

PD-ABJ-393

ISN 67421

PROJECT EVALUATION REPORT

PROVISION OF HEALTH AND DENTAL SERVICES FOR GRENADA

A Project

of

The People to People Health Foundation

(Project HOPE)

Cooperative Agreement No. LAC-0000-A-00-4008-00

December 3-20, 1984

M. Alfred Haynes, M.D., FACPM
Dean, Charles R. Drew Postgraduate
Medical School
Los Angeles, California

Patrick B. Dougherty, M.R.P.
Management Development Director
The MEDEX Group
Honolulu, Hawaii

TABLE OF CONTENTS

	<u>Page</u>
ACKNOWLEDGEMENTS	i
SUMMARY	1
I. Evaluation Methodology	2
II. External Factors	4
III. Achievement of Project's Purposes	5
IV. Project Inputs and Outputs	7
A. Medical and Dental Services	7
B. Laboratory Services	15
C. Technical Support Services	18
Materials Management	18
Environmental Health	20
Medical Equipment Maintenance and Repair	22
Health Planning	24
D. Administrative Support Services	26
V. New Goal and Objectives	28
VI. Beneficiaries	36
VII. Unplanned Effects of the Project	37
VIII. Lessons Learned	39
IX. Appendices	
1. Evaluation Scope of Work	42
2. List of Persons Interviewed	44
3. List of Documents Reviewed	47
4. Project Financial Data	49
5. Summary of Personnel Provided by Project HOPE	50
6. Comparison of Project HOPE and Cuban Staffing Levels in Grenada	52
7. Health Data Base, Grenada 1984	53
8. Cooperative Agreement Between USAID and Project HOPE	75
9. HOPE/Grenada Program Staffing, January 6, 1984 - November 30, 1984	85

ACKNOWLEDGEMENTS

The evaluation team acknowledges the full cooperation and assistance received from Project HOPE, USAID, and the Grenadian Ministry of Health in carrying out this assignment.

We wish to express special thanks to Dr. William Walsh, President of Project HOPE, and Ms. Paula Feeney, USAID Health Officer, Latin America, for the thorough background briefings provided in Washington. We also thank Dr. Harold Royaltey of HOPE Headquarters for making a special trip to Grenada to provide us with information for this evaluation. We also wish to express our appreciation to everyone in Grenada who took the time to speak with us, especially Dr. John Wilhelm, Project HOPE Program Director, and Leticia Diaz, USAID General Development Officer, who shared their insights and went out of their way to show us Caribbean hospitality.

SUMMARY

Under a Cooperative Agreement with USAID, Project HOPE responded promptly to provide immediate health care services and technical support to the people of Grenada.

Specialists recruited under this Project were largely volunteers, and physicians stayed an average of two (2) months. They performed well and Project HOPE successfully fulfilled the terms of the agreement. But the Grenadian physicians were not quite satisfied, due largely to the rapid turnover of American physicians and to Project HOPE's emphasis on training, when Grenadian specialists were most concerned about service.

Progress in the technical support areas was highly satisfactory and much appreciated by the Ministry of Health. These activities are deserving of continued support from USAID in 1985.

Based on the experiences of this Project of 1984, the team recommends four new objectives aimed at assisting Grenada in achieving self-reliance in the development of an affordable health care system:

1. To promote self-reliance in health manpower development
2. To promote development of appropriate and affordable health services
3. To promote assistance in areas of health related to economic development, e.g., environmental sanitation
4. To make the best use of obligated and unexpended funds under the present Cooperative Agreement.

A strategy for achieving these objectives would emphasize affiliation with the University of the West Indies, health planning and financing based on an improved information system, and environmental sanitation.

I. EVALUATION METHODOLOGY

This evaluation was conducted pursuant to the terms of the Cooperative Agreement between USAID and Project HOPE. This Agreement stipulated that an evaluation would be undertaken in the 10th month of the Project to determine progress and achievements.

The evaluation began on December 3 with briefings in Washington, D.C. from the AID/Washington Office.

The following day Project HOPE headquarters staff at Millwood, Virginia provided their own background briefing on the Project. In addition, Dr. Royaltey was sent to Grenada to facilitate the evaluation process there. In Grenada the team was briefed by Leticia Diaz, the General Development Officer of the USAID Mission, and later by Dr. John Wilhelm, the Program Director for Project HOPE.

The process of evaluation consisted largely of interviews with Ministry of Health staff, Project HOPE staff and a number of unidentified residents. These interviews were conducted by the team, sometimes individually and sometimes jointly, and mostly without either AID or Project HOPE staff being present. The Interviews sought to determine what types of activities were performed, the quantity of work done, the quality of the performance, its cost effectiveness and the extent to which both staff and recipients of service were satisfied.

The process also included extensive review of Project HOPE documents, the regular reports prepared by HOPE staff, several ad hoc reports, clinic and hospital records, relevant documents from the Ministry of Health and from USAID (Washington and Grenada). A list of persons interviewed and documents reviewed is given in Appendix 2 and Appendix 3. The evaluation team visited and made rounds in all three hospitals, visited a number of medical and dental clinics, and had an opportunity to observe work in progress and to talk with patients.

Before leaving on December 21, the substance of the findings and recommendations were discussed with the USAID Representative for Grenada, the Permanent Secretary, the Chief Medical Officer and the newly-appointed Minister of Health. A copy of this draft evaluation document was discussed with and presented to the USAID General Development Officer and the Program Director for Project HOPE.

II. EXTERNAL FACTORS

The Project began in the wake of the U.S. intervention in Grenada. The priority in January 1984 was to provide immediate medical services for the people of Grenada by filling the vacuum left by the departure of Cuban and Eastern Block health personnel. Consequently, the emphasis of the Project was on services, with training and health infrastructure development receiving less attention.

The situation in Grenada is much more settled today than it was in January 1984. Consequently, the objectives in the Cooperative Agreement, while valid a year ago, ought to be revised for 1985. Basically, the Project needs to change its emphasis from providing services to more long-term health development. See Section V for a discussion of the proposed new objectives for the Project.

III. ACHIEVEMENT OF PROJECT'S PURPOSES

The primary purpose of this Project was to provide medical and dental services for the people of Grenada and to stabilize the health service delivery system which had been disrupted by the U.S. intervention. Furthermore, this assistance was to be provided in collaboration with the Ministry of Health of the Government of Grenada. These purposes have been well achieved.

Urgently needed medical services have been provided at St. George's Hospital (245 beds). Some inpatient, as well as ambulatory care, has been provided at Princess Alice (60 beds) and at Princess Royal (25 beds) Hospitals. The major specialists were assigned primarily to St. George's Hospital with rotation to the districts for purpose of consultation clinics. Family practice specialists have been assigned to the smaller hospitals, with the result that the capacity of these hospitals to provide care has been upgraded.

Medical and dental support has been provided for the 6 health centers and 26 medical stations in a systematic fashion with strong emphasis on pediatrics and family medicine. Dental personnel have made a significant impact at these centers and have had the greatest number of patient contacts of all the HOPE practitioners.

One of the most dramatic improvements has been in the area of laboratory services at St. George's Hospital. Upgrading of these services has influenced patient care in all departments and improved the quantity and quality of medical services through the health system.

Despite the improvements resulting from the infusion of American health manpower, there was a still deficiency in the system due to a failure to transport seriously ill patients who could not be treated on the island because of a lack of facilities such as radiotherapy. This had been done by the Cubans prior to the intervention, and though it was not specifically a part of the Agreement, it tended to reflect unfavorably on U.S. participation.

Technical support in the areas of materials management, environmental health, and biomedical equipment maintenance and repair contributed greatly to strengthening the health service delivery system, and thereby contributed to the achievement of the project's purpose. Project HOPE technicians have worked with counterparts to analyze problems and implement solutions. Unlike the clinical area, which was heavily service oriented, training was a significant part of the various technical support programs. HOPE technicians provided on-the-job and formal training in their respective areas, and were responsible for preparing a total of eight Grenadians who departed during the year for certificate courses in Jamaica and Barbados.

Assisting in the development of a national health plan was part of the original purpose, but only three person-months of health planning expertise were included in the Agreement. The time was well spent in improving the organization of the existing National Health Plan and by assessing the need for an improved information system. However, the timing for further plan development was not appropriate due to the interim nature of the Government. With the elections now completed and a permanent government installed, the time is ripe for further plan development consistent with overall government policies and objectives.

The joint USAID/HOPE decision to substitute an orthopedic surgeon for a general surgeon did not constitute a change from the original Project purpose. The Agreement required the Project to be carried out in cooperation with the Ministry of Health, and this condition was scrupulously adhered to. By working in close cooperation with the Ministry of Health, the Program Director earned the respect and confidence of the Ministry in a way which apparently had not characterized the Cuban relationship.

Progress made to date has been satisfactory to the point that it is now appropriate to give serious consideration to the transition from the immediate and short-term needs of health personnel to a long-term strategy for improving health in Grenada.

IV. PROJECT INPUTS AND OUTPUTS

A. Medical and Dental Service Inputs:

Under the terms of the Agreement, Project HOPE was expected to provide 144 person-months of medical and dental services. The mix of services was specified as follows:

Family practice physicians	24 P/M
Pediatricians	24 P/M
Internist	12 P/M
General surgeons	24 P/M
Obstetrician/Gynecologists	12 P/M
Anesthesiologists	12 P/M
Dentists	24 P/M
Pathologists	12 P/M

Note: P/M means person months

These personnel were to be recruited on a volunteer basis for minimum assignments of three months. Soon after the Project began, it became clear that there was a serious need for an orthopedic surgeon. There had been one orthopedic surgeon (Cuban) prior to the intervention, and immediately after the intervention the U.S. military provided orthopedic and thoracic surgery coverage. U.S. surgeons tend to be highly specialized and are uncomfortable attempting work which would ordinarily be done by subspecialists such as orthopedic surgeons or urologists. In response to the need, Project HOPE was authorized to substitute one orthopedic surgeon for a general surgeon. As a result of this, the mix of services provided were considered more appropriate than would otherwise have been the case.

By the end of November, 1984, Project HOPE had provided 97.5 P/M of the total 144 required, and it was anticipated that by the end of February 1985, 128.5 P/M would have been provided, making a shortfall of 15.5 person months. The deficits were largely in Family Medicine

and Surgery. (The Orthopedic Surgeon did not arrive until October 1984 due to negotiations between HOPE and USAID.) Overall this represents a phenomenal response to the emergency on the part of Project HOPE, and there are few if any organisations in the U.S. which could have responded as quickly and as well as Project HOPE.

In situations such as this, one would assess quality on the basis of training and experience, and on actual performance based on peer review. The physicians selected by Project HOPE were well trained (see Appendix 9) and tended to be near the beginning or end of their careers. The relationship between the American and Grenadian physicians was such that they did not participate in peer review of a formal nature.

The rapid turnover of specialists was the only consistent complaint about the physicians. The Agreement anticipated a minimum of three months per person, and most physicians served an average two months. It was perhaps unrealistic to expect that physician volunteers could be recruited for three month periods. The turnover created more problems for Grenadians than Project HOPE recognized. The Grenadians frequently complained of having to spend time orienting Americans to the Grenadian scene, and by the time the Americans were able to adapt and be fully useful, they had to leave. It is true that some volunteers did return for a second tour, but one never got the impression that Project HOPE staff fully realized how concerned the Grenadians were about this problem of rapid turnover.

The American physicians recruited by Project HOPE demonstrated an adaptability very far above the average. Senior physicians who came with the understanding that they would help to train Grenadian physicians quickly realized that they were not wanted for training but merely to provide service, and with a humility not generally characteristic of physicians, they quickly adapted to doing routine chores which they had long forgotten, or perhaps had never done. It is to the credit of Project HOPE and of the United States that they did their tasks without complaining and some even returned for a .

9

second tour of duty. Some Grenadians have expressed a feeling that the older physicians adapted more quickly than the younger ones.

This adaptability was necessary not only in the hospital setting, but also in the clinics, in housing, in transport, in communications and in almost every aspect of living. Because Grenadians are such affable people, it was perhaps easier to adapt than it would otherwise have been.

Medical and Dental Services Outputs:

Because of the peculiarities of each speciality, it will be necessary to discuss several of the areas individually, but there were certain activities which are common to all the medical services. In general, the Project HOPE physicians were involved in the following:

- In-patient rounds
- Work up of new patients
- Review of charts
- X-ray review
- On call
- Service at outlying hospitals (Princess Alice and Princess Royal)
- Training
- Consultations (Hospital and Clinic)

In the case of the surgical specialities, there were emergency and elective operations with follow-up.

This represents a wide range of services provided by Project HOPE. Daily, systematic hospital rounds are part of an American tradition of good inpatient care. It is at this point that good teaching and good patient care are routinely combined in an academic setting. Project HOPE physicians made regular daily rounds, and were often disappointed that their Grenadian counterparts did not always make rounds in the same way. The extent to which the physicians made rounds together

might have been a sensitive index of the extent to which there was acceptance and general cooperation.

The average work load of American physicians was difficult to compute because, for one reason, the scheduling changed from time to time as part of the adaptation to the Grenadian setting. For example, at one point, the two anesthesiologists (American and Grenadian) worked together at St. George's Hospital. Later, they decided to alternate 24 hours on and 24 hours off.

Project HOPE physicians prepared regular reports, but their reports did not consistently have quantitative data. Clinic data were maintained and processed at HOPE headquarters in Millwood and were not immediately available in Grenada. These data indicate that by mid-November HOPE physicians and dentists made over 15,000 patient contacts in clinics, and about half of these were made by dentists. HOPE surgeons did about 60% of all surgery done in Grenada, and there were about 80 operations a month prior to the arrival of the orthopedic surgeon. The patient load was not always as heavy as one would have in the United States, but in some cases the workload would have been unbearable for one person, and therefore a relief physician was needed. This situation occurred at all three hospitals, and was sometimes a primary justification for the presence of an American physician.

The quality of the work done was not documented by usual American standards of quality assurance based on peer review. The eagerness to teach on the part of Project HOPE staff might have had an intimidating effect on Grenadians and might have contributed to their unwillingness to learn. There is a lot of circumstantial evidence to suggest that despite a lack of formal peer review, each group learned from the other, but neither group was anxious to admit it. Furthermore, patient care was often not sufficiently well documented by physicians to serve as a basis for quality review.

Although there was general satisfaction with the services provided by American physicians, Grenadian doctors and nurses tended to be surprised at the extent to which American specialists limited their practice. General surgeons from America were reluctant to undertake orthopedic surgery or urology because of the circumstances under which they had to operate. Some of these perceived differences were due to differences in training between the Grenadian and American physicians.

Both nurses and patients gave enthusiastic reports about the American physicians once they got accustomed to them. Nurses came to feel more a part of the treatment team, but had difficulties in adjusting to the continuous turnover of American staff.

Specific comments are required about certain departments. Obstetrics and Gynecology in Grenada is controlled by the sole Obstetrician on the island. He believes in natural family planning only, prides himself on what American physicians would consider a dangerously low Caesarean-Section rate, and believes that childbirth should occur at or near home rather than in the hospital. Generally speaking, his views, which he justifies on the basis of promoting self reliance and preserving the Grenadian culture, are inconsistent with those of Obstetricians trained in the United States.

Hospital midwives were instructed to check with this Grenadian obstetrician before implementing practices advanced by American physicians. Considering the transiency of the assignment, it is questionable if American Obstetricians should be assigned under the present circumstances. It is clear that this obstetrician does not really welcome anyone who will "rock the boat." It poses an interesting ethical dilemma which can only be resolved by the Ministry of Health.

