PD-AAY-677

XD

# FINAL REPORT

## DESCRIPTION AND APPLICATION OF THE INTERNAL EVALUATION SYSTEM DEVELOPED FOR THE SHDS PROJECT

Prepared for:

The Project for Strengthening Health Delivery Systems
in West and Central Africa

By:

M. Alfred Haynes, M.D.
Ann Brownlee, Ph.D.

Under a subcontract with:

Charles R. Drew Postgraduate Medical School

August 30, 1986

## TABLE OF CONTENTS

Section 1: Final Report on the Subcontract for Development and Implementation of an Internal Evaluation System for the SHDS Project

Section 2: Description and Application of the Internal Evaluation System Developed for the SHDS Project

Section 3: Annex 1: Application of the Internal Evaluation System: Evaluation of the SHDS Project as a Whole

Section 4: Annex 2: Application of the Internal Evaluation System: Evaluation of the Objective II Anglophone Nursing Program of the SHDS Project

Section 5: Annex 3: Application of the Internal Evaluation System: Evaluation of Objective III of the SHDS Project

Section 6: Annex 4: Application of the Internal Evaluation System: Evaluation of Objective IV of the SHDS Project

Section 7: SHDS Project 1983-1985: Format for Final Reports for Each Objective

Section 8: Development of a Computerized Management Information System to Support the Internal Evaluation Process

# FINAL REPORT

# ON THE SUBCONTRACT FOR DEVELOPMENT AND IMPLEMENTATION OF AN INTERNAL EVALUATION SYSTEM FOR THE SHDS PROJECT

Prepared by:

M. Alfred Haynes, M.D.
Ann Brownlee, Ph.D.

Charles R. Drew Postgraduate Medical School

August 30, 1986

## TABLE OF CONTENTS


PAGE

1. BACKGROUND CONCERNING THE REQUEST FOR DEVELOPMENT OF AN INTERNAL EVALUATION SYSTEM ..... 1

2. THE OBJECTIVE OF THE EVALUATION SUBCONTRACT ..... 1

3. SUBCONTRACT ACTIVITIES ..... 2

4. THE STRUCTURE OF THE INTERNAL EVALUATION SYSTEM ..... 2

   4.1 The Internal Evaluation System ..... 2

   4.2 The Format for Staff Reporting ..... 4

   4.3 Mechanisms for Organizing and Presenting Basic Information on SHDS Activities ..... 4

5. DESCRIPTION OF THE IMPLEMENTATION OF THE EVALUATION SYSTEM -- INFORMATION GATHERED AND RESULTS PRODUCED ..... 4

   5.1 Results of the Application of the Internal Evaluation System -- SHDS Evaluation Reports ..... 5

   5.2 Notebooks Containing Basic Information on Each of the Six SHDS Program Components ..... 6

   5.3 Files Containing Essential Project Documents ..... 9

6. DEVELOPMENT OF A COMPUTERIZED MANAGEMENT INFORMATION SYSTEM TO SUPPORT THE INTERNAL EVALUATION PROCESS ..... 9

7. METHODS FOR MAINTAINING A FUNCTIONING INTERNAL EVALUATION SYSTEM ..... 10

8. RECOMMENDATIONS FOR FUTURE EVALUATION ACTIVITIES ..... 11

# FINAL REPORT

# ON THE SUBCONTRACT FOR DEVELOPMENT AND IMPLEMENTATION OF AN INTERNAL EVALUATION SYSTEM FOR THE SHDS PROJECT

## 1. BACKGROUND CONCERNING THE REQUEST FOR DEVELOPMENT OF AN INTERNAL EVALUATION SYSTEM

During the program audit of the SHDS Project performed by the Regional Inspector General's Office, a recommendation was made that the SHDS Project develop a system of internal evaluation as an ongoing management and planning mechanism. The auditors noted that an internal evaluation system had been developed during the first two calendar years of the Project (1978-79). It had provided valuable data but had been discontinued due to lack of sufficient staff and funding. They recommended that internal evaluation activities be resumed, and a system appropriate to the current needs of the Project be developed.

After further discussions with REDSO, SHDS decided to develop a subcontract with Charles R. Drew Postgraduate Medical School for design of an internal evaluation system. Drew was selected for the subcontract because the current Dean, Dr. M. Alfred Haynes, as well as other members of the faculty, had valuable expertise and experience in the health care evaluation field. Dr. Ann Brownlee, who had developed the first internal evaluation system and worked as a staff member of the SHDS Project until 1983, was asked to be a major consultant for the subcontract. Dr. Rose Gibbs, an evaluation specialist on the Drew staff, also participated during the first half of the subcontract.

## 2. THE OBJECTIVE OF THE EVALUATION SUBCONTRACT

The general objective of the subcontract has been:

> "To develop and implement a system of internal evaluation for the SHDS Project which will provide information for use in:
>
> - ongoing planning and management within the Project,
> - external evaluation of the Project,
> - development of the final report for the Project, and
> - recommendations for follow-up activities after the termination of the current Project.

## 3. SUBCONTRACT ACTIVITIES

The subcontract for the internal evaluation was awarded on September 3, 1985, and authorization for travel came several weeks afterwards -- somewhat later than had been originally planned. The evaluation team had hoped to visit both Boston and Abidjan for data gathering purposes, but the trip to Boston had to be cancelled due to time constraints.

Two separate trips were made to the Project headquarters in Ivory Coast. In November, 1985, Dr. Brownlee made a three-week visit during which she worked with the Project staff to develop the format for the staff evaluation reports, examine the Project Information System (P.I.S.) to determine what outputs could be produced for use within the evaluation, as well as gather and organize essential information and documents for the evaluation. (See the trip report for details.) Dr. Haynes later visited the Project for one week in February, 1986. During this trip, he met with Dr. French and other members of the SHDS staff, as well as REDSO personnel, to discuss the evaluation system being developed and the Project's mission and goals and to gather data needed for the assessment of the Project as a whole.

Extensive work was also performed at Drew, including the design of the evaluation system and organization and analysis of information brought from the field, using the system developed.

## 4. THE STRUCTURE OF THE INTERNAL EVALUATION SYSTEM

As part of the work on the internal evaluation, the evaluation team developed:

- a system of internal evaluation that could be used by the evaluation team for program assessment;
- a format for reporting that could be used by the SHDS staff to develop program reports which could provide basic information needed for the internal evaluation; and
- mechanisms for organizing and presenting the essential information and documents concerning the SHDS Project that were needed for evaluation, planning and reporting purposes.

### 4.1 The Internal Evaluation System

A description of the internal evaluation system developed by the evaluation team is provided in the report entitled "Description and Application of the Internal Evaluation System Developed for the SHDS Project." This report is presented in the second section of this notebook.

The evaluation system developed is based on the "Systems Evaluation of Care" or "SEC" method first developed by Dr. Haynes and an evaluation team for use in evaluating the work of the Neighborhood

Health Centers. Dr. Haynes and Dr. Brownlee worked, as part of the current subcontract, to adapt the basic system for use within the SHDS Project. With further slight adaptation, the system could be used to evaluate other international health programs of a similar type.

The evaluation system developed includes both a system for assessing the Project as a whole and a system for assessing the various program components within the Project. The system for assessing the Project as a whole covers:

1. The Project's (or system's) mission

2. System goals and objectives

3. Activities

4. Organization

The system for assessing the various program components covers:

1. Goals, objectives and activities of the program

   1.1 Goals
   1.2 Objectives
   1.3 Activities

2. Evaluation of program results

   2.1 Scope
   2.2 Productivity
   2.3 Effectiveness
   2.4 Cost
   2.5 Satisfaction
   2.6 Evaluation profile of the program

3. The program process

4. Initial program state and transformation

5. Lessons learned and recommendations

The evaluation system is easy to use if it is installed early in the Project and information is gathered systematically as Project activities are completed. The results of the analyses performed can be reported in a very readable format, using the tables developed. These results can be summarized on one page in an "Evaluation Profile" which is quite helpful to chief executive officers who need to see quickly where the major strengths and weaknesses of the program lie.

While it was not possible in the current Project since the evaluation subcontract was awarded near its end, Project staff ideally should be involved in developing the evaluation plans during the early phases of the Project. With the help of evaluation experts, Project staff can develop Project and program goals and objectives that are results-oriented, time-specific and measurable. They can also help devise the various criteria and standards used within the system to measure program results. If staff members are involved in implementation of the system in this way, they are much more likely to be interested in the results it produces and to use these results for program improvement. The very fact of participating in the development of objectives and standards of performance may provide the staff with a clearer idea of the Project's goals and how to obtain them, as well as an incentive to do so.

### 4.2 The Format for Staff Reporting

A format for staff reporting was developed during the first trip to the field. It is found in Section 7 of this notebook. The SHDS Director and staff participated in development of the format, along with Dr. Brownlee, and it was agreed that it could serve as a guideline for the development of final reports on the various components of the Project. The SHDS staff later developed the program reports, following, to a varying degree, this format. These reports provide valuable data which can be used both for internal and external evaluation.

### 4.3 Mechanisms for Organizing and Presenting Basic Information on SHDS Activities

The evaluation team, as mentioned earlier, also developed mechanisms for organizing and presenting basic information and documents concerning the SHDS Project that are needed for planning, evaluation and reporting purposes. Basic background information on each of the SHDS program components has been presented in six notebooks. A system for organizing essential documents was also developed and document lists and files completed. A description of what information is available is provided in sections 5.2 and 5.3 of this report.

## 5. DESCRIPTION OF THE IMPLEMENTATION OF THE EVALUATION SYSTEM -- INFORMATION GATHERED AND RESULTS PRODUCED

The information gathered and results produced, based on implementation of the evaluation system described above, are found in the annexes of the report on "Description and Application of the Internal Evaluation System Developed for the SHDS Project", in the six notebooks that provide basic information on each program component, and in four file boxes that contain the essential Project documents.

## 5.1 Results of the Application of the Internal Evaluation System -- SHDS Evaluation Reports

The body of the report on "Description and Application of the Internal Evaluation System..." describes the evaluation system developed both for analysis of a project or system as a whole and for evaluation of a project's program components or subsystems. The annexes of this report then present the SHDS evaluation reports developed by the evaluation team using this system. These reports include:

Annex 1: Application of the Internal Evaluation System: Evaluation of the SHDS Project as a Whole

Annex 2: Application of the Internal Evaluation System: Evaluation of the Objective II Anglophone Nursing Program of the SHDS Project

Annex 3: Application of the Internal Evaluation System: Evaluation of Objective III of the SHDS Project

Annex 4: Application of the Internal Evaluation System: Evaluation of Objective IV of the SHDS Project

Each report describes the evaluation system that has been developed to assess the particular component of the Project being covered and, at the same time, uses the system to do much of the data gathering and analysis proposed. Due to the fact that the SHDS Project was in its final stages when development of the internal evaluation system was proposed, as well as time and budget constraints, not all the data necessary for a full analysis could be gathered. For example, analysis of program effectiveness and satisfaction must be based, to a large extent, on data gathered through interviews or questionnaires mailed to former course participants. Up to this point, there has not been the time or staffing necessary to do the surveys that would be required. The analyses of productivity and cost must be based on detailed information concerning the apportionment of staff time among various project activities and the expenditures for these activities. Since a good portion of the program staff left soon after the evaluation subcontract was awarded, the Project did not have the personnel to put together this information.

