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An Evaluation of the Eastern Caribbean Regional Training Program for Allied Health Professions

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TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

Since 1980, the St. Lucian government, Project HOPE, and the U.S. Agency for International Development (AID) have worked together to design and implement a multi-dimensional training program for allied health professionals. The major emphasis has been on environmental health and pharmacy training. This program was initiated in response to the lack of training opportunities for some of the smaller countries of the Eastern Caribbean. Both the development of trained personnel and of educational resources were seen as goals of the project.

Three Public Health Inspector (PHI) training classes (a total of 40 students) were held in St. Lucia between 1980 and 1985. (An additional 11 students completed the initial class (1979-1981) conducted by Project HOPE and St. Lucia.) Environmental Health Assistant (EHA) classes were held in St. Lucia and Antigua, resulting in 36 and 22 graduates, respectively. A total of 17 graduates were produced by the two pharmacist classes held in St. Lucia, conducted under a separate grant.

The study team (Gail R. Wilensky, Glinda S. Cooper, and Steve Chapman, all of Project HOPE's Center for Health Affairs) collected course assessments and information on responsibilities, and job performance from the graduates, supervisors, and ministry representatives. Personal interviews and written surveys were conducted during site visits to St. Lucia, Antigua, and St. Kitts/Nevis in April 1985. A mailed questionnaire was sent to members from the other participating countries. A high rate of return was obtained from both the mailed and personal surveys. About 80 percent of the PHI graduates

completed the survey, 55-65 percent of each EHA Program, and 60 percent of the pharmacists.

Most of the graduates of the St. Lucia training programs are employed in their respective fields and countries. The St. Lucia EHA program is the only one that has experienced a relatively high post-graduation drop-out rate (25% no longer employed in environmental health). The PHIs and Antiguan EHAs have remained in their positions or been promoted within their departments.

Although a few problems with the St. Lucia program were identified by the graduates, for the most part the course content and teaching were rated highly. The specific problems (e.g., inadequate facilities, delays in certain phases of the training program) were concentrated in the early years of the program, and have generally improved over time.

Several factors limiting the effectiveness of the trainees were identified by both the graduates and the department chiefs. In environmental health, lack of proper equipment, problems with supervision, and sample and specimen collection inadequacies were cited, although both relationships among and level of knowledge of workers were thought to be good. In pharmacy, understaffing and problems obtaining and storing drugs adversely affect the pharmacists' work.

There is a continuing need for training of additional personnel and of furthering the education of previously trained workers. This will enable workers to develop their skills and respond to new or changing demands of

their job. The human resources, such as the counterparts involved in the training programs, could be well used in this process.

This evaluation has demonstrated that it is possible to conduct a comprehensive follow-up examination of program graduates. The experiences of these trainees may well be useful in the development of other training programs.

Two of the specific factors responsible for the positive results of this program were:

- A Program Council, made up of representatives of each participating nation, was created to oversee the development of the program and foster discussions and exchange of information within the region.
- Classroom training is only one part of training: library resources, laboratory work, and internship or field training opportunities were also developed as part of the program.

In addition, two lessons learned during the course of this program, which may help future training efforts are:

- A Technical Advisory Committee, responsible to the Program Council and consisting of education and health professionals, can provide necessary analysis and recommendations concerning subject-specific aspects of the training program. This should be created during the initial planning phase of the project.
- Periodic and systematic efforts to contact former students should be made by the program faculty. Information on post-graduation work experiences, adequacy of the training, and unmet needs would serve to update and improve the current programs.

2.0 BACKGROUND INFORMATION

2.1 Description and History of Program

The Eastern Caribbean Regional Training Programme for Allied Health Workers was established in May 1981 through the combined efforts of the St. Lucian government, Project HOPE, and the Agency for International Development (AID). This program has provided training for environmental health, dental health, and pharmacy workers from St. Lucia and the other Windward and Leeward islands (Antigua, Dominica, Grenada, Montserrat, St. Kitts-Nevis, and St. Vincent). Because of their size, available resources, and level of economic development, these islands were considered to be among the "lesser developed" of the region. The St. Lucia training program was designed to answer both the health and the general development needs of these countries.

The nations of the Caribbean do not constitute a homogeneous region. The history and culture of each country is unique. The bigger countries, Jamaica, Trinidad and Tobago, Guyana, and Barbados, contain natural resources, such as bauxite and alumina, and large population bases to help support economic development. The Leeward and Windward islands are much smaller, in terms of both land and population, and have a lower rate of exports and per capita GDP (Laskin, 1977). These distinctions serve as part of the classification of the region into "more developed countries" (MDC) and "lesser developed countries" (LDC).

The health conditions in the late 1970s also differed among these countries. Infant mortality, communicable diseases, and environmental health factors

(water and food supply, waste disposal) were important concerns throughout the Eastern Caribbean. The MDCs, however, were also addressing needs for rehabilitation, geriatric services, and care for mental illness (Laskin, 1977). The need for skilled physicians, nurses, and allied health workers (including pharmacists and environmental health officers) was evident in all of these nations.

Migration plays a large role in shaping the dynamics of population growth and availability of health manpower within the region. The large urban port areas of the MDCs serve as a ready point of departure. Emigration from Barbados has contributed to the decline in that country's growth rate (Ebanks, 1975). The migration of physicians, nurses, and other health professionals from the Caribbean to the more developed countries (primarily Canada and the United States) is also an important factor influencing the region's health systems. Studies of the loss of physicians and nurses have been reported (Bruinsmo, 1970; Selvwright, 1965), but it is unclear how applicable these findings are to environmental health and pharmacy professions. There was some concern expressed by the LDCs, however, over the potential loss of these workers to the MDC in the Caribbean and other developed countries.

Training programs for these allied health workers exist at the Barbados Community College (BCC) and at the West Indies School of Public Health (WISPH) in Jamaica. However, financial and academic considerations, as well as concern over the potential "brain drain," limited the opportunities for

training health personnel from the LDCs. These factors included (18 Month Evaluation, 1982):

- o Shortage of money to fund scholarships or fellowships to the existing training programs in the region.
- o No indication that BCC would be able to meet St. Lucia's needs within an acceptable time frame.
- o Prerequisites (5 "O" levels) could not be met by many available candidates from the LDCs. These potential trainees would need to spend an additional year away from their home countries and jobs supplementing their general education before entering the existing programs.

The possibility of in-service training in the LDC was also limited, due to the lack of financial and educational resources and suitably trained teachers in these countries.

These factors served as the basis for the decision of the St. Lucian government to develop, with the aid of Project HOPE, an initial training class for Public Health Inspectors in 1979. During the subsequent year, a proposal between Project HOPE and AID was designed to expand this class, add other training programs, and further develop the training facilities within St. Lucia. This proposal was accepted in August of 1980.

The original proposal included 5 components:

1. Public Health Inspector (now called Environmental Health Officer, EHO) training for up to 40 students from the LDCs in a series of 22 month programs.
2. Environmental Health Assistant (EHA) training for up to 40 students from St. Lucia in a series of 3 month programs.
3. Pharmacist training for up to 27 students from the LDCs in a series of 2 year programs.

4. Dental nurse and dental hygienist training, and development of a national dental care program in St. Lucia.

5. Child health care training and program development in St. Lucia, with some help for the other LDCs.

Since the initial program plan, the dental health and child health components have been significantly modified, and an Environmental Health Assistant component has been added for Antigua.

2.2 Evaluation Design

Planning for this program evaluation began in November 1984, and the objectives and methodology were established by January 1985. The objectives were to:

- Assess the implementation of the programs, problems, and accomplishments.
- Assess the results of the programs, both at the trainee level and societal levels (local, national and regional).
- Assess the implications of this experience for future manpower training and development efforts.

The study design primarily involved personal interviews with and surveys of program graduates, chiefs, and government officials (Table 2.1). This plan was presented to the Programme Council at their January 1985 meeting and initial interviews with the faculty and ministry representatives were conducted at this time. From January through April, project documents were reviewed, and the questionnaires were drafted and pre-tested. (Two counterparts and two graduates participated in the pre-test). During a two week trip to St. Lucia, Antigua, and St.Kitts/Nevis in late April, 58 graduates and 4 department chiefs were contacted and participated in the

questionnaires. Those who could not be reached during this trip were sent individual letters and surveys. The response rate for this second phase was quite high: 11 of the 17 graduates (65%) completed and returned the mailed survey. The number of people trained and surveyed, by country and program, is shown in Table 2.2.