The Chairman of the Department of Internal Medicine claims that the department is self-sufficient. He is quite dedicated to his work and sees no need for Project HOPE physicians in Internal Medicine, and considers it a waste to send internists to the district clinics (a

point of view not shared by the Chief Medical Officer). But the Chairman was most appreciative of the pathologist who makes rounds with internists on the medical service. Furthermore, Internal Medicine, which is responsible for the Casualty Service (Emergency Service), often depends on the American physicians because Grenadian physicians on call are not available.

Surgery is a special problem because of a lack of clarity about leadership. The senior physician is part time and on the faculty of the private offshore St. George's Medical School. The junior physician is full time and a product of the University of the West Indies. Project HOPE physicians often are left in the middle of an unpleasant situation because the responsibilities of the senior and junior surgeon are not clearly defined. This ambiguity can be remedied only by the Ministry of Health.

The pathologist is the one physician who has had the greatest positive impact on the hospital. He has been on duty continuously for nine months. Specimens which formerly had to be sent overseas are now processed in Grenada, and this has had a significant impact on the quantity and quality of patient care at the hospital. His contribution is highly regarded across departmental lines.

The Chief of the Pediatric Department has expressed a wish to have registrars (residents in training) rather than American consultants. He thinks Americans are simply imitating the Cubans in sending Pediatricians to the districts, and is sure the practice will not be continued after HOPE departs.

The physicians have extended their services throughout Grenada and Carriacou by the work of the Family Practitioners, and the consultation clinics of the other specialists. These specialists consult with and assist the District Medical Officers in the care of patients at the two outlying hospitals. They assist Family Nurse Practitioners, who are reported to do a superb job, by contributing to their continuing in-service education. But sending specialists to the

districts is a debatable issue. The practice is good and useful on a short-term basis, but it is doubtful if it will be continued on a long-term basis by Grenadians. For the long term, the Family Nurse Practitioners appears to be the best hope for good services at district clinics and health stations.

Following a dental survey early in the Project, dentists have been engaged in four types of activities:

- Extractions
- Restorations
- Fluoride treatment program
- School dental health education

Most of the dentists' time and effort is directed towards extractions. The two HOPE dentists perform 500 extractions a week on adults. This is an outstanding record, but one patient claimed that the Cuban dentists were faster than the Americans! (Dental nurses employed by the Ministry of Health do the extractions for children.) Extractions on adults average 1.7 per patient visit, and the dentists make more patient contacts than physicians. There is little work done on restorations at present, largely because of inadequate equipment. A fluoride treatment program initiated by Project HOPE in 1979 has been revitalized.

The dental work is no doubt greatly appreciated by patients, although one may question whether doing extractions is the best use of professional time. Dental services are provided both in Grenada and Carriacou. A Grenadian dentist is expected to arrive as Dental Health Officer in the Ministry of Health soon.

In general, Project HOPE physicians and dentists have been making a significant contribution to health services in Grenada which goes further than filling the gap left by the departure of Cuban physicians. The range of activities provided by Project HOPE staff is more extensive and their work more thorough. While American

physicians always act within the framework of the Ministry of Health, Cuban physicians seemed to have acted independently. (See Appendix 6 for Comparison of HOPE and Cuban staffing levels.)

One area appears not to have been satisfactorily met by the USAID/HOPE Project: Overseas transfer of patients who may need treatment not available in Grenada is no longer what it was in the past. American physicians have been criticized for this, even though it was not their fault. It has been a matter of personal distress to some HOPE physicians that this need for overseas care could not be met.

The American physicians have worked hard as can be demonstrated from the records of clinic patient loads, pre and post-intervention.

Hospital surgery could be increased were it not for the limitation of one functioning operating room caused by nursing shortages and equipment problems. Patients are pleased with the Americans because they can communicate more easily with English speaking doctors. Perhaps the greatest thrill for HOPE personnel comes when Grenadian patients thank Americans for coming to their rescue.

B. Laboratory Service Inputs:

Project HOPE provided: Medical Technologists 23.5 P/M
 35 mm slide projector
 Overhead projector
 Reference books and texts
 Lab equipment for Princess Alice
 and Princess Royal Hospitals

USAID provided: Laboratory equipment and reagents

Ministry provided: Chief technologist (1)
 Laboratory technicians (4)
 Laboratory trainees (9)
 Laboratory equipment and supplies

Part of the USAID funds originally budgeted for lab equipment and supplies were used to purchase other equipment (primarily two modern x-ray machines). Project HOPE made up some of the deficiency by purchasing lab equipment and supplies for Princess Alice and Princess Royal Hospitals. However, this lab equipment will not arrive in Grenada until early 1985, by which time the two HOPE medical technologists will have returned to the U.S. Had this equipment been available earlier, the technologists would have been available to assist in setting up the labs at Princess Alice and Princess Royal Hospitals. Also, the failure of USAID to provide lab supplies to St. George's Hospital resulted in shortages that disrupted some lab services and reflected badly on the Project.

Laboratory Services Outputs:

Revitalized Laboratory at St. George's Hospital
 New Laboratories at Princess Alice and Princess Royal
 Cytology Services
 Hematology Services
 Histopathology Services

Curriculum and Syllabus for Formal Hematology and
Cytology In-Service Training (6-month courses)
Procedures Manual for Hematology
Pap Smear Protocols
Training in Hematology, Cytology, and Processing
Surgical Specimens
Modernization of Blood Bank
Establishment at a Laboratory Library
Three Grenadians Trained to Enter the Certificate Lab
Technician Course in Barbados (departed in September 1984)

Prior to the Project, there were limited cytology or histopathology services, and surgical specimens had to be sent to the regional laboratory in Dominica. The pathologist established histopathology services; 100% of tissue removed at St. George's Hospital is examined; 51 autopsies have been done to date. One HOPE medical technologist established a pap smear program and the number of pap smears went from 0 in February 1984 to 75 in April 1984. Total pap smears screened are over 700. The second HOPE medical technologist supported the hematology department, modernized the Blood Bank, and worked after hours to develop a six-month in-service training course in hematology.

While providing laboratory services, the pathologist and the technologists carried out extensive training programs (both on-the-job and formal training). Two Grenadians have been trained to screen pap smears. Nine laboratory trainees received formal in-service training, five of whom have gone off island for certificate training and will return to work in Grenada. It is not an exaggeration to say that the accomplishments of the Project in the areas of laboratory services have been outstanding.

For the future, the Chief Medical Technologist (person-in-charge of the Ministry's lab services) plans to recruit new laboratory trainees to replace those now in training off island. A qualified Grenadian medical technologist who has recently returned home will be hired to

help fill the gap left when the two HOPE technologists depart in February, 1985.

The pap smear screening program has been so successful that the Ministry is considering setting up a regional pap smear training program at St. George's Hospital. St. Lucia, Antigua, and other Eastern Caribbean islands have expressed an interest in sending their technicians to Grenada for training in how to screen pap smears. Should this program be established, HOPE ought to consider replacing the cytologist now scheduled to depart without a replacement in February 1985.

C. Technical Support Services:

Materials Management
Environmental Health
Medical Equipment Maintenance and Repair
Health Planning

Materials Management Inputs:

Project HOPE provided: Supplies Management Advisor 10.5 P/M
 Pharmaceuticals and Supplies
 Reference Books

USAID provided: Pharmaceuticals and Supplies

Ministry provided: Chief Pharmacist (counterpart)
 Pharmaceuticals and Supplies

The first Supplies Management Advisor was a pharmacist, and stayed for three months. His replacement was a non-pharmacist. Both were qualified professionals, but naturally they had different priorities and approaches to the job. The materials management program lost some momentum due to the change of advisors. Also, the Supplies Management Advisor took a long leave (Nov. - Dec.), which further reduced the momentum of the program.

Materials Management Outputs:

MOH Supply Manual
Storage Manual
Stock Control Manual
Procurement Procedures Manual
Draft Drug List for Hospitals, Health Centers, and
 Visiting Stations
Development of Forms and Procedures for Receipt of Donor
 Supplied Materials

Inventory of All Health Facilities in St. David's Parish
Functional Organization Chart for Medical Supply
Operations within Ministry of Health
Analysis of Ministry's Materials Management System with
Recommendations For Improvement

The Supplies Management Advisor was on leave during the evaluation team's visit to Grenada, making it difficult to thoroughly evaluate the outputs of this technical support area. The policies, procedures, and forms (including the manuals) appear to be comprehensive and theoretically sound. However, the challenge now facing the Ministry of Health is to implement these policies and procedures.

The district pharmacists are a capable, but underutilized resource. They are not receiving continuing education in pharmacology or in pharmaceutical supply management. They receive little or no supervision, and frequently must make their own transportation arrangements to get medicines from the St. George's warehouse to their district dispensaries.

District pharmacists spend as much as 50% of their time filling prescriptions written by doctors in private practice. It is the norm in Grenada for patients seeing private doctors to have their prescriptions filled at the nearest Government dispensary. Officially, the fee is EC \$1.00 for each prescription, although in many cases the medicines are given at no cost to the patient. Based on the team's observations in several district dispensaries, each prescription averages three or four medications (although six or more medications on one prescription is not uncommon).

Pharmacists and clinicians in the districts complain of shortages and/or unavailability of essential medicines and supplies. More importantly, they report that availability has not significantly improved during the past year. Given the significant quantities of pharmaceuticals provided by Project HOPE and USAID during the past year, this indicates that the Ministry supply system is not yet functioning as it should.

The Supplies Management Advisor, working with the Chief Pharmacist, has done an excellent job of analyzing problems and making realistic recommendations for improvement. And the Chief Pharmacist has taken the initiative to implement solutions wherever he has had the authority and resources to proceed. However, there is a limit to what can be accomplished at the operations level without leadership and support from the policy and planning level of the Ministry. A series of important policy decisions, e.g. drug fees, additional staff, purchase of a delivery vehicle, etc. must be made before significant progress can be made in improving the supply system. This is a matter of some urgency because of the large quantities of donor-supplied pharmaceuticals that continue to arrive from overseas.

Environmental Health Inputs:

Project HOPE provided:	Sanitarian	13 P/M
	Reference Books	
	Films and Slides	
	Fields Test Equipment	
	Funds for Off Island Travel	
	Funds for In-Service Lecturer	
Ministry provided	Chief Technical Officer (counterpart)	
	Local Transportation (road and air)	

The HOPE Sanitarian arrived February 1, 1984, and because of previous work experience in the Caribbean, quickly developed a good working relationship with his Grenadian counterpart.

Environmental Health Outputs:

Project Proposal for Solid Waste Management
Formal 3-month In-service Training Program for
Environmental Health Officers

Two Environmental Health Officers entered the Public
Health Inspector Course in Barbados (departed September '84)
Regular Continuing Education for District Environmental
Health Officers

Environmental Health Technical Assistance to the Ministry
of Health

Regional Travel for Sanitarian and His Counterpart

Improved Environmental Health conditions are important for the health of Grenadians and for the health of the Grenadian economy (especially the small but growing tourist industry). The Sanitarian is involved in several activities which directly impact the tourist industry, e.g. solid and liquid waste management, renovation of public conveniences, and beach pollution.

The HOPE Sanitarian and his counterpart, the Chief Technical Officer, participated in the preparation of a USAID Project Paper on Solid Waste Management. (This paper was submitted to Washington and subsequently funded for US\$275,000). Regional travel funded by the USAID/HOPE Project speeded up preparation of the project paper, because the Ministry was able to base its proposal on experiences of other Caribbean islands with similar solid waste management problems.

The Sanitarian was responsible for two major achievements in the area of training:

1. Establishing a regular continuing education program for District Environmental Health Officers; this training is provided in conjunction with the E.H.O's regular monthly meeting held at St. George's.

2. Preparing four Environmental Health trainees to enter the Public Health Inspector Course in Barbados. The 3-month preparatory course given at St. George's was based on materials developed in St. Lucia and adapted for use in Grenada. Two of the Environmental Health trainees are now studying in Barbados; the other two are working in the districts while the Ministry searches for funding to send them to Barbados. Given the USAID/HOPE investment in these two trainees, USAID might consider using participant training funds to support their study in Barbados.

An important factor in the success in the Environmental Health area is that the Sanitarian and the Chief Technical Officer have a close working relationship which has permitted them to make significant progress. In order to maintain the momentum that the Project has developed, and also considering the importance of environmental health to overall economic development, the HOPE Sanitarian should remain for at least one additional year.

Medical Equipment Maintenance and Repair Inputs:

Project HOPE provided:	Biomedical Engineering Technician 13 P/M Teaching Modules Spare Parts Cabinets Hand Tools and Electric Components Maintenance and Repair Equipment
USAID provided:	X-ray machines (2)
Ministry provided:	Technician Trainees (2) Workshop Tools and Supplies

The Ministry of Health provided workspace for biomedical equipment repair, and has decided to double this workspace in the coming months. The two modern X-ray machines purchased by USAID are on site but not operational. Army surplus X-ray machines shipped to Grenada earlier in the year were obsolete and had to be scrapped, but many parts salvaged from them are now in use in the hospital.

Medical Equipment Maintenance and Repair Outputs:

Repair of Inoperative Equipment
 Decreased Down-time for Equipment
 Inventory of Medical Equipment
 Library of Equipment Repair Manuals
 Establishment of Medical Instruments Group within
 the Maintenance Department
 Linkage to USAID-NIH Medical Maintenance Program for
 Eastern Caribbean
 Formal Training in DC and AC Electronics, Semiconductor
 Devices
 One Technician Entered 10-month Training Course in Jamaica

Equipment maintenance and repair is an essential part of a health service delivery system, and the Project has greatly strengthened the Ministry's capability in this area. The HOPE Biomedical Engineer and the Ministry have established a Medical Instruments Group with its own workspace, staff, and budget allocation. By October, 73 major pieces of equipment had been returned to service, inventory of hospital equipment was 80% complete, and the down-time of major hospital equipment had been reduced 30%.

The Project contacted the National Institutes of Health Medical Equipment Maintenance Program for the Eastern Caribbean and two engineers arrived in September and worked for two weeks. Grenada is now formally included in this USAID-funded NIH program.

The Biomedical Engineer has formally trained four Grenadian technicians, and one of these technicians has entered a 10-month training course in Jamaica, and will return to Grenada in June '85. USAID may want to consider using participant training funds to send a second technician to the Jamaica course.

The Biomedical Engineer has focused on doing repairs himself and strengthening the repair capability of the Ministry. In future, he plans to focus more on maintenance, especially the establishment of a routine preventive maintenance program with up-to-date service record files.

The Biomedical Engineer should remain until the end of 1985 so he can work with the technician returning from Jamaica next June. Also, the relationship with the NIH program should be strengthened so that maintenance engineers will visit Grenada on a regular basis after the HOPE Biomedical Engineer departs. USAID should continue to fund Grenada's participation in the NIH program.

Health Planning Inputs:

One person provided three person months of health planning expertise under the Cooperative Agreement, but an additional 3 months of technical assistance was independently provided by Project HOPE. The latter consultant was a senior official in Project HOPE with extensive international health experience.

Health Planning Outputs:

There were two major outputs as a result of the planning effort. There was a careful review of the existing three year National Health Plan developed under the previous government. One hundred seventy-five objectives (!) were clearly identified in the Plan and

target dates set for their achievement. Those objectives which had actually been achieved were identified, and those which were cancelled and modified could also be identified. This procedure made the planning document more manageable and practical.

