, may extend well beyond the period of danger to health.

While the project team does not believe it is feasible to measure the health or economic benefits directly resulting from the project, CAREC statistics on the prevalence of various diseases give some indication of the scope of the problem being addressed and thus of the potential economic benefits. These data understate the magnitude of the health problem and its economic consequences because many cases are not treated and thus not reported. The following table shows the number of the cases of five communicable diseases reported to CAREC in 1978, a rough estimate of the percentage of cases reported to actual cases, and the universe of cases implied thereby:

CASES OF SELECTED DISEASES IN CAREC MEMBER COUNTRIES, 1978

<u>DISEASE</u>	<u>CASES REPORTED</u>	<u>EST. % COVERED</u>	<u>EST. NO. CASES</u>
Typhoid	182	80%	225
Gastroenteritis	32,641	25%	130,000
Measles	2,377	55%	4,300
Viral Hepatitis	445	65%	685
Influenza	16,447	25%	65,800

Although the project team was unable to translate these morbidity rates to economic costs, a CDC study of a 1977 dengue fever outbreak in Puerto Rico is suggestive of the costs incurred. The Puerto Rico outbreak caused at least 265,000 cases. The study estimated that the outbreak cost a minimum of \$6 million in reduced worker productivity, treatment and control. If (as suspected) the number of cases was seriously underestimated, the real costs may well have been over \$15 million. The Puerto Rico Study suggests the enormous economic costs which can be incurred when prevention, surveillance and control programs fail to halt disease outbreaks at an early stage.

In all countries, the poor suffer a higher percentage of illness and receive a relatively small share of the available curative services. As indicated above, poor health affects income generating capacity and directly affects welfare. An inequitable distribution of health services is thus a contributing factor to the unevenness in the distribution of income. Since this project will reach all segments of the population, the higher incidence of disease among the poor will assure that that group receives a disproportionate share of the benefits.

Preventive Vs. Curative Services

The basic program alternatives for maintaining a population in good health relate to the mix of preventive and curative services. The most effective program mix at any given time and location depends on the health objectives, the cost of each service and the incidence of various diseases. If the health objective is to minimize morbidity in the population, most qualified observers agree that CAREC countries, like most countries, underinvest in preventive services and in the health of the poor. Factors which contribute to this situation include the bias of most medical schools and practitioners toward modern curative services, the political influence of elite groups on government budgetary allocations and the fact that medical services allocated by the private sector are responsive to the effective demand concentrated in a wealthy minority.

The AID assistance provided under the Epidemiological Surveillance and Training Program is expected to lead to an improvement of Caribbean capability in the prevention and control of communicable diseases. An improvement in the recognition of disease patterns will provide Caribbean health planners with information to attack those diseases with appropriate prevention and control measures. The program will thus result in a reduction in the need for expensive treatment and in the time that workers are incapacitated by illness.

Cost Effectiveness of the Regional Strategy

As a regional institution with outreach facilities CAREC can provide essential diagnosis, surveillance, lab equipment and training services at a lower cost per capita than attainable under redundant national programs. CAREC's lower unit cost is a result of economies of scale in the use of expensive technical personnel and laboratories, its ability to vary the type and scale of its operation as conditions change. At the national level these services would prove too costly for most of the small island governments, involve duplication of services and result in the inefficient use of already scarce resources. For example, to set up a virology lab for each of the twenty islands would require capital expenditures of approximately 1.2 million dollars. Sufficient demand for these services does not exist in national laboratories to justify such an expenditure. Recurring costs of probably twice this magnitude would be required to operate such facilities. Most of the territories would be unable to meet these staffing and recurrent financial requirements. The geographic dispersion of the target population in many island territories thus argues for a regional approach if services are to be provided on a cost-effective basis.

6. Social Analysis

Beneficiaries

The project will have two distinct beneficiary groups. The first - the primary beneficiaries - are the approximately 120 health personnel physicians, epidemiologists, public health personnel and laboratory

technicians who will be trained annually under this project. They will be the recipients of instruction in various subfields, (surveillance in disease prevention and control laboratory techniques, medical and veterinary epidemiology) of the health system. The second and ultimate beneficiaries will be the poor majority of the participating Caribbean States, that group most directly and adversely affected by the diseases this project is designed to detect and prevent. They will receive the benefits of this project through the upgrading of health status which will be an eventual outcome of the project. (See Logical Framework Outputs Level.).

The ultimate beneficiaries will be those groups most adversely affected by communicable diseases. Communicable diseases have been the most devastating to populations with poor environmental conditions, (typhoid, gastroenteritis, and other water borne diseases), poor housing (tuberculosis, upper respiratory ailments), and malnutrition (parasitism, gastroenteritis, etc.). Thus, for the most part they are the rural poor or semi-rural small farmers, unskilled urban laborers and the unemployed. Historical and social factors, products of the plantation economy which dominated the Caribbean, are responsible for the poor conditions under which they live. Available data indicate that the average GNP in the LDCs is U. S. \$513 ranging from a high of \$641 in Montserrat to a low of \$316 in St. Vincent. With the exception of Haiti these represent the lowest income levels in the Latin American and Caribbean region. The following table, Underemployment Index, demonstrates further the tenuous economic situation of the LDCs. As can be seen from the figures in the July-August period, unskilled laborers had to work between 2.68 and 7.72 days to purchase a specified food basket. The data also point out that the mean for the LDC territories was 4.23 work days - an amount considerably higher than the 2.38 mean for the less impoverished islands (MDCs) in the region. The specified food basket consisted of the following items: (1) four lbs. of rice; (2) ½ quart of cooking oil, (3) one dozen eggs; (4) two lbs. of frozen chicken; (5) three lbs. of salt cod; (6) 2½ lbs. of white sugar; (7) five lbs. of ripe bananas; (8) one lb. of onions; (9) two packs of cigarettes.

TABLE G

UNDEREMPLOYMENT INCOME INDEX

<u>COUNTRY</u>	<u>WORK DAYS</u>
Antigua	2.68
Dominica	3.74
Grenada	4.29
Montserrat	7.72
St. Kitts	4.27
St. Vincent	4.89
ECCM	4.23
CARIFEA's MDG Mean	2.38

*Source: World Bank Caribbean Regional Study
Vol. VII, 1975

The general health condition of the ultimate beneficiaries is reflected in infant and childhood mortality and childhood malnutrition rates as well as sub-standard environmental sanitation conditions. As can be ascertained from the following table, the infant and child mortality rates for the eight LDC countries is high. In addition, more than 50 percent of all children five years of age or less suffer from some degree of protein-calorie malnutrition.

TABLE H

INFANT & CHILD MORTALITY

<u>COUNTRY</u>	<u>INFANT</u> ^{1/}	<u>CHILD</u> ^{2/}
Antigua	38.2	1.5
Belize	38.5	3.1
Dominica	27.5	1.5
Grenada	23.5	1.4 (1972)
Montserrat	26.3	1.5
St. Kitts/Nevis/Anguilla	42.8	1.3
St. Lucia	35.6	3.0
St. Vincent	57.8	4.9

1/ Number of infant deaths with rates per 1,000 live births, 1975.

2/ Number of deaths 1-4 years of age with rates per 1,000 population, 1975.

Source: Health Conditions in the Americas, 1973-76
PAHO Scientific Publication No. 364, 1978.

In areas outside capital cities conditions tend to be worse than in the urban areas. Sanitation facilities are extremely limited and often in poor states of repair. In many areas sources of water for human consumption are stagnant pools and small streams especially in the Leeward Islands. These sources also serve as laundry and animal watering areas, resulting in high levels of water contamination. Finally, because of fear of theft, barnyard animals often share household living space, further prejudicing the health of the residents.

As noted in the project background and rationale, infectious and parasitic disease represent a serious health problem in the Caribbean. They are estimated to be the cause of twenty to thirty percent of all deaths in the region - with rates being considerably higher among the rural poor and pre-school children. It is generally recognized that there is a high correlation between the incidence and prevalence of such diseases and malnutrition and poor environmental sanitation conditions.

The primary beneficiaries, the recipients of the training, will be drawn from the health ministries of the participating territories.

They are representatives of the middle element of West Indian society - a group which has emerged coincident with the decline of British Colonialism over the past ten years. Members of this middle group include junior level civil servants (the trainees of this project) and modest scale entrepreneurs. Although spanning a wide range from near elite to near poor, they share a desire for advancement, economic gain, and an affinity for the material by-products of modern western life. Except for a minority of recent immigrant East Indian professionals and businessmen, the middle group is not separated from the lower class along ethnic lines. However, job status as professionals, educational background, and higher income levels clearly delineate them from the poor.

Sociocultural Feasibility

The sociocultural feasibility of the project hinges upon two related matters: (1) off-island emigration tendencies and (2) the "smallness of scale" of the participating countries. With both matters there are real but manageable constraints for which corrective strategies have been devised.

Outmigration

Overseas migration has been and continues to be a dominant social trend in the territories. Currently the exodus, although taking place in all sectors and classes of West Indian society, is particularly strong among newly trained professionals. Drawn by employment possibilities, higher wages, better living conditions and career advancement, ever increasing numbers of professionals are leaving the region. There is an evident need for the establishment of a career structure in order to encourage young talent to remain in or to return to the Caribbean. However, indications are that the new policies will impact most on unskilled or limited skilled people. It is probable that the pace may be slowed but the exodus of trained professionals will continue.

The danger posed to this project is that the training provided could contribute to the flow of health personnel, who are already in short supply, from the islands. Undoubtedly, skills will be acquired by the trainees which will give them more leverage in overseas job markets. Although some migration appears inevitable, the project during implementation will consider a number of strategies designed to minimize the loss.

The training will not result in the award of a degree - a key factor in enhancing employment opportunities overseas. In all probability granting of a certificate will be required as West Indians are certainly conscious and desirous of "paper" credentials. The WEO/PAHO policy is to issue only certificates of attendance.

Problems of Small Scale

In almost every point of reference, land area, population, production levels, and many other areas, the CXCs are small societies. In the context of the health sector, the "smallness" factor surfaces with

respect to limited capacity, in both qualitative and quantitative terms in planning, programming, managerial and technical activities. The qualitative short-coming points to the need for the training provided by this project. The quantitative aspect poses the potential constraint to successful implementation. In short, ranks are extremely thin. With the possible exception of Barbados, the participating territories do not have a sufficient number of qualified personnel to manage effectively the insufficient numbers of on-going activities. Strict budget limitations dictate the employment of small core staffs most of whom are responsible for two or more portfolios.

The potential problem arises insofar as seconding more than a minimal number of health personnel from a territory for the same training period could either have a serious adverse effect on the daily management of on-going health activities or inhibit the participation of some CMC States. The Project will avoid this problem through providing principally short-term training, agreed to in consultation with Ministry officials.

7. The Role of Women in Disease Surveillance/Health System in the Caribbean

Women play a major role in the Project both as direct beneficiaries and participants. Many of the surveillance and laboratory services provided by CAREC to Ministries of Health in the CMCs will improve the health status of the female user population - the direct beneficiaries. Also, women as mothers will see their children benefit from the planned improvement in the prevention of immunizable diseases through an improved cold chain system for transport and storage of vaccines.

The Project will involve women as active participants. Many CMCs have senior level female medical officers involved in epidemiology. The Director of CAREC estimates that in approximately 7 out of 18 countries this is true. In Jamaica, for instance, the Chief Epidemiologist is a female physician. In Barbados, the Minister of Health, the Chief Medical Officer and the Senior Medical Officer are women. Over 50% of the laboratory technicians who will participate in the training program are women. Approximately 70-80% of the CMCs' Surveillance Statistical Officers are women.

CAREC encourages those CMCs which have two deputy epidemiologists to assign at least one of the two positions to a qualified female.

Also, public health nurses, traditionally a female profession, are becoming more involved in epidemiological activities (case finding, reporting, follow-up, etc.). The SAC encouraged in their 1979 annual meeting that more public health nurses assume deputy epidemiologist posts.

The CAREC 1979 total staff (professional and support staff) list indicates 38.5% female employees representing six countries (Grenada, Guyana, Jamaica, St. Vincent, Trinidad and the U.S.)

<u>CATEGORY</u>	<u>MEN</u>	<u>WOMEN</u>
Director's Office	2	1
Common Services	10	7
Laboratory	21	14
Surveillance	5	2
Other (Special Research Projects, etc.)	<u>13</u>	<u>8</u>
	51	32 TOTAL 83
	—	—

PART VI. PROJECT ADMINISTRATION

1. INSTITUTIONAL ANALYSIS

PAHO, as the regional office of the World Health Organization for Latin America and the Caribbean, established under its administrative and technical supervision the Caribbean Epidemiology Centre (CAREC). CAREC is part of the Division of Disease Control of PAHO. This was a result of Resolution 14 of the 6th Caribbean Health Ministers Conference. CAREC incorporates the former Trinidad Regional Virus Laboratory into a new organization formed by the countries of Antigua, Bahamas, Barbados, Belize, Bermuda, British Virgin Islands, Cayman Islands, Dominica, Grenada, Guyana, Jamaica, Montserrat, St. Kitts/Nevis/Anguilla, St. Lucia, St. Vincent, Suriname, Trinidad and Tobago, the Turks and Caicos Islands. The governments contribute to CAREC according to a scale incorporated in the Multilateral Agreement (October of 1974.) Trinidad and Tobago contribute 60% of the combined total of the amount paid by the other CMCs. In addition to PAHO and CMCs, CAREC is supported by quota contributions from the Overseas Development Ministry of the United Kingdom, and grants for specific projects from the Medical Research Council (UK), the Rockefeller University, NIH/DHEW and others. (The organizational chart of CAREC and its relationship to PAHO and the Conference of Ministers responsible for Health is shown in Annex XV.)

2. ORGANIZATION AND ADMINISTRATION

The Multilateral Agreement established both the CAREC Council and the Scientific Advisory Co-mittee to assist and direct CAREC activities. The CAREC Council is composed of the following:

- 1) one representative from the host government, Trinidad and Tobago.
- 2) two representatives, other than Trinidad and Tobago, who shall be designated by the Caribbean Health Ministers Conference to serve for specific periods.

One representative from the following:

- 3) Caribbean Organizations.
- 4) The University of the West Indies.
- 5) The Commonwealth Caribbean Medical Research Council.
- 6) International Organizations.
- 7) The Pan American Health Organization/World Health Organization
- 8) Other
- 9) The Ministry of Overseas Development Administration
- 10) The Scientific Advisory Committee.

The Council meets annually to review the Annual Report and submit it with any comments to the Director of PAHO. Also, it reviews and makes recommendations on the proposed program and budget of the Centre to the Director of PAHO, for transmittal to the Caribbean Health Ministers' Conference. The Council determines any modification in or extension of the scale of the quota contributions for participating governments. It determines policies concerning the future operation of the Centre, including provision for service to, and participation of other governments and organizations.

The Scientific Advisory Committee (SAC) meets annually and advises PAHO/WHO and the Council of the Centre on the planning and management of the Centre.

The membership of the SAC is composed as follows:

- 1) Three members designated by the Faculty of Medicine, UWI.
- 2) One member designated by the Faculty of Agriculture, UWI.
- 3) Two members designated by the Caribbean Health Ministers Conference, of which one shall be Trinidad and Tobago.
- 4) Five members designated by the Director of PAHO, of which four shall be independent scientists of international reputation in relevant disciplines, from outside the area served by the Centre.

CAREC was originally formed for a ten year period with a mid-point administrative review to be undertaken in 1979, by the Director of PAHO. The purpose of this review is to assess progress to date by CAREC with a view towards improving its services to member countries. Every indication regarding the soundness of CAREC as an institution is positive. Continuing external support from ODM and MFC is expected. Despite a frequent lapse of payment by member governments to many regional institutions (notably UWI), to date, 90 percent of all member country contributions to CAREC have been made for 1979. This type of response indicates firm support from member governments. In addition, responses to the project team and other AID representatives from Ministry officials in the CMCs, were unanimously positive with regard to CAREC support of their epidemiological needs. The continued and expanded support by contributors, the expanding geographic base served by CAREC, and the quality of its staff work have all indicated firm institutional soundness.

To verify this judgement, the Regional Development Office/Caribbean in September 1978 requested the Center for Disease Control (CDC) of Atlanta, Georgia to provide an assessment of CAREC's present status and potential future growth. This request was based upon CDC's experience with CAREC from 1975-78 under a grant which provided surveillance equipment to CAREC and seconded a number of personnel. CDC's subsequent appraisal confirmed the significant future growth prospects for CAREC and of country surveillance and epidemiological activities. CAREC was seen as being highly effective in responding to country assistance requests, providing appropriate technology transfer of information and generating substantial receptivity to its services and programs within the region. CDC did, however, point out certain constraints to future development of CAREC, among the most serious of which were the low salaries and poor facilities of national public health staff, the need for an increase in CAREC core staff to further improve the effectiveness of surveillance and training, and the need for greater financial support. (The CDC response to the RDC/C inquiry is attached as Annex IX.)

3. GRANT IMPLEMENTATION

In attempting to identify the various options available for administration of the Epidemiology Surveillance and Training grant, three options were explored. The first option was to have the grant administered by the CARICOM Health Secretariat in Georgetown, Guyana, as was the case of the Center for Disease Control/DHEW grant. The second option considered was direct granting of funds to the Caribbean Epidemiology Centre who would be the direct grant implementor. The third option considered was the use of the Pan American Health Organization (PAHO), the parent organization of which CAREC is a Subregional Center (INCAP in Guatemala and CFNI in Jamaica and also subregional Pan American Centers).