Although not all the data could be gathered, it was felt useful, nonetheless, to develop the details of the evaluation systems that could be used to analyze both the Project as a whole and three of the program components. These three programs (Objective II Anglophone Nursing, Objective III, and Objective IV) include a wide range of activities that are typically found in international health programs (for example, continuing education and training activities, curriculum development and evaluation, health information system development, applied research, etc.). The evaluation strategies developed could easily be used, with slight adaptation, for evaluation of future

programs either by the SHDS staff or by other professionals organizing similar endeavors.

Reports were not prepared at this time for the other three components of the SHDS Project (Objective I, and the Lome/Lagos and CESSI programs under Objective II) because it was felt that the reports prepared on the first three programs provided sufficient examples of how the evaluation system could be applied. As the SHDS Project Director agreed, it did not appear cost-effective to develop further just slightly different applications of the same system, unless they could actually be used to perform a complete analysis.

## 5.2 Notebooks Containing Basic Information on Each of the Six SHDS Program Components

As mentioned above, six looseleaf notebooks were assembled which contain the basic information necessary for Project evaluation.

The si notebooks cover the following programs:

- Objective I: Health Planning and Management
- Objective II: Lome and Lagos
- Objective II: Anglophone Nursing
- Objective II: The CESSI Programs (Francophone Nursing)
- Objective III: Disease Surveillance and Data Collection
- Objective IV: The Applied Research Program

Each notebook is divided into the following sections:

- Objective ___ SHDS Final Program Report by SHDS Staff
- Objective ___ End of Project Status (EOPS), 1983-85
- Objective ___ 1983-85 Statement of Work from the SHDS Contract
- Objective ___ 1983 Implementation Plan and Reviews
- Objective ___ 1984 Implementation Plan and Reviews
- Objective ___ 1985 Implementation Plan and Reviews
- Objective ___ Document List
- Objective ___ List of Workshops from Project Information System
- Objective ___ List of Participants and Facilitators from Project Information System
- Information on Objective ___ Evaluation Activities
- Objective ___ Interim Evaluation Report

The material found in each section is briefly described below, as well as how it can be used.

SHDS Final Program Report

The first section of each notebook presents the report that was prepared by the SHDS Project staff member responsible for the particular program covered. These reports, based to varying degrees on the evaluation format presented in the trip report, serve both as

final reports for the various components of the Project and as staff evaluation reports. They provide valuable information that can be used both for the internal evaluation and by the external evaluation team.

End of Project Status (EOPS), 1983-85

This section lists the EOPS that were devised and officially agreed upon by SHDS and REDSO for the various program components, as well as the verifiable indicators, outputs and inputs related to each EOPS. Measurement of the attainment of these EOPS is an important part of the AID evaluation system and so should be considered as the evaluations are designed.

1983-85 Statement of Work

This section presents the Statement of Work prepared as part of the original contract for each component of the Project. These original project plans must be considered when assessing project achievements.

Implementation Plans and Reviews for 1983-85

The next three sections present the Implementation Plans for each of the three years of the current SHDS Project, as well as the mid-year progress reports and end of year reviews. While these reports are available as separate documents, it is very helpful to arrange them for each component of the Project separately. Organized in this way, it is easy for evaluators to make the cross-references necessary between program activities planned and completed.

Document List

A document list has been prepared for each component of the Project covering the major program documents produced during the 1983-85 period. The lists are divided by "types of documents," which relate to each of the major sets of activities under the program. Information on each document includes:

- a reference number,
- the activity number and year within the Implementation Plans which describes the activity covered by the document,
- the name of the document,
- who it was prepared by,
- the date,
- the number of pages,
- a summary of the contents,

- the location in which the document can be found, and

- a column for listing either to whom the document has been distributed or key works for computerized document searches.

The reference numbers for each document contain three parts, separated by periods:

- A Roman numeral and, in some cases, a letter to identify under which component of the Project the document was produced:

  I - Objective I
  IIL - Objective II, Lome and Lagos
  IIA - Objective II, Anglophone Nursing
  IIC - Objective II, CESSI Program
  III - Objective III
  IV - Objective IV

- a number referring to the "type of document" it is, which is listed in the table of contents and also at the top of each page of the document list, and

- a number referring to each separate document under that particular type of document section.

For example, a reference number such as IIA.1.4 means the document comes from the Objective II Anglophone Nursing Program, is a document of type "1" within that program (related to "Information on development of a regional program of continuing education for basic schools of nursing"), and is document number 4 under that type of document ("Report/Minutes of the WACN Continuing Education Committee Meeting held at the National School of Nursing, Freetown, Sierra Leone, March 11-15, 1984").

## Lists of Workshops, Participants and Facilitators

The next two sections of the notebooks provide space for lists of workshops conducted under the various programs, as well as the participants and facilitators involved in them. These lists are available as part of the Project Information System (P.I.S.) and can be helpful as data for both the internal and external evaluations.

## Information on Evaluation Activities

A number of evaluation activities have been carried on within the SHDS Project itself, including evaluation of training activities such as courses and workshops, curriculum evaluations, and even a course on evaluation (under Objective I) during which the participants used the techniques they studied to evaluate various SHDS and WHO/AFRO management training programs. Lists have been prepared which describe the "Information on Evaluation Activities Performed within the SHDS Project" under each program. The list is keyed to the

document list described above using the same reference system. It gives the reference number for each document containing evaluation information, the name of the document, the type of evaluation information available within it, and the page numbers where this evaluation information can be found. This list has been prepared to provide easy access to these activity evaluations for both the internal and external evaluation teams.

Interim Evaluation Report

The final section of the notebook contains the sections of the "Interim Project Evaluation" report that relate to the various program components. This is a report from a mid-term evaluation of the SHDS Project which took place February 24 - April 4, 1985 at the request of USAID. The various sections of the report are included to provide an easy reference for the evaluation teams.

5.3 Files Containing Essential Project Documents

The documents presented in the six document lists (one for each program component) have been collected as part of the data gathering activities of the internal evaluation and are available in four file boxes, arranged according to the reference system used for the document lists. These files are currently available in the SHDS Offices in Boston and Abidjan, as well as at Drew Medical School.

## 6. DEVELOPMENT OF A COMPUTERIZED MANAGEMENT INFORMATION SYSTEM TO SUPPORT THE INTERNAL EVALUATION PROCESS

Once the internal evaluation system had been developed, the SHDS Project Director felt it would be useful if guidelines were also prepared which would describe how a computerized information system could be implemented which would support the internal evaluation process. Since James French had been integrally involved in implementation of the original SHDS Project Information System, it was felt that it would be useful if he could collaborate with the Drew team on this aspect of the subcontract. He, therefore, spent the period from July 24 to August 24 working at Drew in collaboration with Drs. Haynes and Brownlee, as well as a Drew computer specialist, Mr. Sipho Msikinya, on development of the information system.

The work which was completed is described in the report "Development of a Computerized Management Information System to Support the Internal Evaluation Process" found in Section 8 of this notebook. The report presents guidelines for development of a computerized information system which, due to its design, satisfies the project information requirements encountered in the four project phases of planning, implementation, documentation and evaluation. In addition, the report illustrates how the information system can be used to supply the data needed for the evaluation system that has been developed under the subcontract.

The report is divided into five sections. After introducing the information system model, it describes the organization of the model,



3

including the information structure and production of various standard and specialized reports. It then discusses logistics and guidelines for automation, including selection of hardware and software which will meet the system's needs. Next, it describes how the information system meets the data needs of the internal evaluation system in the five major results categories: scope, productivity, quality, cost and satisfaction. Finally, it provides an illustration of how the system can be used to provide data within the SHDS Project. The various computerized forms and schedules that have been developed or adapted thus far for use within SHDS or other international health projects are presented as an annex.

As the report observes, further work would be needed to develop a completely functioning computerized system of the type described. This initial report provides a valuable overview concerning the structure of such a system and how it can interface with the internal evaluation process to provide essential data on an ongoing basis.

## 7. METHODS FOR MAINTAINING A FUNCTIONING INTERNAL EVALUATION PROCESS

The internal evaluation system is only useful, of course, if it continues to function as planned once it is installed, providing relevant data that is <u>used</u> to manage and improve the program. Several suggestions are given below that may be useful for developing and maintaining a functioning system:

- It is critical that project managers and other staff members be integrally involved in the initial design of the system. Project staff should help refine the mission, design goals and objectives, and develop standards for measuring results. At the same time, specific plans should be made, with their collaboration, for ongoing data entry and feedback of results. Discussions should be held concerning how results can be used to help manage and improve the program. This type of involvement in the planning process should increase staff commitment to providing needed data and using results, as well as motivate them to meet agreed upon standards.

  During the design process, forms and schedules for both the management information system and the internal evaluation should be carefully developed.

-- Clear assignments within the project should be made concerning data entry, collection, analysis and reporting. The work involved could be the responsibility of several staff members or just one professional with expertise in the evaluation area. One high-level manager should be assigned to supervise these activities, making sure that data processing stays on schedule.

-- Plans should be made for periodic meetings during which evaluation results are reviewed with project staff and decisions made concerning any needed program changes based on the results.

-- At least twice a year, the evaluation system, as well as the information system that supports it, should be reviewed and any necessary changes made to update and improve it. During these periodic reviews, the utility of the various types of data being gathered should be reconsidered, and any unnecessary data collected eliminated.

## 8. RECOMMENDATIONS FOR FUTURE EVALUATION ACTIVITIES

If the internal evaluation system developed under the subcontract is felt to be useful, several further activities might be considered:

-- The management information system described in the report in Section 8 of this notebook could be further developed. The report describes the structure and major components of an information system that would be useful both for project management and support of the evaluation process. Since time was limited, only selected aspects of the system were developed in full detail, with specific guidelines for computerization. Further work to fully develop and computerize the information system could be undertaken.

-- If a decision is made to use the internal evaluation system in future international health programs, plans should be made to adapt the general evaluation system described in this report during the design phase to the needs of the selected programs. The application of the system for use within the SHDS Project illustrates the type of adaptation work that should be completed. For example, as a new project is being designed, staff should develop a project mission as well as goals and objectives that are results-oriented, time-specific and measurable. Standards for measuring program scope, productivity, cost, effectiveness and satisfaction should be set using the formats outlined in the report on "Description and Application of the Internal Evaluation System." Plans should be made for data collection and analysis and necessary staff time and budget allotted. In addition, any staff members unfamiliar with the evaluation system should receive adequate orientation and training in any tasks that they may have associated with it.

-- After the system has been successfully used on a "pilot" basis, guidelines concerning its development and use might be further refined and consideration given to its adoption for general use in a variety of international health programs.

XD-PH-GM-A
ISN 5026

# DESCRIPTION AND APPLICATION OF THE INTERNAL EVALUATION SYSTEM DEVELOPED FOR THE SHDS PROJECT

Prepared for:

The Project for Strengthening Health Delivery Systems
in West and Central Africa

By:

M. Alfred Haynes, M.D.
Ann Brownlee, Ph.D.

Under a subcontract with:

Charles R. Drew Postgraduate Medical School

July 31, 1986

## OVERVIEW

Most federally funded programs are subjected to external evaluation, conducted by an external group, at specific points during the life of a project (interim evaluations) and again at the end of the project (terminal evaluations). These evaluations are relatively lengthy documents conducted primarily for the benefit of the funding agency. Internal evaluations are done on a continuous basis throughout the life of the project. The reports are precise and are prepared primarily for the benefit of the chief executive officer, whose primary responsibility is to ensure that the program goals are being achieved or that corrective action is taken long before external evaluation. This document presents a carefully defined approach to internal evaluation which is best seen as one step in a cybernetic process which includes thoughtful planning, the setting of goals and objectives, regular reporting through an organized information system, internal evaluation and feedback to staff on performance.