Another achievement was to emphasize the importance of a reliable data base for purposes of planning. (See Appendix 7) This is one of the basic weaknesses of the present plan. The population base is uncertain. There is no officially accepted age and sex distribution of the Grenadian population. Births are tabulated by date of registration rather than by date of birth. Definitions of live births do not always conform to WHO standards. One year, infant mortality may be reported as double what it was the previous year. Health statistics and hospital records are likewise inadequate. The document prepared under the Cooperative Agreement (Appendix 7) addresses all of these issues and makes recommendations.

Although the planning effort was limited, and there is very little evidence that the existing plan is being used, it would probably have been of little value to make a greater investment in planning during the time of an Interim Government. However, as Grenada moves into the next phase, the existence of a National Health Plan based on preliminary work done under the Project, should prove to be of great value for the future development of health services in Grenada.

D. Administrative Support Service Inputs:

Project HOPE provided:	Program Director	3 P/M
	Program Administrator	13 P/M
	Secretary	9 P/M
	Vehicles (3)	
	Telex, Xerox, Typewriter	

Ministry provided:	Drivers (3)
	Office space
	Customs Duty Exemption for Project Materials
	EC \$400 per HOPE employee

All inputs were appropriate and provided when needed. Project HOPE purchased only three vehicles, instead of the five indicated in the Cooperative Agreement. Due to the work load in the office, Project HOPE hired a Grenadian secretary in May, 1984.

Administrative Support Services Outputs:

- Liaison with MOH and USAID/Grenada
- Coordination with Project HOPE Headquarters in Virginia
- Housing for Project HOPE staff
- Transportation for Project HOPE staff
- Personal and Professional support for Project HOPE staff

The administrative support services for this project have been outstanding. The first Project HOPE representatives arrived in Grenada on January 15, 1984. Within weeks, a HOPE office was fully functional, housing and transportation had been secured, and medical and dental volunteers were in place and working. Both Project HOPE staff and USAID/Grenada express great satisfaction with the Project's administrative support services in general, and with the Program Director in particular. The Program Director has done an exceptionally fine job of coordinating the diverse personalities and

resources that go to make up this project, and without his skills it is doubtful that the project would have achieved the overall success that it has.

The only major administrative problem is the somewhat confused channels of communication between Project HOPE/Grenada, Project HOPE/Virginia, USAID/Grenada, and USAID/Washington. Much important information passes between Project HOPE/Virginia and USAID/Washington without including field staff in Grenada. For example, the quarterly financial reports prepared by HOPE/Virginia are not regularly sent to USAID/Grenada or even to HOPE/Grenada. This situation makes it difficult for field staff to monitor and direct the project effectively.

In recent months, administrative functions have been increasingly transferred to Grenadian office staff, who have assumed responsibility for project transportation and logistics, petty cash, and other office functions. This development is a positive step toward greater dependence on Grenadian resources for project administration.

V. NEW GOAL AND OBJECTIVES

The original goal of providing health services was short-term and with the intention of filling a gap created by the withdrawal of the U.S. military from Grenada. Prior to the intervention the Government of Grenada received support in health services from Cuba. To continue the present assistance indefinitely would be to make Grenada dependent on the United States in the same way that it was dependent on Cuba. This option would not be in the best interests of either the United States or Grenada, and Grenada would not find this option desirable.

To discontinue assistance in February 1985, when the present Cooperative Agreement ends, would be the most cruel option and would result in Grenada having been rescued only to be abandoned to a worse situation than existed before the intervention. This is likely to have serious political consequences for both Grenada and the United States. There appears to be no satisfactory way by which Grenada can now be treated the same as the rest of the Caribbean region. By the very act of intervention Grenada has become a special case and will be for some time. The hopes of the Grenadian people have everywhere been lifted by the presence of the United States and cannot now be dashed.

The most satisfactory option is to assist Grenada towards achieving a more independent status with respect to health care, and to assist Grenada in planning a health care system which is within its financial resources. Whereas health planning played a minor role in the current Agreement, it must play a major role after February 1985, and we propose for the Project an entirely new goal and objectives as follows:

Goal: To assist Grenada in achieving self reliance in the development of an affordable health care system.

Objectives:

1. To promote self reliance in health manpower development
2. To promote development of appropriate and affordable health services

3. To provide assistance in areas of health related to economic development e.g. environmental sanitation
4. To make the best use of obligated and unexpended funds under the present Cooperative Agreement.

With the elections completed and a new government in place, these objectives should be firmly established and agreed upon as the basis for future U.S. involvement in health.

One necessary condition for the achievement of these objectives is identification of responsible indigenous leadership in the administration of public health in the Ministry of Health. The evaluation team found reported evidence of disillusionment with the present system, resulting in a drain of local health manpower. It will not be possible to attract talented Grenadians to return, or even to retain the current best talent, in a system which reflects a lack of discipline or which fails to show serious regard for the maintenance of high standards of performance. On the other hand, leadership which is competent and committed will attract followers and external assistance leading to rapid progress in the achievement of the desired goal.

Objective 1: Self-reliance in Health Manpower Development

The most important single step which can be made in achieving self-reliance in health manpower is for the Ministry of Health to enter into an affiliation agreement with the University of the West Indies Medical School so that St. George's Hospital becomes a teaching hospital of the University, and the nation becomes a teaching laboratory for the University's Department of Community Medicine.

The evaluation team was given the impression that the only practical obstacle hindering such an affiliation agreement is the provision of housing on or near the St. George's Hospital site. This agreement should involve all major services and would eliminate the need for

American specialists. But more importantly it would significantly enhance the level of care and attract postgraduate trainees who may decide to remain in Grenada permanently.

The team is aware of the agreement with the offshore St. George's University School of Medicine which gives it sole and exclusive rights to the use of the general hospital for teaching purposes, with only occasional use by the University of the West Indies. The team considers this agreement as contrary to the best interests of Grenada. It not only undermines the University of the West Indies mission within this region, but it makes Grenada dependent on a University with long holidays, and therefore long interruptions of service, and creates an opportunity for non-residents who have no commitment to the development of Grenada. USAID and Project HOPE should give top priority to assisting the Ministry of Health in formulating and implementing an agreement with the University of the West Indies.

Objective 2: Appropriate and Affordable Health Services

The emphasis on appropriate underscores the need for planning, and the emphasis on affordable underscores the need for operating in a cost-conscious manner and entirely within the country's financial resources. In order to achieve this objective we propose that AID offer technical assistance in planning and management with a strong emphasis on economics. We recommend that the person selected have significant successful experience in comparable situations, be able to make a long-term commitment, be assigned as a staff person to the Permanent Secretary or the Chief Medical Officer, and be in a position to influence not only Grenadian expenditures for health care, but all other USAID health inputs to Grenada. At the present time the government is reported to spend 14.7% of its budget in health. This represents a sizable commitment, but there is evidence that it could be spent far more wisely than at present, and that with better planning and management Grenada's health program could be more cost effective.

31

The proposed Health Planner would assist the Ministry of Health in the annual updating and improvement of the present health plan, in justifying all health budgets, and in monitoring health expenditures on an ongoing basis. The team sees this individual as having the most important and longest USAID assignment in Grenada (2 years minimum), and selection should not be limited to Project HOPE respondents.

One reason why planning and management are not currently considered satisfactory is the absence of reliable information. The team therefore proposes that USAID assign a health and management information system specialist who will be able to assist the Ministry of Health in developing information that is reliable and useful for planning, management, and evaluation. At the present time data are being collected and recollected without ever being converted to useful information; and the reliability and validity of other information are open to question. The health care system would be improved and management decisions would be better as a result of an improved information system. Microcomputers can now replace much of the drudgery of data analysis and increase the efficiency of information systems. The use of such technology should be demonstrated in the Ministry of Health and appropriate training provided in the use of microcomputers.

Objective 3: Assistance in Areas of Health Related to Economic Development

This objective recognizes that overall economic development is an important goal of the new government of Grenada, and that health assistance can contribute to the achievement of this goal. The most specific example is perhaps Environmental Sanitation, because a clean and healthy environment will benefit Grenadians as well as contributing to economic development, especially to the development of a tourist industry. Other examples of appropriate assistance in health-related areas include beach pollution, solid waste disposal, and potable water. Assistance in these areas will also contribute to a healthier Grenadian population, which in itself will contribute to economic development.

Objective 4: Best Use of Obligated but Unexpended Funds in the Cooperative Agreement

The present Cooperative Agreement will have approximately US \$650,000 in unspent funds on February 28, 1985. (See Financial Data, Appendix 4.) The evaluation team recommends that these funds be used to assist Grenada in health during 1985. Listed on the following pages are the positions we believe will have the most impact in achieving health development in Grenada.

TOP PRIORITY LISTING
TECHNICAL SUPPORT SERVICES POSITIONS FOR 1985

This is a top priority listing of the positions the team believes ought to be filled in 1985. It is not an all-inclusive list, but a top priority list.

Health Planner/Economist
Information Specialist
Sanitarian
Biomedical Engineer
Medical Technologist (Cytology)
Supplies Management Advisor

A Health Planner/Economics and a Health and Management Information Specialist are the two highest priority technical support positions (see objective 2). The Health Planner will depend on the Information Specialist to provide reliable data, so these positions should be treated as a pair.

The Sanitarian is on the top priority list because his work will contribute in areas critical for economic development (see objective 3).

The Biomedical Engineer is developing the Ministry's maintenance and repair infrastructure which is at present very weak.

The Medical Technologist (Cytology) will be needed only if St. George's Hospital becomes the site for an Eastern Caribbean Regional Training Program for screening Pap smears.

Generally speaking, in the technical support areas the team sees the type of progress that warrants continuation of technical assistance. For example, in the laboratory the variety and sophistication of tests has increased and the training of Grenadian staff is now part of the routine. In the medical equipment maintenance and repair area, down-time of major equipment has been significantly reduced, and a Grenadian technician sent to Jamaica for training. In the environmental health area, a Solid Waste

Management Project is underway, and two Grenadians have been sent to the Health Inspector course in Barbados. Not as much tangible progress can be seen in the Materials Management area, yet assistance is needed if only because of the large quantities of donor-supplied pharmaceuticals that are scheduled to arrive in 1985.

TOP PRIORITY LISTING
CLINICAL POSITIONS FOR 1985

This is a top priority listing of the positions the team believes ought to be filled in 1985. It is not an all inclusive list, but a top priority list.

Pathologist
Family Practice Physician
Orthopedic Surgeon
Dentist
Anesthesiologist

The Pathologist has accomplished so much and continues to provide services that impact on all the other clinical areas that he should be retained.

A Family Practice Physician is justified because this position is so crucial to primary care. On the other hand, Grenada is more likely to utilize Family Nurse Practitioners if the number of Family Practice positions is reduced to one during the transition period.

The Orthopedic Surgeon is needed to meet a recognized and urgent unmet need. Project HOPE first filled this position in October, and there is currently no substitute on the island.

A Dentist is needed until the newly recruited Chief Dental Officer arrives, and an overall strategy for dental health in Grenada is established. One possibility is for dental nurses to do all extractions (adults and children), as they are capable of doing.

An Anesthesiologist is last on the priority list because there are currently two Anesthesiologists on the island. Only one is employed by the Ministry; the other is in private practice.

VI. BENEFICIARIES

The direct beneficiaries of this USAID/HOPE Project have been the entire population of Grenada and Carriacou, who as a result have had access to medical and dental services of a quantity and quality which would not otherwise have been available.

The Ministry of Health has benefited through the close working relationship with Project HOPE personnel and the training they provided. There is likely to be a further benefit from the initial analysis of the existing National Health Plan and from the recommendations for upgrading the health information system.

The United States has also benefited by being represented by the caliber of people recruited by Project HOPE.

VII. UNPLANNED EFFECTS OF THE PROJECT

A significant unplanned effect was the extra assistance provided by spouses of Project HOPE staff. Some spouses donated time in pediatrics and the recovery room at General Hospital. One spouse volunteer is presently the full-time histotechnologist in the laboratory. Other spouses have worked for the Grenada Red Cross, pushed carts in the hospitals, performed office work, and carried out play therapy programs in the pediatrics ward.

Another unplanned effect of this project was the establishment of a fluoride mouthrinse program in the primary schools. HOPE dentists instituted the program, which is being turned over to the Ministry's dental auxiliaries. A HOPE dentist has arranged for a Rotary Club in Minnesota to provide enough fluoride mouthrinse to carry the program for three years.

The HOPE Sanitarian was on hand to assist the Ministry and USAID in preparing a Project Paper on Solid Waste Management. USAID subsequently funded the project for US \$275,000. This was another unplanned effect of the Project.

Laboratories at Princess Alice and Princess Royal Hospitals will have been established by the end of the Project. These laboratories were unplanned, but will improve the quality of health services at the district level.

The HOPE cytotechnologist impressed the Ministry so much with her training of Grenadians to screen Pap smears, that the Ministry is considering a regional pap smear screening training program based at St. George's Hospital. Lab workers from the Eastern Caribbean would come for a proposed six-month training program. This was an unplanned effect of the cytology component of the Project.

Another unplanned effect was the establishment of a Medical Instruments Group within the Maintenance Department of St. George's Hospital. The HOPE Biomedical Engineer served as a catalyst to get the Ministry to create three technician posts, to provide a separate workspace with tools and equipment, and to send one Grenadian technician to Jamaica for a certificate course in equipment repair. Another unplanned effect in this area was the formal link with the USAID-funded NIH Medical Equipment Repair Program for the Eastern Caribbean.

VIII. LESSONS LEARNED

The recent events in Grenada are so unique as not likely to occur again for another generation -- yet one can never know. In the future, the United States should be better prepared to respond with civilian medical assistance to meet immediate health needs of up to one year. This should be possible considering the surplus of physicians in the United States.

Project HOPE responded promptly and well, but because volunteers were used, physicians could serve only an average of two months. The rapid turnover was less than satisfactory. An alternative would be to use the National Health Service Corps, and it would be a practical idea to build an international option into the National Health Service Corps, i.e. the establishment of an International Health Service Corps. Under this arrangement, physicians could repay their obligation to the U.S. Government by a year or two of service in a developing country. There are many who would respond.

There are lessons also to be learned by Project HOPE. Usually Project HOPE is called upon to provide training, and this is considered its primary mission. In Grenada the primary mission imposed upon Project HOPE was service, and it was difficult for Project HOPE to adjust to this new primary mission. If Project HOPE physicians came to Grenada with the primary mission of service and with the intention of learning, they might have been more successful in teaching Grenadian physicians, and they would have themselves experienced less frustration.

For USAID this project was short-term, but one might have predicted from the beginning that a short-term solution would have to be followed by some long-term program. (Project HOPE always favored a three year project) But a weakness in the HOPE proposal was that a transition to self-reliance was not obvious enough, although it was implied. Not knowing what would occur at election time, USAID and HOPE might have planned a number of options.

Even now, the future will depend on the stability of the present government in Grenada. Unless this is assured USAID and HOPE may well be forced into a series of short-term solutions, rather than a single long-term solution to health development in Grenada.