Discussions with the staff of CARFC, PAHO, CARICOM and CDC were undertaken. By limitation of charter, CAREC cannot enter into any grant agreement on its own. The Director of CAREC is not permitted to such activity. Only the Director of PAHO (or his designee) has authority to enter into such agreements. For this reason, the second option was eliminated.

In discussions concerning the first option, it became fairly apparent that the CDC arrangement became administratively difficult early in the process, due to the numerous levels and geographic locations at which clearance for disbursements had to be handled. In addition, overhead was incurred at CARICOM, PAHO/Washington, and CAREC/Trinidad. Due to the bulkiness and complexity of the disbursement system, a six month reimbursement lag between CDC and CAREC had to be advanced from PAHO regular operating budget revenues to cover expenses. For these reasons, the insertion of the CARICOM mechanism as a grant administrator has not been recommended.

The role of the CARICOM Secretariat, however, in representing the interests of Commonwealth Caribbean members of CAREC is an important one. Discussions between RDO/C, CARICOM and PAHO have indicated that close communication should be established between CAREC and the CARICOM Health Secretariat directed by Dr. Philip Boyd, to ensure CARICOM concerns for the benefit of Caribbean populations are reflected in the CAREC epidemiological surveillance training grant. In addition to meaningful consultation between CAREC and CARICOM over the life of the project continuing formal direction to CAREC through the CARICOM Health Secretariat is also envisioned by means of the Annual Conference of Ministers responsible for Health.

For the above reasons, the remaining option of utilizing PAHO/Washington and CAREC as the joint grant administrators is the recommended course of action. Program support costs required by PAHO for administration of the grant are discussed in the financial analysis and issues section of the project paper.

4. ROLE OF OTHER DONORS

The CAREC operating budget is comprised of funds from the Pan American Health Organization, the British Overseas Development Ministry, the Government of Trinidad and Tobago and smaller contributions from the other member countries.

Table I shows the budget breakdown by source for CAREC. Continuing support from these external donors and member countries to the CAREC core operating budget is expected. While definitive breakdown of specific functions by donor is elusive, it may be very generally stated that PAHO/WHO supports CAREC's surveillance activity, ODM supports CAREC's laboratory services, MRC supports much of its research component, and AID will support the training activity to support all of the above components. Member governments, most notable Trinidad and Tobago provided the operating expenditures for CAREC's four (laboratory, surveillance, training and research) activity fields.

TABLE I

CARIBBEAN EPIDEMIOLOGY CENTRE

"CORE" BUDGET FUNDING COMPARISON
(In U.S. Dollars)

(Does not include research grants)

	Budget 1979	Proposed Budget 1980 at 10% increase
PAHO/WHO	288,640	317,504
ODM	133,233	146,556
TRINIDAD AND TOBAGO	289,456	318,402
OTHER	168,323	185,164
	<hr/> 879,652	<hr/> 967,626

United Nations Development Program (UNDP)

UNDP plans to fund two projects which impact upon the AID initiative. The first, titled: Maintenance and Engineering Systems for Health Care Facilities in the Caribbean English-speaking Countries, concerned with maintenance of hospital and laboratory equipment, relates to this project in its proposed application to the Caribbean maintenance requirements of laboratory equipment. This project will complement the efforts of the AID project in that it will provide training in equipment maintenance for the LDC laboratories. The UNDP project will provide initial funding to conduct a survey of existing laboratory and hospital equipment, to determine manufacturer, age, state of repair, and requirements for routine maintenance for each piece of equipment.

The second UNDP project, titled: Caribbean Health Laboratory Services, will have direct impact upon the AID project, in that it will attempt to upgrade the health laboratory services in Grenada, St. Kitts/Nevis/Anguilla, Antigua, Dominica, Montserrat, St. Lucia and St. Vincent. The UNDP project will provide diploma or certificate (6-12 month) fellowships in MDC locations. While the AID project will provide continuing education training to existing laboratory personnel, the UNDP project will provide the initial training to provide qualified laboratory technicians for hospital based laboratory services, particularly biochemistry, hematology and serology.

A complementary area of the second UNDP project is laboratory equipment. CAREC, under the AID project, will be concerned with laboratory equipment at CAREC in the field of Microbiology, with the emphasis on insuring that the LDC public health laboratories maintain a continuous operation in this field. The UNDP project is seen as complementing these efforts by supporting equipment purchase needs for the LDCs in principally hematology, chemistry and histopathology.

Center for Disease Control, Atlanta Georgia

CDC provided a grant to CARICOM for specific activities from 1975-8. The grant provided funds for conference, surveillance equipment for LDCs - epidemic investigation equipment and materials for the transport system. (See institutional analysis and Annex IX.)

In addition, CDC seconded the following personnel to PAHO to work at CAREC: 2 medical epidemiologists, one from 1975-7, one from 1978-80, and two public health advisors, one from 1975-7 and one from 1977-80. CDC has also provided approximately twenty short term advisors to CAREC (as well as two consultants who participated in the design of this project) to assist in teaching and consultation from 1975 to the present; in fields ranging from laboratory management and design, immunization surveys, leptospirosis, enteric bacteria, haematology and venereal diseases. CDC has also served as a laboratory reference resource and has performed a number of services without charge to CAREC for the LDCs - including blood lead levels in three surveys, salmonella typing, diphtheria and tetanus antibody levels and serum lipoproteins in a health survey.

Present CDC support of CAREC consists principally of the two seconded staff - a public health advisor with termination of his tour in June 1980 and a medical epidemiologist who terminates in June 1980.

At CAREC and AID request, CDC extended the tour of the public health advisor one year to June 1980 so that he might provide better continuity with the new incoming staff and the AID trainees. This PH Advisor is acting as director of training and he will play a key role in the organization and operation of the proposed training workshops, traineeships and other courses. (See Annex IX 2/8/79 letter).

In addition, it is anticipated that future support will be given from CDC in laboratory management training. These efforts will be directed toward upgrading management practices of the LDC Laboratory Directors in order to increase self-sufficiency.

CDC will continue to support CAREC by:

- (i) Serving as a laboratory reference resource;
- (ii) Providing bibliographic and reference materials on request;
- (iii) Providing short term staff for teaching, consultation and outbreak investigation, when requested.
- (iv) Providing places in CDC courses for participants from the CACs and from CAREC staff, including the Epidemic Intelligence Service Course each July;
- (v) Arranging attachments for CAC staff in practical public health settings throughout the US;
- (vi) Using CDC's quarantine stations to assist CAREC in transport of laboratory specimens;
- (vii) Collaborating with CAREC and the CACs on projects of mutual concern and interest.
- (viii) Providing assistance in laboratory management training.

5. IMPLEMENTATION PLAN

This project is planned for implementation over a three (3) year period in the CACs of the Caribbean. A detailed implementation schedule is in Annex II.

The implementation date for this project has been designed from o/a 6/1/79. The completion date would then be o/a 5/31/82. In the first four months of project funding June - September, activity would be related to the purchase of laboratory equipment and supplies, immunization equipment, information system equipment and training in its use, and, audio-visual training material. These key events are designed to occur prior to the training and technical assistance efforts. They are needed to be present and operational in order to support the other activities of the project.

The purchase of expendable supplies, such as in the laboratory, and audio-visual training, have been designed to occur in the first three months of the project for use in CY 1979. Thereafter, purchasing is scheduled for the first three (3) months of each fiscal year to be used in the following twelve (12) months. This will ensure the presence of an adequate amount of supplies and material throughout the life of the project.

Training activities as well as technical assistance (laboratory and surveillance) are equally distributed throughout the project time-frame. Emphasis is given primarily to the meeting in May of each year for the designated epidemiologists from each CMC and the CMC Laboratory Directors Workshop. The Laboratory Directors Workshop will be held at CAREC in 1979 and 1981 and in an LDC location in 1980 and 1982. The AID traineeships for the two medical officers and the statistician have the possibility of becoming permanent staff positions at CAREC. The training officer position is designed to overlap the CDC public health advisor's position for six (6) months (Jan.- June 1980) and extend to December 1981. At that time, it should become a permanent staff position at CAREC. The audio-visual technician and the secretary (training unit) positions are funded for three (3) years. After that time, both of these positions could also be made permanent on the CAREC staff. The long term budgetary implications will be considered by the CAREC Council.

The project will be subject to a mid-point evaluation in accordance with the schedule outlined o/a December 1981 and a terminal evaluation o/a May 1982.

6. EVALUATION PLAN

Evaluation of this project will be based on a number of parameters-quantifiable whenever possible.

Surveillance Training

Degree of participation can be expressed as the number of CMC participants in yearly workshops for epidemiologists; courses for deputy epidemiologists; traineeships in epidemiology for medical officers; traineeships in statistics for statistical surveillance officers; in-country workshops in epidemiology for primary health care personnel.

In addition, the evaluation reports should include the type and amount of information disseminated in each of the above, including course outlines and a list of reference materials provided.

Written evaluations (on prepared forms) should be obtained from all participants in courses, workshops and traineeships. For year long traineeships, the evaluation forms should be completed every six months. The training unit will collate, tabulate and summarize the forms for each training activity.

Some measures of the effects of the training should be provided on the evaluation report. For the reporting system, CAREC should obtain the number and type of reporting units for each CMC, determine which units report regularly and determine the monthly percentage. CAREC should also determine the completeness and speed of weekly national reports sent to CAREC and summarize the results. CAREC should also review the quality and quantity of graphic and tabular summaries for each CMC.

For the evaluation of outbreak investigations, CAREC will devise a classification system similar to the following which will be utilized to categorize and measure progress towards self-sufficiency in outbreak investigations: (See EOPS, Table D).

- Level I outbreak not recognized by national staff, but recognized by CAREC;
- Level II outbreak recognized by national staff and CAREC informed;
- Level III outbreak recognized and investigated by national staff; CAREC provides on-site assistance.
- Level IV outbreak recognized, investigated and controlled by national staff; CAREC provides phone or cable communication liaison.

In addition, speed of recognition and national response will be noted by CAREC staff (e.g. appropriate, moderate delay, marked delay).

Using such a system the yearly totals of outbreaks by classification category will be determined. The objective is to increase the number of II, III, and IV levels while trying to eliminate the I level.

To measure routine reporting and surveillance capability an assessment of CMC levels of capability will be undertaken by CAREC and the evaluation team according to a scale similar to the following:

- Level I Simple collection, collation and tabulation of communicable disease data.
- Level II Collection of above data with interpretation, but without additional investigational capacity.
- Level III Capability for collecting and presenting all types of data (acute and chronic disease, morbidity and mortality data, water quality, etc).
- Level IV Collection of all types of data with interpretation and initiation of investigation.
- Level V Recognition of need for surveys and capability of performing them.

Laboratory Training

Degree of participation can be determined by the number of CMC participants annually in yearly workshops for Laboratory Directors; yearly course in Bacteriology for Laboratory Technicians; traineeships in Laboratory Techniques; in-country workshops for Laboratory Technicians and in-country technical assistance and proficiency testing schemes.

Documentation of participation by the CMC laboratories will be determined by examining the program and reports of workshops and courses given at CAREC and in the CMCs for each year.

Trip reports and technical assistance will be examined annually to determine the types of assistance given as well as the recipients of this assistance.

Summary results of proficiency testing will be used annually to indicate the increasing proficiency of CMC laboratories in the program.

Assessment of general CMC laboratory capability will be accomplished by CAREC staff and evaluation team assessment of capability according to the following categories:

- Level I No culture work, able to do gram stains; unable to identify pathogens of public health importance (such as shigella, salmonella, streptococcus, staphylococcus)
- Level II Limited culturing and identification of most common pathogens (can identify for example staphylococcus, streptococcus, shigella, salmonella)
- Level III Moderate culturing capability and identification (can identify and group common pathogens such as salmonella, shigella)
- Level IV Full culturing and identification capabilities; anaerobic capability; TB culture capability; uses CAREC as virology reference (to identify dengue, hepatitis, yellow fever, arthropod borne, arboviruses, influenza, poliomyelitis, leptospirosis, rabies, etc)

The assessment of training and technical assistance will be made annually by analyzing the trip reports of technical assistance visits; summary reports of proficiency testing results; and, by monitoring the type of specimens submitted to the CAREC laboratories.

Evaluation Procedure

The above data should be assembled biannually in June and January for the preceding six month period and sent to CARICOM, RDO/C and AID/Washington for review, with input from outside experts as necessary.

A mid and end-point on site visit should be made by an expert team, whose members should not be participants in the on-going grant operation. The team should be composed of two to four (2-4) individuals. All of the following characteristics will be represented on the evaluation team:

- 1) familiarity with AID policy and procedures, the Caribbean CMCs and the substances of this grant proposal.
- 2) familiarity with the Caribbean CMCs and the substance of this grant proposal, expertise in field epidemiology (including surveillance and outbreak investigations) and the teaching of epidemiology.
- 3) familiarity with the Caribbean CMCs and the substance of this grant proposal, expertise in public health laboratory operation, equipment, maintenance and management and the teaching of microbiology.

Funding has been included in the project budget for these evaluations totalling 5 person months of effort or 2½ person months per evaluation.

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Part VII
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PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORKLife of Project:
From FY 79 to FY 82
Total U.S. Funding \$1,151,763
Date Prepared: March, 1979

Epidemiological Surveillance and Training (538-0027)

Project Title & Number:

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>To improve the health status of the Commonwealth Caribbean population through reduction of communicable disease incidence/prevalence</p>	<p>Measures of Goal Achievement:</p> <p>Decrease in infant mortality</p> <p>Increase in life expectancy</p> <p>Reduction in communicable diseases.</p>	<p>- Annual demographic reports by MOHS.</p> <p>- CAREC statistical reports</p>	<p>Assumptions for achieving goal targets:</p> <p>- Increased knowledge of disease incidence and location will result in more effective preventions.</p>
<p>Project Purpose:</p> <p>1) To increase CAREC capability to assist CMCs in laboratory and surveillance activities.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <p>- training unit will be established and institutionalized with CAREC</p> <p>- CAREC surveillance traineeships training courses and laboratory training courses conducted for public health personnel</p> <p>- proficiency testing program developed</p> <p>- provision of cold chain equipment to CMCs for immunizations</p> <p>- surveillance information system at CAREC functioning and integrating all CMCs</p> <p>CAREC will have adopted a strategy for regional zoonosis surveillance</p>	<p>- CAREC personnel and training records</p> <p>- CAREC proficiency testing reports</p> <p>- CAREC on-site inspection</p> <p>- CAREC weekly/monthly surveillance reports</p>	<p>Assumptions for achieving purpose:</p> <p>- Individuals trained retain and utilize knowledge</p> <p>- Continued support of CAREC by member Governments PAHO, ODM, etc.</p> <p>- LDC countries will be receptive and commit resources to CAREC sponsored initiative.</p>

Project Purpose:

2) To improve the accuracy and efficiency of CMC laboratory identification and surveillance of communicable disease

3) To further develop West Indian middle management at CAREC

End of project status:

- Each CMC will have CAREC trained core staff (Designated Epidemiologist, Deputy Epidemiologist & SSO) responsible for disease identification and control activities
- CAREC trained SSOs will be filing comprehensive weekly disease surveillance reports
- Each CMC will have at least 1 technician trained in microbiology
- All CMC labs will demonstrate 90% accuracy in CAREC proficiency testing program
- CMC demonstrate increased capability in surveillance, outbreaks investigation and laboratories as per Table D (EOPS) in PP
- trainees in medical epidemiology and bio-statistics will have assumed positions at CAREC

Means of Verification:

- CAREC/training records, CMC/MOH records
- CAREC surveillance reports
- CAREC training records, CMC/MOH records
- CAREC proficiency testing reports
- CAREC on-site visits, mid-point project evaluation
- CAREC personnel records