Table 2.1

Study Design

WHO	Trainees: Pharmacists, EH Officers, EH Assistants	Dept. Chiefs/Supervisors	Ministries	Program: Faculty and Advisor
WHAT	Background Info - education experience, salary, etc. Work Assessment - Activities, tasks performed Environment (physical and interpersonal) Program Assessment - Usefulness (theoretical and practical coursework) Perceived need for continuing education Perceived outcomes Overall impressions	Background Info - dept. size type, experience of personnel Needs Assessment - Manpower Continuing Education Equipment Administrative, planning, record keeping, reporting supervisory functions Financial situation Other support requirements Program Assessment - Trainee knowledge, skills, actual work performance Perceived outcomes Overall impressions	Background Info - national health, education and manpower plans, health and development info from mid to late 1970's Needs Assessment - Current health environment and manpower status National health policies plans, priorities Manpower needs, potential for recruitment, training and continued employment Plans for education/ training facilities Regional development Program Assessment - Perceived outcomes Overall impressions	Program Assessment Adequacy of facilities Future needs, changes course content/design continuing education student recruitment teacher training Perceived outcomes Overall impressions
HOW	Review program records Develop new questionnaire draft conduct follow-up personal interviews	Review previous survey (Jan '84) Develop new questionnaire draft conduct follow-up personal interviews	Review written materials Personal interviews	Interviews Site visit

Table 2.2

Public Health Inspector
Training Classes, St. Lucia
1979-1985

	ST. LUCIA-HOPE	ST.LUCIA-AID-HOPE					
	1979-81	1981-82	1982-83	1983-85	Total Trained	Total Surveyed	% Survey
Graduates							
Antigua	0	4	3	2	9	9	100.0%
Dominica	0	2	2	2	6	4	66.7%
Grenada	0	4	2	1	7	6	85.7%
Montserrat	0	1	0	1	2	1	50.0%
St. Lucia	11	0	3	0	14	9	64.3%
St. Kitts-Nevis	0	2	2	2	6	6	100.0%
St. Vincent	0	0	4	3	7	6	85.7%
TOTAL	11	13	16	11	51	41	80.4%

Environmental Health Assistant
Graduates
St. Lucia and Antigua

	1981	1983	Surveyed	% Surveyed
St. Lucia[a]	36	--	20	55.6%
Antigua	--	18[b]	12[c]	66.7%

[a]13 graduates of the MOH program (1979) were also surveyed.

[b]Four additional EHA graduated, but were employed in other community health positions.

[c]Includes 2 members of the 1983-85 PHI class.

Table 2.2 (Continued)

Pharmacist Training Classes
St. Lucia, 1981 to 1985

Graduates	1981-83	1983-85	Total Trained	Surveyed	Percent Surveyed[a]
Antigua[b]	--	--	--	--	--
Dominica	1	1	2	1	100 %
Grenada	1	1	2	0	0
Montserrat	1	0	1	0	0
St. Lucia	4	7	11	3	75
St. Kitts-Nevis	1	0	1	1	100
St. Vincent[b]	--	--	--	--	--
TOTAL	8	9	17	5	62.5%

[a]Percentages based on 1981-83 class only. 1983-85 class was not surveyed due to timing of evaluation and graduation.

[b]Antigua and St. Vincent did not participate in this program, due to the availability of other training arrangements within these countries.

Evaluation Team

The evaluation team consisted of three members of Center for Health Affairs (CHA), the policy research division of Project HOPE. Glinda S. Cooper, a policy analyst with CHA served as Project Coordinator. She has expertise in statistical analysis and survey methodologies, and experience in health policy research and program evaluation. Gail R. Wilensky, Ph.D., is the Director of CHA, and provided senior analytic consultation to the project. A nationally recognized health economist, she has extensive experience in the design, management, and analysis of problems involving health care, public policy and economics. Steve Chapman, a research assistant with CHA, participated in the survey development, implementation, and analysis. His background is in political science and health economics.

In addition, the research team was able to draw on the expertise of numerous people within the Eastern Caribbean. During the January and April trips, interviews were held with:

Mr. Dorbene O'Marde
Health Planner, Ministry of Health
St. John's Antigua

Mr. G. M. Cassell
Permanent Secretary, Ministry of Health
Plymouth, Montserrat

Dr. H. A. Jesudason
Senior Medical Officer
Kingston, St. Vincent

Mr. Oriel Hecter
Permanent Secretary, Ministry of Health
Basseterrer, St. Kitts/Nevis

Mr. C. Lubin
Permanent Secretary, Ministry of Health
Castries, St. Lucia

Mr. Joseph Reid
Chief Environmental Health Officer
St. Johns, Antigua

Mr. Cochran
Minister without Portfolio
St. Johns, Antigua

Mr. Fletcher
Chief Environmental Health Officer
Castries, St. Lucia

Mr. Edward Emmanuel
Environmental Health Counterpart
Castries, St. Lucia

Mr. Eldridge Poyotte
Senior Public Health Inspector
Vieux Forte, St. Lucia

Mr. James Hodge
Chief Public Health Inspector
Basseterre, St. Kitts/Nevis

Mr. Rbert Bowry
Pharmacist
Basseterre, St. Kitts/Nevis

2.3 Previous Evaluations

A mid-term program evaluation was prepared in November 1982 (Eighteen-month Evaluation, 1982). This focused primarily on the implementation of the environmental health and dental programs. The first classes ended in late 1982; so little effort was put into assessing the trainees post-graduation experiences. The overall recommendations of the interim evaluation included:

- Conduct a cost-effectiveness study of the EHO program to be used as a basis for future modifications or elimination of this program.
- Discontinue dental hygienist training.
- Determining feasibility of other programs such as the Child Service Program.

- Attempt to initiate discussions and input from other Caribbean educational institutions, particularly relating to establishing a regional certification process.

As part of the final evaluation, these recommendations, and the subsequent actions taken in response to the report were reviewed by the study team. Positive action had been taken to address the specific problems cited in the interim report. The successful adoption of these recommendations strengthened the administration and content of the program.

The admission criteria (3 "O" levels) were adhered to in the latter EHO classes. A Technical Advisory Committee was formed for each program, providing the Program Council with input on matters such as curriculum, field work opportunities, and certification standards, and serving as a forum for exchange of information and ideas among educational leaders in the region. This has improved the quality and credibility of the program. However, although discussions of regional certification have been held, the problem remains. The initiatives made by this program should be viewed as part of a process which can continue separate from the specific requirements of this project.

The lack of library resources within each country was noted in the interim report and a recommendation was made to provide a set of core textbooks to each country for the use of the graduates. The Ministry of Health within each participating country did receive these books. However, the extent to which they are available to the graduates and other health workers is not clear. The inaccessibility of the books was raised as a complaint by a graduate during this final evaluation. Although the recommendation was followed, it may not have created the intended positive result.

3.0 PROGRAM DETAILS

3.1 Goals, Objectives, and Activities

The contract and amendments between AID and Project HOPE specify the goals and objectives of each component of the training program. The original purpose was to train and promote the effective use of personnel in order to improve the delivery of health care services in St. Lucia and the other countries.

To accomplish this goal, specific objectives were established for the different projects. This includes design of the curricula and training programs, training of appropriate counterpart educators, and provision of faculty and administrative staff, student fellowships and transportation, equipment, supplies, and library materials. Schedules for the different classes were proposed and plans for the 18-month and final evaluations were mentioned.

Up to forty PHIs from the participating countries were to be trained in three 22-month classes. The first was to begin in early 1981, the second in August 1981, and the third in August 1982. However, the implementation of the classes was delayed, and consequently the third class graduated in 1985, rather than in 1984. Thus the work experiences of the last graduates could not be included in this evaluation.

The Environmental Health Assistant courses in St. Lucia were designed as three-month training programs to be held in 1981. Three classes were conducted with a total of 41 enrollees and 36 graduates.

The environmental health program in Antigua was designed in 1982 and implemented in 1983. This program included training of new workers, the EHAs, and an additional continuing education component for the Antiguan PHIs. Two 10-week EHA classes and one 17-week PHI continuing education program were to be held. The first EHA class actually began ahead of schedule, and was larger than originally planned. Upon its completion, a second class was not seen as necessary.

The pharmacy program was initiated in 1981. Originally, four two-year classes, each with 6 or 7 students were planned. Only two classes were held though, with a total of 17 students.

Two other components of the training program are the Programme Council and the Technical Advisory Committee. The Programme Council was proposed in the 1980 contract. It is made up of representatives of the participating countries and oversees the selection of students and development of the training activities, as well as providing continuing evaluation and needs assessment. The Technical Advisory Committees (for environmental health and pharmacy) were created at the recommendation of the 18 month evaluation. This consists of members of the education and health fields and provide input into decisions regarding technical aspects of the training. Each of these groups meets twice a year.

4.0 PROGRAM RESULTS

4.1 Public Health Inspector (PHI) Training

Three PHI training programs were conducted in St. Lucia since the beginning of this contract period, August 1980. The 40 graduates include representatives from each of the seven countries involved in the Eastern Caribbean training program. In addition, 11 PHIs from St. Lucia were trained in the initial pre-contract HOPE-St. Lucia training class (1979-81). Information on the make-up of these classes, and of the survey sample, was presented in Table 2.1.

4.1.1 PHI Course Evaluation

The class of 1985 had just completed their coursework when this evaluation was conducted. Information on their perceptions of the course content and teaching was obtained through a written, confidential questionnaire. For obvious reasons, they were not asked to provide information on their post-training work experiences.