IX. APPENDICES

APPENDIX 1	Evaluation Scope of Work	(2 pages)
APPENDIX 2	List of Persons Interviewed	(3 pages)
APPENDIX 3	List of Documents Reviewed	(2 pages)
APPENDIX 4	Project Financial Data	(2 pages)
APPENDIX 5	Summary of Personnel Provided by Project HOPE	(1 page)
APPENDIX 6	Comparison of Project HOPE and Cuban staffing Levels in Grenada	(1 page)
APPENDIX 7	Health Data Base, Grenada, 1984	(20 pages)
APPENDIX 8	Cooperative Agreement Between USAID and Project HOPE	(10 pages)
APPENDIX 9	HOPE/Grenada Program Staffing, Jan. 16, 1984 - Nov. 30, 1984	(6 pages)

APPENDIX 1

SCOPE OF WORKEvaluation of USAID/HOPE Grenada Project

1. The evaluation team will possess skills in clinical assessment, management and planning, on-the-job and formal training programs. The team will interview AID and Project HOPE staff in central and Grenada offices as well as Grenada Ministry of Health officials and a sample of Grenadian people utilizing health services. Project documentation will be made available by both Project HOPE and AID. The evaluation will focus on the purpose and objectives of the AID/HOPE Cooperative Agreement, but will also cover areas that are germane to assuring that Grenada's health sector manpower needs will be met in upcoming years. The evaluation team will investigate and comment on the following:
2. Describe Project Inputs (Personnel and Supplies)
 - a. Appropriateness
 - b. Sufficient Quality
 - c. Appropriate Timing
 - d. Ability to adapt and to be productive in the Grenadian context
 - e. Analysis of AID and HOPE funding in supplying inputs
3. Describe Project Outputs
 - a. Clinical Services Provided (medical and dental)
 - 1) Numbers of patient contacts
 - 2) Acceptability to MOH and Grenadian People
 - 3) Quality
 - 4) Where services were provided
 - b. Support Services Provided
 - 1) Health planning
 - 2) Laboratory
 - 3) Equipment repair
 - 4) Supplies management
 - 5) Environmental health
 - c. Manpower Trained
 - 1) On-the-job
 - 2) More formal training

- d. **Systems/Plans Developed**
 - 1) **Clinical procedures**
 - 2) **Laboratory procedures**
 - 3) **Supplies management**
 - 4) **Equipment maintenance and repair**
 - 5) **Health planning**
- 4. **Review extent to which original purpose and objectives were met, i.e. immediate need for health sector manpower.**
 - a. **Response according to original plan**
 - b. **Any changes**
 - 1) **Appropriateness**
 - 2) **Responsiveness to Ministry of Health**
 - c. **Is progress made sufficient at this time?**
- 5. **Assess appropriateness and purpose and objectives in the original Cooperative Agreement. Are they still valid? Recommend any changes that may be necessary.**
- 6. **Review and comment on the adequacy of AID, HOPE, and Ministry of Health management support for this project, and recommend any necessary changes.**
- 7. **Assess Grenada's current need for external assistance in meeting its health sector manpower needs. Compare this assessment with those made in November-December 1983. Describe potential sources of any assistance needs identified (both regional and international).**

Prioritize those areas where external assistance is needed in terms of clinical services and support services. Recommend ways to foster Grenadian self sufficiency in health sector manpower.
- 8. **The evaluation report shall be prepared according AID's PES* format. A draft will be left with USAID/Grenada prior to the team's departure. A final copy of the evaluation shall be provided to USAID within one month of the team's departure.**

*Project Evaluation Summary

APPENDIX 2

LIST OF PERSONS INTERVIEWED

USAID, WASHINGTON:

Theodore Bratrud	Officer in Charge, Eastern Caribbean
Paula Feeney	Health Officer, LAC/DR/FW
Alan Randlov	Program Officer, ST/H

PROJECT HOPE HEADQUARTERS, MILLWOOD, VIRGINIA:

William B. Walsh	President and Chief Executive Officer
William B. Walsh, Jr.	Vice President, Operations
Harold H. Royaltey	Director, Community Health Programs
Don G. Weaver	Director of Programs
William L. Brockschmidt	Vice President, Finance

U.S. MISSION AND USAID, GRENADA:

Roy Haverkamp	Charge d'Affaires
James Habron	AID Representative
William Erdahl	Deputy AID Representative
Leticia Diaz	General Development Officer

PROJECT HOPE, GRENADA:

John Wilhelm	Program Director/Public Health Physician
Helen Mitchell	Pediatrician
Benjamin Silverman	Pediatrician
Richard Harruff	Pathologist
Lance Potocki	Family Practice
Robert Bartz	Family Practice
Victor de Wolfe	Internist
Gordon Arnold	Surgeon
Robert Feighny	Orthopedic Surgeon
Gary Johnson	Anesthesiologist
Cory Kruckenberg	Dentist
John Mc Fadyen	Dentist
James Wall	OB/Gynecologist
Beverly Watkins	Medical Technologist
Patsy Mallmann	Medical Technologist
William Sheppard	Biomedical Technician
Thomas Kirby	Sanitarian
Almena Palombo	Administrator

MINISTRY OF HEALTH HEADQUARTERS, ST. GEORGE'S:

Ray Smith	Minister of Health during Interim Government
Jimmy Emmanuel	Permanent Secretary
Frank Alexis	Chief Medical Officer
Doreen Murray	Senior Medical Officer for Health
Theresa Killam	Chief Nursing Officer
George Clarke	Health Planner
Shirley Mathlin	Administrative Officer, Planning Unit
Rupert John	Chief Pharmacist
Curtis Edwards	Chief Technical Officer

GENERAL HOSPITAL, ST. GEORGE'S:

Douglas Andrews	Hospital Administrator
Angela Grant	Matron
Aqatha Clarke	Chief Technologist
Rawle Ross	Technician Trainee
K.S. Kumar	Pediatrician
Dexter Johnson	Surgeon
Desmond Noel	OB/Gynecologist
Alister Budhlall	Internal Medicine

GOUYAVE HEALTH CENTER:

Tom Otway	District Medical Officer
Doreen Francis	Acting Public Health Nurse
Catherine Charles	Pharmacist
Patrick Moore	Environmental Health Officer
Cislyn Carter	Community Health Aide

GRAND BRAS HEALTH CENTER:

David Duncan	Pharmacist
--------------	------------

PRINCESS ALICE HOSPITAL:

Lawrence Gibbs	District Medical Officer
Avis Theodore	Matron
Griffin Cummins	Pharmacist

PRINCESS ROYAL HOSPITAL:

Ram Rao	District Medical Officer
Tom Roberts	Pharmacist

Informal discussions with numerous Grenadians throughout the island provided the evaluation team with valuable information that eventually found its way into this evaluation report.

APPENDIX 3

LIST OF DOCUMENTS REVIEWED

1. Cooperative Agreement between USAID and Project HOPE
2. Three Year Health Sector Plan 1983-1985
3. Agreement Between Government of Grenada and St. George's University School of Medicine, Act No. 17 of 1976
4. List of Participants For Planning and Programming Workshop
5. Provisional Manual for Programme Planning, Implementation and Evaluation of Health Services, September 1983
6. Country Development Strategy Statement FY 1986: Caribbean Regional
7. Country Development Strategy Statement FY 1985: Grenada
8. HOPE Health Planning Activities Report, March 1984
9. Grenada: Revolution, Invasion, and Aftermath by Hugh O'Shaughnessy, 1984
10. Quarterly Program Performance Report, Jan. 13 - April 30, 1984
11. Quarterly Program Performance Report, May 1 - July 31, 1984
12. Quarterly Program Performance Report, Aug. 1 - Oct. 31, 1984
13. Agreement Between Project HOPE and Government of Grenada
14. HOPE Proposal for Immediate Provision of Health Care Services for the People of Grenada, Dec. 20, 1983.
15. HOPE Proposal (Revised) for Immediate Provision of Health Services for the People of Grenada, Jan. 4, 1984.
16. HOPE Proposal for Manpower Training and Health Care Service Improvement for the MOH, Grenada, July 1984.
17. Financial Status Reports, 1st., 2nd., and 3rd. Quarters, 1984.
18. Assessment of Environmental Health Programs, Dec. 9, 1983.
19. An Analysis at Laboratory Resources Needed to Support a Health System in Grenada, Dec. 16, 1984.
20. Vital Statistics Published by Ministry of Health, 1983 and 1984
21. Physician Manpower Survey, Nov. 1983.

22. Yearly Report on PHC Team in St. John's and St. Mark's,
Jan. - Dec. 1983
23. Pharmaceutical Supply and Distribution to Public Health Service
Dispensaries, Dec. 1-13, 1983.
24. Solid Waste Management Project Paper, (undated)
25. HOPE Program Plans and Monthly Progress Reports
26. Curriculum Vitae of HOPE Personnel

APPENDIX 4

PROJECT FINANCIAL DATA

Financial Status:

Total Amount Obligated by USAID	\$1,729,000
Less Expenditures thru Sept. 30, 1984	444,296
Balance of Obligated Funds as of Sept. 30, 1984	<u>\$1,285,704</u>

Note: Project HOPE anticipates significantly higher rate of expenditure during the remainder of the Project, leaving a balance of approximately \$650,000 on the project completion date (February 28, 1985).

Budget Summary of Cooperative Agreement:

	<u>TOTAL BUDGET (Revised)</u>	<u>TOTAL EXPENDITURE AS OF 9/30/84</u>	<u>ESTIMATE OF UNSPENT FUNDS AT END OF PROJECT (2/28/85)</u>
Salaries, Wages, Benefits	\$383,283	\$151,478	0
Equipment, Supplies Vehicles	355,374	135,618	140,000
Travel, Per Diem	856,001	148,679	510,000
Freight for Donated Supplies	82,400	5,915	0
Evaluation	15,000	0	0
Other Direct Costs	<u>27,942</u>	<u>1,606</u>	<u>0</u>
TOTAL	\$1,729,000	\$443,296	\$650,000

Note: The estimate of unspent funds remaining at the end of the project (\$650,000) is based on expenditure projections made by Project HOPE, Millwood, Virginia.

Additional Project HOPE Contribution:

	<u>TOTAL CONTRIBUTION AS ESTIMATED IN AGREEMENT</u>	<u>ACTUAL CONTRIBUTION AS OF 9/30/84</u>
Support Costs	\$ 84,510	\$ 230,000
Indirect Costs	43,777	179,489
Equip/Supplies (Gifts in Kind)	300,000	590,307
Salaries (Donated Services)	<u>1,000,000</u>	<u>385,472</u>
TOTAL	\$1,428,287	\$1,385,668

Additional USAID Contribution:

Emergency Medical Equipment	\$ 80,000
Pharmaceuticals & Medical Supplies	25,000
X-Ray Machines (2)	58,000
Cold Chain Improvements	56,000
Community Sanitation	91,000
Solid Waste Disposal	<u>42,000</u>
TOTAL	\$352,000

Note: It is difficult to determine actual expenditures in the above categories, because much of the procurement was done by AID/Washington and the documentation is not available in the AID/Grenada office. These figures likely underestimate the USAID contribution.

APPENDIX 5

SUMMARY OF PERSONNEL PROVIDED BY PROJECT HOPE

PROJECT HOPE PERSONNEL	TOTAL PERSON MONTHS (PLANNED)	PERSON MONTHS THRU NOV'84 (ACTUAL)	TOTAL PERSON MONTHS THRU FEB'84 (EST.)	TOTAL NO. OF PERSONS WHO WORKED IN THIS POSITION	AV. LENGTH OF STAY FOR PERSON IN THIS POSITION	COMMENTS
<u>MEDICAL & DENTAL SERVICES</u>						
1. Family Practice Physician	24	13.5	18.0	5	3.6 mo	
2. Pediatrician	24	19	23.0	10	2.3	4. Second position vacant until filled by Orthopedic surgeon Oct. 1.
3. Internist	12	6	9.0	4	2.3	
4. General Surgeon	24	13	18.5	9	2.1	
5. OB/Gynecologist	12	9	12.0	4	3.0	6. Two HOPE Anesthesiologist while local anesthesiologist on vacation
6. Anesthesiologist	12	10.5	13.5	8	1.7	
7. Dentist	24	18.0	23.0	4	5.8	
8. Pathologist	12	8.5	11.5	1	11.5	
<u>ALLIED HEALTH SERVICES</u>						
1. Medical Technologist	24	18.5	23.5	2	11.8	
<u>TECHNICAL SUPPORT SERVICE</u>						
1. Supplies Mgmt. Advisor	12	8.5	10.5	2	5.3	
2. Sanitarian	12	10	13.0	1	13.0	
3. Biomedical Engineering Technician	12	10	13.0	1	13.0	
4. Health Planner	3	3	3.0	1	3.0	
<u>ADMINISTRATIVE SUPPORT SERVICES</u>						
1. Program Director/ Public Health Physician	13	10.5	13.5	1	13.5	
2. Project Administrator	13	10.5	13	1	13.0	

APPENDIX 6COMPARISON OF PROJECT HOPE AND CUBAN STAFFING LEVELS IN GRENADA

<u>CUBAN MEDICAL BRIGADE</u>	<u>PROJECT HOPE STAFF</u>
<u>AUGUST, 1983</u>	<u>DECEMBER, 1984</u>
General Surgeon (1)	General Surgeon (1)
Orthopedic Surgeon (1)	Orthopedic Surgeon (1)
OB/Gynecologist (1)	OB/Gynecologist (1)
Anesthesiologist (1)	Anesthesiologist (1)
Pediatricians (3)	Pediatricians (2)
Dentist (3)	Dentist (2)
General Practitioner (2)	Family Practice Physician (2)
Physician Specialist (1)	Internist (1)
Ophthalmologist (1)	Pathologist (1)
Psychiatrist (1)	Public Health Physician (1)
Laboratory Technician (1)	Medical Technologist (2)
	Supplies Management Advisor (1)
	Biomedical Engineer (1)
	Sanitation (1)

NOTE:

Both Project HOPE and the Cuban Medical Brigade had staff permanently posted at Carriacou and Grenville.

APPENDIX 7THE HEALTH DATA BASE, GRENADA, 1984INTRODUCTION

The first step in the health planning process is to assemble information which defines the health status of the population with which one is working. Secondly, an inventory is taken of the resources, human and material, available to apply to the health care system. Using these two sets of information, alternative courses of action to solve the identified health problems can be generated, priorities determined, implementation begun and evaluation planned for. This sequence is seldom if ever followed in its pure state since the planner is working in a real health environment, and at least some of the needed data already exist. Their quality and completeness, however, must be evaluated and where suspect information or deficiencies occur, efforts must be made to gather new information or at least to interpret the material available realistically.

Grenada is no different in this regard from most other countries, and while sufficient information is available to give an impression of the health situation, there are areas where improvement could, and must, be made. Some changes will be easy to carry out while others will require changing the practices and motivation of those generating and recording the primary raw information. A common proposal, when problems with data are recognized, is to generate revisions in the data analysis mechanism, usually with the use of higher technology. While eventually Grenada will need computer capability within the Ministry of Health for the storing and analyzing of health data, a start must first be made toward more reliable and complete gathering, recording and reporting of basic easily observable information. Simpler hand methods of storing and disseminating that information can be developed at present also, which would not preclude an easy transition to eventual computer storage.

In assessing the health status of Grenada's population with the Planning, Monitoring and Evaluation Unit (PMEU) of the Ministry, we looked at information from the sources listed below, where we discuss our findings and suggestions for improvement.