Important Assumptions

1. That there will be continuing interest by West Indians in public health epidemiology.

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<u>Outputs:</u>	<u>Magnitude of Outputs:</u>	<u>Means of Verification</u>	<u>Important Assumptions</u>																												
1) Training Unit Established	3 persons trained and in place with capacity to organize and carry-out training																														
2) <u>Training:</u>	<table border="1"> <thead> <tr> <th data-bbox="625 384 1003 509">Output No. of Partici- pants</th> <th data-bbox="1003 384 1087 509">Year I</th> <th data-bbox="1087 384 1171 509">Year II</th> <th data-bbox="1171 384 1241 509">Year III</th> </tr> </thead> </table>	Output No. of Partici- pants	Year I	Year II	Year III																										
Output No. of Partici- pants	Year I	Year II	Year III																												
a) Traineeships	<table border="1"> <tbody> <tr> <td data-bbox="625 525 1003 553">Traineeships</td> <td></td> <td></td> <td></td> </tr> <tr> <td data-bbox="625 569 1003 598">-MOSII</td> <td data-bbox="1003 569 1087 598">3</td> <td data-bbox="1087 569 1171 598">3</td> <td data-bbox="1171 569 1241 598">3</td> </tr> <tr> <td data-bbox="625 614 1003 643">-Deputy Epid.</td> <td data-bbox="1003 614 1087 643">6</td> <td data-bbox="1087 614 1171 643">6</td> <td data-bbox="1171 614 1241 643">6</td> </tr> <tr> <td data-bbox="625 659 1003 687">-Med. Epid.</td> <td data-bbox="1003 659 1087 687">1½</td> <td data-bbox="1087 659 1171 687">2</td> <td data-bbox="1171 659 1241 687">1½</td> </tr> <tr> <td data-bbox="625 703 1003 732">-Bio-statistician</td> <td data-bbox="1003 703 1087 732">1</td> <td data-bbox="1087 703 1171 732">1</td> <td data-bbox="1171 703 1241 732">1</td> </tr> <tr> <td data-bbox="625 748 1003 777">-Lab. Technicians</td> <td data-bbox="1003 748 1087 777">7</td> <td data-bbox="1087 748 1171 777">7</td> <td data-bbox="1171 748 1241 777">7</td> </tr> <tr> <td data-bbox="625 793 1003 821">-Student Clerkships</td> <td data-bbox="1003 793 1087 821">2</td> <td data-bbox="1087 793 1171 821">2</td> <td data-bbox="1171 793 1241 821">2</td> </tr> </tbody> </table>	Traineeships				-MOSII	3	3	3	-Deputy Epid.	6	6	6	-Med. Epid.	1½	2	1½	-Bio-statistician	1	1	1	-Lab. Technicians	7	7	7	-Student Clerkships	2	2	2	<p>CAREC Training Records</p> <p>Student Evaluation of Training Activities</p>	<p>2. That CAREC trained individuals will be utilized in CMC where their skills can be most effective</p>
Traineeships																															
-MOSII	3	3	3																												
-Deputy Epid.	6	6	6																												
-Med. Epid.	1½	2	1½																												
-Bio-statistician	1	1	1																												
-Lab. Technicians	7	7	7																												
-Student Clerkships	2	2	2																												
b) Surveillance Training	<table border="1"> <tbody> <tr> <td colspan="4" data-bbox="625 834 1003 863">Training Courses</td> </tr> <tr> <td colspan="4" data-bbox="625 879 1003 908">A. Surveillance</td> </tr> <tr> <td data-bbox="625 924 1003 952">Designated Epid.</td> <td data-bbox="1003 924 1087 952">25</td> <td data-bbox="1087 924 1171 952">25</td> <td data-bbox="1171 924 1241 952">25</td> </tr> <tr> <td data-bbox="625 968 1003 997">SSO's & Followup</td> <td data-bbox="1003 968 1087 997">9</td> <td data-bbox="1087 968 1171 997">9</td> <td data-bbox="1171 968 1241 997">9</td> </tr> <tr> <td data-bbox="625 1013 1003 1042">On-site Surveillance Followup</td> <td colspan="3" data-bbox="1003 1013 1241 1042">will vary</td> </tr> </tbody> </table>	Training Courses				A. Surveillance				Designated Epid.	25	25	25	SSO's & Followup	9	9	9	On-site Surveillance Followup	will vary												
Training Courses																															
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c) Laboratory Training	<table border="1"> <tbody> <tr> <td colspan="4" data-bbox="625 1067 1003 1096">B. Laboratory</td> </tr> <tr> <td data-bbox="625 1112 1003 1141">Lab. Directors</td> <td data-bbox="1003 1112 1087 1141">27</td> <td data-bbox="1087 1112 1171 1141">27</td> <td data-bbox="1171 1112 1241 1141">27</td> </tr> <tr> <td data-bbox="625 1157 1003 1185">Formal Laboratory Course</td> <td data-bbox="1003 1157 1087 1185">25</td> <td data-bbox="1087 1157 1171 1185">25</td> <td data-bbox="1171 1157 1241 1185">25</td> </tr> <tr> <td data-bbox="625 1201 1003 1230">On-site training</td> <td data-bbox="1003 1201 1087 1230">7</td> <td data-bbox="1087 1201 1171 1230">7</td> <td data-bbox="1171 1201 1241 1230">7</td> </tr> <tr> <td data-bbox="625 1246 1003 1291">On-site laboratory Followup</td> <td colspan="3" data-bbox="1003 1246 1241 1291">will vary</td> </tr> </tbody> </table>	B. Laboratory				Lab. Directors	27	27	27	Formal Laboratory Course	25	25	25	On-site training	7	7	7	On-site laboratory Followup	will vary												
B. Laboratory																															
Lab. Directors	27	27	27																												
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On-site training	7	7	7																												
On-site laboratory Followup	will vary																														
d) On-site strengthening of laboratory management and laboratory techniques	<table border="1"> <tbody> <tr> <td data-bbox="625 1297 1003 1342">Laboratory Managers/Technicians</td> <td colspan="3" data-bbox="1003 1297 1241 1342">will vary</td> </tr> </tbody> </table>	Laboratory Managers/Technicians	will vary			<p>CMC demand for emergency supplies from CAREC</p>																									
Laboratory Managers/Technicians	will vary																														
e) Procedural and Training Manuals	<table border="1"> <tbody> <tr> <td data-bbox="741 1425 793 1453">79</td> <td data-bbox="814 1425 867 1453">80</td> <td data-bbox="888 1425 938 1453">81</td> </tr> <tr> <td data-bbox="741 1453 793 1485">1</td> <td data-bbox="814 1453 867 1485">2</td> <td data-bbox="888 1453 938 1485">2</td> </tr> </tbody> </table>	79	80	81	1	2	2	<p>Use of Manuals in CAREC training activities</p>																							
79	80	81																													
1	2	2																													

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Outputs:

3) Laboratory Upgrading:

1. Central CAREC Lab.

2. CMC Labs.

4) Quality control of
Immunization supplies in
CMC's.

5) Improved data collection,
analysis and administra-
tive capability

6) Strategy for CMC regional
zoonoses surveillance

Magnitude of Outputs:

Central virological capability
increased through provision of
freezers, autoclave , micro-
scopes, etc.

CMC self sufficiency increased
through provision of auto-
claves and safety hoods.

Cold chain supplies (4 freezers,
22 refrigerators and 96 vaccine
carriers in place in rural
health centers and CMC central
supplies)

CAREC mini-computer purchased,
programmed and performing
routine and special analyses
as well as internal administra-
tive support services.

Conduct of and review by CAREC
and PAHO of report recommenda-
tions and adoption of action
plan.

Means of Verification:

Procurement and administration
records, CAREC Lab. reports

CMC lab reports CAREC procure-
ment records.

CMC records and serological
surveys.

CAREC monthly statistical
reports, CAREC financial and
management reports

Consultants report, CAREC and
PAHO appraisal report.

Important
Assumptions

INPUTS:	YEAR I		YEAR II		YEAR III	
	AID	CAREC/PAHO	AID	CAREC/PAHO	AID	CAREC/PAHO
Training	192,265	102,733	247,642	102,733	263,256	102,734
Equipment & Supplies plus Technical Assistance	117,991	-	16,235	-	10,709	-
<u>Other Activities</u>						
Audio Visual	6,000	-	10,000	-	-	-
Zoonoses Surveillance Study	12,500	-	12,500	-	-	-
Evaluation	-	-	12,000	-	13,000	-
<u>Contingency</u>	15,235	-	15,235	-	15,235	-
<u>Program Support Cost</u>	68,798.2	36,792	62,722.4	36,792	60,440	36,793
TOTAL	412,789.2	139,525	376,334.4	139,525	362,640	139,527

ANNUAL TOTALS

552,314.2

515,859.4

502,167

SUM TOTAL

1,570,341*

* This sum total does not reflect the rounding upward of the AID contribution to the nearest ten thousand (See p. 6 Summary Financial Plan).

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EVENT	FY 1979 1979				FY 1980 1980				FY 1981 1981				FY 1982 1982																
	J	J	A	S	O	N	D	J	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
TRAINING																													
I. Training Unit																													
a) Training Officer (1 individual/ 2 yrs)																													
b) Audio-Visual Technician (1 individual/3 yrs)																													
c) Secretary for Train- ing unit (1 individual 3 yrs)																													
II. Traineeships																													
a) Medical Officers of Health (3 individuals 6 wks/yr)																													
b) Designated Deputy Epidemiologist trainee- ships (6 individuals, 5 wks/yr)																													
c) Medical Epidemiologist traineeships (2 indiv- duals, 2 yrs, each)																													
d) Statistical trainee- ships (1 individual, 3 yrs)																													
e) Laboratory technician traineeships (7 indiv- duals, 2 wks/yr) (traineeships section)																													
f) Medical student clerkships (2 individuals, 10 wks /yr)																													

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EVENT	FY 1979 1979					FY 1980 1980					FY 1981 1981					FY 1982 1982												
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
III Training Courses																												
A. Surveillance Training																												
1. Designated epidemiologists workshop (25 individuals, 1 wk/yr)																												
2. Surveillance Statistical Officer (550) workshops (9550-3 days, 2/yr)																												
3. On-site Surveillance Training (1-2 days) (1-17 countries, 2-Jamaica/yr)																												
B. Laboratory Training																												
1. Laboratory directors training workshops (25 individuals, 1 wk/yr)																												
2. Laboratory course CAREC (25 technicians, 2 wks, /yr)																												
3. On-site laboratory training courses (5-7 techs. LDC lab. 7/yr)																												
4. On-site lab training follow up																												
a. Extended - 7-10 days																												
2-3 LDC labs 6/1st yr, 8/2nd, 3rd yr.																												
b. Brief 7 - 3 days																												

22

EVENT	FY 1979				FY 1980				FY 1981				FY 1982															
	1979				1980				1981				1982															
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
IV. On-site strengthening of laboratory management and laboratory techniques																												
Equipment and Supplies																												
A. Laboratory Equipment for CAREC																												
1. Freeze Drying Equip.																												
2. Microscopes (4 students, 1 instructor)																												
3. Water analysis equip																												
4. -70C Freezer																												
5. Autoclave (double-ended)																												
B. Laboratory Equipment for CMCs																												
1. Safety Hoods																												
2. Autoclaves																												

PURCHASE

USE →

PURCHASE

USE →

13

EVENT	FY 1979				FY 1980				FY 1981				FY 1982															
	1979				1980				1981				1982															
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
C. Laboratory Supplies																												
1. Emergency supplies IDC labs																												
2. Lab supplies for epidemic investigations																												
3. Lab training course material & supplies																												
4. Proficiency testing programs supplies																												
5. Other lab supplies																												
D. Immunization Equip.																												
1. Refrigerators (22)																												
2. Freezers (4)																												
3. Vaccine Carriers (96)																												
E. Information Systems																												
1. Equipment (Computer)																												
2. Training in equipment use (2 individuals for wks).																												
3. Programing assistance (1 individual 18 months)																												

Purchase use as needed

Purchase use as needed

Purchase use as needed

Purchase use as needed

Purchase

D I S T R I B U T E F O R U S E I N I D C ' s

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EVENT	FY 1979 1979					FY 1980 1980					FY 1981 1981					FY 1982 1982												
	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S
III Other Activities																												
A. Audio-Visual training materials and technical assistance (2 M).																												
B. Zoonosis Surveillance Study																												
C. Evaluation of Project (2 Individuals/ 1 month)																												
												</																

ANNEX III

The following tables provide supportive budgetary data for project implementation:-

Table	I	Member Governments Quota Contributions to CAREC
Table	II	Detailed Budget by Component
Table	III	Illustrative Breakdown of Elements in Course Budgets

TABLE I
MEMBER GOVERNMENTS' QUOTA CONTRIBUTIONS COMPARISON

(In U.S. Dollars)

	Agreed 1978	Agreed 1979*	Proposed 1980
Antigua	1,668.00	1,835.00	2,019.00
Bahamas	11,142.00	12,256.00	13,482.00
Barbados	17,460.00	19,206.00	21,127.00
Belize	1,668.00	1,835.00	2,019.00
Bermuda	1,966.00	2,162.00	2,378.00
British Virgin Islands	352.00	387.00	426.00
Cayman Islands	352.00	387.00	426.00
Dominica	1,668.00	1,835.00	2,019.00
Grenada	1,668.00	1,835.00	2,019.00
Guyana	23,032.00	25,335.00	27,869.00
Jamaica	68,727.00	75,600.00	83,160.00
Montserrat	557.00	613.00	674.00
St. Kitts-Nevis-Anguilla	1,666.00	1,832.00	2,019.00
St. Vincent	1,668.00	1,835.00	2,019.00
St. Lucia	1,668.00	1,835.00	2,019.00
Surinam	17,460.00	19,206.00	21,127.00
Turks and Caicos	299.00	329.00	362.00
Trinidad and Tobago	263,142.00	289,456.00	318,402.00
	<u>\$416,163.00</u>	<u>\$457,779.00</u>	<u>\$503,566.00</u>

*The demonstrated increase of 10% over the preceeding year to cover inflation represents an approximate 37.4% over the agreed contributions by the initial signatories to the Multilateral Agreement.

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TABLE II

ELEMENTS IN COURSE BUDGETS

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1.	<u>ANNUAL DESIGNATED EPIDEMIOLOGISTS WORKSHOP</u>		
	(a) Travel/Per Diem for Participants	-	85% of total
	(b) Supplies reference materials	-	10%
	(c) Communications/Miscellaneous	-	5%
2.	<u>TRAINING COURSE FOR DEPUTY DESIGNATED EPIDEMIOLOGISTS</u> (5 weeks at CAREC for 8 persons)		
	(a) A.I.D./CAREC Traineeships (Approximately US\$1,000 for 5 weeks)	-	80%
	(b) Travel	-	15%
	(c) Supplies, reference materials	-	5%
3.	<u>MEDICAL OFFICERS SHORT ATTACHMENTS AT CAREC</u> (6 weeks at CAREC, 3 per year)		
	(a) A.I.D./CAREC Traineeships	-	54%
	(b) Travel to Trinidad	-	14%
	(c) Travel during attachment	-	23%
	(d) Reference materials	-	9%
4.	<u>STATISTICAL SURVEILLANCE OFFICERS WORKSHOPS</u> (3 days, 8-10 persons attending 2 per year)		
	(a) Travel/Per Diem	-	75%
	(b) Supplies/Reference Materials	-	20%
	(c) Miscellaneous/Communications	-	5%
5.	<u>IN-COUNTRY SURVEILLANCE WORKSHOPS</u> (One per country per year, 18 per year)		
	(a) Reference/Course materials	-	87%
	(b) Travel	-	13%

A Note on A.I.D. /CAREC Short Term Traineeships

Maintenance allowance for Trinidad figured at TT\$2,000/month, payable in local currency. This is about US\$833 or US\$27/day. This is not a substitute for the trainee's salary but will provide enough for room and board in Trinidad during the 5-6 week attachment at CAREC.

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TABLE III
 DETAILED AID BUDGET
 BY FISCAL YEAR

PROJECT COMPONENT	Year I	Year II	Year III	TOTAL
<u>TRAINING</u>				
I. <u>Training Unit</u>				
a) Training Officer (1 person, 2 years)		40,500	42,900	83,400
b) Audio Visual Technician (1 person, 3 years)	6,500	7,150	7,865	21,515
c) Training Secretary (1 person, 3 years)	6,500	7,150	7,865	21,515
II. <u>CAREC Traineeships</u>				
1) Medical Officers of Health Traineeships (3 persons, 6 wks/yr)	6,500	7,150	7,865	21,515
2) Dep. Epidemiologist Traineeships (6 persons, 5 wks/yr)	8,000	9,000	10,100	27,100
3) Medical Epidemiologist Traineeships (2 persons, 2 yrs each)	28,765	31,642	34,806	95,213
4) Biostatistical Traineeships (1 person, 3 yrs)	13,900	15,290	16,819	46,009
5) Laboratory Technician Traineeships (7 persons, 2 wks/yr)	6,700	7,370	8,107	22,177
6) Medical Student Clerkships (6 person, 2 per yr, 10 wks/yr)	5,100	5,610	6,171	16,881
III. <u>Training Courses</u>				
A. Surveillance Training Courses				
1) Desig. Epidemiologist Workshop (25 persons, 1 wk/yr/3 yrs)	15,500	17,050	18,755	51,305
2) Surveillance Statistical Officer Training (9 persons, 3 days/ per year)	8,000	8,800	9,680	26,480

PROJECT COMPONENT	Year I	Year II	Year III	TOTAL
3. On-site Surveillance Training (19 countries, average of 1 visits/ yr over 3 years)	22,500	28,600	31,460	82,560
B. Laboratory Training Courses				
1) Laboratory Directors Training Work- shop (27 persons, 1 wk/yr)	15,500	17,050	18,755	51,305
2) Formal Laboratory Course - CAREC (25 persons, 2 wks/yr)	19,500	21,450	23,595	64,545
3) On-site Laboratory Training Courses (7 persons, 7 sites/yr)	3,700	4,070	4,477	12,247
4) On-site Laboratory Follow-up for 2 & 3 above	11,600	12,760	14,036	38,396
IV. On-Site Strengthening of Laboratory Management and Laboratory Techniques				
Technical Assistance (1 person, 18 months) (includes per diem & travel)	12,000	6,000	-	18,000
Miscellaneous Costs	2,000	1,000	-	3,000
TRAINING SUB-TOTAL	192,265	247,642	263,256	703,163

EQUIPMENT AND SUPPLIES

A. Laboratory Equipment for CAREC

1) Freeze Drying Equipment	5,000	-	-	-
2) Student Microscopes	4,800	-	-	-
3) Instruction Microscope	3,000	-	-	-
4) Water Analysis Training Equipment	500	-	-	-
5) Storage Freezer	5,000	-	-	-
6) Double-ended Autoclave	7,000	-	-	-