In all, 41 of the 51 students (80.4%) completed this part of the questionnaire. They were asked to rate, on a poor/fair/good/excellent basis, parameters of course content: four aspects of teaching, six areas of facilities, and eight factors relating to the programs effect on personal development (Table 4.1 and 4.2). In general, course content and teaching categories were rated well, while aspects of the facilities (e.g., living

Table 4.1

PHI Graduates' Ratings of Training Program:
Content, Teaching and Facilities

Number and Percent (%) of Responses

	POOR	FAIR	GOOD	EXCELLENT	DID NOT ANSWER
COURSE CONTENT					
Usefulness	0 (0.0)	0 (0.0)	12 (29.3)	26 (63.4)	3 (7.3)
Thoroughness	0 (0.0)	0 (0.0)	22 (53.7)	17 (41.5)	2 (4.9)
Mix of Coursework (Theoretical and Practical)	1 (2.4)	14 (34.1)	16 (39.0)	9 (22.0)	1 (2.4)
Internship - Organization [a]	0 (0.0)	6 (20.0)	18 (60.0)	1 (3.3)	5 (16.7)
Internship - Supervision [a]	2 (6.7)	5 (16.7)	14 (46.7)	1 (3.3)	8 (26.7)
Preparation for PHI work	0 (0.0)	3 (7.3)	18 (43.9)	19 (46.3)	1 (2.4)
Overall Course Content	0 (0.0)	1 (2.4)	25 (61.0)	13 (31.7)	2 (4.9)
TEACHING					
Lectures	0 (0.0)	1 (2.4)	21 (51.2)	18 (43.9)	1 (2.4)
Availability of Help	2 (4.9)	15 (36.6)	18 (43.9)	4 (9.8)	2 (4.9)
Relevance of Assignments	0 (0.0)	4 (9.8)	18 (43.9)	17 (41.5)	2 (4.9)
Overall Teaching	0 (0.0)	4 (9.8)	24 (58.5)	10 (24.4)	3 (7.3)
FACILITIES					
Lab	5 (12.2)	21 (51.2)	10 (24.4)	2 (4.9)	3 (7.3)
Supplies	2 (4.9)	13 (31.7)	21 (51.2)	4 (9.8)	1 (2.4)
Classroom	0 (0.0)	4 (9.8)	29 (70.7)	7 (17.1)	1 (2.4)
Library	0 (0.0)	7 (17.1)	23 (56.1)	10 (24.4)	1 (2.4)
Living Conditions	2 (4.9)	13 (31.7)	15 (36.6)	7 (17.1)	4 (9.8)
Overall Facilities	0 (0.0)	6 (14.6)	28 (68.3)	5 (12.2)	2 (4.9)

[a] Was not asked of the 11 students just finishing their coursework.

Table 4.2

PHI Graduates' Ratings of Impact
of Training on Personal Development

	Number and Percent (%) of Responses				
	MADE WORSE	NO EFFECT	SOME IMPROVE-MENT	GREAT IMPROVE-MENT	DID NOT ANSWER
Practical Knowledge	0 (0.0)	0 (0.0)	6 (14.6)	34 (82.9)	1 (2.4)
Confidence	0 (0.0)	1 (2.4)	13 (31.7)	25 (61.0)	2 (4.9)
Communication Skills	0 (0.0)	5 (12.2)	7 (17.1)	28 (68.3)	1 (2.4)
Job Effectiveness	0 (0.0)	0 (0.0)	8 (19.5)	32 (78.0)	1 (2.4)
Managerial Skills	0 (0.0)	3 (7.3)	22 (53.7)	15 (36.6)	1 (2.4)
Problem Solving Ability	0 (0.0)	2 (4.9)	12 (29.3)	26 (63.4)	1 (2.4)
Professional Development	0 (0.0)	0 (0.0)	9 (22.0)	30 (73.2)	2 (4.9)
Overall Impact	0 (0.0)	0 (0.0)	11 (26.8)	29 (70.7)	1 (2.4)

conditions) received a slightly less positive response. "Poor" ratings on any factor were rare, though. Similarly, the students' perceptions of the impact of the program were very good. The open ended questions asking about comments, suggestions, and complaints about the program also elicited comments which support the favorable impressions generated by this data.

4.1.2 PHI Employment Information

Of the 40 trainees who graduated on or before 1983, 30 (75.0 %) completed surveys for this evaluation. In addition, employment information was verified for the remaining graduates. Two members of the first class (1979-81) have left St. Lucia, but the remaining are currently employed by the Ministry of Health in their respective countries. One in St. Lucia is currently awaiting assignment to the environmental health department from a position in vital statistics. Five of the PHIs from Antigua have been promoted one or more levels, to Grade 1 or Acting Senior Public Health Inspector. The PHIs in the remaining countries are all still employed with their departments. Several from Grenada have also participated in additional training courses (Table 4.3).

The 29 graduates currently employed as PHIs were asked whether the type of area they usually worked in was rural, urban, or both. Only 5 (17.2 %) indicated they usually worked in urban areas, but 11 (37.9%) usually work in rural areas. The other 13 (44.8%) said they work in both locations. This is encouraging because the lack of trained environmental health workers in rural areas has historically been an important concern.

Table 4.3

Employment Status of the HOPE Trained PHIs

Enrolled	51
Graduated	51
Employed as PHI After Graduation	50
Currently Employed as PHI	42
Promoted within Environ. Health Department	6
No longer Working in Environ. Health	0
Known to Have Left Country	2

Survey respondents were asked to describe their employment experience before entering the training program. Fourteen had been employed as environmental health workers, 8 had been employed in other fields (e.g. factory, teaching), 3 had been students, 3 were unemployed, and 2 were employed, but did not indicate the type of job.

The graduates were also asked their current and pre-training salaries. The mean monthly salary for the 28 PHIs who provided this information was EC $1055. Pre-training salaries were much lower, reflecting both general inflation and a direct effect of training on earnings. The mean monthly pre-training for the 25 respondents providing this information (assuming the unemployed and students had no earnings) was EC $385. Excluding the students and unemployed, the average monthly salary was EC $507.

4.1.3 PHI Description of Work

The survey respondents were asked whether each of 23 activities was included in their regular work, and asked to designate five main activities. Inspections of houses and food handling establishments, solid waste management, public education, [illegible] inspection and nuisance investigations were activities mentioned most often. The frequency of these and other responses is presented in Table 4.4.

The degree to which the training of environmental health officers matches the actual type of work performed should be considered. Both over-training and under-training produces an inefficient and unfavorable situation. The PHIs are performing a variety of duties involving the specific material included in the curriculum. However, many of these areas were suggested as useful subjects for additional training. This indicates that the PHI training program provides a basic level of skills and knowledge, but, given the actual responsibilities of the PHIs, additional training opportunities are warranted (see Section 4.1.4).

The PHIs were also asked to compare their actual work experience with their expectations (Table 4.5). The only area with a substantial level of negative ratings was "Supervision Received." Almost 40 percent felt this was less or worse than expected. The other areas, particularly job effectiveness and responsibilities, were generally perceived as surpassing expectations. Although specific frustrations and disappointments were raised in the open-ended questions and interviews, this level of satisfaction is encouraging.

Table 4.4

Responsibilities of
Public Health Inspectors[a]

PROGRAM OR ACTIVITY	INCLUDED IN WORK N (%)	LISTED AS MAIN ACTIVITY[b] N	RANK
Housing Inspections	24 (80.0)	17	3
Water Quality and Supply	25 (83.3)	8	
Solid Waste Management	25 (83.3)	17	2
Vector Control	25 (83.3)	9	
Food Handling Establishments (e.g. stores, restaurants, bakeries)	27 (90.0)	26	1
Institutional Inspections (e.g. hospitals, prisons)	24 (80.0)	1	
Public Education	27 (90.0)	13	5
In-service Training/ Continuing Education	11 (36.7)	1	
Meat Inspection	23 (76.7)	12	
Air Quality Management	2 (6.7)	0	
Hazardous Waste Disposal	6 (20.0)	0	
Recreational Health and Safety	16 (53.3)	0	
Supervision of Auxiliary Workers	20 (66.7)	5	
Nuisance Investigations	28 (93.3)	13	4
Sewage Disposal (Public)	25 (83.3)	10	
Occupational Health	14 (46.7)	0	
Epidemiological Investigations	22 (73.3)		
Accident Prevention	16 (53.3)	0	
Radiation Protection	0 (0.0)	0	
Community Environmental Health Surveys	29 (96.7)	1	
Port Health	8 (26.7)		
Rabies Control Program	6 (20.0)	0	
Disaster Preparedness	16 (53.3)	2	

[a]29 St. Lucia - HOPE graduates currently employed as PHI and 1 PHI trained elsewhere.

[b]Each responder could list up to five activities, and there were 138 total responses.

help were the underlying problems with the prescription packaging system. These are all important factors influencing the effectiveness and impact of the pharmacists and the training program.

4.5 Pharmacy Conditions

The pharmacists were asked to rate specific aspects of their work and the changes which had occurred during the past year. The availability of equipment and the number of pharmacists working received mostly "poor" ratings, although the quality of pharmacists was generally thought to be good. Specific changes depend largely on the individual, with some reporting improvements and others reporting worsening of availability of drugs and numbers of pharmacists. Overall level of service was generally thought to be "somewhat better."