A. POPULATION

A census of Grenada's population as of 30 April, 1981, was carried out by the Statistical Office of the Ministry of Finance, and an enumeration of the population as of December, 1981, was published by the Aedes aegypti Control Unit of the Ministry of Health. Numerous "estimates" from undocumented sources are also current in Grenada giving the population for various recent years. A 1982 monograph on solid waste management gives a 1981 estimate said to be based on "information from the Government Census Office, the Ministry of Health and projections from 1960 and 1970". It gives 110,000 as the population. Finally, the office of the Registrar General, in its report on 1982 vital statistics, gives a figure, based on natural increase plus immigration since the last census, of 110,410 for 31 December, 1982.

There is no agreement among these sources and the high and low figures vary by as much as 18%.

The official census has not been accepted by Government because of suspected underreporting and therefore cannot be quoted. It gives the lowest total of population of any source. It is also the only enumeration which gives the population of each parish (and St. George's town) by age and sex.

The Aedes aegypti enumeration gives populations of localities down to the smallest villages, but gives no age-sex figures. The total from this source is 103,103. It gives a seemingly very high population percentage for Carriacou and this probably does represent significant overreporting for that location. The Aedes aegypti enumeration is obtained from the numbers of residential premises counted multiplied by 4.5 (the mean household size in Grenada at the time of the 1970 census). Emigration is significant from Carriacou and unusual numbers of unoccupied houses exist there. The difference in population percentages by parish from the 1981 census, the Aedes aegypti enumeration and the 1981 estimate from the waste disposal study illustrate the general similarity and the Carriacou exception:

<u>PARISH</u>	<u>1981 CENSUS</u>	<u>1981 ESTIMATES</u>	
		<u>A. AEGYPTI ESTIMATE 1981</u>	<u>SOLID WASTE DISPOSAL</u>
ST. GEORGE'S	33.7%	33.6%	33.3%
ST. JOHN'S	9.2	9.2	9.3
ST. MARK'S	4.5	4.5	4.4
ST. PATRICK'S	11.2	11.1	11.4
ST. ANDREW'S	24.9	23.3	25.2
ST. DAVID'S	11.2	10.2	11.4
CARRIACOU	5.3	8.1	4.9
<hr/>	<hr/>	<hr/>	<hr/>
GRENADA	100.0	100.0	99.9

Percentage of total Grenadian population living in each parish based on three 1981 estimates.

In health planning, population figures are useful for several purposes and ideally, a single set of numbers, the most accurate one possible, should be used for all purposes. Here the matter is complicated by:

- (a) Marked variance between sources as to the actual total population, with the officially gathered one not accepted by Government.
- (b) Only one source of population by age and sex, and that the unaccepted official count.
- (c) A significant discrepancy in the percentage of the total population living in Carriacou among the three sources of that information.

This is a very difficult place in which to have disagreements of the order of magnitude of some which exist in Grenada in this area. At least five population facts are basic to planning:

- Total population
- Percentages of total by age
- Percentages of total by sex
- Percentages of total by parish, town, etc.
- Pairing of factors, e.g., age by sex, etc.

An agreed upon total population number is obviously important for calculating the above, and also because it is used to calculate incidence and prevalence rates of diseases and conditions, birth and death rates and other very important bases for planning and resource allocation.

RECOMMENDATIONS

The recommendations in this area range from the ideal to the most expedient:

- (a) Immediately undertake a carefully planned accurate new census, recognize it as official and use only the data obtained from it.
- (b) Accept the current census and extrapolate from it and the 1960 and 1970 ones.
- (c) Utilize 100,000 as the population now for planning and derive age and sex and residence percentages from the Office of Statistics Census.

Considering the need for numbers to work from we recommend suggestion c. for now and working toward a, as soon as feasible:

- (1) Population estimates range from below to above 100,000 almost equally. Therefore, we recommend using 100,000 as the current figure for the total population in Ministry of Health planning.
- (2) Since estimates of percentages of total population living in each parish agree closely between two of the three sources and an apparently reasonable explanation for the discrepancy in the third source is at

hand, we suggest using the percentages given in the "official" census.

- (3) Since there is only the "official" source for age-sex breakdowns use it (by percents, not numbers) and derive numbers from these percents for age-sex population breakdowns for any subunit wanted, using 100,000 as the total. Appendix I gives the percentages to be used.

Thus we have a somewhat artificial but reasonable population base giving total population, and populations by parish by age and sex.

An obvious advantage of using 100,000 as the population is that incidence and prevalence disease rates per 100,000 population are pre-calculated, i.e. the number of cases reported equals the rate per 100,000 population.

Outward migration from Grenada is reported to have long been a significant factor in stabilizing the population of the island. We feel from extensive discussions with various officials that the population is in fact, considerably smaller than the estimates commonly used and 100,000 is probably much closer to the actual total than the 110,000 commonly used.

Use the 100,000 figure for 1981 and add population annually based on changes reported from the Registrar General's Office of births, deaths and migration.

B. VITAL STATISTICS REGISTRATION

The gathering and publishing of data on births, deaths and immigration are assigned to the office of the Registrar General, Ministry of Health. Figures for 1982 are published, but it will be later in 1984 before 1983 deaths are tabulated completely.

1 BIRTHS

Births are tabulated by year of registration, not necessarily by year of birth. In most instances, over time, this may balance out roughly, but some unusual event could cause skewing of the figures.

Registration, by all accounts, is fairly nearly complete of those babies who obviously are live born. Many premature babies who die within minutes of birth and who make only feeble respiratory movements, for example, are undoubtedly misclassified as fetal deaths unless they survive for at least days after birth.

It is consistently maintained that virtually every delivery in Grenada is attended by a health professional (MD or nurse-midwife) or is checked by a midwife as soon as reported and that virtually no untrained midwives (nanas or granny-midwives) work in Grenada any more. This gives assurance that the vast majority of births are presently registered and registered fairly promptly.

Although the official 1983 birth registration figures have not been released, in our study we tabulated the births registered in that year, and excluding obvious late registrations of persons born years earlier, 2883 live births were counted. Data are available for place of birth, parish of residence of mother, age of mother and whether the birth is described as legitimate. In 1982, 79.76% of births were classified as illegitimate. We did not calculate this for 1983. Figures for 1983 will detail this and the age distribution of mothers, when published. Figure I shows the distribution curve for 1982's births, which illustrates the age pattern of maternity in Grenada.

From the raw 1983 data we were also able to gain information about the delivery location patterns of Grenadian women as illustrated in Appendix II.

The two major problems identified as to birth registration were:

- a. Statistics issued cite births registered in a calendar year, not occurring in a calendar year.
- b. There are questions about how completely and accurately live births of extremely premature or low birth weight infants are registered.

Solutions to both these problems are important to the correct determination of the birth rate and the perinatal, neonatal and infant mortality rates. Grenada, through PAHO, is a member nation of WHO and should, therefore, try to register all births in accordance with WHO standards so that Grenada's health statistics will gain comparability with those of other member nations. Also, an accurate knowledge of these statistics is obviously vital to the ability to judge the status and progress of maternal and child health in the country itself and the knowledge is rightly stated as an objective of the Three Year Health Plan.

RECOMMENDATIONS

(a) Birth registration enumeration:

In countries where registration of births is very promptly carried out in almost 100% of cases, the actual number of babies born in one calendar year may be determined only a few weeks into the succeeding year. The slower the system is, of course, the longer the period before all births for a year are registered. Simply considering all births registered in a year as equal to births occurring in that year is not a solution. In our preliminary examination of 1983 figures it appeared that about 95% of all 1983 births were registered by the end of February, 1984. But this was an estimate only. We recommend (in outline only here) the following course to correct this problem:

- i. By counting late registrations for two or three sample recent years, determine the average time beyond the end of the year when essentially all births eventually registered have in fact, been registered. This defines the magnitude of the problem.
- ii. Call all numbers "provisional" until enough time has passed beyond the end of the year, as determined above, so that it is reasonable to assume that about 99% of births for the year have been registered, and use that figure as the "final" figure for births during that year.
- iii. Study the birth registration system to see how it can be speeded up (Eg. send in registration sheets more frequently) or changed more basically to speed up registration.
- iv. Undertake a campaign to health professionals and patients as to the value of prompt registration of births.
- v. Plan on using year of occurrence figures beginning in 1985.

(b) Correct registration of very premature infants:

This is more difficult of solution. Many of these babies may be born before health care is sought and even more frequently may occur when there has been no time for a professional attendant to be called and reach the place of the delivery. In these circumstances a completely untrained person makes the decision as to whether a live or stillborn infant was delivered, modified only by a professional's later interview of persons who observed the birth.

The WHO definition of a live birth is:

"... the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached".

In no country in the world is compliance with that standard complete, but all countries should make every reasonable effort to comply. In so doing, Ministry

of Health must accept a probable short-term worsening of reported infant and perinatal mortality rates. But when reasonably complete compliance has been obtained the reliability of the figures for planning purposes is an important reward. Also, in many developing countries, because of poor reporting of livebirths, infant mortality rates are given at such low levels as to be totally unbelievable; such patently unreliable figures discredit, in the views of many international agencies, all the health status figures of the country. Planned significant steps to improve the reporting process in themselves upgrade the international belief in the credibility of a Ministry of Health. In this way a temporary worsening of apparent rates is usually correctly and positively interpreted as an effort to maintain better records, rather than as a sign of poor health care.

There is no particular added expense or skill needed in Grenada to move toward better compliance. The collecting and reporting system is in place. Two things only are needed:

- i. The belief at all levels from Ministry officials and consultants to district midwives, that a report of each live birth, as defined by WHO, is important.
- ii. A concerted institutionalized determination by everyone involved to do so.

The apparent simplicity of these two recommendations is very deceptive. They will be difficult to achieve without considerable education of all involved by example, by seminars and workshops, by incorporating in the curriculum of the school of nursing and any other available educational means. And it will require time; but a beginning can and should be made.

We have touched only very lightly on the problem of registering fetal deaths, as this is a reciprocal, in a way, of correct identification of live births.

If all birth events, whether judged correctly or not as live births, are recorded under some classification, then, while the shift between live births and fetal deaths will alter all the rates derived from live births as a denominator, the effect on the perinatal and neonatal rates will be numerically even greater than on the infant mortality rate. And as reporting improves, all three rates will become more nearly correct.

The major remaining source of error to be studied, but after the above have been resolved, is the line between those stillbirths classed as fetal deaths and those counted as abortions. Numerically, however, the numbers of events that are of a questionable category here are small and the matter should wait for resolution until the live birth category has been successfully applied routinely.

2. DEATHS

The reporting of deaths is more complex than registering of births and is even less reliable in Grenada as to needed information.

Deaths are given by the office of the Registrar General by age and sex, place of occurrence, place of residence of the deceased and by cause of death. It is felt generally that these data are fairly complete, but age at death, particularly at advanced ages, is undoubtedly an approximation only in many instances.

- a. As with births, the deaths reported in any given year in Grenada are the deaths registered in that year, not only those which occurred in that year, again apparently because of the belief that they will balance out over years. Even more with deaths than with births, however, unusual events can skew results. For example, apparently a number of neonatal deaths which occurred in 1982 at General Hospital were not registered in that year. This was rectified in one month in 1983, causing that month to show a large bulge of neonatal mortality.
- b. Listing causes of death, however, represents the greatest problem as the system is now functioning. Causes of death (or diagnoses in general, for that matter) are not coded except in the office of the Registrar General. Apparently no significant effort is made to encourage physicians signing death certificates to sign out patients with diagnoses which are compatible with the International Classification of Diseases and which can therefore be coded as such on the certificates. Given this situation the officer coding certificates and recording causes of death must second guess doctors and do it, of course, with no opportunity generally to discuss the deaths with the physicians certifying them.

The usual international death certificate format is used in Grenada, allowing the recording of multiple underlying causes of death, and of contributory causes. But the certificates are coded in the office of the Registrar General for one cause only and the apparent rule of local practice is to code (and therefore list in the annual causes of death summary) only the Ia cause, i.e., the cause given first on the death certificate. With such a practice, several problems occur which give faulty impressions of the mortality experience in Grenada and which may mask or cause the loss of identification of severe existing medical problems. For example:

Maternal deaths may be listed as due to causes that do not indicate that they were deaths due to pregnancy. No maternal causes of death were reported in 1982, yet cases were listed as maternal deaths at General Hospital in that year.

Deaths from metastatic malignancies may, in one instance, be attributed to the primary site and in another to the secondary site.

Etiologies of cardiac deaths may be lost or misinterpreted.

Modes of dying may be given as the Ia cause (e.g. asthenia, cachexia, inanition, etc) with resultant loss of information as to the underlying disease, injury or condition which really caused the death.

All of these problem and others, sometimes repeatedly, have been identified in a review of the coding and reporting process of the deaths registered in 1983, and causes of death given for Grenada must, therefore, be viewed with considerable reservation.

- c. It is impossible to tell, except by an expensive prospective study, what percentage of total deaths, especially in the neonatal and later infant periods, go unregistered. One such study, done in 1974 by PAHO in ten nations of the western hemisphere, showed that unregistered infant deaths in the countries studied ranged from 0.0% to 26.8% of the total and for neonatal deaths (under one day of age) from 0.0% to 65.1% of those which occurred. The situation in this area is, of course, unknown in Grenada and affects both birth and death statistics, but is a problem that probably is not of a great numerical magnitude and which should be approached after some of the more acute registration problems have been solved.

RECOMMENDATIONS

a) Death registration enumeration:

We recommend a program of transfer from a year of registration to a year of occurrence method of reporting deaths similar to the one we recommend above for births. This should be in practice for calendar year 1985.

b) Cause of death reporting:

As hinted at above, the problems in this area are the most serious in the area of death reporting. Our recommendations in this area include:

- i. Choose the one cause of death for coding and reporting in accordance with WHO Manual of the International Statistical Classification of Diseases (ICD) Injuries and Causes of Death. Currently the method used in Grenada is almost directly the opposite. On the death certificate used, as in the International convention, there is a space (Ia) for the "disease or condition directly leading to death". Under this (Ib and Ic) are antecedent causes, which are also called the underlying causes. In WHO international practice there is a set of rules for choosing which cause to report. The rules appear somewhat confusing at first, but, in essence, they call logically for the basic underlying cause to be counted as the cause of death for statistical reporting of causes. The Ia cause, the immediate cause, is not to be used and in Grenada, currently it is the practice to select this one always if at all possible.

This practice should, under initial supervision from a HOPE health planner familiar with death reporting, be changed to conform as closely as possible to WHO protocol.

- ii. All physicians practicing in Grenada should be requested to fill out death certificates carefully and in a manner expediting coding by ICD standards. Workshops should be held emphasizing the importance of this and giving instruction on the logic of the ICD classification system. Since the physicians already respond in some manner to the need to complete certificates of death, and since it requires virtually no additional time or effort for them to do it carefully, this educational effort should be pursued with vigor. This will, however, take time, effort and repeated effort to achieve results. Our study shows, that with rare exceptions, certificates are not filled out more carefully at General Hospital than by DIO's certifying deaths at homes in the outlying parishes. The workshops, therefore, should include all physicians who certify deaths.

- iii. The officer coding deaths in the office of the Registrar General should be given in-service training, in Grenada, working with actual death certificates to broaden her understanding of pathologic processes and the methodology of preparing cause of death statistics. At least two other persons should be trained simultaneously to code certificates to relieve the burden on the one person doing it now and to replace her in case of illness. Each certificate coded thereafter should be checked by another of the three before being finally accepted.
- iv. Death certificates should be delivered to the office of the Registrar General within five business days of being received, coded immediately and entered in the annual Causes of Deaths statistics so that a running picture of causes of death is known to the MOH. Quarterly provisional summaries should be published as well as annual provisional, and eventually final, lists.
- v. Provisional and final annual lists should continue to be provided, by age, sex and parish of residence and of occurrence of death.