B. Laboratory Equipment for CMCs

1) Microbiological Safety Hoods (2)	3,000	-	-	-
2) Autoclaves (2)	4,000	-	-	-

Freight	2,500	-	-	-
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Estimate of spare parts and maintenance costs (approx. 20% for 3-year period)	6,200	-	-	-
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41,000

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PROJECT COMPONENT	Year I	Year II	Year III	TOTAL
C. Surveillance and Laboratory Supplies				
1) Emergency Supplies	1,500			1,500
2) Epidemic Investigator Supplies	5,500	6,050	6,655	18,205
3) Laboratory Training Course Materials	1,300	1,430	1,573	4,303
4) Proficiency Testing Supplies	850	935	1,029	2,814
5) Other Lab. Supplies and Inflation	1,165	1,320	1,452	3,937
	<hr/>			
SUB-TOTAL	10,315	9,735	10,709	30,759
D. Immunization Equipment for CMCs				
1) Freezers (4)	2,400			
2) Refrigerators (22)	8,800			
3) Vaccine Carriers (96)	1,976			
4) Freight	1,300			
	<hr/>			
	14,476			14,476
E. Information System				
Data Processing Component				
1) Mini Computer (hardware and software)	40,200			40,200
2) Instructional Training (2 individuals 2 wks plus on-site follow-up)	3,000	2,000		5,000
3) Programming Assistance (18 months)	9,000	4,500		13,500
	<hr/>			
	52,200	6,500		58,700
EQUIPMENT & SUPPLIES SUB-TOTAL				144,935
<u>OTHER ACTIVITIES</u>				
1) Audio Visual Training Materials and Technical Assistance (2 PM)	6,000	10,000		16,000
2) Zoonoses Surveillance Study (in humans and animals)	12,500	12,500		25,000
3) Evaluation		12,000	13,000	25,000

PROJECT COMPONENT	Year I	Year II	Year III	TOTAL
<u>SUMMARY</u>				
A. Training	192,265	247,642	263,256	703,163
B. Equipment and Supplies	117,991	16,235	10,709	144,935
C. Other Activities	18,500	34,500	13,000	66,000
Contingency (5% of total)	15,235	15,235	15,235	45,705
SUB-TOTAL	343,991	313,612	302,200	959,803
Program Support Costs (20% of project costs)	68,798.2	62,722.4	60,440	191,960.6
TOTAL	412,789.2	376,334.4	362,640	1,151,763.6

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AGENCY FOR INTERNATIONAL DEVELOPMENT

ADVICE OF PROGRAM CHANGE

COUNTRY: Caribbean Regional

PROJECT TITLE: Epidemiological Surveillance and Training

PROJECT NUMBER: 538-0027

CP REFERENCE: None

APPROPRIATION CATEGORY: Population/Health

INTENDED FY 1979 OBLIGATION: \$388,912

This is to advise that A.I.D. intends to obligate \$388,912 in grant funds for the Epidemiological Surveillance and Training Project. The Project was conceived late in FY 1978 as a result of discussions between the PAHO/Caribbean Epidemiology Centre (CAREC) and A.I.D. concerning the status of epidemiological surveillance in the region. For this reason, it was not included in the FY 1979 Congressional Presentation.

The purpose of the project, which is to be implemented by CAREC, a PAHO center in Port-of-Spain, Trinidad, is to improve the accuracy and efficiency of laboratory identification and surveillance of communicable disease, to fill middle management positions with West Indians and increase CAREC's ability to assist its member countries in surveillance activities. The major portion of the A.I.D. grant will be devoted to long and short-term training for individuals in surveillance positions in the 19 member countries. Traineeships will be provided in three areas: for CAREC member country personnel returning immediately to their respective country positions; for developing potential West Indian staff at CAREC; and clerkships for upper-level medical students. The grant will also provide formal and informal courses for country epidemicologists, statistical surveillance officers and primary health care workers, as well as laboratory training courses. A.I.D. will also fund the development of a proficiency testing program for member country laboratories, provide selected teaching and analytical laboratory supplies and an information system to fully integrate all member countries into the CAREC surveillance system.

Total project cost of the three year project is estimated to be \$1,717,494 of which A.I.D. will fund \$1,177,677, PAHO \$419,817 and other donors \$120,000.

Attachment: Activity Data Sheet

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ANNEX V

STATE 318676 19

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ACTION
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ACTION...
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Health Advisor (Paul Sakary)

AIDAC

E.O. 112065 N/A

TAGS:

SUBJECT: DAEC REVIEW OF CARIBBEAN REGIONAL EPIDEMIOLOGICAL SURVEILLANCE AND TRAINING PID

1. SUMMARY: THE DAEC REVIEWED AND APPROVED THE SUBJECT PID ON NOVEMBER 17, 1978. IN DEVELOPING THE PP, THE MISSION SHOULD BE COGNIZANT OF TWO PRINCIPAL CONCERNS VOICED IN THE DAEC DISCUSSIONS. THE PROJECT SHOULD ATTEMPT TO MAXIMIZE THE BENEFITS GOING TO THE LDCS VS. THE MDCS OF THE REGION. IN ADDITION, A PREFERENCE WAS VOICED FOR DEALING DIRECTLY WITH A REGIONAL INSTITUTION (CAREC, CARICOM) RATHER THAN CHANNELING FINANCIAL ASSISTANCE THROUGH PAHO.

2. RELATIONSHIP OF PROJECT TO MISSION STRATEGY: CONCERN WAS EXPRESSED THAT THE AID PROJECT WAS SIMPLY SUBSTITUTING FOR FINANCING PREVIOUSLY PROVIDED BY CDC RATHER THAN BEING AN INTEGRAL AND IMPORTANT PART OF THE MISSION'S OVERALL STRATEGY FOR ADDRESSING THE PROBLEMS IN THE HEALTH SECTOR. THE PP SHOULD CLEARLY ARTICULATE THE MISSION'S STRATEGY FOR THE CARIBBEAN REGIONAL HEALTH SECTOR AND INDICATE HOW THE PROJECT SUPPORTS THAT STRATEGY (E.G., BY IMPROVING MANAGEMENT CAPABILITY IN THE SECTOR, ASSISTING IN THE CONTROL OF COMMUNICABLE DISEASES, ETC.) AND BUILDS UPON OR COMPLEMENTS OTHER MISSION SUPPORTED ACTIVITIES.

3. PROJECT DESIGN: THE DAEC REVIEW ADDRESSED THREE DESIGN ISSUES: (A) THE PROJECT'S INTENT TO TRAIN PHYSICIANS AND TECHNICIANS IN VIEW OF HIGH OUT-MIGRATION OF SKILLED PEOPLE FROM THE REGION, (B) THE PROJECT'S FOCUS ON THE ENGLISH-SPEAKING CARIBBEAN THUS LEAVING HAITI AND DR OUT OF THE PROJECT, AND (C) THE PROJECT'S LOGICAL FRAMEWORK WITH PARTICULAR CONCERN REGARDING THE OBJECTIVELY VERIFIABLE INDICATORS.

--A. REGARDING TRAINING, THE PP SHOULD DEMONSTRATE THAT THE LACK OF TRAINED PERSONNEL IS A CONSTRAINT TO AN EFFECTIVE EPIDEMIOLOGICAL SURVEILLANCE SYSTEM IN THE REGION AND THAT THE TRAINING PROPOSED IS APPROPRIATE IN TERMS OF LENGTH OF TIME AND SKILL MIX. THE SERIOUSNESS OF THE OUT-MIGRATION PROBLEM AS IT AFFECTS THE HEALTH SECTOR SHOULD BE EXAMINED AND THE RESULTS INCORPORATED INTO THE PROJECT DESIGN. IN ADDITION, THE PROJECT SHOULD MAXIMIZE PARAPROFESSIONAL TRAINING OR PROVIDE A CLEAR JUSTIFICATION FOR NOT DOING SO. THE PP SHOULD ALSO ANALYZE THE REASONS WHY MORE TRAINING HAS NOT BEEN DONE IN THE LDCS WITH A VIEW TO MAXIMIZING TRAINING IN THOSE COUNTRIES. IN CONJUNCTION WITH THE ABOVE, THE MISSION SHOULD CONSIDER INCREASING THE NUMBERS OF LDC PERSONNEL TRAINED UNDER THE PROJECT.

--B. REGARDING THE PROJECT FOCUS, THE PP SHOULD EXAMINE POSSIBLE LINKAGES FOR INCLUDING HAITI AND THE DR IN THE PROJECT RECOGNIZING THAT THIS COULD PRESENT BOTH LANGUAGE AND ADMINISTRATIVE PROBLEMS AS WELL AS POSE PROBLEMS ASSOCIATED WITH UNLIKE EPIDEMIOLOGICAL INFRASTRUCTURES. THE RESULTS OF THIS EXAMINATION SHOULD BE INCLUDED IN THE PP.

--C. LASTLY, THE LOGFRAME SHOULD BE REEXAMINED WITH A VIEW TO CLEARLY DEFINING WHAT CONDITIONS ARE EXPECTED TO EXIST AT THE END OF THE PROJECT AND ESTABLISHING MEANINGFUL INDICATORS OF PROJECT SUCCESS. THESE MIGHT INCLUDE INDICATORS WHICH, INTER ALIA, DEMONSTRATE THE EFFECTIVENESS OF THE SURVEILLANCE NETWORK AND THE RESPONSIVENESS OF TRAINED PERSONNEL.

4. ADMINISTRATION: GIVEN THE DESIRE TO STRENGTHEN REGIONAL INSTITUTIONS WHEREVER POSSIBLE, THE DAEC REVIEW DISCUSSED VARIOUS OPTIONS FOR PROVIDING PROJECT FUNDING TO CAREC. WHILE DIRECT FUNDING OF CAREC OR CARICOM IS MOST DESIRABLE (BY FOSTERING A REGIONAL ORGANIZATION AND SAVING ON OVERHEAD -- PRESENTLY 31 PERCENT -- CHARGED BY PAHO) THIS OPTION MAY PROVE INFEASIBLE. THE PP SHOULD PROVIDE A JUSTIFICATION FOR SELECTING WHICHEVER ADMINISTRATIVE OPTION IS ULTIMATELY CHOSEN. TO ENABLE THE MISSION TO ADDRESS THIS POINT, LAC/DR/HN WILL PURSUE THIS MATTER WITH PAHO IN

AID/W AND PROVIDE THE MISSION WITH GUIDANCE DURING LASKINTDY IN JANUARY.

5. OTHER DONORS: THE PP SHOULD DISCUSS IN DETAIL THE AREAS OF FOCUS AND TIME FRAME FOR THE INPUTS BEING MADE BY THE OTHER DONORS, E.G., U.K., UNDP, MRC. IN ADDITION, THE PP SHOULD DISCUSS THE ROLE OF CDC AND PAHO FOCUSING ON THEIR PAST AND PRESENT ACTIVITIES AND THEIR INSTITUTIONAL LINKAGES TO CAREC. CDC SHOULD BE ENCOURAGED TO CONTINUE ITS SUPPORT OF CAREC IN VIEW OF ITS MISSION TO PROTECT THE HEALTH OF U.S. CITIZENS AT HOME AND ABROAD. LAC/DR/HN WILL PURSUE THIS MATTER WITH CDC/ATLANTA AND PROVIDE THE MISSION WITH GUIDANCE THROUGH LASKINTDY. THE RESULTS OF THESE EFFORTS SHOULD BE REFLECTED IN THE DESIGN OF THE PROJECT AND REPORTED IN THE PP.

6. RECURRING COSTS: THE PP SHOULD ANALYZE THE ONGOING COSTS ACCRUING TO CAREC AS A RESULT OF THE PROJECT AND SHOULD INDICATE HOW THESE COSTS WILL BE COVERED (E.G. PAHO CONTRIBUTIONS, INCREASED INPUTS FROM MEMBERS). IN ADDITION, THE PP SHOULD INDICATE WHY AN AID GRANT IS NEEDED AT THIS

BT

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TIME IN VIEW OF PAHO, OTHER DONOR, AND MEMBER CONTRIBUTIONS BEING PROVIDED TO CAREC.

7. FOLLOWING DAEC DISCUSSION OF DATA MANAGEMENT ASPECTS OF THE PROJECT, MEETINGS WERE INITIATED BETWEEN CAREC, PAHO, AND SER/DATA MANAGEMENT TO DISCUSS THE NATURE OF INFORMATION SYSTEM IMPROVEMENTS TO BE INCLUDED. THE PP SHOULD PROVIDE A JUSTIFICATION FOR ANY COMPUTER CAPABILITY PROVIDED TO CAREC UNDER THE PROJECT AND OUTLINE ADEQUATE PROVISIONS FOR THE SERVICING/MAINTENANCE OF THE EQUIPMENT. SER/DM WILL PROVIDE GUIDANCE ON APPROPRIATE COMPUTER HARDWARE/ SOFTWARE PACKAGE FOR CAREC WHICH WILL BE HAND-CARRIED BY LASKIN IN JANUARY.

8. ANTICIPATE APPROVAL IN THE NEAR FUTURE OF A NEW ADMINISTRATIVE POLICY DELEGATING BROADER PROJECT APPROVAL AUTHORITY TO THE FIELD. ONCE SUCH AUTHORITY HAS BEEN APPROVED, I PLAN TO DELEGATE AUTHORITY TO THE MISSION DIRECTOR, RDO/C, FOR AUTHORIZATION OF THIS PROJECT. VANCE

BT
 #8676

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

Name of Entity: Pan American Health Organization
 Name of Project: Epidemiological Surveillance and Training Project
 Project Number: 538-0027

Pursuant to Part I, Chapter I, Section 104 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a Grant to the Pan American Health Organization ("PAHO") of not to exceed Three Hundred and Eighty Eight Thousand, Nine Hundred United States Dollars (US\$388,900) (the "Authorized Amount") 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 will provide an increased capability to the Caribbean Epidemiology Center (CAREC), a collaborating subregional Center of PAHO, to assist Caribbean member countries in the detection, prevention and control of communicable and infectious diseases. ("The Project"). The entire amount of A.I.D. funding authorized for the Project will be obligated when the Project Agreement is executed.

I approved the total level of A.I.D. appropriated funding planned for this Project of not to exceed One Million, One Hundred and Sixty Thousand United States Dollars (US\$1,160,000) to be grant funded, including the funding authorized above, during the period FY 1979 through FY 1982. I approve further increments during that period of Grant funding up to \$771,190 subject to the availability of funds in accordance with A.I.D. allotment procedures.

I hereby authorize the initiation of negotiation and execution of a Project Grant 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 conditions; together with such other terms and conditions as A.I.D. may deem appropriate:

A. Source and Origin of Goods and Services

Except for ocean shipping, goods and services financed by A.I.D. under the Grant shall have their source and origin in the United States or in member countries of CAREC. Except as A.I.D. may otherwise agree in writing. Ocean shipping financed under the Grant shall be procured in the United States.

B. Special Covenants for Project Grant Agreement

1. The Grant Agreement will specify the amount which is to be paid to PAHO for indirect costs of program support for the Project.
2. PAHO will agree that AID funding be utilized for laboratory and surveillance training of nationals only from the countries of: Antigua, Bahamas, Barbados, Belize, British Virgin Islands, Cayman Islands, Dominica,

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Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, St. Kitts/Nevis/Anguilla, St. Lucia, St. Vincent, Turks and Caicos and Suriname. Such activities for other CAREC member countries will be financed by those governments or through the CAREC core budget.

3. PAHO will agree to establish an evaluation program for the project at midpoint and prior to project termination. AID, PAHO, CAREC and participating CMCs will collaborate in conducting these evaluations during the life of the project covering:
 - i) Progress toward attainment of objectives of the Project.
 - ii) Identification and evaluation of problems and constraints which may inhibit such attainment.
 - iii) Assessment of how such information may be used to help overcome such problems; and
 - iv) Evaluation, to the degree feasible, of the overall development impact of the Project.
4. PAHO will agree to establish a training unit in CAREC and to incorporate it within the annual budget in order that formalized training activities continue after the termination of the project.
5. PAHO will agree to incorporate the costs of maintaining a computerized information system within the annual budget of CAREC in order that such an activity continues after the termination of the project.
6. PAHO will agree to conduct periodic consultation with CARICOM in the planning, implementation and evaluation of the project.

William B. Wheeler
AID Representative

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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?
Yes. Communicable diseases Disproportionately affect the needy.
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?
No.
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?
Not applicable.
Assistance is to a regional international organization.

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?
- Not applicable
Assistance is to an international organization.
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?
- N/A
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?
- NA
N/A

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? Not applicable. Assistance is to an international organization.
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? N/A
9. FAA Sec. 620 (i). 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? Not applicable Assistance is to an International Organization.
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, No. The Governments involved have 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?

Not Applicable Assistance is to an international organization.

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 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.)

Not Applicable.

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? No.
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? Not Applicable. Assistance is to an International Organization.
15. FAA Sec. 620A, FY 79 App. Sec. 607. Has the country granted sanctuary from prosecution to any individual or group which has committed an act of international terrorism? Not Applicable. Assistance is to an International Organization.
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? Not Applicable. Assistance is to an International Organization.

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?

Not applicable. Assistance is to an international organization.

B. FUNDING CRITERIA FOR COUNTRY ELIFIBILITY

1. Development Assistance Country Criteria.

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

Yes. All countries involved have show such concern. This project directly aids the poorer elements of the society, especially mothers infants and children, who are most vulnerable to communicable disease.