The pharmacists were also asked about the importance of several factors to the delivery of health care. The availability of drugs, the number of pharmacists, and the quality and availability of pharmacist training and continuing education were the greatest priorities, while the addition of pharmacy and hospital facilities were viewed as least important.

Table 4.5

PHIs' Perceptions of Work

Number and Percentage (%) of Responses[a]

	LESS/WORSE THAN EXPECTED	SAME AS EXPECTED	MORE/BETTER THAN EXPECTED	DID NOT ANSWER
Overall Responsibilities	6 (20.7)	11 (37.9)	11 (37.9)	1 (3.4)
Supervision Received	10 (34.5)	15 (51.7)	3 (10.3)	1 (3.4)
Amount of Community Work	4 (13.8)	12 (41.4)	11 (37.9)	2 (6.9)
Amount of Time Spent on Routine Inspection	3 (10.3)	14 (48.3)	12 (41.4)	0 (0.0)
Relationships with Co-Workers	5 (17.2)	16 (55.2)	7 (24.1)	1 (3.4)
Effectiveness in Job	4 (13.8)	13 (44.8)	11 (37.9)	1 (3.4)

[a]29 St. Lucia - HOPE graduates currently employed as PHIs.

4.1.4 Factors Affecting PHI Job Performance

Training is just one element of successful, effective health programs. The actual impact of newly trained workers will be influenced by the conditions and environment of the workplace. Of course, a "trickle-up" style of change may take place. In this way, the graduates' skills and knowledge would be incorporated by others, fostering broader improvements in the department's work activities.

The Public Health Inspectors were asked to rate and describe certain work conditions within their departments. In general, the factors which could be more directly influenced by the training programs received better ratings than factors which are somewhat removed from the trainees' responsibilities (Table 4.5). Availability of equipment and proper sample and specimen collection were the most commonly cited problems. However, knowledge of disease causation and control methods and relations among environmental health workers received favorable ratings. The poorer areas do indicate problems and limitations to the effectiveness of the trainees and training program.

The Public Health Inspectors were also asked to describe specific changes, (e.g., number, type, methods, records of inspections) which had occurred in the last two years. In St. Lucia, several people noted the recent development of new inspection forms and acquisition of equipment to improve the thoroughness of the inspections. Also, a food handlers training program was initiated. The number of inspections (housing and other) was

Table 4.6

PHIs' Department Ratings

	Number and Percent (%) of Responses[a]				
	POOR	FAIR	GOOD	EXCEL-LENT	DID NOT ANSWER
Availability of Equipment	18 (60.0)	9 (30.0)	1 (3.3)	0 (0.0)	2 (6.7)
Record Keeping	8 (26.7)	12 (40.0)	5 (16.7)	2 (6.7)	3 (10.0)
Supervision	5 (16.7)	14 (46.7)	8 (26.7)	1 (3.3)	2 (6.7)
Morale	6 (20.0)	7 (23.3)	9 (30.0)	4 (13.3)	4 (13.3)
Knowledge - Causation/ Control Methods	3 (10.0)	3 (10.0)	15 (50.0)	6 (20.0)	3 (10.0)
Knowledge - Administrative Law and Practice	5 (16.7)	15 (50.0)	7 (23.3)	1 (3.3)	2 (6.7)
Availability of Consultative Services	18 (60.0)	6 (20.0)	4 (13.3)	0 (0.0)	2 (6.7)
Public Relations	5 (16.7)	11 (36.7)	9 (30.0)	3 (10.0)	2 (6.7)
Relations Among Envir. Health Workers	4 (13.3)	4 (13.3)	14 (46.7)	6 (20.0)	2 (6.7)
Communications Among Envir. Health Workers	7 (23.3)	8 (26.7)	9 (30.0)	4 (13.3)	2 (6.7)
Evaluation of Inspection Findings	5 (16.7)	14 (46.7)	5 (16.7)	4 (13.3)	2 (6.7)
Sample and Specimen Collection	11 (36.7)	10 (33.3)	7 (23.3)	0 (0.0)	2 (6.7)

[a]29 St. Lucia - HOPE graduates currently employed as PHIs, and 1 PHI trained elsewhere.

said to have increased in both St. Lucia and Antigua and the contribution of the EHAs was often cited as a factor in this change. In Dominica, new inspection forms and procedures were also introduced, and in Antigua, solid waste management equipment was obtained and new services offered to businesses. Refuse service was also expanded in St. Kitts-Nevis. It was also noted in St. Kitts-Nevis that the number of housing inspections had decreased because of staffing shortages.

The scope and level of training, in relation to actual job responsibilities, is an important factor in the evaluation of a training program. The PHIs were asked to rate their interest in specific subject areas. Meat inspection, occupational health, and health systems management received the most interest (Table 4.7). Meat inspection is an established area of advanced training, and management programs have also been offered. However, the clear identification of occupational health as an area of interest may reflect an unmet need in environmental health.

Table 4.7

Public Health Inspectors' Interest in Additional Training

Number and Percent (%) of Responses[a]

SUBJECT	NOT VERY INTERESTED	SOMEWHAT INTERESTED	VERY INTERESTED	DID NOT ANSWER
Meat Inspection	1 (3.3)	7 (22.6)	23 (74.2)	0 (0.0)
Port Health	2 (6.5)	9 (29.0)	15 (48.4)	5 (16.1)
Solid Waste Management	2 (6.5)	11 (35.5)	14 (45.2)	4 (12.9)
Pesticides	3 (9.7)	13 (41.9)	11 (35.5)	4 (12.9)
Water Quality	1 (3.3)	10 (32.3)	16 (51.6)	4 (12.9)
Health Systems Management	2 (6.5)	8 (25.8)	17 (54.8)	4 (12.9)
Occupational Health	1 (3.3)	8 (25.8)	19 (61.3)	3 (9.8)
Epidemiology	2 (6.5)	5 (16.1)	15 (48.4)	9 (29.0)

[a]30 St. Lucia - HOPE graduates and 1 PHI trained elsewhere.

4.2 Environmental Health Assistant (EHA) Training

Three classes of EHAs were trained in St. Lucia, all in 1981. There were 41 enrollees, of which 36 graduated. Thirteen other EHAs, trained under a separate program in 1979, were also interviewed as part of this evaluation. In Antigua, one EHA class was held during 1983.

4.2.1 EHA Course Evaluation

The data discussed in this section were collected in April, 1985 through a written, confidential questionnaire. We interviewed 20 HOPE graduates in St. Lucia and 10 in Antigua. They represent 51 percent of all HOPE EHA graduates and 81.1 percent of HOPE EHA graduates still working in environmental health. Two additional EHAs from Antigua were interviewed as part of the 1983-85 PHI class in St. Lucia, but are not included in these quantitative results. The course evaluation was divided into four sections: course content (five measures) teaching (four measures), facilities (three measures), and the programs effect on personal development (eight measures). Also, open ended questions were asked to elicit more detailed responses.

As shown in Tables 4.8 and 4.9, (St. Lucia), 4.10, and 4.11 (Antigua), the graduates' comments were generally very positive. Responses were for the most part either "good" or "excellent." A few areas, namely availability of help, preparation for EHA work, and development of managerial skills elicited fewer "excellent" or "great improvement" and more "fair" or "some improvement" ratings than other areas. The Library was the only measure that received more than one "poor" rating. Particularly highly rated were

Table 4.8

St. Lucia EHA Graduates' Ratings of
Training Program:
Content, Teaching and Facilities

	Number and Percent (%) of Responses[a]				
	POOR	FAIR	GOOD	EXCELLENT	DID NOT ANSWER
COURSE CONTENT					
Usefulness	0 (0)	1 (6)	7 (41)	7 (41)	2 (12)
Thoroughness	0 (0)	4 (24)	10 (59)	3 (18)	0 (0)
Mix of Coursework (Theoretical and Practical)	0 (0)	3 (18)	5 (29)	6 (35)	30 (18)
Adequate Preparation	1 (6)	4 (24)	5 (29)	3 (18)	4 (24)
Overall Course Content	0 (0)	1 (6)	7 (41)	5 (29)	4(24)
TEACHING					
Lectures	0 (0)	2 (12)	5 (29)	8 (47)	2 (12)
Availability of Help	1 (6)	4 (24)	6 (35)	2 (12)	4 (24)
Relevance of Assignments	0 (0)	4 (24)	5 (29)	3 (18)	5 (29)
Overall Teaching	0 (0)	1 (6)	6 (35)	4 (24)	6 (35)
FACILITIES					
Classroom	0 (0)	3 (18)	8 (47)	3 (18)	3 (18)
Library	6 (35)	0 (0)	3 (18)	2 (12)	6 (35)
Overall Facilities	0 (0)	3 (18)	6 (35)	2 (12)	6 (35)

[a]17 identified St. Lucia - HOPE graduates.