This report outlines procedures specifically designed for the internal evaluation of the SHDS Project at a time when this phase of the project is almost completed and most of the staff have left. The techniques, however, have applications far beyond the SHDS Project. SHDS is to be complimented for considering this approach even though late in the life of the project. It is hoped that the documentation will prove useful in the planning, management and evaluation of subsequent programs.

**M. Alfred Haynes, M.D.**

July 31, 1986

TABLE OF CONTENTS

PAGE

1. Introduction to the Internal Evaluation System ..... 1

1.1 Transformation Oriented ..... 1
1.2 Assessment of Results ..... 1
1.3 Assessment of Process ..... 2
1.4 Initial State - Transformation ..... 3
1.5 Lessons Learned and Recommendations ..... 3
1.6 Order of Evaluation ..... 3
1.7 Topics Covered in the Remainder of the Report ..... 3

2. Description of the System for Evaluating the Project as a Whole ..... 4

2.1 The Mission ..... 5
2.2 System Goals and Objectives ..... 6
2.3 Activities ..... 6
2.4 Organization ..... 7
2.5 Significance of System Review ..... 7

3. Description of the System for Evaluating the Program Components..... 7

3.1 The Goals, Objectives and Activities of the Program ..... 8
3.2 Evaluation of Program Results ..... 10
3.3 The Program Process ..... 24
3.4 Initial Program State and Transformation ..... 24
3.5 Lessons Learned and Recommendations ..... 25

Annex 1: Application of the Internal Evaluation System: Evaluation of the SHDS Project as a Whole

Annex 2: Application of the Internal Evaluation System: Evaluation of the Objective II Anglophone Nursing Program of the SHDS Project

Annex 3: Application of the Internal Evaluation System: Evaluation of Objective III of the SHDS Project

Annex 4: Application of the Internal Evaluation System: Evaluation of Objective IV of the SHDS Project

# DESCRIPTION AND APPLICATION

# OF THE INTERNAL EVALUATION SYSTEM

# DEVELOPED FOR THE SHDS PROJECT

## 1. INTRODUCTION TO THE INTERNAL EVALUATION SYSTEM

In the past few months a system for evaluating the SHDS Project has been developed by the internal evaluation team under the SHDS Project's subcontract with Charles R. Drew Postgraduate Medical School. The evaluation system is based on the "SEC Method," first developed by Dr. M. Alfred Haynes and an evaluation team for use in evaluating the work of Neighborhood Health Centers under a contract first with the Office of Economic Opportunity and later with the Department of Health, Education and Welfare (HEW). The system was further developed by Dr. Haynes and a team of consultants during an additional contract with HEW and later during a scholarly leave from Drew. The acronym "SEC" stands for "System Evaluation of Care."

Since this system was originally developed for evaluation of health centers delivering care to specific patients and communities, it had to be somewhat altered and adapted for use with a project such as the Project for Strengthening Health Delivery Systems in Central and West Africa (SHDS). This modified version of the evaluation system could be used, with further slight adaptation, for other international health programs of a similar type.

### 1.1 Transformation Oriented

Most evaluation techniques are either process oriented or results oriented. The SEC Method is transformation oriented and takes into consideration the actual results achieved, the process by which the results were obtained and the inputs or initial state. One of the positive aspects of the evaluation system is that it forces staff to think constantly about the key result areas and to modify daily practice so that activities are constantly self-assessed and can be objectively assessed by others. The evaluation also takes into consideration the environment in which the procedures take place and the existing constraints.

### 1.2 Assessment of Results

The first step in the evaluation process is the assessment of results. As in most methods of evaluation, actual results are compared either with established objective standards or with the planned results. However, it has been found that regardless of the system, the results to be evaluated can be placed into five categories -- scope, productivity, effectiveness, cost and satisfaction.

1.2.1 Scope - refers to the range of activities performed. In some cases, the organization may be attempting too much or too few activities when compared with its mission. It may simultaneously be doing things which it ought not to do and neglecting things which are necessary for the achievement of its goals.

1.2.2 Productivity - is a measure of the amount of work performed in relation to the personnel employed. The amount of work actually performed (quantity) is compared with what should have been performed during a given unit of time by a given number of staff (full-time equivalents). Even if the productivity is high, the amount of work performed may be inadequate because the personnel were insufficient for the adequate performance of the task. Both elements should be taken into consideration in the evaluation.

1.2.3 Effectiveness - is a measure of the degree to which the activities completed led to attainment of the results desired. Standards of effectiveness will vary with each activity assessed. Much of the initial work of designing the evaluation relates to defining standards for effectiveness and for the other result areas against which actual performance is measured.

1.2.4 Cost - is a measure of the amount of dollars spent in achieving the actual results. The evaluation process is really more concerned about value and efficiency. It measures the cost of achieving a given output compared with defined standards or established norms.

1.2.5 Satisfaction - includes a measure of the satisfaction of the users of the service and also a measure of the satisfaction of the providers.

1.2.6 Ratings - provide an evaluation profile. The findings on the key results are quantified and rated as outstanding (*), adequate (+) or inadequate (-). Often, the information is not available to assess an activity. It is then reported as unassessed (0).

## 1.3 Assessment of Process

The second step is the documentation of the process. An understanding of the process is important whether or not the desired results are obtained. The process of achieving results can actually be explained on the basis of two major categories -- resources and management. The resources include:



21

personnel (quantity and quality);

finances;

facilities (space, equipment, etc.); and

technology.

It is the management of these resources which leads to the achievement of results. The process of evaluation is, therefore, an analysis of how resources are managed.

It is also important to take into consideration the general environment in which the work is performed, such as the political and social climate and the constraints under which one operates. Constraints are not merely problems in operation. In this context, constraints are "givens" external to the program and over which the staff have no control.

While the result areas are expressed largely in quantitative or numerical terms, the process is described in narrative form.

## 1.4 Initial State - Transformation

The initial state is examined as a basis for explaining results. Different groups may accomplish different results with the same amount of effort because they begin at different points. The evaluation process, therefore, includes a statement of the initial point or baseline. This initial state is compared with the end of project status to determine whether a transformation has taken place.

## 1.5 Lessons Learned and Recommendations

After the evaluation has been completed, the evaluators will be able to provide the chief executive and other users with a summary of lessons learned and recommendations stemming from the findings.

## 1.6 Order of Evaluation

The order of evaluation described is the reverse of implementation and, indeed, an internal evaluation may well proceed in this manner because the chief executive is usually first interested in results, then in an explanation of process. He is usually aware of the initial state but is then most interested in the transformation which results from the project.

## 1.7 Topics Covered in the Remainder of the Report

The internal evaluation system which has been introduced above focuses both on an evaluation of the system or project as a whole and evaluation of the subsystems or various program components of the



21

project. The next section of this report will describe the system developed for evaluating the project as a whole. The following section will describe the system for evaluating the project's various program components.

The system described in these two sections has been adapted to provide an internal evaluation system specifically tailored to the needs of the SHDS Project. The application of the system is described in four annexes:

Annex 1: Application of the Internal Evaluation System: Evaluation of the SHDS Project as a Whole

Annex 2: Application of the Internal Evaluation System: Evaluation of the Objective II Anglophone Nursing Program of the SHDS Project:

Annex 3: Application of the Internal Evaluation System: Evaluation of Objective III of the SHDS Project

Annex 4: Application of the Internal Evaluation System: Evaluation of Objective IV of the SHDS Project

As mentioned in the overview, the internal evaluation activities that led to this report were begun at a time when the current phase of the SHDS Project was almost over and most of the staff had left. The reports found in the Annexes describe how the internal evaluation system can be adapted for specific sample programs within the SHDS Project. Data available is then analyzed, using the system, although the data that was available at this point was not complete. It is hoped that the system developed and the analysis process illustrated in the annexes will be useful in future projects of a similar nature.

## 2. DESCRIPTION OF THE SYSTEM FOR EVALUATING THE PROJECT AS A WHOLE

The method of internal evaluation that has been developed assesses a project as a system. The project, in its totality, is examined as a system and its component parts or programs are considered subsystems. The project (system) consists of a group of component parts (subsystems or programs) organized so as to achieve a common goal. One, therefore, examines the mission of the project, the goals which it seeks to achieve, the activities which it performs in pursuit of those goals, and how it organizes itself to carry out these activities. This section deals with the evaluation of the overall system. The final section will deal with the subsystems. In a well integrated project, if the goals of the components are achieved, then the system as a whole will also achieve its goals.

An example of how the evaluation system described in this section can be applied for evaluating the SHDS Project as a whole is found in Annex 1, as mentioned above.

## 2.1 The Mission

The mission of the project or organization is its reason for existence. It should be expressed as a clear statement of purpose and, from this statement, one should be able to determine what the project or organization should or should not do. The mission does not change frequently and it should be understood by every employee.

The mission of a system as a whole should be assessed against four criteria:

1) Is the mission still relevant?

2) Does it provide realistic boundaries of action?

3) Is the concept of the mission institutionalized? and

4) Is the stated mission compatible with the implied mission?

2.1.1 Relevance - Organizations often continue to exist long after the original reason for their existence no longer remains. The determination of relevance may not always be apparent on the surface and sometimes requires considerable probing. Relevance is best determined by considering the views of both the providers and the users of the service.

2.1.2 Boundaries - The mission should set the boundaries for action and suggest what should and should not be done. Current and proposed activities should be examined in relationship to the mission. The perceived needs of a population may cause an organization to extend or to limit its boundaries.

2.1.3 Institutionalization of the mission adds meaning and purpose to the work of the staff. The mission should be understood by all. Understanding does not imply being able to repeat the words but rather being able to grasp the significance of the organization's activities and purpose.

2.1.4 Congruence - The stated mission may often be ideal but, if one studies the activities and how they are performed, one would conclude that the organization had an entirely different mission. For example, despite statements to the contrary, self-interests may be more dominant than community interests. The implied mission should be compared with the stated mission. It is best when they are congruent.

## 2.2 System Goals and Objectives

The system goals and objectives become the basis on which each subsystem or program defines its own goals and objectives to ensure overall system results in a coordinated and timely fashion.

The goals are distinguished from objectives primarily on the basis of the time horizon. Goals specify the results to be achieved in the long run (5-10 years or for the life of the project) while objectives specify results to be achieved in one year or less. Otherwise, the same criteria apply; they should be:

results-oriented;

time-specific; and

measurable.

Goals and objectives are sometimes confused with activities, but the results should not be confused with the activities or methods by which those results are to be achieved.

Results Orientation:

The five key result areas should always be kept in mind. They include scope, productivity, effectiveness, cost and satisfaction. Goals and objectives should be set internally even if not required by the funding agency.

Time-Specificity:

Goals and objectives should be time-specific. Since goals are long term, they may not have a high degree of specificity, but there should be a target time for reaching them.

Measurability: Goals and objectives should also be measurable so that it is possible to determine when the results have been achieved.