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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?

Yes. The project will facilitate control of communicable diseases, which are a major cause of infant mortality and morbidity.

2. Economic Support Fund Country Criteria.

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

No. ESF funds will not be used in this project.

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 interest?

Not Applicable.

as

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?

No sale proceeds are anticipated.

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?

No.

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

Not Applicable.

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Act Unnumbered; FAA Sec. 653 (b); Sec. 634A. Notification will be accomplished as per the draft Notice contained in Annex IV of this paper.
(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)?
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? Yes.
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 is required.
4. FAA Sec. 611 (b); FY 79 App. Sec. 101. Not Applicable.
If for water or water-related land resources 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?
5. FAA Sec. 611 (a). 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 Assistance Administrator taken into consideration the country's capability effectively to maintain and utilize the project? Not Applicable.

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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.

This is a regional Project.

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.

As a basic health project, it will not directly and substantially have such effect.

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).

The project will use U.S. technical assistance and commodities as appropriate.

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.
- As shown in the budget, both PAHO and the local Governments will make substantial contributions to the project.
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?
- No.
11. FAA Sec. 601 (e). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?
- Yes.
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?
- Not Applicable .

B. FUNDING CRITERIA FOR PROJECT

1. Development Assistance Project Criteria

a. FAA Sec. 102 (b); 111, 113; 281 a.

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 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?

The project will foster regional cooperation by strengthening the regional organization which is the implementing agency.

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) is 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,

This project constitutes a less costly approach to basic health care,

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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.

because as designed it will address specific diseases at the preventive stage before they become epidemic.

(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;

(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 cost 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)?

This is a regional project and thus the statute does not apply.

- 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"?
- Not Applicable. The project does not involve grant capital assistance.
- f. FAA Sec. 231 (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.
- The goal of the project is to improve the efficiency of local and regional institutions.
- 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?
- Yes. The project will reduce the incidence of communicable diseases, thus it will increase the productive capacity of individuals in the area.
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.
- Not Applicable. The project will be grant funded.
- 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?
- N.A.
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?
- N.A.
- b. FAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities?
- No.

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? Yes.

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? The Project does not include such procurement.

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. Appropriate waivers of this requirement will be obtained. Generally, U.S. flag shipping is not available to all of the small Islands in the region.

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? Yes.

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If the facilities 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?

Yes.

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.

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?

Not Applicable. This is not a capital project.

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?

The project does not include construction.

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?

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? Not Applicable. The Project will be grant financed.
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? Yes.
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.
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? Yes.
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.

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- 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.

ANNEX VIII

ENVIRONMENTAL ANALYSIS

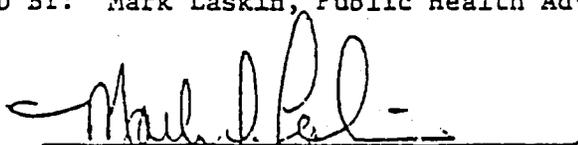
PROJECT LOCATION: Carribbean Regional

PROJECT TITLE: Epidemiological Surveillance and Training

FUNDING: FY-1979, \$369,000

LIFE OF PROJECT: \$1,108,000

IEE PREPARED BY: Mark Laskin, Public Health Advisor, LAC/DR/EN



Signature

11/15/78
Date

ENVIRONMENTAL ACTION RECOMMENDED: Negative Determination

(See Page)

CONCURRENCE:

Signature

Date

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Dec 13 1978

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT LAC/DR-IEE-79-4
WASHINGTON, D. C. 20523

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ASSISTANT
ADMINISTRATOR

ENVIRONMENTAL THRESHOLD DECISION

Location Carribean Regional
Project Title : Epidemiological Surveillance and Training, 538-0027
Funding : FY-1979, \$369,000
Life of Project: \$1,108,000

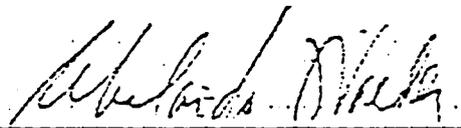
Mission Recommendation:

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.

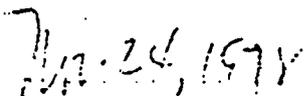
The Latin America and th Caribbean Bureau's Development Assistance Executive Committee has reviewed the Initial Environmental Examination for this project and concurs in the Mission's recommendation for a Negative Determination.

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.



Assistant Administrator for
Latin America and the Caribbean



Date

Clearances:

DAEC Chairman: MBrown 
LAC Environmental Advisor: ROOTTO 

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I. PROJECT DESCRIPTION

Much of the morbidity and mortality in the Caribbean region is caused by communicable diseases. The Intra-Caribbean Epidemiological Surveillance and Training project has been designed to provide training, technical assistance, and equipment support to assist the Caribbean Epidemiology Centre (CAREC) in disease identification and prevention.

The project will provide for 1) a fellowship program to train West Indian nationals in epidemiology and public health; 2) the establishment of a training unit at CAREC to provide in-service training to designed small island epidemiologists and their staffs, 3) technical assistance in training and procedure manual development and 4) the purchase of basic laboratory equipment for national and regional laboratories.

II. ENVIRONMENTAL IMPACT IDENTIFICATION AND EVALUATION

As a project designed to identify potentially hazardous environmental and health conditions in the Caribbean region it is felt that only positive impact on the host countries environments will be realized.

In terms of occupational safety and health the purchase of safety hoods and other safety laboratory equipment as well as the development of procedural manuals for the handling of potentially harmful specimens will be included in the proposed project.

No harmful impacts are expected from the project in terms of land use, water quality, or atmospheric conditions. Similarly no impact on natural resources, cultural conditions or socio-economic conditions is expected. All health impacts are expected to be highly positive in terms of reduction in incidence and prevalence of environmentally transmitted diseases:

III. RECOMMENDATION

Since the proposed project will effect no change with adverse implications for the human or natural environments of the Caribbean Regional countries, it is recommended that the Assistant Administrator for Latin America approve a Negative Determination for this project.

Impact
Identification
and Evaluation 1/

Impact Areas and Sub-Areas

A. LAND USE

- | | |
|--|---------------|
| 1. Changing the character of the land through: | |
| a. Increasing the population | _____ N _____ |
| b. Extracting natural resources | _____ N _____ |
| c. Land clearing | _____ N _____ |
| d. Changing soil character | _____ N _____ |
| 2. Altering natural defenses | _____ N _____ |
| 3. Foreclosing important uses | _____ N _____ |
| 4. Jeopardizing man or his works | _____ N _____ |
| 5. Other factors | |
| _____ | _____ |
| _____ | _____ |

B. WATER QUALITY

- | | |
|---|---------------|
| 1. Physical state of water | _____ N _____ |
| 2. Chemical and biological states | _____ N _____ |
| _____ | _____ |
| _____ | _____ |

1/ N - No environmental impact.
 L - Little environmental impact.
 M - Moderate environmental impact.
 H - High environmental impact.
 U - Unknown environmental impact.

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- 3. Ecological balance N
- 4. Other factors
- _____
- _____

C. ATMOSPHERIC

- 1. Air additives N
- 2. Air pollution N
- 3. Noise pollution N
- 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 N
- 2. Dilution of cultural traditions N
- 3. Other factors
- _____
- _____

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F. SOCIO-ECONOMIC

- | | |
|--|-----------------------------------|
| 1. Changes in economic/employment patterns | <u> N </u> |
| 2. Changes in population | <u> N </u> |
| 3. Changes in cultural patterns | <u> N </u> |
| 4. Other factors | <u> </u> |
| _____ | _____ |
| _____ | _____ |

G. HEALTH

- | | |
|---|-----------------------------------|
| 1. Changing a natural environment | <u> N </u> |
| 2. Eliminating an ecosystem element | <u> N </u> |
| 3. Other factors | <u> </u> |
| _____ | _____ |
| _____ | _____ |

H. GENERAL

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

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL
ATLANTA, GEORGIA 30333
TELEPHONE: (404) 632-3311

ANNEX IX

(a)

OCT 6 1978

Mr. Clayton Miracle
Health Officer
USAID, RDO/C (Barbados)
FFO, Miami 34055

Dear Mr. Miracle:

We are pleased to respond to the request from the USAID Mission in Bridgetown for information concerning the Center for Disease Control's (CDC) involvement in and support of the Caribbean Epidemiology Centre (CAREC), Fort of Spain, Trinidad.

1. The rationale for CDC's initial financial assistance was in response to a Pan American Health Organization (PAHO) Advisory Committee's determination that an epidemiologic center in the Caribbean, directed toward developing surveillance programs and epidemiologic resources in Caribbean countries, was a prime public health objective, development of which would have a beneficial impact upon the practice of public health in the United States. The initial involvement was a contract of \$323,000 and, subsequently, the assignment of two CDC personnel to CAREC on a full-time basis. The contract was for 3 years. It was subsequently modified by a 1-year extension without additional funds. These monies will be expended by December 1978. CDC continues to support CAREC by the assignment of two staff members on a permanent basis and headquarters staff on short details to assist in training programs and in advisory capacities.
2. CAREC has provided advice, guidance, technical assistance, and financial support to the development of disease surveillance, investigative and control activities, and epidemiologic units in each of the participating Caribbean countries, and has developed and implemented a Caribbean disease surveillance program. Development has been somewhat slower than anticipated due to budgeting and personnel restrictions; nevertheless, progress has been made. Our assessment is that there is significant future growth potential of the headquarters at CAREC and of the surveillance and epidemiologic activities within each country.

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3. The termination of the CDC contract should have no significant effect upon the present and future programs of CAREC if PAHO is able to assume financial support for the programs previously supported by CDC monies. However, if PAHO is unable to provide support, then the expiration of the CDC contract will have a negative impact on future development. Without financial support important technical meetings, consultations, disease investigative trips, and training programs will have to be cancelled.
4. We do not have definitive knowledge as to whether Caribbean countries could assume full financial support of CAREC at the end of 10 years, but there is no such evidence that they could.
5. CAREC is effective in responding to requests for assistance from the countries. As its staff becomes more proficient and complete, its ability to assist countries will increase significantly.
6. The training programs that have been held both at CAREC and in the countries have been effective in generating interest in the subjects and in providing appropriate technology transfer of information. Persons have been trained in the subject areas, but whether the specific training has been effective as measured by improvements in public health, such as the decreased incidence of disease, has not been evaluated as yet. However, personnel exposed to this training have demonstrated their ability to utilize the lessons that have been learned, whether in the field or in the laboratory. We believe these programs have been effective, but a more sensitive evaluation is being considered.
- 7! The individual countries are very receptive to the programs, services, and training programs offered by CAREC.

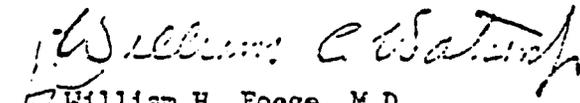
Page 3 - Mr. Clayton Miracle

8. The constraints to the future development of CAREC are related to the low salaries and poor facilities offered by National Governments to their public health staff. The low salary structure makes it necessary for some public health officials to hold second jobs which interferes with performing their functions in the field of public health. It is difficult to attract competent West Indian professional staff to CAREC, which is one problem that needs to be approached. We feel that it is important that individual financial contributions from countries be increased in order to strengthen the countries' commitments to CAREC and to allow CAREC to expand its resources and programs.
9. Concerning suggestions that we would make to strengthen CAREC, we emphasize the need to provide a more solid financial base for CAREC that would allow the opportunity to make realistic long-range plans concerning programs and personnel. The permanent staff at CAREC, Port of Spain, needs to be increased to provide more site visits to evaluate the effectiveness of surveillance, training programs, and to identify and assist with current problems. A program to attract young persons into public health, such as a fellowship program with training both within and without the Caribbean, needs to be developed.

The support that individual countries have given to CAREC has been impressive, but it needs to be solidified. The monthly surveillance report prepared by CAREC is providing up-to-date, significant public health information to the participating countries, by providing a narrative and a summary of surveillance data from individual countries. There have been problems with transportation of laboratory specimens from countries to CAREC and to other laboratories, some of which have been solved.

In summary, we heartily support CAREC's request for financial assistance from AID. We believe that CAREC has embarked on a much needed public health program which has already substantially improved and benefited disease surveillance, epidemic investigations, and disease control in the Caribbean. Without additional financial assistance beginning January 1, 1979, CAREC would be unable to continue consolidation and expansion of the epidemiology program developed during the past 4 years of operation.

Sincerely yours,


William H. Foegle, M.D.
Assistant Surgeon General
Director

cc:
Mr. Laskin, AID

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ACTION AIRMAIL

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AIDAC

2/1/79

PASS TO DR. W. FOEGE CDC, ATLANTA

E. O. 11652: NSA -
SUBJECT: CARIBBEAN EPIDEMIOLOGY CENTER

3/5/79

1. THE REGIONAL DEVELOPMENT OFFICE/CARIBBEAN (RDO/C) HAS RECENTLY RECEIVED A REQUEST FROM THE CARIBBEAN EPIDEMIOLOGY CENTER, TRINIDAD FOR ASSISTANCE TO COVER A FIVE YEAR PERIOD. THE REQUEST WAS SPECIFIC IN REQUESTING AID FUNDS FOR REPLACING AND EXPANDING ACTIVITIES SUPPORTED BY THE CDC GRANT TO CARICOM WHICH, AS YOU KNOW, PHASES OUT IN DECEMBER OF THIS YEAR.

4/1/79

2. RDO/C HAS GENERAL KNOWLEDGE OF AREAS OF CDC INVOLVEMENT WITH CAREC BUT HAS NO SPECIFIC INFORMATION REGARDING OBJECTIVES AND RESULTS OF YOUR ASSISTANCE. TO ASSIST IN THE CONSIDERATION OF CAREC REQUEST, RDO/C WOULD VERY MUCH APPRECIATE CDC RESPONSE TO FOLLOWING: (1) RATIONALE FOR CDC INITIAL ASSISTANCE AND REASON FOR PHASE OUT;

(2) CAREC PRESENT STATUS AND FUTURE GROWTH POTENTIAL; (3) WHAT IMPACT WILL CDC PHASE-OUT HAVE ON PRESENT AND FUTURE PROGRAMS; (4) WHAT EVIDENCE MAY BE AVAILABLE TO INDICATE WHETHER CARIBBEAN TERRITORIES CAN ASSUME FULL FINANCIAL SUPPORT OF CAREC AT THE END OF TEN YEARS; (5) HOW EFFECTIVE IS CAREC IN RESPONDING TO REQUESTS FOR ASSISTANCE FROM THE ISLANDS; (6) ARE TRAINING PROGRAMS EFFECTIVE; (7) ARE ISLANDS RECEPTIVE TO AND DO THEY UTILIZE SERVICES AND TRAINING OFFERED BY CAREC; (8) CONSTRAINTS TO CAREC FUTURE DEVELOPMENT; (9) ANY OTHER COMMENTS THAT WOULD ASSIST RDO/C IN ITS CONSIDERATION OF ASSISTANCE TO CAREC.
COLLINGS, W. H. P.

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
CENTER FOR DISEASE CONTROL
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FEB 8 1979

Mr. William Wheeler
AID Representative
Agency for International Development
P. O. Box 302
Bridgetown, Barbados

ACTION...	D.H. Boyd
DUE DATE...	2/22/79
ACTION TAKEN	
.....	
DATE	
SIGNATURE.....	

Dear Mr. Wheeler:

This is in followup to your conversation with Dr. Koplan regarding future support of the Caribbean Epidemiology Centre (CAREC). The Center for Disease Control (CDC) has supported CAREC from its inception with direct grant aid, by providing short-term advisors, by serving as a laboratory reference resource, and by seconding professional staff.

We will continue to support CAREC by: Serving as a laboratory reference resource; providing bibliographic and reference materials on request; providing short term staff for teaching, consultation and outbreak investigation, when requested; providing assistance in laboratory management training; providing spaces in CDC courses for participants from the Lesser Developed Countries (LDC's) and CAREC staff, including the Epidemic Intelligence Service Course each July; arranging assignments for LDC staff in practical public health settings throughout the U.S.; using CDC quarantine stations to assist CAREC in transport of laboratory specimens; and collaborating with CAREC and the LDC's on projects of mutual concern and interest.

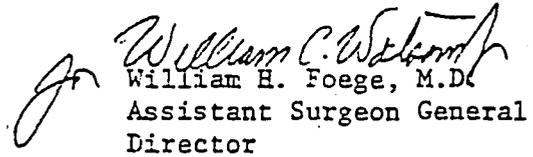
In addition, to better facilitate the training and assumption of responsibilities by the AID grant trainees and, in particular, the training officer, we are prepared to extend the tour of our seconded public health advisor to June 1980 (beyond the present termination date of June 1979).

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Page 2 - Mr. William Wheeler

If needed, we will be happy to provide further technical assistance in the development of the AID grant proposal and in the implementation of the grant itself.

Sincerely yours,


William H. Foege, M.D.
Assistant Surgeon General
Director

1.0 CAREC, Epidemiology and Public Health

Epidemiology is the study of the occurrence of illness. Where clinical medicine looks at the health of the individual, epidemiology is concerned with the health of populations. It seeks answers to the questions: what diseases are there, how much, where do they occur, among what sub-groups of the population, what factors contribute to their occurrence, how can they be prevented or controlled? Epidemiology includes the investigation and control of epidemics (unusual outbreaks of disease) and the study of the baseline levels of disease - surveillance, data compilation, analysis and then taking control action based on one's conclusions.