Table 4.9

St. Lucia EHA Graduates' Ratings of
Impact of Training on Personal Development

	Number and Percent (%) of Responses[a]				
	MADE WORSE	NO EFFECT	SOME IMPROVE-MENT	GREAT IMPROVE-MENT	DID NOT ANSWER
Practical Knowledge	0 (0)	1 (6)	11 (65)	4 (24)	1 (6)
Confidence	0 (0)	1 (6)	10 (59)	5 (29)	1 (6)
Communication Skills	0 (0)	1 (6)	8 (47)	4 (24)	4 (24)
Job Effectiveness	0 (0)	1 (6)	9 (53)	5 (29)	2 (12)
Managerial Skills	0 (0)	3 (18)	10 (59)	2 (12)	2 (12)
Problem Solving Ability	0 (0)	3 (18)	10 (59)	4 (24)	0 (0)
Professional Development	0 (0)	4 (24)	7 (41)	3 (18)	3 (18)
Overall Impact	0 (0)	2 (12)	7 (41)	4 (24)	4 (24)

[a]17 identified St. Lucia - HOPE graduates.

Table 4.10

Antigua EHA Graduates' Ratings of Training Program: Content, Teaching and Facilities

	Number and Percent (%) of Responses[a]				
	POOR	FAIR	GOOD	EXCELLENT	DID NOT ANSWER
COURSE CONTENT					
Usefulness	0 (0)	1 (10)	3 (30)	6 (60)	0 (0)
Thoroughness	0 (0)	3 (30)	1 (10)	5 (50)	1 (10)
Mix of Coursework (Theoretical and Practical)	0 (0)	1 (10)	1 (10)	7 (70)	1 (0)
Adequate Preparation	0 (0)	1 (10)	3 (30)	6 (60)	0 (0)
Overall Course Content	0 (0)	1 (10)	4 (40)	5 (50)	0 (0)
TEACHING					
Lectures	0 (0)	1 (10)	4 (40)	5 (50)	0 (0)
Availability of Help	3 (30)	1 (10)	1 (10)	5 (50)	0 (0)
Relevance of Assignments	0 (0)	2 (20)	3 (30)	5 (50)	0 (0)
Overall Teaching	0 (0)	2 (20)	3 (30)	5 (50)	0 (0)
FACILITIES					
Classroom	0 (0)	4 (40)	4 (40)	0 (0)	2 (20)
Library	6 (60)	0 (0)	1 (10)	1 (10)	2 (20)
Overall Facilities	2 (20)	4 (40)	1 (10)	1 (10)	2 (20)

[a] 10 HOPE graduates

"Usefulness of Course Content" and "Lectures." The teaching and course content ratings were generally rated higher for the Antigua program than for the St. Lucia program, but the small sample sizes limit the inferences which can be made from these trends.

4.2.2 EHA Employment Information

Every St. Lucian HOPE EHA graduate whose employment status we were able to verify (as was the case with 32 out of the 36 graduates) worked as an EHA immediately after graduation. Nine of them have since left the EHA staff, eight of whom were fired. In St. Lucia, no HOPE EHA graduates--or any EHA--has been trained for or promoted to the position of PHI. (See Table 4.12)

In Antigua, however, the experience of the EHAs has been different. Of the 18 originally employed as EHAs, two were promoted to acting PHI and two others sent for full PHI training. Two others left the service for other jobs within Antigua, and one has left the country. The four who were initially employed in community health or family planning positions are still working with these departments (Table 4.12).

The HOPE EHAs in St. Lucia seemed to have higher incomes than before the training program. The current median income in St. Lucia for ten EHAs who provided this information is EC $449 a month, compared to EC $216 (based on only two responses) before the HOPE program. In Antigua, EHA incomes have not risen. The current median income in Antigua for thirteen responders is EC $460, compared to EC $462 (based on eight responses) before the HOPE program.

Table 4.11

Antigua EHA Graduates' Ratings of
Impact of Training on Personal Development

	Number and Percent (%) of Responses[a]				
	POOR	FAIR	GOOD	EXCELLENT	DID NOT ANSWER
Practical Knowledge	0 (0)	0 (0)	4 (40)	6 (60)	0 (0)
Confidence	0 (0)	0 (0)	1 (10)	9 (90)	0 (0)
Communication Skills	0 (0)	1 (10)	2 (20)	7 (70)	0 (0)
Job Effectiveness	0 (0)	0 (0)	3 (30)	7 (70)	0 (0)
Managerial Skills	0 (0)	3 (30)	5 (50)	1 (10)	1 (10)
Problem Solving Ability	0 (0)	2 (2)	6 (60)	2 (20)	0 (0)
Professional Development	0 (0)	0 (0)	4 (40)	6 (50)	0 (0)
Overall Impact	0 (0)	0 (0)	5 (50)	5 (50)	0 (0)

[a]10 HOPE graduates

Table 4.12

Employment Status of HOPE Trained EHAs

	Antigua	St. Lucia
Enrolled	24	41
Graduated	22	36
Employed as EHA After Graduation	18	36
Currently Employed as EHA	11	23
Promoted Within Envir. Health Dept.	4	0
No Longer Working in Envir. Health	2	9
Known to have Left Country	1	0
Situation Unknown	0	4

It should also be remembered when assessing the impact of training on the income of the graduates that the St. Lucia EHA training program took place in 1981, and the Antigua EHA training program in 1983. Also, the incomes cited above are not in constant dollars. Nearly all EHAs were employed in the Department of Environmental Health (in St. Lucia as Aedes Inspectors) before their HOPE training. Sixty percent of Antiguan EHAs felt that they would still be EHAs without the HOPE program, contrasted with seven percent of St. Lucian EHAs.

4.2.3 Description of Work

There were two activities that were identified by St. Lucia EHAs most often as one of their main activities: housing inspections and vector control (Table 4.13). Antigua EHAs spend their time on a wider range of activities (Table 4.14). Among those identified as main activities by Antiguan EHAs were solid waste management, housing inspections, water quality and supply, and nuisance investigations.

PHIs were asked to describe and rate the work performance of the EHAs (Table 4.15). In general, the ratings for the EHAs main activities were very good, and PHI comments on EHA performance were virtually uniformly positive. Public education and sewage disposal were the areas in which there was more disagreement about the quality of the EHAs' work. The mean percentage of time that the surveyed EHAs were under the direct supervision of an PHI was 56 percent.

Table 4.13

Responsibilities of St. Lucia Environmental Health Assistants[a]

PROGRAM OR ACTIVITY	INCLUDED IN WORK N (%)	LISTED AS MAIN ACTIVITY[b] N	RANK
Housing Inspections	30 (91)	26	1
Water Quality and Supply	23 (70)	0	
Solid Waste Management	22 (67)	5	
Vector Control	28 (85)	22	2
Food Handling Establishments (e.g. stores, restaurants, bakeries)	9 (27)	0	
Institutional Inspections (e.g. hospitals, prisons)	3 (9)	0	
Public Education	19 (58)	7	-
In-service Training/ Continuing Education	10 (30)	0	
Meat Inspection	3 (9)	0	
Air Quality Management	1 (3)	0	
Hazardous Waste Disposal	20 (61)	2	
Recreational Health and Safety	12 (36)	0	
Nuisance Investigations	29 (88)	11	3
Sewage Disposal (Public)	23 (70)	2	
Occupational Health	4 (12)	0	
Epidemiological Investigations	9 (27)	0	
Accident Prevention	18 (55)	0	
Radiation Protection	7 (21)	0	
Community Environmental Health Surveys	27 (82)	5	
Port Health	3 (9)	1	
Disaster Preparedness	17 (52)	1	

[a]Includes EHAs trained by St. Lucia Ministry of Health, total of 33 respondents.

[b]Each respondent could list up to three activities, and there were 82 total responses.

Table 4.14

Responsibilities of

Antigua Environmental Health Assistants[a]

PROGRAM OR ACTIVITY	INCLUDED IN WORK N (%)	LISTED AS MAIN ACTIVITY[b] N	RANK
Housing Inspections	9 (64)	7	2
Water Quality and Supply	8 (57)	6	3
Solid Waste Management	12 (86)	9	1
Vector Control	7 (50)	3	
Food Handling Establishments (e.g. stores, restaurants, bakeries)	6 (43)	1	
Institutional Inspections (e.g. hospitals, prisons)	5 (36)	0	
Public Education	7 (50)	2	
In-service Training/ Continuing Education	3 (21)	0	
Meat Inspection	0 (0)	0	
Air Quality Management	0 (0)	0	
Hazardous Waste Disposal	8 (57)	2	
Recreational Health and Safety	6 (43)	0	
Nuisance Investigations	13 (93)	5	
Sewage Disposal (Public)	9 (64)	2	
Occupational Health	4 (29)	0	
Epidemiological Investigations	2 (14)	0	
Accident Prevention	4 (29)	0	
Radiation Protection	1 (7)	0	
Community Environmental Health Surveys	11 (79)	1	
Port Health	9 (64)	0	
Disaster Preparedness	4 (29)	1	

[a]Includes EHAs not trained by HOPE, total of 14 respondents.

[b]Each responder could list up to three activities, and there were 39 total.