## 2.3 Activities

A system list of activities would include broad categories such as training, research and provision of care. Ideally, the classifications should be mutually exclusive and totally exhaustive; that is, the categories should not overlap and the listing should be inclusive of all activities performed. The list of activities should be compared with the mission to determine if they fall within or exceeds the boundaries set by the mission. It should be compared with the defined scope of work to determine if the activities are adequate, inadequate or beyond what is required for the organization or project to achieve its goals.

## 2.4 Organization

The system is usually organized into subunits for the performance of certain activities. Each such group or program is a subsystem and it is these subsystems which become the focus of detailed evaluation.

An organization chart is helpful in evaluating the way activities are organized, but one must ensure that the chart truly reflects the way the system works. There are three organizational arrangements -- functional, team and matrix. There appears to be no one form which is best for all situations. Therefore, this evaluation method assumes that the best form is the one which is most effective in achieving the desired results.

In examining the organization, the evaluator examines how activities and accountability are grouped and how the groups are interrelated; how information and decisions flow and how problems are solved.

Organizational problems are often due to interpersonal conflict, failure to identify clear lines of accountability, over-complexity of the organization or an inadequate flow of information.

## 2.5 Significance of System Review

The review of the mission, goals and objectives, activities and organization of the system as a whole provides a point of orientation from which to pursue the evaluation of each subsystem or program component.

# 3. DESCRIPTION OF THE SYSTEM FOR EVALUATING THE PROGRAM COMPONENTS

The method which has been developed for evaluating the project as a whole has been described in the previous section. This section will discuss the specific evaluation techniques that can be used for evaluating the program components or subsystems of a project. In the case of the SHDS Project, there are six program components to be evaluated. These include:

- Objective I: Health Planning and Management
- Objective II: Lome and Lagos
- Objective II: Anglophone Nursing
- Objective II: The CESSI Programs (Francophone Nursing)
- Objective III: Disease Surveillance and Data Collection
- Objective IV: The Applied Research Program

The system for evaluating the program components includes the following sections:

1. Goals, objectives and activities of the program

   1.1 Goal
   1.2 Objectives
   1.3 Activities

2. Evaluation of program results

   2.1 Scope
   2.2 Productivity
   2.3 Effectiveness
   2.4 Cost
   2.5 Satisfaction
   2.6 Evaluation profile

3. The program process

   3.1 Resources
   3.2 Program management

4. Initial program state and transformation

5. Lessons learned and recommendations

The details of how the evaluation system is designed and how it can be used are described in the following sections, which cover each of the major components of the evaluation system in turn. Examples of the application of the internal evaluation system for three components of the SHDS Project are found in Annex 2, 3 and 4. These Annexes describes how the system can be used to evaluate:

- The Objective II Anglophone Nursing Program
- Objective III (Disease Surveillance and Data Collection)
- Objective IV (The Applied Research Program)

These reports provide useful illustrations of how a variety of types of activities, often found in international health programs, can be assessed using the internal evaluation system developed.

## 3.1 Goals, Objectives and Activities of the Program

All programs within the Project should have stated goals and objectives, as well as specific activities they are designed to perform. The first step in the evaluation process is to identify these goals, objectives and activities and assess them.

### 3.1.1 Goals

Each program should have one or more major goals which should specify results to be achieved over the long-term -- either over the life of the project or for a period of five to 10

years. These goals, in order to be useful, should meet three criteria. Specifically, they should be:

- results-oriented,
- time-specific, and
- measurable.

The first step in the evaluation of each program should be to identify the goals that have been developed. These goals should then be assessed to determine if they meet the three criteria above. If they do not, it will be impossible to accurately measure, during the evaluation, whether the goals have been attained.

One important role of the evaluation team can be to help the staff, if they haven't already, to develop goals that are results-oriented, time-specific and measurable. Work on this exercise can help the Project staff members clarify exactly what they hope to accomplish over the life of the program and, thus, may encourage successful goal attainment.

In certain programs, it may be useful to do a baseline survey or inventory of the current state of development in the program area before or at the beginning of the program. This information may be useful for program planning and also provide the type of data needed for development of appropriate goals.

### 3.1.2 Objectives

The second task in the evaluation of a program is assessment of the program objectives. Objectives differ from goals primarily as far as the time horizon. While goals measure results to be achieved over the long-term, objectives should be short-term, for a period of one year or less. As for the goals, they should be results-oriented, time-specific and measurable.

The initial step in evaluation of objectives should be to identify what objectives, if any, have been developed by the Project.

The next step is to assess to what extent the objectives are focused on a shorter time span than the goals and are results-oriented, time-specific and measurable. If the objectives do not meet these criteria, the evaluation team may find it useful to work with the program staff to develop more appropriate objectives.

### 3.1.3 Activities

Next the evaluation team, with the assistance of the staff, if possible, should identify the major types of activities planned as part of the program. This list of activities should not be detailed, and may include such broad categories as curriculum development, training, development of a training network, development of a health information system, development of a research funding program, etc.

The list of types of activities planned should then be briefly compared with the goals and objectives of the program to determine if they are generally consistent. If there seems to be some inconsistency between goals, objectives and the types of activities planned, this should be discussed in this section of the evaluation and possible remedies proposed.

## 3.2 Evaluation of Program Results

The next major component of the evaluation is the evaluation of program results. As mentioned earlier, the essential aspects of this part of the evaluation can be covered by five categories — scope, productivity, effectiveness, cost and satisfaction.

### 3.2.1 Scope

Scope refers to the range of activities to be performed. The list of types of activities planned, developed in section 3.1.3, can be used as the initial list of the scope of activities.

The first step in assessment of the scope of activities involves determining whether the range of activities chosen is most appropriate for meeting the program's stated goals and objectives. In some cases, the scope of activities may be too wide, compared with stated goals and objectives. In other cases, necessary types of activities may be missing. Close examination may indicate that some of the goals, objectives, or activities should be reoriented. This part of the assessment is quite important. Based on it, the list of activities indicating the "scope" of activities that should be performed should be revised, if necessary.

The second and final step in assessing the scope of activities involves rating the importance of each of the types of activities and then assessing the extent to which the program performed this scope of necessary activities.

A system for assessing whether the scope of activities performed is appropriate can be developed by assigning points for each type of activity, with 100 points assigned in all.

The number of points to be assigned to each activity should be based on how important each type of activity is for the attainment of the program's goals and objectives.

The assignment of points should be done with the participation, if possible, of the program staff. Each staff member can be asked to rate the importance of the various types of activities by distributing the 100 points between them. Then reasons for the choices can be discussed, and the ratings to be used can be decided either by concensus or by taking an average of the scores and adjusting them so that they total 100. If necessary, the assignment of the evaluation points can be performed by the evaluation team alone.

The scoring of the performance of the types of activities can then be obtained by determining whether each of the activities in the list was actually performed. If the type of activity was performed to some degree, all of the score for that activity should be awarded. If the type of activity has not been performed at all, no score should be awarded.

A score which falls between 75 and 89 rates the program as "adequate" with respect to the performance of the appropriate scope of activities. A score of less than 75 is rated as "inadequate" and of 90 or more as "outstanding."

A table that can be used to present the results is presented on the next page. It identifies the activity that was planned, the highest possible score, the score awarded, and leaves room for a brief explanation. Further explanation can be provided, if necessary, under the section on program process (section 3.3).

Rating the Scope of Activities Performed
Under the Program

| Type of Activity | Highest Possible Score | Score Awarded | Explanation |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| Total possible score: | 100 | | |
| Total score awarded: | | | |

Rating for scope of activities performed: _____

**Legend:**

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

3.2.2 Productivity

The first step in measuring productivity is measuring the quantity of activities performed in the program.

Quantity

The quantity of activities can be most easily assessed by comparing specific activities planned with those actually completed. A list of specific activities can be prepared by itemizing the specific activities planned under each of the types of activities identified in the previous section (3.2.1).

Each of the specific activities planned should then be assigned a score, indicating its importance to the overall program. (The points assigned in section 2.1 to the various types of activities can be divided between the specific activities under them.) Again, this can be done, if possible, with the participation of the program staff, or simply by the evaluation team itself.

The performance of the specific activities planned can then be scored by awarding none, some or all of the points possible for each activity, depending on the quantity of activities performed. (For example, if three training courses are planned and only two are completed, only two-thirds of the points would be awarded.)

If all points are awarded, the score would be 100. To obtain the "quantity" rating for the program, the points awarded are totaled. A score between 75 and 89 rates the program as "adequate" with respect to quantity of activities. A score of less than 75 is rated as "inadequate' and of 90 or more as "outstanding." A table of the type that can be used to present results is presented below.

Rating of Quantity of Activities Completed
Under the Program

| Area of Activity | Activity | Total Poss. Score | Score Awarded | Explanation |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | Total score possible: | 100 | | |
| | Total score awarded: | | | |

Rating of program on quantity of activities performed: _____

**Legend:**

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)



31

## Productivity

Productivity is the measurement of the quantity of work performed in relation to the personnel or staff and consultant time used. It is important to measure productivity in addition to quantity because it takes account of the amount of manpower available to complete the activities. If personnel is insufficient, the productivity of a program may be high, even though the output or quantity of activities performed is low.

A general estimate of productivity can be made by comparing the amount of regular staff time used for implementation of a particular program with an estimate of the amount of staff time usually required for similar activities. If the amount of staff time is very low in comparison, productivity may be generally rated as "outstanding." If the amount of staff time is average, it may be rated as "adequate," and if it is, in general, higher than staff time usually required for performance of similar activities, it should be rated as "inadequate." The above type of calculation, as can be seen, provides only a very rough estimate of productivity.

The specific productivity of the program on selected activities can be estimated by dividing the quantity of activities performed, in a sample of key areas, by the number of personnel days required to complete the activities. The "estimate of productivity" can be stated, as in the table below, by listing the "number of personnel days" used to perform a "standard quantity of activities." Standard quantities of activities would vary, of course, depending on the type of activities. In training, for example, it might be "one participant-day of training." The total number of "participant-days" in a particular course would be the total number of course days multiplied by the number of participants. In research, the standard quantity might be "number of personnel days used, on an average, for development, administration and technical supervision of a research project."

Estimates of Productivity for a Sample of Program Activities

| Area of Activity | Activities Performed | No. of Personnel Days Used | Estimate of Productivity |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

The next step in evaluating the productivity of the program would involve comparing the estimate of productivity for the various areas of activity under the program, either with some accepted standard or with the productivity of other programs performing similar activities.

It would be very interesting to compare the productivity of several projects conducting similar types of activities but using differing organizational arrangements. (For example, regional vs. local projects, or programs with headquarters in the U.S. vs. those with in-country offices.)

An example of a section of a table for measuring program productivity that could be used once standards have been developed appears below.

Example of a Possible Table
For Rating Program Productivity

| Area of Activity | Standard for Productivity | Productivity Estimate | Productivity Rating | Explanation |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

### 3.2.3 Effectiveness

The measurement of program effectiveness focuses on comparison of the results due to the program's activities with accepted standards for activities of that type. Measurement of effectiveness focuses, in general, on whether the activities have produced results which actually make a positive difference (or produce a positive effect) after the activities are completed. In general, measurement of effectiveness focuses on "medium-term" effects, while measurement of impact focuses on "long-term" or ultimate effects. This evaluation system focuses only on the former, as measurement of impact may be quite difficult, unless a follow-up assessment is scheduled some time after the Project is completed.