The major medical and public health advances of the past 100 years have been in the area of communicable (also called infectious) diseases. The improved quality of life and prolonged life span seen in developed nations have been due in large part to the decrease in morbidity and mortality of infectious diseases. Similarly, the lower predicted life span and greater disease morbidity seen in the developing world are the result of the continued heavy toll of infectious diseases. While polio, typhoid, tetanus, childhood gastroenteritis and dengue are uncommon sporadic diseases in North America and Western Europe, they can be common, devastating illnesses in the developing world and the West Indies, in particular. Not only do they cause a great amount of human suffering and deaths, but they also have adverse developmental and economic effects. Dengue out-breaks use up scant governmental resources in mosquito control, insecticide purchases, etc. They force low income individuals to spend earnings on medical care and medicines and also to miss work. They ruin the tourist trade for up to several years. Gastroenteritis costs families and government as an acute illness, but has more chronic economic consequences, contributing to malnutrition and poor school and work performance.

Infectious diseases are often more easily prevented and controlled by approaching them as a public health problem rather than individual by individual. Thus, immunizations may be delivered by health care clinics, rural health centres or practitioners, but the decisions on which vaccines are necessary, public education on the necessity of immunizations, the ordering, storage and handling of vaccines and the evaluation of vaccine and program efficacy must be done by public health professionals. Similarly, clinicians treat gastroenteritis, but to look at features of aggregate cases and relate the disease occurrence to lapses of hygiene, poor water quality or unsatisfactory food preparation requires epidemiologic and laboratory capability. These associations determine which appropriate control and preventive measures should be taken.

..... /epidemiology

Epidemiology and particularly its surveillance component, permit health planners and decision-makers to quantitatively determine their health priorities and problems. Epidemiology also provides health authorities with the approaches to solving these problems and evaluating ongoing programs of both health care delivery and public health activity.

In response to the need for improved epidemiologic activity in the region, PAHO/WHO established the Caribbean Epidemiology Centre (CAREC) in 1975 at the request of the Ministers Responsible for Health in the Commonwealth Caribbean.

In July 1977, Suriname became a fully participating member. The budget is provided by PAHO, the participating territories, United Kingdom Overseas Development Ministry, and specific research grants.

The Centre is organised by divisions of surveillance, laboratory, training and research. It occupies seven acres in the St. Clair section of Port of Spain, Trinidad, in buildings previously housing the Trinidad Regional Virus Laboratory of the Rockefeller Foundation. The Centre currently employs ninety persons, (15 professional staff).

From 1975-78 The Center for Disease Control (Atlanta, Georgia) sponsored a grant to assist CAREC in beginning to develop an epidemiological service in the Caribbean. While the proposed AID grant will not repeat what CDC began in 1975, it does build on the base laid by CDC to build a solid common service institutional base for CAREC in the region. To make that institution more effective the AID grant will develop capability.

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2.0 NEEDS ASSESSMENT

At the time CAREC was established, there was no uniform list of reportable diseases in the Caribbean, reporting by practitioners within countries was minimal, reported data was collected but rarely tabulated or analysed and reporting of national data to international health bodies was irregular. Moreover, little training was done in the region in epidemiology, the local capability to investigate and control disease outbreaks was minimal and there was no designated regional reference and support laboratory for the full range of microbiological testing. CAREC from its inception began to deal with these limitations through its surveillance, laboratory and training components.

2.1) Surveillance

One of CAREC's immediate actions was the establishment of a uniform list of reportable diseases which was adopted by CAREC member countries, clinics and practitioners were encouraged to recognise, diagnose, and report diseases, and national surveillance units were created to report their tabulated total cases to CAREC and PAHO/WHO on a weekly basis.

The improved surveillance consequent upon the establishment of CAREC has served to demonstrate the magnitude of communicable disease in the Caribbean in this decade. Morbidity and mortality from infectious and parasitic diseases are a major health problem in the Caribbean, particularly in the under 5-years old age group, with enteritis and other diarrheal diseases responsible for one third of all deaths. Paediatric wards are crowded with gastroenteritis cases requiring expensive facilities. This overcrowding has generated requests for new wards or children hospitals, which have, in turn, generated greater demands upon the national health budget. Improved national surveillance will lead to the earlier detection of cases and facilitate their effective treatment by the primary health services. While influenza and pneumonia, malnutrition, sepsis and meningitis are among the other major causes of death in children in the Caribbean, several other diseases have been of major concern to all age groups.

Typhoid has occurred in epidemics in Bahamas, Dominica, Grenada, Jamaica, and St. Lucia since 1975 and is still endemic in Dominica, Grenada, Guyana, Jamaica, St. Lucia, and Trinidad and Tobago. Some of these outbreaks have been water-borne and directly related to a breakdown in the surveillance of water supplies. A recent outbreak in Jamaica involved 217 suspect cases who all required extensive laboratory investigation to determine the 86 confirmed, with additional studies to detect carriers. It required the in-patient treatment of the 50 cases and the follow up day-to-day treatment in a remote village of the remainder. Such an outbreak could have had serious economic implications had a tourist resort become involved.

...../2 A Dengue

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A Dengue epidemic in Puerto Rico, was estimated to have cost US\$16 million, exclusive of any revenues lost due to drops in tourism. For most Caribbean countries, especially the LDCs, tourism is a major contributor to the national budget and the occurrence of communicable disease, and its attendant publicity on the mass media, will discourage tourism and adversely affect their fragile economies.

The source of typhoid is usually a human carrier who causes disease transmission by contaminating food or water with his or her excreta. Carriers have been detected in two recent typhoid outbreaks and their treatment will prevent future outbreaks. Further work is required in the establishment and maintenance of typhoid registers in every country to facilitate the detection of carriers and their treatment.

Starting in Jamaica in 1977, Dengue spread by importation to many Caribbean countries (e.g. Bahamas, Dominica, Guyana, Trinidad and Tobago). This disease caused severe loss of production and school absenteeism in Bahamas, Dominica, and Jamaica. In Jamaica, where CAREC participated late in the outbreak, up to 350,000 cases occurred. In contrast, Trinidad and Tobago consulted with CAREC before any cases had occurred and, using staff-previously trained at CAREC, instituted intensified surveillance and control means. This early and thorough epidemiology activity limited Trinidad and Tobago's dengue outbreak to fewer than 200 cases. Thus, Trinidad and Tobago, unlike Jamaica, was able to control serious disruption of its economy due to industrial absenteeism and loss of tourism. Other countries in the region, including those of Hispaniola, were unable to anticipate and subsequently limit the dengue epidemic.

The occurrence of jungle yellow fever in 1978 in Columbia while several Caribbean countries with Aedes aegypti infestation had teams participating in an international sports meeting, served to emphasize the risk of importation and spread of yellow fever in the Caribbean. CAREC was able to alert the countries and advise on appropriate control measures.

Malaria is another vector-borne disease of great concern to the region. It remains endemic to Haiti with frequent importations to the Dominican Republic and Jamaica. The carrier of malaria, Aedes aegypti mosquito, is endemic throughout the Caribbean.

In November 1978, an outbreak of epizootic disease occurred among howler monkeys in Guayaguayare, Trinidad, which served as an immediate alert that the yellow fever virus may be present in this forest area. Intensive surveillance and control measures are presently being implemented with CAREC assistance. The economic effects of yellow fever are well appreciated in Trinidad and Tobago, for the occurrence of 15 cases of yellow fever in 1954 is estimated to have cost the country TT\$30.0 million. (US\$12 million) indirect and indirect losses.

.....3/Outbreaks

Outbreaks such as dengue, malaria, and yellow fever are all national concerns, but are also regional problems. Yellow fever in Trinidad would be an immediate and real threat to every other Caribbean country. Thus, surveillance, investigative and control efforts must be co-ordinated regionally. In some countries for some outbreaks, these efforts are effective. However, there is still much improvement to be made in complete routine reporting of cases, recognition of disease outbreaks, and their thorough investigation and control.

There are serious weaknesses in the surveillance of zoonotic disease with the lack of adequate co-ordination between medical and veterinary medical agencies. Rabies, leptospirosis, bovine tuberculosis, brucella, toxoplasmosis, and histoplasmosis have all been reported, but require more epidemiologic study to determine their magnitude and accomplish their control. Other animal diseases such as African swine fever are threats to the national capacity for local food production and, ultimately, to community nutrition. A recent outbreak of ASF in the Dominican Republic and Haiti has required the eradication of ^{much of} the swine population in those countries with untold impact on the economy and nutritional status of their populations.

Although all the countries have national immunization programs, ~~as~~ cases of diseases preventable by immunization are still occurring (e.g. diphtheria, measles, poliomyelitis, tetanus, and pertussis). The surveillance of these diseases is providing an important evaluation tool for those responsible for primary care services. Cases of poliomyelitis occurred in 1977 in St. Vincent and Turks and Caicos, and in 1978 in Cat Island, Bahamas. The cases in St. Vincent and Bahamas were directly related to poor cold storage facilities for the poliomyelitis vaccine, whereas in Turks and Caicos, it was due to poor coverage of the population. Pertussis remains one of the most common causes of death in infants in Belize. Further to improve surveillance of measles, and its complications, more countries are recognising the importance of providing immunization against this disease.

Immunizable diseases, along with malnutrition, emphasize the close association between an epidemiology service and primary health care services. The epidemiology unit can determine the toll taken by disease that could be prevented by immunization (e.g. measles in all the West Indies, pertussis in Belize, neonatal tetanus in Haiti, poliomyelitis in the Dominican Republic, etc.). Epidemiology permits the ongoing evaluation of primary health care efforts. As increased resources and interest are devoted to primary health care, such evaluative measures are indispensable to quality control, cost-effectiveness and, ultimately, improving health.

.....4/Food-borne

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Food-borne illness is grossly under-reported but improvements in surveillance have resulted in the identification of some outbreaks, their adequate investigation, and the implementation of control measures to prevent recurrence. There was a serious episode of poisoning in Jamaica with 17 deaths traced to flour contaminated with parathion during handling at a foreign port. In another instance, typhoid was traced to a food handler preparing a dessert sold in Dominica. An outbreak of illness in Trinidad was traced to the consumption of black pudding contaminated with Clostridium perfringens. One hundred and thirty persons were ill many requiring hospital treatment. The unsatisfactory food preparation and storage practices were identified and corrected. Food-borne illness required great improvement in reporting and prevention. Water quality and quantity remains a major problem in all West Indian countries. In particular there is poor liaison between those responsible for rural water systems and health authorities. Breakdowns in pumps and/or chlorination are not properly reported so that primary health care workers are unable to advise of timely preventive measures (e.g. boiling water).

The immunizable diseases, diarrheal diseases, including those that are food and water borne, and malnutrition, all disproportionately affect the young and the poor. Epidemiologic and public health efforts make their greatest impact on and benefits for the economically disadvantaged.

In all the above surveillance activities and outbreak investigations, CAREC has participated providing technical assistance, laboratory services, investigation equipment and supplies. CAREC has had the unique opportunity to assess national capacity under field conditions and to determine personnel and facilities requiring strengthening if adequate national capacity is to be achieved in each country. At every interaction with national staffs, CAREC staff attempt to provide some classroom, but particularly field training to develop capability for national self-sufficiency and proficiency in epidemiologic matters.

The development of national staff competence from community health aide to Minister of Health, in epidemiologic matters at a level of sophistication appropriate to their responsibilities, is a basic requirement to the improvement of health care in the region and a basic challenge to the training responsibility of CAREC. The designated epidemiologists (physicians with some public health role) in each LDC frequently also engage in private practice or emigrate for higher paying or more challenging job opportunities. Thus, CAREC has emphasized the need for the role of "deputy epidemiologists" who are non-physicians trained in public health - frequently senior public health inspectors or public health nurses with many years of experience and previous exposure to epidemiology. These individuals are less likely to migrate. They enthusiastically take on epidemiologic training and new work roles, and they are in a position to influence other field staff - both those in public health and primary health care. Most CAREC countries have already appointed deputy epidemiologists. All require basic instruction in epidemiology and periodic follow-up training to enable them to perform satisfactorily.

.... /5 In addition

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In addition to non-physician epidemiology in the region, a major constraint in public health programs in general and epidemiology in particular is the small pool of qualified medical officers interested in the fields. Specialization in medicine is usually determined during medical school, often under the influence of a particular course, electives or "rotations" (e.g. pediatrics, surgery, etc.). Most physicians in the Caribbean are educated at the University of the West Indies (Mona, Jamaica). U.W.I. has a small Department of Social and Preventive Medicine with no trained epidemiologists on their faculty. Currently much of the undergraduate and graduate teaching of epidemiology at U.W.I. is done by CAREC staff, serving as honorary lecturers. To fully interest and educate medical students in the potential of a career in epidemiology requires more than a few classroom hours however.

Similarly, to make the system work, the other public health inspectors, public health nurses, district nurses, physicians, and community health aides all have to be made aware of their role in the surveillance network and trained appropriately.

Surveillance statistical officers require particular training attention in that they collate, co-ordinate and transmit to senior Ministry staff, CAREC and PAHO/WHO their national data. Creating this cadre of health personnel trained appropriately in epidemiology and aware of their role in the surveillance network, is fundamental to improving disease recognition, reporting, analysis and ultimately control.

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2.2. Laboratory Services

In addition to the needs for improvements in the quality and level of training and epidemiological surveillance the accurate diagnosis of communicable diseases is a basic requirement for surveillance and disease control. The CAREC laboratories provide for this in two ways: (1) directly, through the virology, bacteriology, serology, parasitology and entomology services which it offers and (2) indirectly, by training activities aimed at improving and maintaining laboratory standards in the LDCs. Training is both by formal courses and by the training of individuals either at CAREC or in their own laboratories.

The Laboratory helps in the assessment of vaccination programs and other control measures by means of surveys (e.g. serological surveys for antibodies to poliomyelitis and parasitological surveys in school-children) as well as a number of research projects (current topics include infantile gastroenteritis, rabies, leptospirosis, filariasis, arbovirus diseases and the immunology of streptococcal diseases.

Aims and Functions of CAREC Laboratories

The specific aims and functions of the CAREC laboratories can be summarized as follows:-

1. to assess the resources and needs of the laboratories in the Caribbean area and to assist them in training and development.
2. to provide selected diagnostic laboratory services and facilities required for disease surveillance not generally available elsewhere in the Caribbean in routine and epidemic situations.
3. to maintain reference facilities for the investigation of selected viruses and other disease agents.

Limited Resources of the Caribbean Laboratories

CAREC relates primarily to nineteen contributing countries whose laboratories vary enormously in size and in level of proficiency. The range extends from large general hospital laboratories with many trained staff and considerable levels of automation to small laboratories capable of only a limited range of tests and even to 1-person laboratories in which the solitary technician also doubles as radiographer.

.....2/The smaller

The smaller laboratories are serving small island populations, and since they represent the only readily available facility additional tests can only be done by transporting either the patient or the specimens to the laboratory. Communications are not good hence their technical capabilities must be somewhat greater than in a mainland community of the same size where transportation and access is more easily and quickly accomplished. From almost all the nineteen countries, tests for virus diseases (e.g. poliomyelitis, influenza, dengue fever) are referred to CAREC. These investigations are technically complex and costly. Duplication of the necessary facilities to support identification of these diseases should not be looked for in this region for the foreseeable future. In contrast, all these countries attempt tests for bacterial diseases (e.g. typhoid fever, diphtheria, bacillary dysentery) and parasitic diseases (e.g. malaria, schistosomiasis, amoebic dysentery) to varying degrees of proficiency.

2.21 Proficiency Testing

One of the methods of assessment of the countries' laboratories which CAREC introduced one year ago is Proficiency Testing (PT). This consists of sending known specimens to the laboratories. The CAREC Laboratories know exactly what bacteria or parasites are present in these specimens. The reports from the participating laboratories are compared to the known specimen contents. The results are determined to be the maximum capability of each laboratory to report accurately on the material received.

The material issued for proficiency testing has been selected so that it should be within the capacity of the individual small laboratory to isolate and identify them to clinically informative levels. The following table is a summary of the reported results in bacteriology:

TABLE II

1978 Proficiency Testing Requests - Bacteriology

Specimens testing proficiency in:	Percent of laboratories giving false results
Diarrhoeal diseases	45%
Diphtheria	31%
Staph. Infection	18%
Gonorrhoea	27%
Antibiotic sensitivity testing	40%

.....3/From the above

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From the above Table it is disappointing to recognize that only 50% of the laboratories have responded on average, to the bacteriology PT scheme. It is not clear at this time whether non-responders have not attempted the tests or have merely failed to report the results. The results obtained from the responders demonstrating the low level of proficiency on material which should have been within the capability of all, shows the magnitude of the problem which CAREC must address. The table shows only the first year of operation of these schemes in bacteriology in particular.

The range of pathogenic organisms which could be sent was severely restricted by CAREC's lack of capacity to ~~prepare specimens~~ which will survive shipment. CAREC does not have the equipment, notably a freeze-dryer, to prepare all types of specimens for shipment.

Many, but by no means all, of the deficiencies detected have been in the laboratories of the LDC's and it is in these countries that the problems shared by most laboratories in the area are most clearly seen. The LDC's are generally unable to recruit pathologists, most have shortages of trained technologists and difficulty in retaining trained staff, difficulty in buying and in maintaining equipment, difficulty with laboratory supplies and, in addition, a number are housed in old and inadequate facilities. CAREC needs to update its information on the resources and needs of these laboratories at frequent intervals in order to assist their development effectively and take advantage of opportunities for training their personnel.