The most important, and difficult, part of these recommendations to complete will be the education of the physicians and enlisting their co-operation.

3. POPULATION MIGRATION

This category is reported by the office of the Registrar General based on data provided by the Customs Service. Although traditional wisdom has it that there is a large excess of outward migration from Grenada, the 1982 figures showed a net positive in-migration of 900 persons. No study has been made by us of this yet, but because of the reported importance of migration to population a study of the accuracy of the present figures should be done. We have no present recommendations in this area other than to initiate a study of the reporting system when feasible.

C. HEALTH STATISTICS

There is an office of Statistics in the Ministry of Health charged with collecting and reporting data on communicable diseases and malnutrition, on immunization programs and on activities of the district medical officers at health centers and visiting stations. The officer in charge received some PAHO training out-of-country, and records events presented to her accurately. But reporting appears to be quite incomplete. Morbidity reporting is less complete than mortality reporting generally. The type of reasoning implied by one physician's statement (that he didn't believe the Ministry's statistics, anyway, so seldom reported his cases to it) illustrates the motivational problems. An example of the state of reporting is that only six new cases of tuberculosis were reported in 1983; this gives a reported incidence lower than that of the US and about a fourth that of Barbados. One Grenadian physician stated he had seen more than six new cases himself in that year.

The recording of data on communicable diseases in Grenada seems unduly complex and requires hand transfer of information from one paper to another multiple times for each case recorded. This is a system pre-loaded for errors and could and should be simplified.

Data on immunizations are recorded on forms requested by PAHO's program designed to expand immunization coverage (EPI) but the raw data sent in from various health stations vary in completeness and accuracy. Even so, they are of a better quality than the data reported on communicable diseases.

Reporting out of disease patterns to the field (and even to other offices in the Ministry) seems to be long delayed so that it has only historical, not tactical value. Epidemic levels of important diseases should be determined and reported promptly, and whenever other information comes to hand which bears on management of the health system, it should be readily available and reported promptly to concerned authorities.

Reports on district medical officer activities currently list patients seen and hours spent. A review of the most useful activities to be reported from the community health division might profitably be made to see whether other types of information might be more functional for guiding policies and allocating resources.

Some way must be found to cause private practitioners to submit reports of notifiable diseases and immunizations and to check on and improve the quality and completeness of the information sent in from within the government services. The private health sector apparently has a lower compliance rate than the Government service, which creates a source of inaccuracies which is hard to assess.

RECOMMENDATIONS

a) Communicable and notifiable disease reporting.

- i. As is almost universally the case, this is the health statistic in Grenada subject to the greatest degree of underreporting. As indicated later under Health Centers and Visiting Stations, it is simply too easy to forget to report these diseases by physicians treating them, and the record keeping system does not help. Private sector physicians are notoriously poor about reporting such diseases, but in Grenada this amounts to a smaller proportion of total cases than in some countries. The public sector system provides for reporting. Our first recommendation is to have a series of meetings with physicians (private and public) and nurses intended to remind them of this importance of the reporting of notifiable diseases and of the

methodology currently in use for reporting. They should be invited to discuss the factors interfering with their ease of reporting.

- ii. Existing Public Health Law in Grenada as it pertains to communicable and notifiable disease should be reviewed. Any appropriate changes should be described carefully and appropriate steps made to incorporate them into the law or to change the Law to accommodate them.
 - iii. The HOPE health planner and public health physician should initiate a program with the Statistical Officer of the MOH to study carefully the entire system of reporting, collecting and analyzing notifiable diseases with the view of streamlining the process and minimizing the transfer of data from form to form. Data should be collected, with diagnoses coded to at least a three number level according to the ICD Standards, in such a way as to make them compatible with computer data processing of a later date.
 - iv. A quarterly report of notifiable diseases occurring in Grenada should be prepared and distributed to the MOH, all physicians and all hospitals, health centers and visiting stations.
 - v. By the use of standard epidemiologic methods, epidemic levels of selected significant notifiable diseases should be set. An effort should be made to carry out surveillance of these diseases and report promptly when they reach epidemic proportions.
- b) Immunization reporting:
- i. Ongoing reinforcement for carrying out the EPI reporting program should be carried out. A goal should be to increase the accuracy of recording and the standardization of recording methods. Involvement of the private sector should be encouraged.
 - ii. The importance of a Road to Health Card (modified from UNICEF) for each child in Grenada should be reemphasized and these should be maintained accurately and in an up to date manner.
- c) Reporting of clinic activities:
- i. This should be reviewed to determine the uses and value of the items reported, and changes made if agreed upon.
 - ii. Whatever set of data agreed upon should be collected to as complete a degree as possible.

D. MEDICAL RECORDS, HOSPITALS

One of the basic records of any health system is that of the individual patient when hospitalized. From those records, in addition to their vital role in recording the care of individual patients, come the cumulative account of the institution's experience, and the data which result in the ability to calculate the resources needed in the hospital come from that accumulated experience. These data also furnish the primary raw source of information about the deaths, births, illnesses, injuries and surgeries of a large segment of the population.

The hospital's Record Office must play a major role in recording and interpreting these data, and not limit itself strictly to its archival role as a repository for old charts.

As part of our study of the health data base, and for other statistical purposes, we looked for the following in regard to hospital records in Grenada:

1. GENERAL HOSPITAL, ST. GEORGE'S

- a) Record of age, sex, ward, diagnosis and disposition (home, died, transferred) of each patient discharged during January, 1984.
- b) Record of age, sex, diagnosis, surgery carried out and parish of residence (where shown) for each patient operated on in January, 1984.
- c) Record of age, sex, diagnosis, parish of origin and disposition of a representative sample of 100 patients discharged in 1983 from each of the following wards:
Male medical, female medical, female surgical, male surgical, maternity and pediatrics (a total sample of 600 patient discharges).
- d) Record of all patients transferred from Princess Alice to General Hospital, as described under 2c. included were diagnosis, treatment and details of lab and x-ray studies.

2. PRINCESS ALICE HOSPITAL, ST. ANDREW'S

- a) Record of age, sex, parish of residence, diagnosis and disposition of each patient discharged in January, 1984.
- b) Sample of 100 patients discharged in 1983 with same data.
- c) Record of all patients transferred from Princess Alice to General Hospital during the first 20 days of March, plus February and January, 1984, and November and December, 1983. Included were age, sex, parish of residence, diagnosis and name (to be used only to find the patients' records at General Hospital after which the names will be removed from the study).

3. PRINCESS ROYAL HOSPITAL, CARRIACOU

- a) Record of age, sex, place of residence, diagnosis and disposition of every patient discharged in January, 1984.
- b) Same information for a representative sample of 100 patients discharged in 1983.

This material will be analyzed at HOPE Center and results used in

evaluating the HOPE medical service program in Grenada. However, in gathering this information we made observations about how the hospitals gather and record patient information. We believe the information is of importance to improving the accuracy and usefulness of the records as statistical data.

Common to all the records are some observations concerning only their use for the statistical data base of the health system, not as regards their value to immediate management of the patient (although this will be helped also, usually):

1. Admitting clinical impressions are often quite vague, and are sometimes not changed or clarified at the time of the patient's discharge.
2. Filling out the face sheets of the records is more complete with regard to administrative details than as to diagnosis and disposition of the patients.
3. Diagnoses are not coded according to ICD standards.

At General Hospital, obviously the most complex of the institutions, a log, or even two, is kept on each ward which records all admissions and discharges. They are difficult to use for searching because cases are entered chronologically only. Also, the quality of the record entry varies widely, apparently depending on the interest or motivation of the person entering data. Delivery room and operating theater logs are an exception and should be maintained. In searching large numbers of these records, inconsistencies or errors are encountered occasionally. Most of these have to do with dates of admission and discharge. These books, no matter how accurately kept, however, are difficult to justify on the basis of future usefulness if other records of the same data, which are also required, are kept meticulously.

Every night at midnight a Census Sheet for each ward is completed. It is routed first to the Matron's Office and then the Record Office. This record is well-conceived and if completed accurately should be all that is needed from the ward beyond each patient's record itself. The Census Sheet has space for the name, patient number, diagnosis and disposition of each patient admitted and discharged during that 24 hours. It also allows for a statistical summary including the census at the beginning of the day and at the end, and special information about maternity ward activities.

Using these Sheets for later analysis is complicated by the fact that they are all too often inaccurately and incompletely filled out. If a ward census is 21 at day's start and three patients are admitted and two discharged, then the census at day's end is 22, not 19 or 23. This type of error is commonly seen. In some instances the sex, age, diagnosis or even name of a patient is ^{missing} even though the nurse may have only one or two cases to include. On the maternity ward the sex of the baby may not be recorded while the sex of the mother is dutifully entered. Some nurses on the other hand meticulously fill out the sheets and these are a pleasure to study. The Census Sheets, recorded accurately, compiled chronologically, and with cross-references to the completed patients' charts and a cross-reference index would constitute a simple accessible and accurate data base easily maintained in the Record Office. It would be as easy, or easier, to maintain than the present record keeping and would involve few new skills but principally a motivation based on the belief that the data base is important and will be used.

At Princess Alice and Princess Royal Hospitals all admissions are recorded in a large central journal maintained by the Matron herself. In both these institutions therefore, the quality and consistency of the record keeping process in the logs are

good.

To use the log in searching for an individual patient, however, is difficult unless the approximate date of entry is known because the logs are recorded chronologically only.

Another problem is that the entry is opened when the patient is admitted and only the date of discharge and disposition (i.e., discharged, died, transferred) are added at the time of discharge. The diagnosis entered is therefore only the "admitting impression," and sometimes makes no sense as the permanently recorded diagnosis. For example, one patient died after six days in hospital with the diagnosis "social problem."

The above are general comments which came up after looking at the record system as it exists. Suggestions for changes are listed below.

RECOMMENDATIONS

1. GENERAL HOSPITAL, ST. GEORGE'S

- a) Carry out training sessions on all wards and the Record Office about the importance of the Daily Census Sheet as an accurate record, vital to the hospital. Emphasize that it will be utilized and not simply be filed away.

Demand that it be filled out correctly after holding workshops on how to do it; when it goes to Matron's office in the AM have Matron or her assistant go over it for deletions or arithmetic inaccuracies, and make her office responsible for their immediate correction. When the office is satisfied, stamp the sheets as Accepted and forward them to the Record Office. This must be done within one business day.

- b) Use the completed ward census sheets to complete a daily in-house census record to be sent to Matron's Office, the Hospital Administrator, the CMO and the Director of the PNEU.
- c) Set up a simplified card cross-index system to identify patients' charts. The system would file charts by hospital number, and be searchable by dates, diagnosis, name or hospital number. Surgeries performed should be included. This should be installed in such a way as to be compatible with computer storage later.
- d) Institute ICD diagnosis coding - by the Record Office - for all discharges, and code all diagnoses for the cross reference file. Institute a new face sheet to facilitate ICD diagnostic coding of final diagnoses.
- e) Hold workshops for physicians and nurses on how to code diagnoses. (Should be held in conjunction with the workshop on coding for death certificates).
- f) Prepare a quarterly report of hospital activity based on patients admitted and discharged, diagnoses, deliveries, surgeries, deaths, source of patients (by parish) for the hospital's administration and matron, the CMO (for distribution by him) and the Director of the PNEU. Prepare a similar Annual Report.
- g) Report directly to the MCH Statistical Office - within three days of discharge, all notifiable diseases admitted to the hospital.

- h) Through the Medical Staff and Standards Committee, institute an educational/enforcement policy to encourage physician to complete charts accurately and in a timely way. Authorize the Record Office to return charts to doctors for clarification and completion when necessary.
- f) Have periodic in-service sessions to maintain motivation.

2. PRINCESS ALICE AND PRINCESS ROYAL HOSPITALS

The logs kept in these hospitals are well kept and for the time being, should be maintained as at present except for four changes:

- a) The diagnosis should be entered into the log at the time of discharge, not admission, of the patient and should be as carefully worded diagnosis as is possible, given the diagnostic constraints in the two hospitals. The log is entered at the time of discharge when the date and disposition of the patient are entered. The final diagnosis should go in at that time. There is no need to enter an admitting diagnosis. The diagnosis should be ICD codable if possible and the physicians in charge should attend the workshop on ICD diagnostics. Copies of the ICD Manual should be in each hospital's office.
- b) Cross reference cards should be instituted to make the chart file accessible by name, date, and hospital number. Diagnoses can be cross-indexed if ICD coded (This will come at a later time).
- c) A separate delivery room log should be maintained, including all pregnancies treated, including early events (abortions by types) and transfers to General Hospital with details.
- d) A daily census showing patients in-house at 0001 daily and events (admissions, discharges, etc) daily included. This should be given to the hospital director daily by the Matron.

E. HEALTH CENTER AND VISITING STATION STATISTICS

As noted under Health Statistics above, reports are required by the MOH Statistic Office from health centers and visiting stations regarding immunizations, notifiable diseases and DMO clinics and other activities.

The patient records in the clinics should be of use also as sources of raw data on patterns of health care seeking behaviour of Grenadians, of morbidity patterns, and of ambulatory care.

To check the accuracy of present reporting and evaluate the usefulness of the data for the latter uses, visits were made to several centers and clinics:

- a) All visiting stations in St. George's parish
- b) Health center at Grand Bras (St. Andrew's)
- c) Health Center at Hillsborough (Carriacou)
- d) Health stations at Hermitage (St. Patrick's), and Belle Vue South, Mt. Pleasant and Windward on Carriacou.

We observed the way in which data for the reports required by the Statistic Office are gathered. There are several ways in use of putting down the raw data but all include putting it down on a paper or in a ledger and transferring it later which leads to inaccuracies. There were obvious differences in the meticulousness with which the raw data were recorded and in some instances totals of tabulations did not quite agree with totals taken by us. In one health station data on immunizations were entered in several locations in one ledger depending on home address, or whether the immunization was in a "special clinic" or routinely given. In all, however, we felt that immunizations, while probably underreported somewhat, were the most accurately recorded of the three types of information sought. Reports on communicable disease are the least so, unless an epidemic is in progress, when attention is brought to the disease. DMO's often diagnose gastroenteritis, for example, and enter the word on the patient's record. The charts, at the time of refiling by patients last name, were not scanned by the nurse or assistant for diagnoses while we were observing, and it seems incomprehensible that once a month nurses would search through all the clinic's records looking for certain diagnoses, so probably diagnoses made by DMO's in their clinics are not recorded and reported except in unusual circumstances. Nurses seem to have a much better record of reporting communicable diseases since we have observed them recording diagnoses they have made (of gastroenteritis, for example) on the MOH report form at the time of seeing the patients.