A system for scoring and rating the effectiveness of various sets of activities has been developed and an example of a table that can be used to report results is presented on the next page. First, criteria for measuring the effectiveness of the various sets of activities must be developed, as well as

plans for measuring the attainment of the criteria. In some cases, measurements can be made after looking at program reports or files. Often the assessment of effectiveness will involve either mailed questionnaires sent to course graduates and other program participants, or site visits and interviews with these same people. If questionnaires are sent systematically, throughout the life of the project, programmed to go out at a standard period of time after the completion of each activity (for example, a short questionnaire to graduates, six months after the completion of each course), this type of assessment may not be too difficult. If left until the end of the Project, the undertaking would necessarily be more massive and less accurate, since the time passed after completion of the various activities will vary so greatly.

The table below should be used for each set of activities. Total possible scores to be awarded for attainment of the various criteria related to the set of activities should be assigned, based on the relative importance of the criterion to the measurement of effectiveness. Total points possible should come to 100. The actual scores can then be awarded, with the total points awarded if the criterion is fully met, and only partial points awarded if the criterion is partially met. A rating is then made, using the same system as for earlier assessments.

**Measurement of Effectiveness of a Set of Activities**

| Criterion | Method for Measuring Attainment of Criterion | Poss. Score | Score Awarded | Explanation |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | Total possible score: | 100 | | |
| | Total score awarded: | | | |

Rating for effectiveness: _____

**Legend:**

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

It is commonly known that results from mailed questionnaires may be more biased than results obtained through interviews or systematic observation. For example, course graduates that have accomplished more on return are more likely to respond to questionnaires than are graduates that have used what they learned in the course less. It seems impossible to eliminate this bias and others like it when interviews or on-site observations are too expensive and time-consuming to perform.

One safeguard that can be built into the assessment is the requirement that the response rate to a question must be at least 50% before the results are used.

When designing criteria for the measurement of effectiveness, it often seems unrealistic to require that 100% of those responding meet the criteria for the total possible score to be awarded. For example, all applied research (AR) course graduates need not have to have conducted AR for the course to be considered fully effective on this criterion. In this first use of the system, the evaluators must estimate what percentage is reasonable (for example, that "50% of the graduates conduct AR on return home"). It will be difficult to know for sure whether the criteria developed are reasonable and fair until a number of programs have been evaluated using a similar system.

When measuring attainment of criteria, the percentages meeting the various criteria refer to the percentages out of those answering the questionnaires.

The questionnaires to be used must be developed, distributed, collected and analyzed -- a process that can take some time, but provides some of the most useful information in the evaluation. The questionnaires, which can be included in an annex of the evaluation report, can include requests for both closed and open-ended responses. (For example, each question can ask for a "yes" or "no" response, or rating on a scale, and then ask for comments or provision of specific information on the respondents' activities or performance related to the question. The open-ended sections of the questions can aid greatly in the interpretation of results.)

### 3.2.4 Cost

The measurement of the cost of the various programs can be divided into three components -- measurement of total cost of the program by year, measurement of the cost of specific sample activities and measurement of cost-efficiency of these activities. Each of these measurements is discussed below.

## Total Cost of the Program By Year

The description of the cost of a program by year can include both a statement of the amount budgeted and the amount expended (the actual cost). Each of these figures should include overhead, as well as any other amounts for administrative or organizational activities that support the particular program being assessed. In some cases, the costs are found in several budgets. All of these can be listed, using a form such as the one provided below.

### Budget and Expenditures For a Specific Program by Budget and by Year

| Type of Budget | Budget, Including Overhead, by Year | | | Expenditures, Including Overhead, by Year | | |
|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 3 | Year 1 | Year 2 | Year 3 |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| Totals: | | | | | | |

## Cost of Sample Activities

The budgets and expenditures for sample activities can be calculated in somewhat the same manner as the total budgets and expenditures. A table that can be used to calculate and report amounts budgeted and expenditures for a sample of activities is presented below.

### Budgets and Expenditures for a Sample of Activities

| Sample Activity | Amount Budgeted | | | | Expenditures | | | |
|---|---|---|---|---|---|---|---|---|
| | Bdg. 1 | Bdg. 2 | Bdg. 3 | Total | Bdg. 1 | Bdg. 2 | Bdg. 3 | Total |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

## Cost-efficiency of Sample Activities

The cost-efficiency of a specific activity can be measured if one can first calculate the cost of an agreed upon quantity of the activity and then compare it with some standard. A brief table for presenting the estimated costs for specific quantities of activities is presented below. Specific quantities of activities might include, for example, "one participant-day of training," "one staff-day used for program development of a particular type," "one staff-day used for technical assistance of a certain type," etc.

## Estimates of Costs for Specific Quantities of Program Activities

| Specific Quantity of Activity | Estimated Cost |
|---|---|
| | |
| | |
| | |
| | |

Further work must be done to develop standards for costs of specific quantities of activities. Standards might be developed by first estimating costs for producing the same quantities of activities under several international health projects and then taking the lowest cost obtained as the standard for 100% efficiency.

Another method of approaching cost-efficiency would be to estimate the cost of producing specific quantities of activities under the same program in consecutive years and then to determine if the cost for producing the quantity of activities goes down from year to year. If so, the program could be said to be relatively more cost-efficient in producing the same activities over time. If this method of estimating cost-efficiency were agreed upon early in a project, it could provide an incentive for the staff for finding less expensive ways of conducting the same activities over time. It should lead to greater use of regional and local resources, an approach that fits in well with the long-term aims of most international health projects.

### 3.2.5 Satisfaction

Rating of User and Provider Satisfaction

The evaluation of the satisfaction with various aspects of the program completes the process of assessment of results. Satisfaction can be evaluated for both users and providers for the various major types of activities performed under the program. The table below can be used to present the general plan for the types of activities that will be covered, what types of users and providers will be questioned, and how satisfaction will be measured.

Evaluation of Satisfaction with Various Types of Activities within the Program

| Type of Activity | User | Provider | How Satisfaction Measured |
|---|---|---|---|
| | | | |
| | | | |
| | | | |

Satisfaction is most often measured by mailed questionnaires or interviews with users and providers. When satisfaction with activities such as courses or workshops are being measured, questionnaires could be distributed on the final day of the course, thus saving time and expense later on. Experience has shown, however, that responses given at this time tend to have a positive bias, while responses to questionnaires received after graduates have been back in their work situation for some time may be more realistic. The former participants have had time by then to gain perspective on how useful the course has been, considering the realities of their jobs. They may also be less influenced by the exhuberance that participants often feel as they finally successfully complete a challenging course.

The questionnaires prepared for assessing satisfaction should be both closed and open-ended. The close-ended questions permit selection of 1 of 5 choices or a "don't know" option. Each question is followed by an opportunity for comment. Comments are useful in providing reasons for the ratings given by the users and providers and often include suggestions for improvement which can be fed back to program staff. Anonimity of the respondents should be stressed and respected.

The questionnaires are constructed around factors which affect satisfaction with the various types of activities. Responses are subjective in that it is the respondents' opinions which are important.

The scores for satisfaction are calculated by tallying the responses to the questionnaires in the following manner. All items where the response is "don't know" are ignored. The average score for each item is found by adding the numbers circled and dividing by the number of responses to that item. The average for all items is then obtained by adding the averages for each item and dividing by the number of items. A score which falls between 3.5 and 4.4 is rated as "adequate," a score below 3.5 is considered "inadequate" and a score of 4.5 or above as "outstanding."

The questionnaires themselves can be presented in an annex of the report, along with details from analysis of the open-ended sections of the questionnaire, if desired.

A table that can be used to present results from the rating of satisfaction of users or providers for various activities is presented below. The table reports on the factor used for measuring satisfaction, a brief summary of the question used, total score possible (always "5"), score awarded, and explanation.

**Rating of User or Provider Satisfaction with a Specific Type of Activity**

| Factor for Measuring Satisfaction of User or Provider | Question Used (See Annex for details) | Total Poss. Score | Awarded Score | Explanation |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Highest average score possible: 5

Average score awarded: _____

Rating for satisfaction of user or provider: _____

**Legend:**

4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

### 3.2.6 Evaluation Profile of the Program

The final item covered in the section on "evaluation of program results" is the presentation of an overall evaluation profile which summarizes succinctly, in quantitative terms when possible, the results from the previous five sections. An example of the type of table that can be used to present this profile is given on the next page.

The type of summary presented in the profile can be particularly useful for key management personnel who wish to review a brief overview of the evaluation results so they can easily pinpoint problem areas and then concentrate on them in more detail. The overall ratings for the various aspects of the evaluation (scope, productivity, etc.) of a particular program can then be included in a summary matrix which presents results from all the programs within the project. This matrix can help managers and staff to easily assess where various programs are strong and weak, compared to other programs.

## Evaluation Profile of the Program

| | | | |
|---|---|---|---|
| **Scope** | | **Effectiveness** | |
| | | 1 set of activities | |
| | | Total score: (100) | |
| | | Rating: | |
| | | Etc. | |
| Total score: (100) | | | |
| Rating: | | | |
| **Productivity** | | **Cost** | |
| Quantity | | | |
| | | Total cost: | |
| | | Cost for standard units of activities: | |
| | | Cost-effectiveness rating: | |
| Total score: (100) | | | |
| Rating: | | **Satisfaction** | |
| **Productivity** | | 1 set of activities | |
| | | Average score (for users): (5) | |
| | | Rating: | |
| | | Average score (for providers: (5) | |
| | | Rating: | |
| | | Etc. | |
| **Rating:** | | | |

| | | | |
|---|---|---|---|
| Summary: | Scope: | Quantity: | Productivity: |
| Effectiveness: | | Cost: | Satisfaction: |

Legend:

- Inadequate
- Adequate
- Outstanding

0 Not Assessed
? Undetermined

## 3.3 The Program Process

This section of the evaluation discusses and analyzes, in narrative form, the program process that has led to the results discussed in the previous section. There are two major categories that it is important to consider when examining program process — resources and management.

Resources that should be considered include:

- personnel (quantity and quality),
- finances or budget,
- facilities (space, equipment, etc.) and
- technology.

It is the management of resources that leads to the achievement of results. The evaluation of the program process should, therefore, include an analysis of how resources are used by management.

The sections on resources and management can begin with a general description of resources available and used, as well as the system of management used. They should also cover the difficulties or constraints that have affected use of resources and the management of the program. It may be helpful to take into consideration the general environment in which the work is performed, various political, social or economic constraints that may affect the program process, etc. The discussions should also include a general assessment of the program process and both the positive and negative ways in which it may have affected the achievement of results. During the discussion, it may be useful to explore, in particular, some of the program results that have deviated from what was expected and examine how the process of program development and implementation followed may have contributed.

## 3.4 Initial Program State and Transformation

This section covers an aspect of the program that the evaluators themselves may well examine first — the initial program state or "baseline" from which the program started, as well as the transformation that then took place as a result of the program activities. This aspect of the evaluation is covered near the end, as is the program process, because decision-makers and managers are often most interested in evaluation of program results and feel they know the initial program state and process followed in program development and implementation quite well. Once the results have been reviewed, however, these readers may be more inclined to examine the section on process, and initial state and transformation in more

detail in search of clues to why specific results (in particular, those that were unexpected) were attained.

The discussion of the initial program state and the transformation that took place as a result of the program can be presented in narrative form. A more succinct and systematic way of organizing and presenting the information can involve use of a table, such as the one below, that allows for a brief summary of the initial program state and transformation that has resulted from the program, organized by examining, in turn, the same sets of activities as those examined in earlier sections of the evaluation.