The problems of the MDC's laboratories differ in degree rather than kind. These laboratories, to varying extents, contribute to the services available to the LDC's, in disciplines such as histopathology (tissue analysis), biochemistry (blood and urine chemical analysis) and hematology (blood cell analysis). These laboratories should not be viewed simply as competing for assistance from CAREC to the detriment of the LDC's. CAREC's activities should have the objective of raising laboratory testing in bacteriology and parasitology to appropriate standards in all the countries with the greatest efforts where there are the greatest deficits.

In summary, the capacity of these island laboratories to provide adequate testing support is limited by factors of inadequately trained staff; difficulties with testing supplies, and, badly maintained or un-servicable laboratory equipment. In St. Vincent for example, a laboratory autoclave was out of service for six months. The island laboratory could not sterilize media and equipment or dispose of contaminated material. As a result of this, all bacteriology laboratory tests were discontinued for the six month period. Problems of this magnitude seriously restrict the ability of the island laboratories to provide adequate services in support of basic health programs.

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3.3. IMMUNIZATION ACTIVITIES

A major problem common to most countries in the Caribbean area is lack of adequate and proper storage facilities for vaccines being used in their immunization programs. Some vaccines have to be stored at +4°C to +8°C while others require temperatures of -10°C to -30°C, so that potency can be effectively preserved until required for administration. The high tropical temperature throughout the year in the Caribbean add to this problem as vaccines can be rendered impotent and ineffective if exposed to these high temperatures for too long.

One of the most essential requirements of an immunization program is an efficient cold chain. The cold chain is the storage and handling of vaccine to prevent spoilage from the time of leaving the manufacturer until it is administered to an individual to ensure it was kept at the optimum low temperature recommended by the manufacturer and free from direct sunlight during the entire period.

From observation it has been concluded that:-

(1) Sufficient refrigerators and freezers are not available in the programs; (2) the health service suffers from this shortage; (3) in some cases, those available are used to store hospital food and drugs as a first priority; (4) Vaccine is stored in what can be made available or sometimes even with food and drugs; (5) a number of refrigerators were recording higher than normal temperature. On closer observation and investigation most of them were over nine years old and could not maintain proper temperatures due to age and deterioration of seals and other components; (6) the Governments are aware of this situation but cannot afford to provide the requirements adequately from their limited health budgets; (7) replacements of deteriorated refrigerators and freezers are being made slowly, but not to meet the demands of the expanding immunization programs.

2. EQUIPMENT MAINTENANCE

The Caribbean area has often been referred to as an equipment "graveyard" where great quantities of broken, poorly maintained, or malfunctioning equipment lie unused. Due to the multiplicity of donors, governments, and equipment manufacturers no standardization of equipment exists resulting in an inability of any one government to maintain either a spare parts inventory or a qualified individual(s) capable of maintaining all of the types of laboratory equipment utilized in the central laboratory. Also a large percentage of equipment breakdown is due either to misuse or ignorance of required maintenance schedules.

Unfortunately, even if parts were available for the laboratory equipment, a dearth of trained personnel that could diagnose the problem or respond to it currently exists. No current inventory of existing equipment, its condition, and expected useful life or personnel available to operate or repair the equipment exists in the CMCs. Thus, the magnitude of the problem while known to be severe has never been clearly defined.

DATA PROCESSING/INFORMATION SYSTEM

2.5 Data on Communicable Diseases in the Caribbean

CAREC was originated in 1975 with the principal objective of surveillance of diseases (primarily communicable) in the English speaking countries of the Caribbean. From the information system perspective this consisted of (a) receiving data on the incidence of 40 communicable diseases from each of the nineteen countries each week; (b) detecting unusually high incidence suggestive of an epidemic; where found, (or when the country found it itself and contacted CAREC more immediately by cable or telephone) for a CAREC Epidemiologist to contact the country's Epidemiologist by telephone and determine both the action being taken by the country and assistance required of CAREC; (c) weekly reports to monitor the effectiveness of control programs and contacting the country when such measures appear to be failing to either control or eradicate the disease; (d) monthly reports to keep all relevant persons informed of the status of communicable diseases in the whole Caribbean by reports, tables and charts in the CAREC Surveillance Reports; (e) annually to prepare a Report reviewing the long term trends of communicable diseases in the Caribbean highlighting areas in which control has been unsuccessful and further measures needed to be taken.

Since 1975, these functions have been carried out using a manual system for transferring data, detecting unusually high incidence, and preparing reports monthly and annually.

Present Data Processing With Its Problems And Limitations

At present, incidence data on twenty diseases are transferred from countries' weekly reports to CAREC's record cards (all twenty-three

.... /countries

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countries of the Caribbean are now monitored as diseases are not uniquely generated only in the English-speaking Caribbean. An incomplete picture of the Caribbean is obtained if French and Spanish speaking countries are ignored). This manual system results in the limitation of the number of diseases monitored, as each disease necessitates the transfer (and checking) of the weekly incidence and the years' cumulative total for twenty-three countries for fifty-two weeks (i.e. $2 \times 23 \times 52 = 2392$ targets annually).

The manual system also, of necessity, results in errors in transcription from a country's report to a CAREC record card. While the cumulative total provides a check for errors, they can still, with human fallibility be missed by this method. Errors in the country's data are also looked for and, when detected, reported back to the country's epidemiological statistical officer for corrections. Again, with human fallibility, errors are sometimes missed at CAREC resulting in incorrect data being carried by both the country and CAREC until detected. The two possible errors mentioned may easily occur in the diseases not recorded at CAREC and hence create chronic misinformation. Similar difficulties on a larger scale are recognized in the preparation of monthly, quarterly and annual reports.

To elucidate diseases and to monitor epidemics of unusual incidence, graphic presentation are prepared and copies made for:

- (i) The CAREC epidemiologist to monitor the outbreak (and here to possibly use later as training material).
- (ii) The country's epidemiologist to monitor the outbreak.
- (iii) The country's surveillance statistical officer.
- (iv) The monthly CAREC Surveillance Report and hence distribute to relevant personnel.

Manually prepared graphical presentation of disease patterns and epidemics has the problems of: (a) being time-consuming especially if more than one original copy is required (e.g. for display or with color-neither allowing photo-copying (b) updating, requiring the whole graph to be re-drawn (c) requiring re-drawing on a small scale if published in the Surveillance Report.

..... Capability with
Computerization.

2.51 Capability With Computerization Of Information Function

2.511 Determination of Optimal Control Methods

At present use can be made of the data at CAREC for mathematical disease models only for very simple, and hence unrealistic models. This, therefore, prevents an important use of the data for many diseases of comparison of the effectiveness of different control methods and hence determination by cost/benefit analysis of an optimal control method. If an epidemic is beginning in a Caribbean country, an immediate answer is required which necessitates rapid access to a computer at CAREC.

2.512 Trend Analysis

At present, only limited analysis can be made on disease trends due to the difficulties in both retrieving and processing manually data of the proportions necessary for trend analysis. This can also be carried out only for diseases and countries for which trends are pointedly obvious. Detection of less obvious trends especially with the expected seasonal and "white noise" components of disease incidence data is impossible at present. This, therefore prevents long term prediction and its use in health sector planning.

2.513 Data on Immunization in the Caribbean

CAREC has become actively involved in the regional immunization program since 1976, when an immunization officer for the English-speaking Caribbean countries was appointed and stationed at CAREC. Thus CAREC has a responsibility both for monitoring and improving the coverage status of their populations (particularly children) in poliomyelitis, diphtheria, pertussis, tetanus, measles and tuberculosis.

Objectives of the information system to be provided under the grant are:

- (a) Monitoring the coverage being achieved in each of the nineteen countries for the six diseases above in children aged under 5 (five) years.
- (b) Assisting the PAHO Immunization Officer at CAREC to advise each country on ways of improving coverage to reach the objectives of 80%
- (c) Monitoring the vaccine stocks for these vaccines in the nineteen countries and advising on dates and amounts for re-ordering.

..../(d) Correcting

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- (d) Correcting the status of the immunization coverage for these six diseases with the reported incidence in all the twenty-four Caribbean countries measuring the effectiveness of the immunization program and determining the countries in which the program is not effective.

2.52 Processing of Survey Data

Several surveys are ongoing at CAREC to assist in determining ways of improving the health status of the populations of the Caribbean countries, with particular emphasis on children. These include:

2.521 Parasite and Poliomyelitis Sero-Surveys in School Children

As requested by the Caribbean Health Ministers Conference, CAREC carries out a survey in about three countries each year with the aim of determining: The proportion of the school children aged five to nine years protected against the three types of poliomyelitis (by a serum antibody test) the effectiveness of the country's immunization and parasite control programs.

Data from these surveys (8 variables x 300 children) is processed by hand to provide the simplest tables and proportions (with confidence intervals). This is a time-consuming process with abundant sources of potential errors. Further analysis of the data and two or three ways tabulations is extremely time-consuming and error prone and hence not carried out at present. Such data will be rapidly processed with the aid of, the grant provided computer.

2.522 Gastro-enteritis Surveys

At present surveys are being carried out in Trinidad, St. Vincent and Guyana to try to determine the factors associated with outbreaks of gastro-enteritis for each of the different known causative agents. This will result in a better understanding of the best ways to prevent the disease which is still one of the five principal causes of mortality in children in the Caribbean. The data consists of one to six observations of variables from a sample of the population. As the processing of this amount of data can only be done by computer, and regular processing is prevented by the lack of facilities and the projects budget, this results in not determining likely factors and hence monitoring more closely what are expected to be high risk participants until the end of the survey.

The introduction of a computer capability under the AID grant will allow more sophisticated manipulation of the gathered data and hence assist in determining major causes of gastro-enteritis.

...../Administration.

2.53 Administration

In addition to the data processing and information system use of the mini-computer, the inventory, payroll, project control and financial control areas will benefit from the introduction of computerization. The present situation involves costly and repetitious processing of data, restricted manpower and increasing demands for more sophisticated and timely reports for effective control of stocks, funds and project operations.

Some of the present limitations experienced in the above-mentioned areas are:

2.531 Inventory

The day-to-day routine of receiving, storing, distributing, re-ordering and inventorying does not currently allow sufficient time for the production of control reports with which to evaluate/rationalize stores to guarantee provision of essential items and to identify and replace expiry items. Further, optimization of the limited space through rationalization is becoming increasingly essential. Current reporting demands include regular monthly inventory statements, expiry date statements, essential items statements or status enquiry and review lists for items at re-order level.

2.532 Payroll

The current Payroll is manually prepared, normally requiring three processing days followed by one day for preparation of third-party lists regarding deductions made. In addition, there is the allocation and distribution of charges and posting of the Provident Fund contributions.

Besides the repetitious use of the same basic data in different formats there is a tight schedule necessary to meet the banking requirements for transfer of the salary deposit to individual staff accounts.

2.533 Financial

Currently, the financial operations at the Centre occupy more than 75% of the staff-time in this operation and involve substantial overtime during vacation and other periods of absence by any member of the Accounting Unit. Provision of management reports is minimal and, where produced, are sometimes too late for effective control of resources. Allocation and control of basic data must normally be repeated four, and in some cases five times, to complete the accounting cycle, with all the contingent possibilities for errors in translation that must be reconciled before finalization of the process.

.../The time element

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The time element for completion of an account process is particularly critical where Project Grants are concerned in order to provide prompt statements of expenditure to the Grantors. Delays are a continuing problem.

2.534 Projects

The recently introduced evaluation and review technique - (AMPES) demands a new system of record keeping for the projects of several countries in which CAREC participates. The time consuming preparation and updating of the records must currently be done by senior staff members thus reducing their availability in other vital areas.

2.6 Computer Utilization

The addition of three essential options to the proposed Mini-Computer (a Disk Drive for off-line storage, random access memory for bulk data storage and a line printer for the formatting of reports) could substantially reduce the work load of the Administration Unit through:

- (a) utilization of the available utility program package to provide inventory control reports;
- (b) modification of the available utility program to provide payroll preparation and financial distribution;
- (c) modification of the available PAHO programme for "AMPES" project preparation and evaluation statements and,
- (d) one-time data capture of the available inputs to the several repetitious operations within the financial controls of the Centre.

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E. O. 11652: N/A

SUBJ: CARIBBEAN EPIDEMIOLOGY CENTER

1. RDO/C IS CONSIDERING NEW REGIONAL PROJECT TO STRENGTHEN AND EXPAND THE CARIBBEAN EPIDEMIOLOGY CENTER (CAREC) AND REQUIRES ASSISTANCE FOR INITIAL ASSESSMENT AND PREPARATION OF PID.

ACTION
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INFO
2-7-8

2. CAREC IS A REGIONAL INSTITUTION WHICH WAS FORMED ON JANUARY 1, 1975 BY PAHO AT THE REQUEST OF THE MINISTERS RESPONSIBLE FOR HEALTH FOR THE ENGLISH SPEAKING CARIBBEAN ISLANDS AND PRESENTLY RECEIVES 50 PERCENT OF ITS BUDGETARY SUPPORT FROM MEMBER GOVERNMENTS AND 40 PERCENT FROM PAHO, COM, AND CDC. CAREC PROVIDES VITAL COMMON SERVICES IN THE AREAS OF DISEASE SURVEILLANCE, EPIDEMIOLOGY, IMMUNIZATION, LABORATORY BACK-UP SERVICES AND TRAINING THE ISLANDS' MEDICAL PERSONNEL IN EACH OF THESE AREAS. A CDC GRANT OF \$356,000 PROVIDED SUPPORT IN THE ABOVE MENTIONED AREA HOWEVER, THIS GRANT PHASES OUT IN DECEMBER, 1978.

POC
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PIA

3. CAREC HAS REQUESTED ASSISTANCE FROM AID TO CONTINUE AND EXPAND THOSE SERVICES THAT WERE INITIATED UNDER THE CDC GRANT. RDO/C, AFTER PRELIMINARY INVESTIGATION BELIEVES THAT THE PROPOSED REGIONAL EPIDEMIOLOGY PROGRAM OF CAREC FOR 17 ENGLISH SPEAKING STATES AND TERRITORIES OF THE CARIBBEAN IS CRITICAL AND WARRENTS PRIORITY AID CONSIDERATION FOR ASSISTANCE.

DI
POP
DSB
CMST

4. PID DEVELOPMENT REQUIRES EPIDEMIOLOGIST OR PUBLIC HEALTH ADVISOR WITH BACKGROUND AND EXPERIENCE IN DISEASE SURVEILLANCE, LABORATORY SERVICES, EPIDEMIOLOGY AND DEVELOPMENT OF TRAINING PROGRAMS IN THESE AREAS. WOULD BE HIGHLY DESIRABLE IF FAMILIAR WITH PID DEVELOPMENT AND AID PROCEDURES. REQUEST LAC ASSISTANCE IN IDENTIFYING INDIVIDUAL WHO WOULD MEET ABOVE REQUIREMENTS. SUGGEST YOU EXPLORE THE RASA AVENUE WITH OIH OR CONTACT CDC ATLANTA IF SUCH PERSON NOT AVAILABLE IN AID.

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5. SERVICES REQUIRED FOR APPROXIMATELY TWO WEEKS STARTING ON/ABOUT OCTOBER 2, 1978. IT WILL BE NECESSARY FOR INDIVIDUAL TO TRAVEL TO TRINIDAD AND OTHER ISLANDS WITHIN THE CARIBBEAN TO ASSESS CURRENT PROGRAM AND ADDITIONAL REQUIREMENTS. ADVISE.
ORT:2

CDC
HEW

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Training Officer

This person should ideally be an educator with administrative abilities who is equipped through formal education or experienced to:

- (a) Co-ordinate the logistical elements of holding training courses in the Caribbean.
- (b) Provide expertise on the educational methods to be employed in a specific course.
- (c) Provide the technical expertise on the design, assembly, production, and use of training materials.

A background in a health related field would be an advantage as well as familiarity and experience in the LDCs of the Caribbean.

Audio-visual Technician

This person has the technical expertise through formal training or experience to:-

- (a) Assist in the layout and design of high-quality audio-visual teaching aides.
- (b) Assist in the production of teaching exercises and manuals in appropriate quantities for course requirements.
- (c) Familiarity with the use of all audio-visual equipment on hand at the Centre.
- (d) Through on-the-job instruction assist health staff in simple display techniques.

Secretary

This person has the necessary secretarial and administrative skills to:

- (a) Provide back-up and support in the co-ordination of the logistical elements of the training program.
- (b) Provide secretarial services required for the production of training materials.
- (c) Provide direct support services to meetings and courses held at the Centre or in the territories.

EQUIPMENT SUPPLIES FOR THE AUDIO VISUAL TECH.

A drawing/drafting table (well lit)

A small table or taborer preferably with drawers or storage trays that will hold the drawing equipment within reach of the artist.

T-square - 36" made of either aluminium, stainless steel or a plastic edged laminated wood

Triangles - Plastic

1-12" 1-6" 30°-60°

1-8" 45°

Set of French Curves

1-18" Flexible Curve

Ruler - 18"

Bow Compass with pen attachment and adapter for Leroy Reservoir Pen

A water jar of some sort preferably with large mouth

Templates Small Ellipse (3/32" to 5/16")

Larger Ellipses (1/4" to 1-3/8")

Circles (2 to 30mm)

Windsor & Newton Permanent white (1 or 2 tubes)

Red Sable Brushes Nos. 1 & 3 (3 ea.)