Use of the clinic registries of charts for statistical purposes could have some use since they represent the number of patients registered in the clinic. The name, age, sex, and address of the patients is usually recorded. But for DMO clinics at least, diagnoses, treatment given, etc., are illegible usually or not recorded beyond the most hurried brief way if at all. A better method was undertaken to get such information from patient visits to DMO clinics. A form was devised for HOPE physicians working in DMO clinics to use which in a very simple way allows us to collect desired information (while protecting completely the patient's identity). The forms are coded for computer input and specific statistical information about patient health seeking patterns will be available from the HOPE Center in Millwood, Virginia. (Again, the patients' names are not entered and there is no way to trace a specific set of data to an individual patient). Each HOPE physician working in DMO clinics enters required information (age, sex, diagnosis, treatment, appropriateness of visit, parish) on each patient he sees, the diagnoses are coded according to a

WHO Reason for Encounter classification, and then the coded information is placed in the HOPE computer for analysis.

The information gained will be part of the data base being built into the PIU so that more accurate planning may be done.

RECOMMENDATIONS

- a) Study the usefulness of information currently being requested and modify or retain depending on what use is to be made of it.
- b) Assign numbers to patient charts so they can be cross indexed.
- c) Have workshops to impress on DMOs and nurses the need for simple but accurate data (diagnosis, treatment, lab and x-ray results) on charts legibly.
- d) Have notifiable disease diagnoses made by physicians and nurses sent to MOH Statistical Office every five business days. Have a sheet so that DMOs and nurses can check off cases of diseases easily at the time of the patients' visit. Avoid the problem of having to go back and search records or lose track of number of patients seen with various notifiable diseases.

F. THE THREE YEAR HEALTH SECTOR PLAN FOR GRENADA, 1983-1985

This 221 page generally excellent plan was studied thoroughly and by means of a page by page search 175 objectives (usually dated) for the MOH were identified and tabulated according to the Health Plan outline, paragraphing and page numbers. On a table, each objective is stated and in one column the date of anticipated achievement is given. The next column will give (when tabulation is completed) the date of actual completion. The following column gives a new target date if achievement is behind schedule, and the last column provides space for a reply stating "objective cancelled/modified". These are being completed by heads of the various involved divisions of the MOH.

Completion of this tabulation will give an objective verified picture of where the MOH stands on achievement of the 1983-1985 Health Plan and what modifications or changes are currently visualized by responsible division heads of the MOH. This too is information to fed into the data base of the PHEU.

G. SUMMARY AND GENERAL STATEMENTS

We have summarized above our assessment of the health data base of Grenada as it now stands and made suggestions about how to make improvement in it, some simple and straightforward - others involving acquisitions of a few new skills and others requiring understanding of reasons for doing things and requiring a motivation to do them. No suggestion made here is beyond the budgetary limits or human skills of the MOH if the will to do them is present and they are recognized as desirable changes to make.

The result of doing them would be a more reliable data base on which sounder planning decisions could rest, and which might well, over years, result in cash savings. Accomplishing the changes listed would also enable the MOH to know with considerably greater accuracy the health status of the Grenadian people in an ongoing way so that public health decisions could be made on a more rational basis.

It is important to remember that:

- a) Understanding of why a thing is done, if it is reasonable, leads usually to a greater willingness to do it. Therefore, all workshops and seminars and directives should begin with an explanation of why the action is requested.
- b) Any request for a routine supply of information should result in a return flow of the summaries and analyses of the information to the sources of the raw data.
- c) Records and data required should be judged periodically on why they are demanded and how they are being used.
- d) New, and valuable old procedures must be monitored for continued completeness and accuracy for long periods if they are to be maintained well. Ordering a new form, having a workshop on it, then sitting back expecting it to come in reliably will lead only to disappointment.
- e) Those in charge of data collection and record keeping should make periodic visits to the field where the raw data are generated if enthusiasm and institutionalization of the collecting process are to be maintained.

Much data has actually been collected in the process of this survey. As it is analyzed and organized, the rules above will be followed and the information sent, through the PNEU, to the proper MOH authorities. Because of the ease of analyzing data at HOPE Center most of the data gathered will be treated there and returned to Grenada through the HOPE office here.

Harold H. Royaltey, MD, MPH,
Director of Community Health Program,
Project HOPE.

St. George's, Grenada,
8 April, 1984.

MALE	ST. G TOWN	ST. G NORTH	ST. G SOUTH	ST. G TOTAL	ST. JOHN	ST. MARK	ST. PAT.	ST. A NORTH	ST. A SOUTH	ST. A TOTAL	ST. DAVID	CARRI+ ACOU	TOTAL
< 1	0.8	1.3	0.9	1.0	1.1	1.2	1.1	1.2	1.2	1.2	1.1	1.2	1.
1-4	4.0	4.7	4.4	4.4	5.1	5.6	5.3	6.0	5.2	5.6	4.7	6.1	5.
0-4	4.8	6.0	5.2	5.5	6.2	6.7	6.4	7.2	6.4	6.8	5.8	7.4	6.
5-9	5.5	6.6	5.5	6.0	6.4	6.3	7.5	7.8	6.8	7.2	7.7	7.3	6.
10-14	5.1	5.9	5.1	5.5	6.3	8.9	7.0	7.5	6.7	7.1	6.9	6.1	6.
15-19	5.6	6.7	6.2	6.3	6.7	6.1	6.5	6.2	6.6	6.4	7.3	4.6	6.
20-24	5.9	5.4	6.8	6.1	5.4	4.7	4.6	5.2	4.7	5.0	5.3	4.0	5.
25-29	4.3	3.4	5.0	4.2	3.2	3.4	2.2	2.6	2.8	2.6	2.8	3.4	3.
30-34	2.9	2.1	3.2	2.7	2.4	2.3	2.0	2.0	1.9	2.0	2.1	2.2	2.
35-39	1.8	1.6	2.6	2.1	1.7	1.6	1.3	1.3	1.5	1.4	1.6	1.3	1.
*40-49	3.6	3.4	3.9	3.6	2.8	2.7	3.0	3.2	2.8	3.0	3.1	1.5	3.
50-54	1.8	1.8	1.6	1.7	1.7	1.6	1.5	1.6	1.5	1.6	1.8	1.0	1.
55-59	1.4	1.3	1.5	1.4	1.5	1.2	1.3	1.2	1.5	1.3	1.2	1.0	1.
60-64	1.1	1.1	1.0	1.0	1.2	1.0	1.3	1.0	1.3	1.2	1.3	1.2	1.
≥ 65	3.0	2.1	2.7	2.5	2.9	2.9	3.2	2.4	3.5	3.0	2.7	4.8	2.9
ALL AGES	(46.8)	(47.4)	(50.3)	(48.6)	(48.4)	(49.4)	(47.8)	(49.2)	(48.0)	(48.6)	(49.6)	(45.8)	(48.1)
FEMALE													
< 1	0.8	1.2	1.0	1.1	0.9	1.1	0.9	1.1	1.2	1.1	1.1	1.1	1.
1-4	3.4	4.7	4.3	4.3	5.0	4.9	5.2	5.9	5.2	5.6	4.9	5.6	5.
0-4	4.3	5.9	5.3	5.4	6.0	6.0	6.1	7.0	6.4	6.7	6.1	6.7	6.
5-9	4.9	6.1	5.7	5.7	5.9	6.5	7.6	7.2	6.8	6.9	7.0	6.9	6.
10-14	5.5	6.5	5.3	5.8	6.6	6.8	7.4	6.8	6.3	6.5	6.1	6.0	6.
15-19	6.7	7.4	5.7	6.6	6.5	6.2	6.2	6.9	6.4	6.6	6.5	5.7	6.
20-24	6.0	6.0	6.0	6.0	5.2	4.7	4.6	4.6	5.5	5.1	5.2	4.4	5.
25-29	4.5	3.3	4.1	3.8	3.5	3.4	2.7	2.9	2.7	2.8	2.8	2.9	3.
30-34	3.4	2.4	3.0	2.8	2.4	2.1	2.0	1.9	2.2	2.0	2.2	2.1	2.
35-39	2.3	2.0	2.2	2.2	1.9	1.7	1.5	1.6	1.7	1.7	1.8	1.8	1.9
*40-49	4.2	4.2	3.8	4.1	3.5	3.5	3.1	3.6	3.6	3.6	3.6	2.4	3.
50-54	2.1	1.9	2.0	2.0	1.9	2.0	2.2	2.0	2.1	2.0	2.0	1.8	2.
55-59	2.0	1.7	1.5	1.7	1.6	1.6	1.6	1.5	1.7	1.6	1.6	1.8	1.
60-64	2.1	1.3	1.3	1.4	1.5	1.2	1.7	1.1	1.8	1.4	1.4	2.4	1.9
≥ 65	5.0	3.8	3.5	3.9	4.9	4.8	5.3	3.7	4.9	4.3	4.0	9.2	4.6
ALL AGES	(52.9)	(52.5)	(49.4)	(51.4)	(51.4)	(50.5)	(52.0)	(50.8)	(52.1)	(51.2)	(50.3)	(54.1)	(51.1)

APPENDIX I

Population of Grenada, Percentage of population by age, sex and parish. Based on census of 30th April, 1981, (not yet accepted by Government).

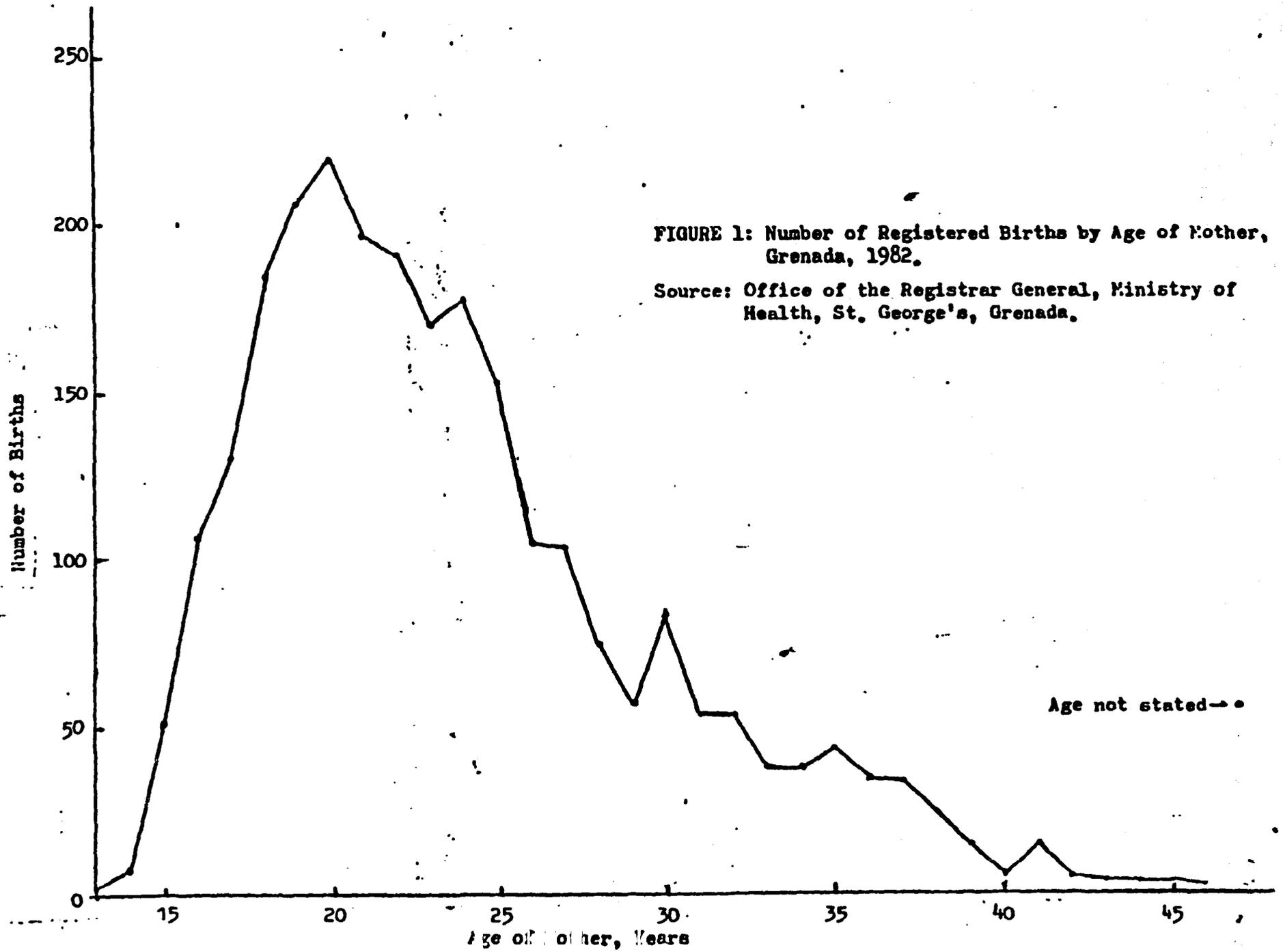


FIGURE 1: Number of Registered Births by Age of Mother, Grenada, 1982.

Source: Office of the Registrar General, Ministry of Health, St. George's, Grenada.

Age not stated → •

SCHEDULEA. Purpose of Cooperative Agreement

The purpose of this Agreement is to provide support for the Provision of Health and Dental Services for the People of Grenada, as more specifically described in Attachment 2 to this Agreement entitled "Program Description."

B. Period of Agreement

1. The effective date of this Agreement is January 13, 1984 and the estimated completion date is February 28, 1985.

2. Funds obligated hereunder are available for program expenditures for the estimated period January 13, 1984 to February 28, 1985 as shown in the Financial Plan below.

C. Amount of Agreement and Payment

1. The total estimated amount of this agreement for the period shown in B.1. above is \$1,729,000.

2. AID hereby obligates the amount of \$200,000 for program expenditures during the period set forth in B.2. above and as shown in the Financial Plan below.

3. Payment shall be made to the Recipient in accordance with procedures set forth in the Standard Provision of this Agreement entitled "Payment - Federal Reserve Letter of Credit, (FRLC) advance, Standard Provision No. 7A," as shown in Attachment 3.

4. Additional funds up to the total amount of the Agreement shown in C.1. above may be obligated by AID subject to the availability of funds, and to the requirements of the Standard Provision of this Agreement, entitled "Revision of Financial Plans."

D. Financial Plan

1. The following is the Financial Plan for this Agreement. The Recipient may not exceed the grand total of the total estimated amount or the obligated amount, whichever is less (see Part C above). Except as specified in the Standard Provision of this Agreement entitled "Revision of Financial Plans", as shown in Attachment 3, and except as otherwise instructed below, the Recipient may adjust line item amounts within the grand total as may be reasonably necessary for the attainment of program objectives. Line items No. 2 and 3 may not be rebudgeted without prior approval of AID Agreement Officer.

	<u>Financial Plan</u>		
	<u>(1/1/84-2/29/84)</u>	<u>(3/1/84-2/28/85)</u>	<u>Total</u> <u>(1/1/84-2/28/85)</u>
1. Salaries, Wages & Benefits	\$28,585	\$122,758	\$151,343
2. Equipment, Supplies, Office Space, Vehicles	19,100	336,274	355,374
3. Travel, Transportation & Per Diem (Personnel)	139,455	957,486	1,096,941
4. Freight - Donated Supplies & Materials	9,636	72,764	82,400
5. Evaluation	-0-	15,000	15,000
6. Other Direct Costs	3,224	24,718	27,942
	<u>\$200,000</u>	<u>\$1,529,000</u>	<u>\$1,729,000</u>

NOTE: Recipient shall absorb all U.S. support costs estimated at \$84,510 and all indirect costs estimated at \$43,777.

2. Notwithstanding the effective date of this Cooperative Agreement, and subject to the Standard Provision entitled "Allowable Costs and Payment (Other than Educational Institutions)," costs incurred on or after January 1, 1984 shall be eligible for reimbursement hereunder. Such costs are included in the Financial Plan shown above.E.