This section can give a very useful summary view of the transformation that has taken place as a result of the program, set in the important context of where the program began.

Description of Initial Program State and Transformation

| Set of Program Activities | Initial Program State | Transformation Resulting From the Program |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

## 3.5 Lessons Learned and Recommendations

The final section of the evaluation summarizes lessons learned as a result of the evaluation of the program and any recommendations, either for changes in the current program or for the future, that may stem from these lessons. The information can be presented either in narrative form or, more succinctly, in a table such as the one presented on the next page.

## Lessons Learned form the Program and Recommendations

| Lessons Learned | Recommendations |
|---|---|
| | |

A brief summary of lessons learned and recommendations may be particularly useful to management staff and donors involved in planning future programs of a similar type. It allows the opportunity for a creative assessment of the conclusions that can be drawn from the evaluation and the development of specific and practical recommendations for action.

## ANNEX 1:

## APPLICATION OF THE INTERNAL EVALUATION SYSTEM

## — EVALUATION OF THE SHDS PROJECT AS A WHOLE

## APPLICATION OF THE INTERNAL EVALUATION SYSTEM: EVALUATION OF THE SHDS PROJECT AS A WHOLE

### 1. THE MISSION OF THE SHDS PROJECT

The mission of the SHDS Project is given as follows:

> "To collaborate with the Ministries of Health of 20 West African countries and with AFRO to strengthen health delivery systems for primary care."

To appreciate the choice of this mission, one must understand the history of the project. After an eminently successful smallpox eradication campaign conducted jointly by WHO and CDC (contracted by AID), there was an effort to consolidate previous gains and to move to another joint project involving collaboration with the same 20 countries. This time the project was not oriented toward eradication of a single disease, but the strengthening of systems for delivering health care. This was an expressed need of the countries involved and is consistent with the WHO goal of health for all by the year 2000. It is a perfectly valid reason for the existence of this collaborative project which was developed and named Strengthening Health Delivery Systems (SHDS). This mission is now assessed in accordance with the criteria outlined.

#### 1.1 Relevance

The mission of strengthening health delivery systems is likely to be always relevant. This is true even for countries with the most advanced health systems. So the mission of the SHDS Project meets the criterion of relevance.

#### 1.2 Boundaries of Action

The mission, as stated, sets no boundaries for action. Almost every conceivable health activity could be subsumed under this mission and, since the mission would always be relevant, then a project funded under this mission could justifiably continue forever. The only barrier placed by the stated mission would be a noncollaborative action. For example, if SHDS were to attempt to develop a program without country participation, it would be a violation of the stated mission. A major problem of having such a boundless mission is that any attempt to end the project based on this mission could result in frustration and disappointment for all concerned, especially when results have been satisfactory.

#### 1.3 Institutionalization

By capturing the essence of the stated mission in the title of the project, SHDS has made its reason for existence clear to all persons whether or not they are involved in the project. Even without



4

knowing what the project does, one can easily understand this mission, and the mission has, therefore, been easily institutionalized.

### 1.4 Congruence

Even a cursory examination of the activities of the SHDS Project would suggest that its mission is not boundless and not, therefore, congruent with its stated mission. The mission which would be implied from an examination of its activities would be "to provide short-term, intensive training in health management, PHC training program and materials development, PHC-oriented nursing, epidemiology and applied research and to strengthen the teaching skills and curriculum of certain institutions which provide training and continuing education in these areas." This, so far, has been its special focus within the broader context of strengthening health delivery systems. In summary, SHDS has failed to narrow its statement of mission to what it can reasonably do within a finite period of time. Even though it has done extremely well what it was expected to do, it would have been better if a more limited mission had been made explicit.

## 2. THE GOALS AND OBJECTIVES OF THE SHDS PROJECT

What we define as goals are described in the project document as objectives, and what we define as objectives are defined in the project documents as subobjectives. We quote here only the four goals of the project:

1. To develop health management training competencies for producing primary health care managers at peripheral, district and regional levels;

2. To increase the skills and improve the utilization of health personnel providing general services at the supervisory and local levels;

3. To improve regional and national disease surveillance and health/demographic data systems and to integrate these systems into national health delivery systems; and

4. To develop training, service and research demonstration models for local health services delivery through applied research.

The critique which applies to the goals also applies to the objectives and wherever there are differences, the differences will be identified.

Results Orientation:

It is not always clear from the statement of goals exactly what result is to be expected even though this can often be implied. For example, one

must assume that the end result of the implied research training (goal #4) would be competent researchers, though this is not explicitly stated.

Time Specificity:

The criterion of time specificity is met since the long-term goals have been defined for the life of the project and, each year, the yearly objectives are defined, reviewed and approved.

Measurability:

Both goals and objectives, as currently stated by SHDS, tend to avoid measurability even though specific measures are precisely spelled out in the program plans. This may simply be another way of thinking which is neither better nor worse than the one proposed. We propose another way of stating a goal which meets the three criteria we have defined. For example: "To provide 147 health professionals within the region with competency in the design of applied research projects and 37 of these with competency in training others by the end of 1985."

Relevance to the Mission:

All goals defined by the project are relevant to its stated mission.

## 3. THE SHDS ACTIVITIES

The major SHDS activities can be summarized as follows:

- Intensive training in health management at network institutions and training of trainers;
- Training in management of primary health care programs;
- Development of a capability to produce learning materials;
- Nursing education (Anglophone and Francophone), curriculum development and continuing education;
- Training in epidemiology;
- Health Information System (HIS) development;
- Training in applied research; and
- Funding and technical support of applied research projects.

These activities are all consistent with the mission and goals and with the defined scope of work. It is these activities which will be evaluated under the evaluation of the various components of the project. It would appear, however, that one important activity, which could be described as

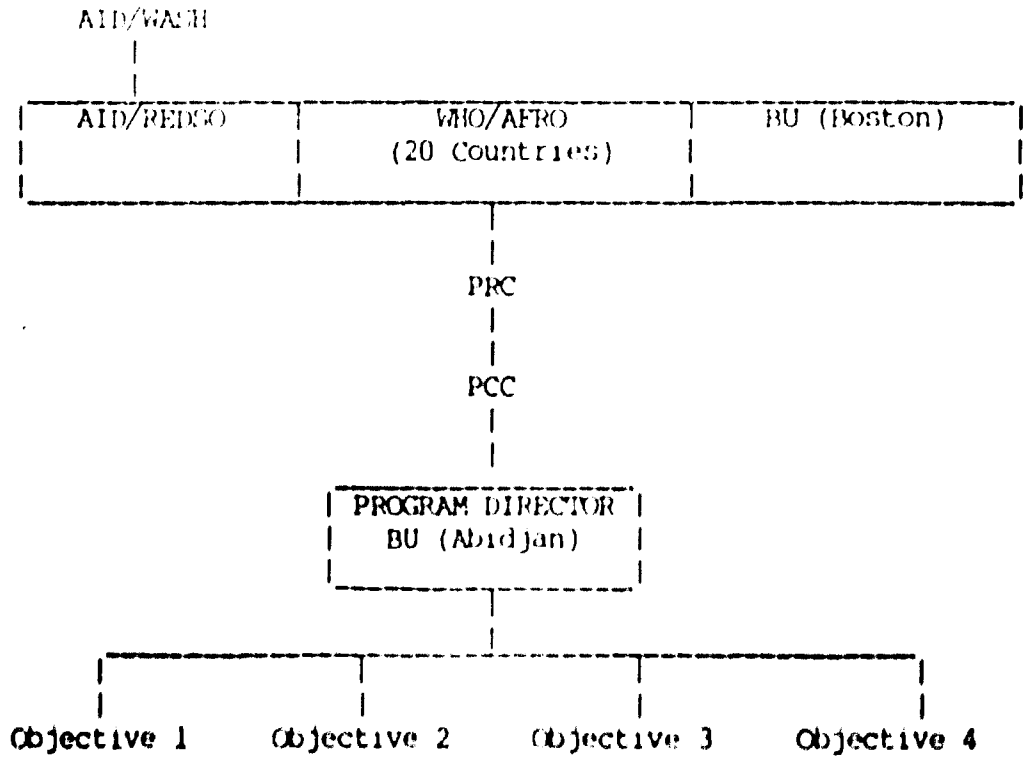


43

marketing, would have helped to increase the effectiveness of the other activities. This is an activity which was not given adequate attention in the conceptualization of the project as a whole.

## 4. THE ORGANIZATION OF THE SHDS PROJECT

The organization is somewhat complicated and involves a number of players. Originally AID/WASH signed an agreement with WHO/AFRO for AFRO to assume primary responsibility for the project and to serve as the secretariat for the 20 countries involved. AFRO was to be responsible for the African inputs to the project, such as arrangements for trainees to attend training workshops, and the identification of African consultants. At the same time, AID/WASH signed a contract with Boston University to carry out project activities and to manage the U.S. inputs such as U.S. consultants, project staff, etc. Boston University established project headquarters in Abidjan. In time, the AID role was transferred from Washington to the regional office (REDSO). The project activities were to be reviewed every two years by the Project Review Committee (PRC) which had representation from AID, AFRO, Boston University and one representative from each of the 20 countries. In addition, a smaller group including similar representation, but with only four country representatives, was to meet annually as the Project Coordinating Committee (PCC). The Boston University Abidjan office organized its activities under the project director along the lines of its four major objectives. Theoretically, the organization chart would be as follows:



In reality, the operation is somewhat different. At the level of Program Director and below, the organization appeared to work smoothly. The relationship between AFRO and the project appears to vary with the person who is the principal in AFRO. There appears to be inadequate communication between AID and AFRO. Relationships between AID and Boston University appear to be maintained largely through the project director and, in general, the primary responsibility of Boston University is largely exercised through the office of the project director.

Communications between AFRO and the 20 countries do not appear to be as effective as they might be and information about program activities often fails to reach the appropriate individuals. The 20 countries are a mixed group with different languages, different cultures, different standards of living and different population sizes.

The PRC, which might compare to a board of directors, meets too infrequently (every two years) to be effective and then appears to spend more time in information sharing than in problem solving. The PCC, which might compare to an executive committee, meets only once a year. There may not be a continuity among the representatives. Therefore, representatives may not have enough historical orientation and may not be in a position to commit their countries.

The line between the program director and REDSO is really three parallel lines. There is a technical line, a management line and a contract line. The technical and management lines may not always agree and the contract line is often asked to do things which, under normal circumstances, would be done by the contract office of Boston University. In all of this complexity, the program has worked because the program director's office has, by default, assumed a more pivotal role than would have been expected.

There seems to be no satisfactory way of simplifying the organization and maintaining the collaborative nature of the project. Since communication is so critical in a collaborative project of this kind, it would seem critical to have assigned to the project, specifically to AFRO, an individual whose full-time responsibility was to travel between the countries and to improve both communications and marketing.

The difficulty of effectively managing a project of this kind increases exponentially with the number of countries and of agencies involved. It was due to the unusual dedication of the staff that this project worked as well as it did.

Below the program director, activities were organized by objectives. This arrangement facilitated the management and evaluation of specific tasks and simplified the process of accountability. Most organizational problems were experienced above the level of the program director and related to information flow and to the decision making process in a heterogeneous, multicultural group. As indicated above, some of the problems might have been minimized by the assignment of a person who could act as a facilitator of communications and marketing.