India Ink (Cheaper by pint or quart)

A good Grade of Vellum pref "Vidalon"
(good for tracing and diazo overheads)

A good Grade of drawing paper
pref. Strathmore Bristol, 1 & 2 Ply, Kid finish

Knife X-Acto No. 1

Pack of 100 No. 11 Blades

Whetstone (Fine) for sharpening Blades

Pair of scissors

A selection of screens and/or lines put out by Chart Pak

Felt tip Markers - Regular Nib (Black & 3 or 4 other colors)

Can of 1-coat Rubber Cement

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Can of Rubber Cement Thinner
Glass Rubber Cement Dispenser
2-Rubber Cement Pick ups

OTHER EQUIPMENT

Camera Lucida (\$195.00 or more)
Photo Printer, Pickle Jar (Developer)
Diaz Film - Black, Yellow, Orange, Blue, Red, Reversal

Lercy Standard Reservoir Pens

½, 0, 1, 2, 3

Lercy Standard Replacement Points

½, 0, 1, 2, 3

PHOTOGRAPHY

A Larger Dark Room with a more Workable Sink

A 35 MM Single Lens Reflex Camera with a couple of screw-on
close-up attachments

A copy Board with Lights for use with the 35MM Camera (for taking colour
slides)

A viewer/ sorter for 2x2 slides (enough area to hold about 30 slides)

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ANNEX XIII

SAMPLE WORK PLANS

The following are samples of CAREC work plans for each CAREC Member country. The two presented as examples (St. Vincent and Jamaica) assist in differentiating CAREC activities between the MDC's and LDC's of the region.

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WORK PLAN JAMAICA
CAREC SURVEILLANCE UNIT

AREA	PLAN OF WORK 1978	OTHERS INVOLVED AT CAREC/PAINI	REMARKS	ACCOMPLISHMENTS 1978 STATUS 30 NOVEMBER
1. National Surveillance System	<p>1.1 Designated epidemiologist to participate in annual meeting of national epidemiologists 22-26 May at CAREC.</p> <p>1.2 Provide training for surveillance Statistical officer through participation in short sub-regional courses in February and October and follow up assistance.</p> <p>1.2.1 Assistance to College of Arts, Science and Technology Course for statistical medical record personnel 1 to 3 March.</p> <p>1.2.2 Training of Parish Statistical Clerks for 3 days 6-8 December.</p> <p>1.3 During 20-24 February provide training in Surveillance and epidemic investigation for 64 Public health nurses and inspectors taking one year qualifying courses at the West Indies School of Public Health (WISPH).</p> <p>1.3.1. Provide training at CAREC from 4 September to 6 October for 2 assistant epidemiologists</p> <p>1.3.2 Participate in 2-day workshop for Health Personnel 10-11 August</p>	<p>1.2.1. CR and Dr Paradis PAINI residency student</p> <p>1.3 Students from other countries are included in 64</p> <p>1.3.1. CR Country programme funds for fellowship</p>	<p>1.2.2 Subsequently Ministry of Health advised dates inconvenient.</p>	<p>1.1 Epidemiologist participated in meeting and presented reports on (1) Dengue (2) the establishment of a National Surveillance Unit.</p> <p>1.2 Visit by Statistician 16 April - 6 May to assist in training 13 statistical assistants at CAST and provide further in-service training to Surveillance Statistical Office.</p> <p>1.2.1 Assistance provided as scheduled by Dr Paradis following review by CAREC staff.</p> <p>1.3 Training provided as scheduled for 64 participants.</p> <p>1.3.1. One PHII attached to National Surveillance Unit and one PHII from St. Mary Parish trained as scheduled. In addition the M.O.H. from St. Mary Parish also participated.</p>

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1 WORK PLAN JAMAICA
CAREC SURVEILLANCE UNIT

AREA	PLAN OF WORK 1978	OTHERS INVOLVED AT CAREC/PAHO	REMARKS	ACCOMPLISHMENTS 1978 STATUS 30 NOVEMBER
	<p>1.4 DURING 20-24 February provide training in Surveillance and epidemic investigation for 1.4.1. DPH Students 1.4.2. Dip.Com. II. Students attending the University of West Indies, Mona, Jamaica Campus.</p> <p>1.4.1 Provide orientation for UWI lecturer in Surveillance/Epidemic Investigation activities including training at CAREC July 3-7.</p> <p>1.5 Provide continuing assistance with the development of an effective surveillance system at primary and national health care levels including the production of simple manuals on control for primary health care workshops.</p> <p>1.5.1. Develop in conjunction with epidemiologist and physician's manual and print and bind copies for national distribution.</p> <p>1.6 Provide reference material for designated epidemiologist and staff including:-</p> <p>1.6.1 70 copies Food Borne Illness Investigation</p> <p>1.6.2 10 copies Control of Communicable Diseases in Man</p> <p>1.6.3 Single copies materials on Hospital Infection Control, disaster preparedness and vector control.</p> <p>1.6.4 Single copy Guide to Hygiene and Sanitation in Aviation.</p> <p>1.7 Provide addressing equipment to facilitate rapid distribution of epidemiological report.</p>	<p>1.4 Department of Social and Preventive medicine UWI</p> <p>1.4.1 CR country programme funds</p> <p>1.5 JAM 4300</p>	<p>1.4 Students participate from all countries serviced by CAREC</p>	<p>1.4 Training provided as scheduled for DPH and Dip. Com. II Students.</p> <p>1.4.1 Provided as scheduled</p> <p>1.5 At visit in April, Statistician assisted Epidemiologist in design of new notifiable disease reporting system. Utilisation of PHN and PHN reviewed October 24 and 26.</p> <p>1.5.1 Reviewed and postponed to 1979.</p> <p>1.6.1 Delivered) April)</p> <p>1.6.2 1978))</p> <p>1.6.3 Provided 22 May.</p> <p>1.6.4 Provided October 26 to epidemiologist.</p> <p>1.7. Equipment selected and application made to CARICOM for funding from CDC Grant.</p>

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WORK PLAN JAMAICA
CAREC SURVEILLANCE UNIT

AREA	PLAN OF WORK 1978	OTHERS INVOLVED AT CAREC/PAHO	REMARKS	ACCOMPLISHMENTS 1978 STATUS 30 NOVEMBER
2. Sexually Transmittal Disease	2.1 Assist with identification of the extent of the problem, institution of effective and timely treatment and case finding; community education and training of health workers particularly at primary health care level in case detection, follow up and treatment techniques. 2.1.1 Provide 2x2 projector for community and staff education programme	2.1 Jam. 4300 2.1.1 CDC Grant		2.1.1 Agreed as projectors provided from other funds to change request for addressing equipment (see 1.7).
3. Leprosy	3.1 Participation of specialist physician in a meeting of experts to be held at CAREC 6-9 March. The purpose of the meeting is to standardise diagnostic and treatment criteria and to explore the feasibility of shared consultant services with other countries.	3.1 DC and Regional adviser in leprosy	3.1 Specialist physician unable to participate because of clinical commitments	
4. Epidemic Investigation	4.1 Provide assistance as requested by designated epidemiologist. 4.1 Dengue 4.2 <u>Gastroenteritis</u> 4.2.1. Train Technician through attachment to CAREC in CIEP techniques for rotaviruses 4.3 Typhoid outbreak Kingston 4.4 Typhoid outbreak, Niagara, St James. (See next page)*	4.1 CAREC Laboratory Section AMRO 0710 JAM 0700 4.2.1 CAREC Laboratory Section		4.2.1 10-day training provided April for technician utilising CAREC fellowship funds. 4.3 Reviewed investigation October 24 and 26. Agreed establish typhoid Register System and use CAREC investigation forms. CAREC provided 500 forms and 1500 Register Cards.

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WORK PLAN
CAREC SURVEILLANCE UNIT - ST. VINCENT

AREA	PLAN OF WORK 1978	OTHERS INVOLVED AT CAREC/PAHQ	REMARKS	ACCOMPLISHMENTS 1978 STATUS 30 NOVEMBER
1. NATIONAL SURVEILLANCE SYSTEM	<p>1.1 Designated epidemiologist to participate in annual meeting of epidemiologists at CAREC 22-26 May.</p> <p>1.2 Provide 5 weeks training at CAREC for a deputy epidemiologist 4 September to 6 October.</p> <p>1.3 Provide training for Surveillance Statistical Officer at sub-regional course in October and follow-up previous course (November 1977)</p>		<p>1.1 Designated epidemiologist to make presentation on poliomyelitis investigation and control 1977.</p> <p>1.2 Health Ministry did not submit candidate. Postponed to 1979 course.</p> <p>1.3 October 1978 course postponed to April 1979 due to lack of funds.</p>	<p>1.1 Epidemiologist participated in meeting and presented a report on poliomyelitis case.</p> <p>1.3 Visit by CAREC statistician 23 - 25 January Reviewed action taken after Miss Bonadie had returned from the November Workshop and gave further advice on improvements to communicable disease and hospital morbidity information systems.</p>

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WORK PLAN
CAREC SURVEILLANCE UNIT - ST. VINCENT

AREA	PLAN OF WORK 1978	OTHERS INVOLVED AT CAREC/FAHO	REMARKS	ACCOMPLISHMENTS 1978 STATUS 30 NOVEMBER
1. NATIONAL SURVEILLANCE SYSTEM	<p>1.4 - Conduct 2-day Workshop in surveillance and epidemic investigation for public health inspectors and nurses.</p> <p>1.5 Participate in "MAURICE PATE" type seminar to review family health and population dynamics programme. - 4 - 6 April</p> <p>1.6 Provide reference material for designated epidemiologist and staff including:</p>	<p>Technical Officer AMRO 0170 CFHI Family Health</p>	<p>1.4 Not undertaken as local arrangements not finalized.</p>	<p>1.5 25 nurses, public health inspectors, health educators, nutritionists, physicians, and senior administrators including the Permanent Secretary participated. Technical officer AMRO 0170 participated from CAREC.</p> <p>2.6 Provided 22 May material on disaster preparedness, vector control and hospital infection.</p>
2. SERO-EPIDEMIOLOGY AND PARASITE SURVEY	<p>2.1 Conduct a sero-epidemiology survey for polio antibodies on a sample of 5 and 9 years old school children together with stool examination for parasites.</p>	<p>2.1 CAREC Laboratory Section.</p>	<p>2.1 Owing to delays in completing mass polio programme was planned for May. See also EPI (AMRO 0170). Proposed to sample 1, 6 and 9 year old children to give better assessment of effectiveness of mass immunisation.</p>	

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WORK PLAN
CAREC SURVEILLANCE UNIT - 81 -
 - ST. VINCENT

AREA	PLAN OF WORK 1978	OTHERS INVOLVED AT CAREC/PAHO	REMARKS	ACCOMPLISHMENTS 1978 STATUS 30 NOVEMBER
3. GASTROENTERITIS STUDY	3.1 Conduct a Study of the aetiology of gastro-enteritis in young children.	3.1 Main input CAREC Laboratory (B. Hull)	3.1 One more visit needed early 1979 to complete the study.	3.1 At visit in January, Statistician obtained approval from CMO and made contact with hospital paediatrician. Study in progress since May. Three study visits of three weeks each have been undertaken.
4. EPIDEMIC INVESTIGATION	4.1 Provide assistance as requested by designated epidemiologist. 4.1.1 Investigation of Suspect Pertussis outbreak 8 cases reported between week ending 27 May through 10 June compared with 2 cases previously reported since 1 January 1978. Only 3 cases were reported for the whole of 1977.	4.1.1 CR CAREC Laboratory Section	4.1.1 Poor coverage with DPT	4.1.1 Field assistance provided 21-25 June in investigation of cases including follow-up laboratory examination at CAREC. Outbreak of respiratory tract illness confirmed, but laboratory diagnosis could not be established definitively.

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ANNEX XIV

NEGOTIATION AGREEMENT
NON-PROFIT INSTITUTIONS

INSTITUTION: Pan American Health Organization
525 Twenty-Third St., NW
Washington, DC 20037

Date September 25, 1978
FILING REF.: This replaces
Negotiation Agreement
dated November 15, 1977

The indirect cost rate(s) contained herein is for use on grants and contracts with the Department of Health, Education and Welfare subject to the conditions contained in Section II.

SECTION I: RATES - TYPE: Final; Fixed; Predetermined (Pred); Provisional (Prov)

Type	Effective Period		Rate	Locations	Applicable To
	From	To			
Final	1/1/76	12/31/76	31.0%	All	All Programs
Final	1/1/77	12/31/77	31.5%(a)	All	All Programs
Prov	1/1/78	Until Amended	<u>31.5%(a)</u>	All	All Programs

(a) See Special Remarks 1.

*Base: Total direct costs less equipment and alterations and renovations.

Fringe Benefit Rate:

Prov	1/1/76	12/31/76	6.0%	All	All Programs
Prov	1/1/77	12/31/77	6.0%	All	All Programs
Prov	1/1/78	Until Amended	<u>6.0%</u>	All	All Programs

*Base: Salaries and wages.

Treatment of fringe benefits: Vacation, holiday, sick leave pay, and other paid absences are included in salaries and wages and are charged to grants and contracts as part of the normal charge for salaries and wages. Separate charges for the costs of these absences are not made. The following fringe benefits are specifically identified to each employee and are charged individually as direct costs: Health insurance, life insurance, disability insurance, pension costs, recruitment, travel and installation, Home leave Travel, assignment allowance, post adjustment non-resident allowance, dependent allowance, education grant and language allowance. The following fringe benefits are included in the fringe benefit rate: Termination and repatriation entitlements.

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SECTION II: General

A. LIMITATIONS: Use of the rate(s) contained in this agreement is subject to any statutory or administrative limitations and is applicable to a given grant or contract and the availability of funds. Acceptance of the rate(s) agreed to herein is predicated on the conditions: (1) that no costs other than those incurred by the grantee/contractor were included in its indirect cost pool as finally accepted and that such costs are legal obligations of the grantee/contractor and allowable under the governing cost principles, (2) that the same costs that have been treated as indirect costs are not claimed as direct costs, (3) that similar types of costs have been accorded consistent accounting treatment, and (4) that the information provided by the grantee/contractor which was used as a basis for acceptance of the rate(s) agreed to herein is not subsequently found to be materially incomplete or inaccurate.

B. ACCOUNTING CHANGES: If a fixed or predetermined rate(s) is contained in this agreement, it is based on the accounting system in effect at the time the agreement was negotiated. Changes to the method of accounting for costs which affect the amount of reimbursement resulting from the use of this rate(s) require the prior approval of the office responsible for negotiating the rate(s) on behalf of HEW. Such changes include but are not limited to changes in the charging of a particular type of cost from indirect to direct. Failure to obtain such approval may result in subsequent cost disallowances.

C. FIXED RATES: If a fixed rate is contained in this agreement, it is based on an estimate of the costs which will be incurred during the period for which the rate applies. When the actual costs for such period have been determined, an adjustment will be made in a subsequent negotiation to compensate for the difference between the costs used to establish the fixed rate and actual costs

D. NOTIFICATION TO OTHER FEDERAL AGENCIES: Copies of this document may be provided to other Federal agencies as a means of notifying them of the agreement contained herein.

E. SPECIAL REMARKS:

- (1) Reimbursement of space costs is determined on the basis of the cost of ownership to the awardee and not rental payments.
- (2) Final adjustment of the 6% fringe benefit rate will be negotiated in fiscal year ending December 1979 with expiration of NIH Contract Number 1-HD-5-0640.

By the Institution

_____ /s/

Name

Title

Date

By the Department of Health, Education, and Welfare

Owen M. Galahor /s/

Owen M. Galahor

Name Director,

Division of Cost Allocation

Title

September 25, 1978

Date

Negotiated by John McCarthy

Telephone (215) 596-5425



ANNEX XVI

PAN AMERICAN HEALTH ORGANIZATION
 Pan American Sanitary Bureau..Regional Office of the
 WORLD HEALTH ORGANIZATION

525 TWENTY-THIRD STREET, N.W., WASHINGTON, D.C. 20037, U.S.A.

CABLE ADDRESS: OFSANPAN

REPLY REFER TO: AM/138-79

TELEPHONE 223-4700

28 March 1979

Mr. William A. Sigler
 Deputy Director
 Office of Development Resources
 Bureau for Latin America and
 the Caribbean
 Agency for International Development
 Washington, D. C. 20523

Dear Mr. Sigler:

With reference to your letter of March 16, 1979 and Mr. Laskin's letter of March 23, 1979, we have carefully reviewed the program support costs for the AID project in CAREC.

Based upon the cited total direct costs of \$959,803, the total program support costs utilizing the 31.5% rate would be \$302,337. We do not now consider it feasible to isolate out any elements such as per diem and travel costs in determining the appropriate program support costs. However, as stated in our letter of 5 February 1979, and considering our further discussion on the matter, we do consider it appropriate that PAHO share some of the project support costs involved as a contribution by PAHO to the project. Therefore, we will be willing to waive a portion of the total program support costs through the application of a 20% rate against total direct costs of the project. This waiver will result in a sharing of the program support costs of \$302,337, with \$191,961 provided by AID and \$110,731 absorbed within PAHO resources.

I hope that the above is acceptable to your office and that the project can now be formalized.

Sincerely yours,

William E. Muldoon
 Chief of Administration

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