Table 4.15

PHI Assessment of EHA Performance
in St. Lucia and Antigua

PROGRAM OR ACTIVITY	Number and Percent (%) of Responses[a] Not Part of EHA Work	EHA Work, Substandard Performance	EHA Work, Good Performance	Did Not Answer
Housing Inspections	1 (7)	1 (7)	12 (86)	0 (0)
Water Quality and Supply	9 (64)	0 (0)	1 (7)	4 (20)
Solid Waste Management	2 (14)	1 (7)	9 (64)	2 (14)
Vector Control	3 (21)	2 (14)	6 (43)	3 (21)
Food Handling Establishments (e.g. stores, restaurants, bakeries)	12 (86)	0 (0)	0 (0)	2 (14)
Institutional Inspections (e.g. hospitals, prisons)	12 (86)	0 (0)	0 (0)	2 (14)
Public Education	1 (7)	4 (29)	6 (43)	3 (21)
In-service Training/ Continuing Education	8 (57)	3 (21)	0 (0)	3 (21)
Meat Inspection	13 (93)	0 (0)	0 (0)	1 (7)
Air Quality Management	13 (93)	0 (0)	0 (0)	1 (7)
Hazardous Waste Disposal	13 (93)	0 (0)	0 (0)	1 (7)
Recreational Health and Safety	11 (79)	0 (0)	2 (14)	1 (7)
Supervision of Auxiliary Workers	8 (57)	1 (7)	3 (21)	2 (14)
Nuisance Investigations	0 (0)	3 (21)	11 (79)	0 (0)
Sewage Disposal (Public)	2 (14)	3 (21)	6 (43)	3 (21)
Occupational Health	12 (86)	0 (0)	1 (7)	1 (7)
Epidemiolcgical Investigations	11 (79)	1 (7)	0 (0)	2 (14)
Accident Prevention	9 (64)	1 (7)	2 (14)	2 (14)
Radiation Protection	8 (57)	0 (0)	1 (7)	5 (36)
Community Environmental Health Surveys	0 (0)	0 (0)	9 (64)	5 (36)
Port Health	12 (86)	0 (0)	1 (7)	1 (7)
Disaster Preparedness	9 (64)	1 (7)	1 (7)	3 (21)

[a] 14 PHIs who work directly with EHAs.

In St. Lucia, although all EHAs are based in either Castries or Vieux Forte (urban centers), slightly more EHAs work in rural than urban areas. In Antigua, equal numbers work in rural and urban area.

In general, the EHA position has met or exceeded the expectations of HOPE EHA graduates (Tables 4.16 and 4.17). Relationship with PHIs, as well as overall responsibilities and effectiveness in job were all better than expected for most. Supervision received was the one expectation explored in this evaluation that was rated the "same as expected" (53 percent) more often than "better than expected" (41 percent).

Antigua EHAs were not as satisfied as St. Lucia EHAs with their jobs relative to their expectations before the program. Thirty-six percent expressed disappointment with their overall responsibilities and 36 percent expressed disappointment with the amount of community work they do. However, 86 percent found that their effectiveness in their jobs met or exceeded their expectations.

Table 4.16

St. Lucia EHAs Job Expectations

Number and Percent (%) of Responses[a]

	Less/Worse than Expected		Same as Expected		More/Better than Expected		Did Not Answer	
Overall Responsibilities	1	(6)	4	(24)	10	(59)	2	(12)
Supervision Received	0	(0)	9	(53)	7	(41)	1	(6)
Amount of Community Work	1	(6)	3	(18)	12	(71)	1	(6)
Amount of Time Spent on Routine Inspections	0	(0)	8	(47)	9	(53)	0	(0)
Relationship with PHIs	1	(6)	7	(41)	9	(53)	0	(0)
Effectiveness in Job	1	(6)	3	(18)	11	(65)	2	(12)

[a]17 identified St. Lucia - HOPE graduates.

Table 4.17

Antigua EHAs Job Expectations

Number and Percent (%) of Responses[a]

	Less/Worse than Expected		Same as Expected		More/Better than Expected		Did Not Answer	
Overall Responsibilities	5	(36)	7	(50)	1	(7)	1	(7)
Supervision Received	2	(14)	8	(57)	1	(7)	3	(21)
Amount of Community Work	5	(36)	2	(14)	5	(36)	2	(14)
Amount of Time Spent on Routine Inspections	2	(14)	7	(50)	3	(21)	2	(14)
Relationship with PHIs	2	(14)	6	(43)	4	(29)	2	(14)
Effectiveness of Job	1	(7)	4	(43)	6	(43)	1	(7)

[a]Includes EHAs not trained by HOPE, total of 14 respondents.

4.2.4 Factors Affecting EHA Job Performance

Both St. Lucian and Antiguan EHAs cited poor availability of equipment and record keeping as factors that affect their job performance (Tables 4.18 and 4.19). Both also seemed positive about working relationships among Environmental Health workers. Open ended questions and interviews prompted comments on problems of transportation (EHAs in both countries often walk to inspection sites up to fifteen miles away), follow-up on reported problems, and lack of uniforms or other proper identification. St. Lucian EHAs also complained that they were not respected enough by the rest of the department, that the position or EHA had not yet been accepted as legitimate within the department, and that they were not making the contribution that they might to environmental health. Both St. Lucian and Antiguan EHAs cited the lack of continuing education as a problem, and nearly all expressed interest in further training.

Table 4.18

St. Lucia EHA's Assessment of
Environmental Health Department

	Number and Percent (%) of Responses[a]				
	POOR	FAIR	GOOD	EXCELLENT	DID NOT ANSWER
Availability of Equipment	15 (45)	10 (30)	5 (15)	3 (9)	0 (0)
Record Keeping	5 (15)	6 (18)	12 (36)	9 (27)	1 (3)
Supervision	2 (6)	3 (9)	17 (52)	9 (27)	2 (6)
Morale	3 (9)	4 (12)	8 (24)	5 (15)	13 (39)
Knowledge of Proper Control Methods	2 (6)	7 (21)	17 (52)	3 (9)	4 (12)
Knowledge of Administration Law and Process	10 (30)	11 (33)	6 (18)	3 (9)	3 (9)
Availability of Consultative Services	6 (18)	8 (24)	8 (24)	1 (3)	10 (30)
Public Relations	2 (6)	5 (15)	7 (21)	8 (24)	11 (33)
Working Relationship Among EH Workers	3 (9)	2 (6)	13 (39)	13 (39)	2 (6)
Communication of Info Among EH Workers	2 (6)	6 (18)	15 (45)	6 (18)	4 (12)
Evaluation of Inspection Findings	1 (3)	6 (18)	13 (39)	8 (24)	5 (15)
Sample and Specimen Collection	6 (18)	5 (15)	11 (33)	8 (24)	3 (9)

[a]Includes EHAs trained by the St. Lucia Ministry of Health, total of 33 respondents.

Table 4.19

Antigua EHAs' Assessment
of Environmental Health Department

	Number and Percent (%) of Responses[a]				
	POOR	FAIR	GOOD	EXCELLENT	DID NOT ANSWER
Availability of Equipment	9 (64)	3 (21)	1 (7)	0 (0)	1 (7)
Record Keeping	9 (64)	1 (7)	3 (21)	0 (0)	1 (7)
Supervision	4 (29)	4 (29)	5 (36)	0 (0)	1 (7)
Morale	2 (14)	7 (50)	4 (29)	0 (0)	1 (7)
Knowledge of Proper Control Methods	3 (21)	5 (36)	4 (29)	1 (7)	1 (7)
Knowledge of Administration Law and Process	3 (21)	4 (29)	4 (29)	1 (7)	2 (14)
Availability of Consultative Services	5 (36)	3 (21)	4 (29)	0 (0)	2 (14)
Public Relations	2 (14)	7 (50)	2 (14)	1 (7)	2 (14)
Working Relationship Among EH Workers	3 (21)	1 (7)	6 (43)	4 (29)	0 (0)
Communication of Info Among EH Workers	4 (29)	4 (29)	3 (21)	3 (21)	0 (0)
Evaluation of Inspection Findings	2 (14)	5 (36)	4 (29)	2 (14)	1 (7)
Sample and Specimen Collection	7 (50)	2 (14)	3 (21)	1 (7)	1 (7)

[a]Includes EHAs not trained by HOPE, total of 14 respondents.

4.3 Environmental Health Conditions

The underlying objective of any health manpower training program is to improve the health status of the community. Working and living conditions are the areas which could be affected by the work of environmental health trainees. The PHIs and EHAs were asked to evaluate the environmental health conditions found in their work, and to identify areas of change within the past two years.

Prisons, occupational environment, and recreational hygiene were the only areas in which a majority of responses indicated either no change or a worsening of conditions over a two year period (Table 4.20). These areas were also among those receiving the poorest overall ratings for current conditions (Table 4.21). Other areas receiving a large share of "poor" or "fair" ratings were hospitals, solid waste management, and sewage disposal.