Although there appears to have been some interpersonal conflict during the early days of the project, transfer of accountability to the REDSO was a step in the right direction. The delicate balance between the project staff, AFRO and AID required by this project could be possible only with a minimum of interpersonal conflict between the key participants. The competition among the 20 countries for participation and benefits required an unusual sensitivity and judgment.

5. **SUMMARY**

In summary, the system as a whole has performed remarkably well. The mission could have been more narrowly defined but, in large measure, the defined goals were met except in circumstances where the cost and the complexity of the program were underestimated. The addition of marketing activities centered in AFRO might have permitted the broader realization of the objectives among the 20 countries. Although the organization was, of necessity, complex because of the many countries and agencies involved, major problems were avoided by the unusual dedication of the staff and the initiative of the program director.

ANNEX 2

APPLICATION OF THE INTERNAL EVALUATION SYSTEM

-- EVALUATION OF THE OBJECTIVE II ANGLOPHONE NURSING PROGRAM

OF THE SHDS PROJECT

TABLE OF CONTENTS

PAGE

1. Goals, Objectives and Activities of the Anglophone Nursing Program... 1

1.1 Goals..... 1

1.2 Objectives..... 2

1.3 Activities..... 3

2. Evaluation of Program Results..... 3

2.1 Scope..... 3

2.2 Quantity and Productivity..... 5

2.3 Effectiveness..... 10

2.4 Cost..... 15

2.5 Satisfaction..... 18

2.6 Evaluation Profile..... 25

3. The Program Process..... 26

4. Initial Program State and Transformation..... 30

5. Lessons Learned and Recommendations..... 32

# APPLICATION OF THE INTERNAL EVALUATION SYSTEM
# -- EVALUATION OF THE OBJECTIVE II ANGLOPHONE NURSING PROGRAM OF THE SHDS PROJECT

## 1. Goals, objectives and activities of the Anglophone Nursing Program

### 1.1 Goals

The three goals of the Anglophone Nursing Program, as stated in the 1985 Implementation Plan for this program, are:

1) To develop a Regional Continuing Education Program for the West African College of Nursing (WACN) for graduates of basic Schools of Nursing

2) To complete the curriculum development program for the Post Basic Nursing Program at the Cuttington University College (CUC)

3) To continue curriculum development for the Basic Nursing Programs at the Tubman National Institute of Medical Arts (TNIMA) and in Sierra Leone

Program goals should specify results to be achieved over the long term (5-10 years) or over the life of the project (3 years). They should be results-oriented, time-specific and measurable.

The Anglophone Nursing Program goals, as now phrased, describe the activities and programs to be developed, rather than the results desired from them, and are neither time specific nor completely measurable. Thus it is difficult to accurately measure whether the goals have been attained.

Examples of goals that could better meet these criteria for the current program are given below:

1) To provide ___ nurses with strengthened knowledge and skills in nursing service and education oriented toward primary health care, by the end of 1985, through the CUC Post Basic Nursing Program

2) To collaborate with the CUC Post Basic Nursing Program and three basic Schools of Nursing by the end of 1985 to improve the quality and relevance of the training they provide through an on-going cycle of curriculum evaluation and reformulation.

3) To provide at least 40 graduates of basic Schools of Nursing with increased knowledge and skills related to the nursing role in PHC, by the end of 1985, through a regional continuing education program.

4) To collaborate with WACN, WHO/AFRO and nursing schools in the 5 Anglophone countries to help developed their capability by the end of 1985 to provide an on-going continuing education program, with at least ___ related activities per year.

Program goals should, of course, be developed by the program designers or staff, preferrably when the program is being developed or early in its implementation.

## 1.2 Objectives

Below is a list of the objectives of the Anglophone Nursing Program, or "Subobjectives", as they are termed in the yearly Implementation Plans:

(Sub)objective 1: To collaborate with basic School of Nursing, WACN, and AFRO in planning organizational capability for a system of formal and continuing education programs in PHC in the region

(Sub)objective 2: To develop a Post Basic Nursing Education Center in order to strengthen nursing service and nursing education in the region

The 1983 Implementation Plan also provides what could be termed objectives, in the introductory section:

> " By the end of 1983, CUC will have begun to establish a continuing capability to conduct and evaluate a Post-Basic Nursing Training Program in PHC and the WACN will have begun to develop a capability to coordinate regional curriculum development and continuing education in the five West African Anglophone countries in collaboration with WHO/AFRO." (page 35)

Objectives should differ from goals primarily as far as the time horizon. While goals measure results to be achieved over the long term, objectives should be short term, for a period of one year or less. As for the goals, they should be results-oriented, time-specific and measurable.

The above objectives are to some extent results-oriented. The first two objectives (subobjectives) are not time-specific and all of the objectives are somewhat difficult to measure. Thus it is hard to assess whether they have been attained.

Below are some examples of reworded objectives for 1983. They focus a little more specifically on results the program wishes to attain by the end of 1983, and thus would be somewhat different for each of the next two years, as the program reaches later phases in its development. The objectives below still may be somewhat difficult to measure unless clear indicators are developed:

1) To provide ___ nurses, by the end of 1983, with strengthened knowledge and skills in nursing service and education oriented toward PHC, through the CUC Post-Basic Nursing Training Program

2) To collaborate with the CUC Post-Basic Nursing Training Program to evaluate its reformulated curriculum by the end of 1983, and, as a result, to begin to strengthen its capability to assist basic Schools of Nursing to conduct similar evaluations.

3) To collaborate with WACN, basic Schools of Nursing in the five Anglophone countries, and WHO/AFRO, by the end of 1983, to make plans for an organizational system which will provide an on-going program of formal and continuing education in nursing oriented toward PHC

### 1.3 Activities

Types of activities planned by the 1983-1985 Anglophone Nursing Program include:

-- a continuing education program

-- curriculum reformulation and evaluation

-- provision of fellowships in nursing

-- development of a collaborative relationship between Anglophone and Francophone nurses to promote the nursing role in PHC

A review of the Anglophone Nursing Program goals and objectives shows that they are generally quite consistent with the types of activities planned. The fourth activity, while not alluded to in any of the goals or objectives, may be considered to some degree part of a continuing education strategy which will strengthen nursing skills related to PHC.

## 2. Evaluation of program results

### 2.1 Scope

The list of the types of activities included in the Anglophone Nursing Program given above indicates the scope of activities planned under the program. Later in the evaluation we will examine whether the quantity of resources and activities are enough to successfully reach the goals and objectives.

The first step in assessment of the scope of activities involves determining whether the range of activities chosen is most appropriate for meeting the stated goals and objectives of the Objective III program. Examination of the scope of activities indicates that it does include the types of activities usually felt to be necessary for meeting goals and objectives such as those the program wishes to attain.

The second and final step in assessing the scope of activities involves rating the importance of each of the types of activities performed for the attainment of the program's goals and objectives, and then assessing the extent to which the program performed the scope of activities planned. (See Section 3.2.1, page 10, of "Description and Application of the Internal Evaluation System..." for a complete explanation of the scoring and rating system used.)

A table providing the results of this assessment is given on the following page.

Rating of the Scope of Activities Performed
Under the Anglophone Nursing Program

| Subob-jective | Type of activity | Highest possible score | Score awarded | Explanation |
|---|---|---|---|---|
| 1 | A continuing education program | 35 | 35 | The c.e. program was well developed, although funding was not available for all desired workshops |
| 2 | Curriculum reformulation and evaluation | 35 | 35 | Curric. reformulation took place in CUC p.b. nursing program and 3 basic Schools of Nursing although not always with SHDS input |
| 2 | Provision of fellowships in nursing | 20 | 20 | Fellowships were provided as planned |
| 1 | Development of a collaborative relationship between Anglophone and Francophone nurses to promote the nursing role in PHC | 10 | 10 | Exchange between the 2 groups took place and an anglophone/francophone conference was held although without SHDS support |
| | Total possible score: | 100 | | |
| | Total score awarded: | | 100 | |

Rating for scope of activities performed: Outstanding (*)

Legend:

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

As illustrated above, the Anglophone Nursing Program received an over-all rating of "outstanding" as far as scope of activities because all types of activities were performed to some degree.

## 2.2 Quantity and productivity

### Quantity

The quantity of activities under the Anglophone Nursing Program can be most easily evaluated by comparing specific activities planned with those actually completed. The list of specific activities has been prepared by itemizing the specific activities planned under the 4 categories of types of activities listed in the table in Section 2.1. The list of specific activities, provided in the table on the next page, is a summary of the activities proposed in the three Project Implementation Plans for 1983, 84, and 85, as well as proposed outputs listed in the EOPS.

Each of the planned activities has been assigned a score, indicating its importance to the over-all program. (The points assigned in section 2.1 to the various types of activities have been divided between the specific activities under them.) The performance of the activities planned has then been scored by awarding none, some or all of the points possible for each activity, depending on the quantity of activities performed. (See Section 3.2.2, page 12, of "Description and Application of the Internal Evaluation System..." for a complete explanation of the scoring and rating system used.)

The results of the analysis are presented in the table beginning below. As can be seen, the program received a total score of 79 for quantity of activities completed, and thus a rating of adequate.

Rating of Quantity of Activities Completed
Under the Anglophone Nursing Program

| Subobj. & type of act. | Specific activity | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1 (cont. ed.) | 2 c.e. workshops for 40 nurses | 8 | 8 | Curric. dev. workshop held in Freetown 22 Oct. - 3 Nov. 84 for 20 participants. WACN subregional workshop on curric. dev. held in Accra, Ghana 28 Oct. - 8 Nov. 85 for 25 participants. |
| | Additional c.e. workshop with funding other than SHDS | 5 | 5 | Workshop on management in Badagry, Nigeria, 16-22 July 84 for 20 nurse administrators for which SHDS assisted WACN in procuring REDSO funds. Regional workshop on researcl in nursing in Lagos, 7-12 July 85 with 28 participants, funded by WACI STC inputs. 8 national workshops held, 3 as a result of SHDS/WACN co-sponsored workshops. |

(Continued, next page)

| Subobj. & type of act. | Specific Activity | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1 (cont. ed.) | Development of WACN ability to coordinate c.e. programs in collaboration with AFRO | 4 | 4 | WACN C.E. Committee formed and functioning, coorindating planning and implementation of c.e. progs. |
| | Proposal for regional WACN systems of c.e. | 5 | 2 | Draft proposal developed in June 84. (Not yet submitted or funded. ) |
| | WACN 5 Year Plan of Action, 1985-1990 developed and approved | 5 | 3 | 5 Year Plan developed but not yet reviewed and approved at all the national and college levels |
| | Supply of short-term consultant (STC) for WACN office for 6 months | 3 | 3 | Scheduled start Jan. 85 Began April 85 |
| | Follow-up survey of workshop participants | 2 | 0 | Data collection instruments completed June 85. Data collection began Sept. 85. |
| | C.e. needs assessment for 5 anglophone countries | 3 | 0 | No SHDS funding due budget constraints. Likely to do early 86 |
| 2 (curric. reform. & eval.) | Staff dev. workshop on evaluation at CUC Dept. of Nursing | 3 | 3 | Held Dec. 83 |
| | Eval. of CUC reformulated p.b. nursing ed. curric. that was developed in 1982 | 7 | 7 | Eval.study completed May 84. Behind schedule due to disruption of academic calendar. |
| | Follow-up studies of 1980-82 and 1983-84 CUC p.b. nursing graduates | 4 | 2 | Follow-up study 1980-82 grads. completed April 84. Study of 1983-84 grads. started 85, diff. getting questionnaires returned |
| | Development of protocol for evaluation of curric. of basic schools of nursing | 3 | 3 | Completed Dec. 84. |
| | Reformulation of the curric. at C.U.C. and in 3 basic schools of nursing. | 15 | 12 | CUC curric. revised based on eval. results including dev. of spec. tracks in Com. Hlth. Nurs. and MCH/Midwifery.(4)<br>Curric. at TNIMA revised by Jan. 85. Delayed as TNIMA closed 18 months, reopened April 85 & curric. being implemented (4)<br>Curric. at S.L. Sch. of Nursing revised after postponed due new principal. Done without SHDS input except thru workshops. (2) |