E. Substantial Involvement Understanding

It is understood and agreed that AID will be involved in the following:

1. Evaluation of Program activities with the recipient and outside evaluators during the tenth month of operation;
2. Approval of the procurement of equipment, supplies and vehicles which exceed \$130,000 in the aggregate;
3. Rebudgeting of funds which may become available from line item No. 3 entitled "Travel, Transportation & Per Diem-Personnel."

F. Reporting

1. Financial Reporting

a. Financial reporting requirements shall be in accordance with the Standard Provision of this Agreement entitled "Payment - Federal Reserve Letter of Credit (FRLC)," as shown in Attachment 3.

b. The original and two copies of all financial reports shall be submitted to AID, Office of Financial Management, Program Accounting Division (FM/PAD), Washington, D.C. 20523. In addition, three copies of all financial reports shall be submitted to the Technical Office specified in the Cover Letter of this Agreement.

2. Program Performance Reporting

a. The Recipient shall submit quarterly program performance reports, and a final report, which briefly presents the following information:

(1) A comparison of actual accomplishments with the goals established for the period, the findings of the investigator, or both. If the output of programs or projects can be readily quantified, such quantitative data should be related to cost data for computation of unit costs.

(2) Reasons why established goals were not met.

(3) Other pertinent information including, when appropriate, analysis and explanation of cost overruns or high unit costs.

b. Between the required performance reporting dates, events may occur that have significant impact upon the program. In such instances, the Recipient shall inform AID as soon as the following types of conditions become known:

(1) Problems, delays, or adverse conditions that will materially affect the ability to attain program objectives, prevent the meeting of time schedules and goals, or preclude the attainment of project work units by established time periods. This disclosure shall be accompanied by a statement of the action taken, or contemplated, and any AID assistance needed to resolve the situation.

(2) Favorable developments or events that enable time schedules to be met sooner than anticipated or more work units to be produced than originally projected.

c. If any performance review conducted by the Recipient discloses the need for change in the budget estimates in accordance with the criteria established in the Standard Provision of this Agreement entitled "Revision of Financial Plans", the Recipient shall submit a request for budget revision.

d. Five copies of each program performance report shall be submitted to the Technical Office specified in the Cover Letter of this Agreement.

G. Indirect Cost Rates

It is agreed and understood that any indirect costs incurred by the recipient under this agreement will be for the account of the recipient as a cost sharing item.

H. Title to Property

Title to all property procured under this Agreement shall be vested in the cooperating country in accordance with Standard Provision No. 13C.

I. Authorized Geographic Code

The source and origin of all goods and services shall be G00 (U.S.).

J. Special Provisions

1. OMB Circular A-122

a. The terms "OMB Circular A-122" and Subpart "1-15.6 of the Federal Procurement Regulations (FPR)" are synonymous.

b. Subpart 1-15.6 reserves the sections on bid and proposal costs and independent research and development costs. AID and the Recipient hereby agree upon the following treatment of these costs, pending such time as the FPR is amended to include them:

(1) Bid and proposal (B&P) costs are the immediate costs of preparing bids, proposals, and applications for potential Federal and non-Federal grants, contracts and agreements, including the development of scientific, cost, and other data needed to support the bids, proposals, and applications. B&P costs of the current accounting period are allowable as indirect costs. B&P costs of prior accounting periods are unallowable in the current period. In this regard, B&P costs incurred for the preparation of requests for specific projects and programs are acceptable for recovery as indirect costs. However, proposal costs incurred in the attempt to obtain unrestricted funds are to be treated as fund raising and must be included in the organization's direct cost base. B&P costs do not include independent research and development costs which are covered by paragraph (2) below, or preaward costs covered by Attachment B, Paragraph 33, of OMB Circular A-122. (FPR 1-15.603.2.)

(2) Independent research and development (IR&D) costs are for research and development conducted by an organization which is not sponsored by Federal or non-Federal grants, contracts or other agreements. IR&D costs must be included in the organization's direct cost base for allocation of its proportionate share of indirect costs. The costs of IR&D, including its proportionate share of indirect costs, are unallowable under AID agreements.

2. No U.S. support costs of the Recipient are reimbursable hereunder.

K. Alterations and Additions to Standard Provisions:

1. The Standard Provisions set forth as Attachment 3 to this Agreement consist of form AID 1420-52, dated 2-82, which includes provisions 1 through 34.

2. The Standard Provisions, as defined above, are modified as set forth in the July 82 Attachment to AID Forms 1420-52, entitled "Alterations in Grant", which is attached hereto and made a part of this Agreement.

3. Delete the following Standard Provisions from form AID 1420-52, dated as above:

- a. Provision 5A : Negotiated Overhead Rates - Predetermined

- b. Provision 5B : Negotiated Overhead Rates - Non Profit Organizations other than Educational Institutions

- c. Provision 7B : Payment - Periodic Advance
- d. Provision 7C : Payment - Reimbursement
- e. Provision 13A - Title to and Use of Property
(Grantee Title)
- f. Provision 13B - Title to and Use of Property
(U.S. Grant Title)
- g. Provision 10A - Procurement of Goods and Services
under \$250,000

4. Add the following Standard Provisions to form AID 1420-52, dated as above, which are attached hereto and made a part of this Agreement:

- a. Provision 35 : Patent Rights (Small Business Firms & Non Profit Organizations)

L. Relationships and Responsibilities

Project Hope staff will work in cooperation with the AID General Development Officer and the AID Representative in Grenada.

M. Support

The Government of Grenada has indicated that they will provide one (1) local hire administrative Assistant, one (1) secretary and drivers as well as (EC) \$400 per person/month of U.S. services.

PROGRAM DESCRIPTION

A. Purpose of Agreement

Provision of Health and Dental Services for the People of Grenada in cooperation with the Ministry of Health of the Government of Grenada.

B. Specific Objectives

- To provide urgently needed medical and dental services in the St. George's Hospital, and ambulatory care in the Princess Alice Hospital and the Princess Royal Hospital.
- To provide medical support for health centers and medical stations.
- To improve laboratory services at St. George's Hospital.
- To provide technical support services for improved operation of the health delivery system.
- To assist the Ministry of Health to develop a national health plan.

C. Implementation

Project HOPE will provide approximately 240 person months of medical and health personnel to achieve the objectives outlined above. To the maximum extent possible, Project HOPE will recruit personnel on a volunteer basis, for minimum assignments of three months. The levels of effort expressed below are, therefore, in full time equivalents. The proposed assistance will be provided in the following areas:

A. Medical Dental Services (144 P/M)

Medical care (pediatrics, internal medicine, general surgery and obstetrics/gynecology), as well as pathology and anesthesiology, will be provided at St. Georges Hospital. Outpatient services will be provided at Princess Alice and Princess Royal Hospitals. The personnel to be provided include:

2 family practice physicians	24 P/M
2 pediatricians	24 P/M
1 internist	12 P/M
2 general surgeons	24 P/M
1 obstetrician/Gynecologist	12 P/M
1 anesthesiologist	12 P/M
2 dentist	24 P/M
1 pathologist	12 P/M

HOPE physicians and dentist will work within the structure and organization of the Ministry of Health. These clinicians will diagnose and treat patients in the hospitals and, where feasible, train Grenadian counterparts. In addition, clinic medical personnel - principally pediatricians and family practice physicians - as well as dental personnel will be made available from the hospitals to provide consultations in health centers (6) and medical stations (26), as appropriate.

B. Allied Health Services (24 P/M)

Two medical technologists (24 months) will be provided to improve laboratory services primarily at St. Georges Hospital. If feasible, laboratories will be established at Princess Alice and Princess Royal Hospitals. The medical technologists will:

1. perform laboratory tests in St. Georges Hospital as required,
2. establish standard laboratory procedures and institute a quality control program,
3. establish procedures for new tests not currently performed but which are required for adequate medical practice, and
4. train counterpart Grenadian medical technologists as laboratory supervisors.

C. Technical Support Services (39 P/M)

Certain technical services are required to improve overall effectiveness of Grenada's health delivery system. A Materials Management Specialist (12 months) will be provided to establish procedures for the procurement, distribution, storage and inventory control for pharmaceuticals, equipment and supplies. A Sanitarian (12 months) will be provided to establish procedures and supervise the Ministry of Health's

programs in vector control, water quality control, sanitary inspections, solid waste management and sewage disposal. A Biomedical Engineering Technician (12 months) will be provided to repair and maintain medical equipment in hospitals, health centers and medical stations. This technician will work with the existing Biomedical Engineering program in the Caribbean of the U.S. National Institutes of Health to assess training needs and train Grenadian counterparts. A Health Planner will be provided (up to 3 P/M) to assist in the preparation of a national health plan for Grenada. Additional participation (up to 9 months) of the Health Planner is subject to negotiation with AID and the Government of Grenada (GOG).

D. Administrative Support Services (26 P/M)

A program director/public health physician (M.D., M.P.H.) (13 P/M) and a project administrator (13 P/M) will be provided. In addition to providing administrative oversight, the program director will provide technical support and supervision to HOPE's medical personnel and technical assistance to the Ministry of Health.

D. Relationships and Responsibilities

Project HOPE will work in cooperation with the AID/General Development Officer in Grenada and the AID Representative in Grenada. Additionally, Project HOPE will make every effort to coordinate its activities with other donor programs in Grenada.

E. Evaluation

Services will begin immediately upon the signing of the Cooperative Agreement. An evaluation of project progress to date and achievements will be undertaken in the 10th month of the project. The terms of reference for this evaluation will be mutually agreed upon by Project HOPE and AID/Grenada.

F. Total Effort

Total 233 P/M

Medical and Dental Services (144 P/M)

2 family practice physicians	(24 P/M)
2 pediatricians	(24 P/M)
1 internist	(12 P/M)
2 general surgeons	(24 P/M)
1 obstetrician/Gynecologist	(12 P/M)
1 anesthesiologist	(12 P/M)
2 dentist	(24 P/M)
1 pathologist	(12 P/M)

Allied Health Services (24 P/M)

2 Medical Technologists (24 P/M)

Technical Support Services (39 P/M)

1 Supplies Management Advisor (12 P/M)

1 Biomedical Engineering Tech (12 P/M)

1 Sanitarian (12 P/M)

1 Health Planner (3 P/M)

Administrative Support Services(26 P/M)

1 Program Director/Public Health
Physician (13 P/M)

1 Administrator (13 P/M)

HOPE/GRENADA PROGRAM
STAFFING
JANUARY 16, 1984 - NOVEMBER 30, 1984

Medical and Dental Services

Individuals

Affiliation

(2) Family Practice

Lance Potocki, M.D.

Private Practice

Edwin Preshaw, M.D.

Private Practice

Ernst Oldtmann, M.D.

Private Practice

George Troxel, M.D.

Winchester Medical Center

Robert Barts, M.D.

University of Wisconsin

Total Person Months

12.5

Page two

Medical and Dental Services

(2) Pediatricians

Individuals

Affiliation

Benjamin Silverman, M.D.

Childrens Hospital
of Philadelphia

Helen Mitchell, M.D.*

Maine-Dartmouth
Family Practice

Grace Caputo, M.D.

Childrens Hospital
of Philadelphia

Richard Ruddy, M.D.

Childrens Hospital
of Philadelphia

John Hubbell, M.D.

Childrens Hospital
Boston

James Belt, M.D.

Private Practice

Thomas Kenyon, M.D.

University of Arizona

Kristy Ingebo, M.D.

Childrens Hospital Boston

Douglas Boenning, M.D.

Childrens Hospital
Philadelphia

Ruthven Modell, M.D.

Childrens Hospital
Philadelphia

Total Persons Month 19

Page three
Medical and Dental Services

(1) Internist

Individuals

Affiliation

Victor DeWolfe, M.D.

Cleveland Clinic

Virginia Weatherhead, M.D. *

Cleveland Clinic

Donald Schalch, M.D.

University of Wisconsin

Robert Robinson, M.D.

Indiana University

Total Persons Month 7

(2) General Surgeons

Gordon Arnold, M.D.

Boston University

Richard Strate, M.D.

St. Paul Ramsey Medical
Center for Crippled

Kathie Dalesandri, M.D.

Martinez VA Medical Center

Robert Boyd, M.D.

Winchester Medical Center

Steven Eyer, M.D.

University of Minnesota

Wolfgang Markgraf, M.D.

VA Hospital of
St. Petersburg, FL

(1) Orthopedic Surgeon

Robert Feighny, M.D.

University of Kansas

Total Persons Month 13

Page four
Medical and Dental Services

(1) OB/Gynecologist

Total Persons Month 9

(1) Anesthesiologist

Total Persons Month 10.5

Individuals

James Wall, M.D.

Jane Hodgson, M.D.

Algirdas Devenis, M.D.

Garry Johnson, M.D.

Charles Galway, M.D.*

Laura Roderick, M.D.*

Glenn Petersen, M.D.

Michael McCue, M.D.

Steven Elia, M.D.

Craig Muettertles

Affiliation

University of Minnesota

University of Minnesota

Private Practice

Private Practice

Fairview Hospital, MN

University of Washington

Fairview Hospital, MN

Massachusetts General Hosp.

Massachusetts General
Hosp.

Crozier-Chester Medical
Center

Page five

Medical and Dental Services

(2) Dentist

Individuals

Affiliation

Cory Kruckenberg, D.D.S.,

Private Practice

Edwin Owen, D.D.S.n

Private Practice

Ray Flanders, D.D.S./s

Va State Health Dept.
Peninsula Health Center

John McFayden, D.D.S.

Private Practice

Total Persons Month 19.5

(1) Pathologist

Richard Harruff, M.D.

Grandy Memorial Hospital
Atlanta, Georgia

Total Persons Month 99

Allied Health Services

(2) Medical Technologist

Beverly Watkins

VA Medical Hospital,
Decatur, Georgia

Patsy Mallmann

Sequoria Hospital

Total Persons Month 18.5

Page five

Medical and Dental Services

(2) Dentist

Total Persons Month 19.5

(1) Pathologist

Total Persons Month 99

Allied Health Services

(2) Medical Technologist

Total Persons Month 18.5

Individuals

Cory Kruckenberg, D.D.S.,

Edwin Owen, D.D.S.n

Ray Flanders, D.D.S./s

John McFayden, D.D.S.

Richard Harruff, M.D.

Beverly Watkins

Patsy Mallmann

Affiliation

Private Practice

Private Practice

Va State Health Dept.
Peninsula Health Center

Private Practice

Grandy Memorial Hospital
Atlanta, Georgia

VA Medical Hospital,
Decatur, Georgia

Sequoria Hospital

Page six

Technical Support Services

Individuals

Affiliation

(1) Supplies Management Advisor

Lee Werley

University of North
Carolina

Forest Neal

HOPE Staff

(1) Biomedical Engineering

William Sheppard

University of Oregon
Health Sciences Center

(1) Sanitarian

Thomas Kirby

HOPE Staff

(1) Health Planner

Darryl Crompton

University of Alabama,
Birmingham

Total Persons Month 31

Administrative Support Services

(1) Program Director/Public Health
Physician

John Wilhelm, M.D., M.P.H.

HOPE Staff

(1) Administrator

Almena Palombo

Massachusetts General
Hospital

Total Persons Month 21

Total Person Months 169.5

*Two Rotations

December 4, 1984

ARD/pg