Table 4.20

Changes in Environmental Health Conditions, 1983 to 1985

Number and Percent (%) of Responses[a]

	Much Worse	Somewhat Worse	No Change	Somewhat Improved	Greatly Improved
Food Handling Establishments	0 (0.0)	0 (0.0)	7 (14.9)	26 (55.3)	14 (29.8)
Housing	1 (2.1)	1 (2.1)	6 (12.8)	21 (44.7)	18 (38.3)
Hotels	1 (2.5)	1 (2.5)	7 (17.5)	16 (40.0)	15 (37.5)
Prisons	2 (6.9)	2 (6.9)	17 (58.6)	4 (13.8)	4 (13.8)
Schools	0 (0.0)	2 (4.3)	13 (28.3)	16 (34.8)	15 (32.6)
Hospitals	0 (0.0)	1 (2.8)	13 (36.1)	15 (41.7)	7 (19.4)
Occupational Environment	0 (0.0)	1 (2.7)	16 (43.2)	9 (24.3)	11 (29.7)
Meat Hygiene	1 (2.6)	1 (2.6)	12 (30.8)	10 (25.6)	15 (38.5)
Water Quality	0 (0.0)	1 (2.2)	15 (31.1)	18 (35.6)	14 (31.1)
Farming Practices	0 (0.0)	1 (3.1)	13 (40.6)	8 (25.0)	10 (31.3)
Solid Waste Management	1 (2.2)	3 (6.5)	11 (23.9)	22 (47.8)	9 (19.6)
Rodent/Insect Control	2 (4.3)	1 (2.2)	13 (28.3)	19 (41.3)	11 (23.9)
Sewage Disposal	0 (0.0)	0 (0.0)	20 (43.5)	15 (32.6)	11 (23.9)
Recreational Hygiene	1 (2.6)	0 (0.0)	19 (50.0)	13 (34.2)	5 (13.2)
Community Participation	0 (0.0)	2 (4.3)	11 (23.9)	15 (32.6)	18 (39.1)
Public Education	0 (0.0)	1 (2.3)	6 (14.0)	22 (51.2)	14 (32.6)
Epidemiological Investigations	0 (0.0)	0 (0.0)	15 (28.8)	14 (26.9)	23 (44.2)

[a]Total responses varies by question, depending on number of responders with relevant experience.

Table 4.21

Current Environmental Health Conditions, 1985

Number and Percent (%) of Responses[a]

	POOR	FAIR	GOOD	EXCELLENT	TOTAL
Food Handling Establishments	15 (28.8)	9 (17.3)	21 (40.4)	7 (13.5)	52
Housing	6 (10.7)	18 (32.1)	26 (46.4)	6 (10.7)	56
Hotels	3 (7.9)	6 (15.8)	17 (44.7)	12 (31.6)	38
Prisons	4 (25.0)	4 (25.0)	6 (37.5)	2 (12.5)	16
Schools	6 (13.6)	14 (31.8)	23 (52.2)	1 (2.3)	44
Hospitals	4 (14.3)	9 (32.1)	11 (39.3)	4 (14.3)	28
Occupational Environment	6 (33.3)	9 (50.0)	2 (11.1)	1 (5.5)	18
Meat Hygiene	6 (20.7)	8 (27.6)	12 (41.4)	3 (10.3)	29
Water Quality	2 (4.3)	8 (17.0)	25 (53.2)	12 (25.5)	47
Farming Practice	8 (22.2)	12 (33.3)	13 (36.1)	3 (8.3)	36
Solid Waste Maragement	9 (22.0)	19 (46.3)	11 (26.8)	2 (4.9)	41
Rodent and Insect Control	10 (20.4)	21 (42.9)	14 (28.6)	4 (8.2)	49
Sewage Disposal	11 (25.0)	14 (31.8)	16 (36.4)	3 (6.8)	44
Recreational hygiene	5 (12.8)	17 (43.6)	13 (33.3)	4 (10.3)	39

[a]Total responses varies by question depending on number of responders with relevant experience.

4.4 Pharmacist Training

Two pharmacy classes were conducted in St. Lucia (1981 to 1983 and 1983 to 1985), producing a total of 17 graduates. This second class was completed in May of 1985, and so they were not included in the follow-up survey used in this evaluation. Written questionnaires were received from five of the eight members of the first class, and two interviews were conducted. Additional information on pharmacy conditions and needs was obtained from surveys and interviews of chief pharmacists.

Because the number of graduates and surveys is small, an extensive quantitative analyses of the results is not warranted. However, the general findings and trends will be presented and discussed.

4.4.1 Pharmacist Course Evaluation

As with the environmental health programs, the students were asked to evaluate the content, teaching and impact of the training program. The only areas which received "poor" ratings were the lab facilities and the organization and supervision of the internship. The other dimensions of the program were generally good, with the facilities including some "fair" ratings and content and teaching a number of "excellents." Time limitations and teacher turnover were two specific problems mentioned. The personal impact of the program was also rated highly, with only a few "fair" and "poor" responses for the development of specific skills (managerial, communication, and problem solving).

4.4.2 Pharmacist Employment Information

Four of the pharmacists had been employed as pharmacy trainees before entering the program, and the other had been working as an assistant teacher. Their mean monthly salary is now EC $1268, up from the pre-training average of EC $608.

4.4.3 Pharmacist Description of Work

One pharmacist is working at a hospital, and the four others work in other clinic settings. One is located in a rural area, one rotates between locations, and the remaining three work in urban areas. Most work alone or with one assistant. The pharmacists reported that most of their work time is spent preparing prescriptions (ranging from 30 to 94.5%), with smaller amounts of time spent on management (inventory, purchasing, and record review), and staff or public education (1 to 10% for each of these three categories).

4.4.4 Factors Affecting Pharmacist Job Performance

The pharmacists were asked to describe specific policies, practices, and problems encountered in their work. The areas most frequently described as inadequate were storage of drugs and labeling and packaging of prescriptions. Problems with inventory control and central supply, refrigeration and space limitations were cited as causes of improper storage, although the frequency of ordering and turnover rate of drugs was consistently described as satisfactory. The limitations of supplies and

4.6.4 Educational Materials

Project HOPE has provided textbooks, library materials, audio-visual equipment, a dental clinic, and other resources at the main training center in St. Lucia. This includes specimens, film and slide sets, portable field testing equipment, and micro-scope mounted slide sets. This help provides a comprehensive learning experience for the students. For example, the pharmacy students were able to prepare materials for public education with the audio-visual equipment. In addition, a library of basic and applied science textbooks was given to the Ministry of Health of each country. These resources will help maintain the high quality of the training program and further the development of continuing education opportunities in the health sciences.

5.0 DISCUSSION OF ISSUES

The underlying question in manpower training is: "Are adequate numbers of the right types of personnel being trained and used?" Population growth, migration, attrition, and changes in resources make manpower requirements a varying quantity. Two areas will be considered. One is the continued need for the training programs currently operating in St. Lucia (environmental health and pharmacy). The other is the potential usefulness to St. Lucia and the region of other types of training.

5.1 Environmental Health

5.1.1 Training Program

The assessment of the St. Lucia PHI program provides ample evidence of the generally high quality of training. The curriculum was reviewed and approved by the 18 month evaluators and the TAC. The faculty have consistently received good ratings by both students and outside reviewers. Problem areas identified during the first two years of the program (such as facilities and duration of training) were improved. The students have done well on the Royal Society of Health examinations. The content and teaching of the EHA program was also highly regarded by reviewers and students, but the performance of students is more varied.

The desire for continuing education or in-service training was raised repeatedly in the course of the evaluation. This could provide a chance for review of basic coursework, new or updated material, and a framework for

preliminary training of new workers. The counterparts have been trained for this work, and at present are untapped resources within the departments. Efforts to develop this service could prove to be a valuable addition to the overall training opportunities and capabilities of the region.

5.1.2 Trainee Roles and Impact

HOPE environmental health graduates have generally been quite successful at acquiring and retaining positions in environmental health. (The only possible exception to this is the experience of HOPE EHA graduates in St. Lucia.) These graduates represent a major step toward the establishment of effective Environmental Health Departments. Other steps, however, remain to be taken.

In addition to future train'ng (basic training for workers new to environmental health and continuing education for those already trained) it is also important to assess the respective roles of PHIs and EHAs, recognize the major obstacles to the satisfactory execution of those roles, and anticipate the planning changes that will be necessary in the future.

PHIs perform a wide variety of duties (see Table 4.4). Their one real complaint about performing these duties was with "Supervision Received," (Table 4.5) and one of the major areas of criticism for their Departments was "Availability of Consultive Services" (Table 4.6). These comments, taken with other comments elicited from EHAs and Chief Public Health Inspectors, indicate that the Departments may benefit from clearer delineation of responsibilities, more consistent planning, and greater

cooperation within the Department. In Antigua, a representative of the MOH suggested that technical consulting to develop administrative procedures--rather than further training of graduates--would be most beneficial to the Department of Environmental Health.

In St. Lucia, it is important to resolve questions about the role of EHAs, and to work toward making that role descriptive of their actual activities. It is especially important after a period of expansion in personnel to concentrate on developing an organizational structure that maximizes the effectiveness of the Department's activities. This development involves utilizing EHAs--and other health professionals--to their potential. There is awareness throughout the Departments of the need for greater organization, which improves the chances of significant progress in this area.

Certain types of equipment and supplies would increase the effectiveness of the Departments. Water testing kits and Aedes sprayers are two examples of the type of equipment that is often lacking. Additional needs include cards and uniforms to facilitate good public relations, better transportation arrangements to minimize the time spent walking, and a better designed filing system and place to keep documents which would improve record keeping, increase planning possibilities, and encourage follow-up on identified environmental health problems.

It should be remembered that as environmental health conditions change, the role of the Environmental Health Departments also changes, as do the roles of the various personnel within the Department. Currently, there is a great

deal of emphasis on housing inspections. Perhaps, as housing conditions improve, the locus of activity may shift to institutional inspections, occupational health, or some other environmental health concern.

5.1.3 Trainee Requirements

The future market for PHIs in the region will depend on the need for this type of workers and the specific job opportunities available within the departments. Table 5.1 presents information from several recent assessments of the training needs during the next five years.

In 1984, the Chief PHI in each country completed a questionnaire for Project HOPE. They were asked to assess the total number of PHIs needed to provide good environmental health services in 1984 and 1989. This was followed by the 1985 survey, in which the Chiefs were asked for the number of trained PHIs currently working and for the number likely to be sent for training between 1985 and 1989. The difference between the number of trained PHIs in 1985 and the needs assessment for 1989 represents an unconstrained estimate, whereas the 1985 estimates of the future training positions reflects judgements which include availability of candidates, jobs, and other resources.

The figure representing total assessed need was much larger (38) than the total number of expected graduates (14). The actual number of people which would be sent for PHI training is likely to be between these estimates, but closer to the lower figure. The backlog of untrained PHIs has decreased since 1980: 12 untrained PHIs are currently working in the region, whereas

Table 5.1
Environmental Health Officer:
Current Status and Future Projections

	Antigua	Dominica	Grenada	Montserrat	St. Kitts-Nevis	St. 'ucia	St. Vincent	Total
1980 Population	78,000	80,000	110,000	12,000	45,000	125,000	115,000	565,000
Needs Assessment 1984[a]	22	20	16	5	20	25	15	123
Trained, 1984[a]	12	17	12	4	10	24	14	93
Trained, 1985[b]	16	15	13	5	14	22	16	101
Untrained, 1985[b]	6	1	--[c]	0	2	0	3	12
Needs Assessment 1989[a]	26	22	23	5	22	25	17	140
Trainees Needed 1985-89	10	7	10	0	8	3	0	38
Expected Trainees 1985-89[b]	2	2	2	0	3	2	3	14

[a]Based on Project HOPE Chief PHI Survey, 1984.

[b]Based on Project HOPE Chief PHI Survey, 1985.

[c]Information unavailable.

at least 29 of the members of the previous classes were employed as PHIs prior to training. Such a decrease in the backlog of untrained PHIs indicates that fewer graduates need to be produced by future training programs, although the need for newly trained PHIs to replace those who retire or leave, as well as to allow for department expansion, remains.

The situation for environmental health assistants is less clear, and differs between Antigua and St. Lucia. In Antigua, several openings for EHA were created as EHAs were promoted to the PHI position. These have been filled, but only sporadic on-the-job training has been provided for these new workers. They have much to gain from a more systematic approach to training. In St. Lucia, however, the commitment to the EHA position is less clear. None of the 20-30 openings (resulting from the dismissal or departure of trained EHAs), have been filled. Without a commitment to the position, it would be unwise to establish an on-going EHA training program in St. Lucia.

5.2 Pharmacy

5:2.1 Training Programs

As with the environmental health program, efforts of the TAC, faculty, and Programme Council have assured that the pharmacy curriculum is comprehensive and appropriate for the region. Individual teachers were highly regarded, although the turnover of HOPE faculty during the program did cause some discontinuity. The first class seemed to experience some difficulties with the facilities and coursework. These problems were less evident during the

second class. The pharmacy program has developed into a full and rigorous course.

5.2.2 Trainee Roles and Impact

Members of the first class have had more than one year of post-graduate work experience. It is likely that the second class will experience similar situations and will undertake the same type of activities. The addition of these new pharmacists will help alleviate problems of understaffing. Additional training of new personnel would address some of the problems currently encountered by the pharmacists. Other limitations, such as availability and storage of drugs, require different efforts. The appropriateness of additional mid-level personnel (i.e. pharmacy assistants) depend on the volume of service at each location. The pharmacists may not currently perform a wide variety of duties (such as public and staff education) because of the demands of prescription preparation. Developing opportunities for this work will require joint efforts by the pharmacists and administrative departments, along with the provision of additional personnel.

5.2.3 Trainee Requirements

The 1982 evaluation included estimates of training needs in pharmacy for the period between 1981 and 1983. At that time, 20 trainee positions were identified in St. Lucia, six each in Dominica and Grenada, four in St. Kitts/Nevis, and one in Montserrat. During the 5-year course of this project, around 48 percent of these 37 positions have been trained.

Information from the Chief Pharmacists and pharmacists in the region substantiate the continued need for addition pharmacist training. It would be realistic to expect that the number of trainees during the next five years would be similar to the number of recent graduates.

5.3 Other Training Needs

The issue of training needs in areas other than Environmental Health and Pharmacy is tangential to the primary goal of this report, which is the evaluation of the HOPE training programs. Evidence of other training needs in St. Lucia and the Eastern Caribbean gathered as a result of this program evaluation is anecdotal. We will, however, summarize our impressions of these needs.

One overall theme emerged from responses to our questions about future training. Many people we spoke with emphasized the need for general rather than specific training. Broad knowledge, such as that resulting from double training, seemed desired. For example, the distinction between community health, environmental health, and family planning assistants were identified as inefficient specialization. In Antigua, laboratory needs, such as equipment and training in cytology and histology were identified. Also, technical assistance, or consulting, was required to help structure department organization and planning.

In St. Lucia, training needs for laboratory technicians, psychiatric nurses, and epidemiologists were mentioned. Also, cited was assistance in management organization and planning, although not to extent as in Antigua.

Elsewhere, Montserrat pointed to current problems in solid waste disposal, and St. Kitts also mentioned a lack of psychiatric nurses.

In sum, it appears that the regional training needs are evolving. As environmental health and pharmacy manpower shortages become less severe and conditions in both these areas improve, the attractiveness of other types of training programs heightens. As long as efforts are made to consolidate gains achieved by programs such as these, the Eastern Caribbean region may soon be ready to address a new level of health care needs, such as psychiatric nursing, lab technicians and geriatrics.

5.4 Developmental Impact

Many changes have occurred in the Eastern Caribbean nations since 1980, and it is difficult to determine which changes resulted from this specific training project and which changes would have occurred in the absence of this training effort. The establishment of the Health Science Division of the Sir Arthur Lewis Community College in St. Lucia is the primary educational development which may have been fostered by the training programs of the previous five years.

This Division, initially covering nursing, pharmacy and environmental health, signals an acceptance of formal, standardized training programs within the health field. The need for pre-requisites, a mechanism for testing and certification, and continually developing curricula and educational resources, can be readily seen within the structure of a

community college setting. These are some of the concepts which were developed by the work with the St. Lucia HOPE-AID program.

The graduates of the training program have exhibited competence in and dedication to their work. Besides contributing to the specific jobs for which they were trained, they have the base of knowledge to broaden the scope and impact of their efforts. A certain level of flexibility and common activities exist within individual health and management fields, and these can benefit from the general development of human resources achieved through this project.

6.0 LESSONS LEARNED AND RECOMMENDATIONS FOR FUTURE PROGRAMS

Health conditions and care are dynamic. They evolve from changes in resources, technology, and general development. Education of health care professionals should be viewed as an ongoing process in order to respond to these changes. Given this, the following recommendations for future training efforts can be made:

Program Development

- Opportunities for in-service training and continuing education should be created providing both refresher courses and new material. This would ensure that the graduates' skills and interest remain sharp.

- Development of generalized training programs, particularly at the para-professional or assistant level, should be considered. This would allow for greater flexibility in planning and use of workers.

- Responsibilities and activities of workers in relation to current health conditions should be regularly examined. This can involve a simple, subjective assessment such as was included in this report, or a more comprehensive and rigorous analysis.

- A systematic follow-up of all graduates should be included as part of any training program. This is not a difficult undertaking, and could be conducted by the program faculty at regular (e.g., yearly) intervals.

Program Implementation

- An advisory board such as the Technical Advisory Committee, should be established as part of the initial phase of any training project. This will foster the exchange of ideas, provide expertise in technical matters, and enhance the quality of the program.

- Support from local professional associations should be sought as a means of establishing a base of resources and advice for the programs. Use of local human resources as adjunct professors lessens the cost of the external inputs and, most importantly, fosters local responsibility for operation of the program.

Three aspects of this project should be noted for consideration in future programs. These are:

- A Program Council, consisting of ministers from each participating country, helped guide the program and enhances regional cooperation and development.

- Identification of appropriate local counterparts is essential. Counterpart committment and release from other government duties will result in better training of the counterpart and less frustration on the part of the educators. The counterpart system has worked well as a means of institutionalizing development of training resources.

- Field experience, laboratory work, and library resources are important components of a training program. Appropriate arrangements, materials and equipment should be obtained prior to the beginning of the coursework. A variety of field work opportunities can be designed within each country using local professionals and organizations.

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