(Continued, next page)

| Subobj. & type of act. | Specific activity | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| | Reformulation of curr. in 3 basic schools of nursing (continued) | | | S. of N. of Gambia worked to do own curric. revisions in 1985 with help of non-SHDS full time consultant (2) |
| | Development and use of field practicum sites for CUC p.b. nursing program | 3 | 3 | Field site at Sinyea Village was identified and used. Accomodates 25 students per sem. |
| 2 (fellowships in nursing) | Provision of 12 fellowships, (cont. and new) for CUC p.b. nursing program | 10 | 8 | Only 10 followships given due funding cuts. 9 SHDS supported fellows graduated. |
| | Provision of 3 Masters level fellowships in U.S. in area of teaching | 10 | 10 | 3 fellowships given and all masters students completed program at BUSOM |
| 1 (Anglo./ Fr. collaboration) | Arrangements for CESSIs to send reps. to attend WACN general meetings. | 2 | 1 | Invitations extended. No CESSI attended in 83, 1 in 84 and 2 in 85. Times didn't attend due to scheduling conflicts |
| | Arrangements for CESSI reps. to attend 2 SHDS/WACN c.e. workshops | 2 | 0 | CESSI didn't attend 84 workshop due sched. conflicts. Support for 85 workshop attendance cut due budget constraints. |
| | Conference for anglo./fr. nurses on role of nursing in PHC | 6 | 3 | Conference deleted due budget constraints, but AFRO held Roundtable 5-11 June 85 in Brazzaville, SHDS Nursing Coordinator attended. |
| | Total possible score: | 100 | | |
| | Total score awarded: | | 77 | |

Rating of Anglophone Nursing Program on quantity of activities performed: Adequate

Legend:
90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate

As can be seen by glancing at the explanation column of the above table, while most activities scheduled were completed or are in the process of being completed, there was considerable delay in some cases, due to a variety of constraints, including political and organizational problems on the mtional side and SHDS budget cuts. These delays have meant that in some cases there has not yet been the follow through one would have liked, such as implementation of curriculum evaluation results, finalization and funding of the continuing education proposal, completion of a c.e. needs assessment, implementation of recommendations for Anglophone/Francophone collaboration to strengthen nurses roles in PHC, etc. Unless most of these follow-through activities are completed, the program is likely to have little long-term effect.

Productivity

A general estimate of productivity can be made by comparing the amount of regular SHDS staff time used for implementation of the Anglophone Nursing Program with an estimate of the amount of staff time usually required for similar activities within other SHDS programs and other health and development projects. Within the SHDS Project there is one Nursing Coordinator with responsibility for both the Anglophone Nursing Program and the activities related to the two CESSI programs. This staff person probably works a little more than half time on the Anglophone Nursing Program, with some consultant time available (which also must be organized and managed by this same staff member). Most of the scheduled activities have been completed although, as will be discussed more thoroughly in the process section, many of the activities have been behind schedule, due to political and organizational constraints such as closing or postponement of teaching programs for varying periods of time, etc. These constraints were something over which the Program had no control and work completed was admirable, when they are taken into consideration. However, it has meant that the Program has been somewhat slower than desired in putting into action some of the plans and recommendations stemming from some of its earlier activities. Thus general productivity of the program can be rated as "Adequate".

Specific productivity of the Anglophone Nursing Program on selected activities can be estimated by dividing the number of staff days for the entire activity by the number of participant days or some other appropriate unit of activity. Staff days included would be only those supported by the SHDS/BU and SHDS/AFRO budgets and include staff, consultant and temporary advisor time focused on the particular activities. Estimates of productivity for sample Anglophone Nursing Program activities can be provided by the table below, if the necessary figures for the activities and staff time are obtained.

Estimates of Productivity for a Sample of Anglophone Nursing Program Activities

| Area of activity | Activities performed | No. of staff days used | Estimate of productivity |
|---|---|---|---|
| Continuing education | 2 c.e. workshops of 10 days each held for 40 participants | ___ staff days used | ___ staff days used for each participant-day of c.e. |
| Curriculum reformulation and evaluation | Evaluation of the CUC p.b. nursing curric. was completed | ___ staff days used | ___ staff days used for one full curriculum evaluation, including: (list of tasks completed) |
| | Reformulation of the curriculum at TNIMA using CUC techniques | ___ staff days used | ___ staff days used for reformulation of the curriculum, including: (list of tasks completed) |
| | Reform. of the curric. at S.L. or Gambia S. of N. without SHDS assistance | ___ staff days used | ___ staff days used for reformulation of the curriculum, including: (list of tasks completed) |
| Provision of fellowships in nursing | 10 fellowships provided for CUC p.b.n. prog. | ___ staff days used | ___ staff days used for administration of each followship |

The next step in evaluating the productivity of the program would involve comparing the estimate of productivity for the various areas of activity under the Anglophone Nursing Program, either with some accepted standard or with the productivity of other projects performing similar activities. At this point there is no accepted standard for productivity of activities of this type. It would be possible to develop standards for productivity for various types of activities, either based on the experience of the SHDS Project or, if possible, after estimating the productivity of a number of international health programs implementing activities of this same type.

An example of a section of a possible chart for measuring program productivity that could be used in the future, once standards for productivity have been developed, appears below.

Example of a possible chart for measuring program productivity:

| Area of activity | Standard for productivity | Productivity estimate for A. Nursing Prog. | Productivity rating | Explanation |
|---|---|---|---|---|
| Cont. ed. | __ staff days or less for each p/d of c.e. = outstanding<br>__ to __ staff days for each p/d of c.e. = adequate<br>Over __ staff days for each p/d of c.e. = inadequate | __ staff days used for each p/d of c.e. | Outstanding (for example) | |
| Evaluation of nursing prog. curric. | __ staff days or less for one full curric. eval. including: (list of tasks) = outstanding<br>__ to __ staff days for one full curric. eval. = adequate<br>Over __ staff days for one full curric. eval. = inadequate | __ staff days used for one full curriculum evaluation | Adequate (for example) | |

Productivity within the Anglophone Nursing Program, as within other SHDS programs, is much higher than it would have been without the close collaboration of various national and regional groups. For example, productivity within the continuing education program has been much increased by the hard work of national School of Nursing staff and members of WACN, which has involved a contribution of staff time not financed by SHDS. This type of participation is, of course, critical to the continuation of the Program after SHDS terminates.

## 2.3 Effectiveness

The effectiveness of the Anglophone Nursing Program may be measured by assessing the effectiveness of the major sets of activities performed under the program, including:

-- The continuing education program

-- Curriculum reformulation and evaluation

-- Provision of fellowships in nursing

-- Development of a collaborative relationship between Anglophone and Francophone nurses to promote the nursing role in PHC

Measurement of effectiveness focuses in general on whether the activities have produced results which actually make a positive difference (or produce a positive effect) after the activities are completed. A system for measuring and rating the effectiveness of the sets of activities and reporting results is presented in table form on the following pages.

The tables list both the criteria for measuring the effectiveness of the various sets of activities and methods for measuring the attainment of the criteria, as well as the scoring system to be used. It is proposed that some of the information needed for measurement of various criteria be obtained by means of mailed questionnaires because, unfortunately, travel and personal interviews with certain of the respondents would be too costly.

A discussion of some of the problems of bias that may result from use of mailed questionnaires for measuring program effectiveness and how the evaluation system developed has attempted to deal with this is discussed in Section 3.2.3, page 15, of "Description and Application of the Internal Evaluation System...".

Measurement of the Effectiveness
of the Continuing Education Program

| Criterion | Methods for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. 80% of the graduates of SHDS-sponsored c.e. workshop completed it successfully | Evidence from workshop report, tests given at beginning and end of workshop, etc. | 10 | | |
| 2. 70% of the graduates used knowledge/skills in job in some way | By follow-up questionnaire to graduates** | 10 | | |
| 3. 60% of the graduates have developed curricula using skills learned in workshop since their return * | By follow-up questionnaire to graduates** | 10 | | |
| 4. 40% of the graduates have used the PHC curricula they developed during the workshop (or an adapted version of it) in their own tr. progs.* | By follow-up questionnaire to graduates** | 10 | | |
| 5. C.e. workshops have been planned by WACN &/or AFRO for 1986-90 & there is evidence that they will be held | Written plan, evidence of implementation of 1986 workshops, and interviews with SHDS, WACN and AFRO staff re plans for implementing future workshops | 20 | | |
| 6. WACN has received funding needed for future c.e. programs (for at least 2 workshops per yr. for next 2 yrs.) | Interviews with SHDS and WACN staff, written evidence of funding of c.e. proposal or other support | 20 | | |
| 7. Schools of Nursing that participated in past c.e. workshops indicate that future workshops are needed and they will help plan & implement them | Questionnaires or interviews with sample of S. of N. staff (or use of info. from needs assessment now underway) | 20 | | |

Legend: 90+ = Outstanding (*) Total poss. score: 100
75 to 89 = Adequate (+) Total score awarded:
74 or less = Inadequate (-) Rating: _____

* The effectiveness of all SHDS sponsored c.e. workshops should be measured. Criteria 3 and 4 relate curric. dev. workshops held in Freetown, 1985. They would need to be adjusted for each workshop, depending on its particular objectives.

** A follow-up study of c.e. graduates is now underway as part of the Program. If possible, results of this study should be used as part of the measure of program effectiveness.

Measurement of the Effectiveness
of Curriculum Reformulation and Evaluation

| Criterion | Methods for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Recommendations for changes in the CUC p. b. nursing curric., made as a result of the evaluation, have been implemented | Examination of evaluation report and interviews with SHDS and CUC program staff | 25 | | |
| 2. CUC p.b. nursing staff have used the eval. techniques (that they acquired as a result of the SHDS sponsored training and evaluation experience) in their own work | Questionnaire or interviews with CUC p.b. nursing staff | 15 | | |
| 3. An evaluation protocol has been developed as a result of the CUC p.b. nursing evaluation activities and used by at least one basic school of nursing | Examination of the protocol and interviews with SHDS and CUC p.b. nursing program staff | 15 | | |
| 4. TNIMA reformulated curriculum has been implemented and a comparision of the original and reformulated curricula show the later to be an improvement. (Sub-criteria to measure improvement must be developed.) | Examination of curricula and reports, if available, and interviews with TNIMA staff | 25 | | |
| 5. Reformulated curriculum in one additional basic school of nursing has been implemented and shown to be an improvement. | Examination of curricula and reports, if available, and interviews with school of nursing staff | 20 | | |
| | Total possible score: | 100 | | |
| | Total score awarded: | | | |

Legend:

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

Rating: _____

## Measurement of the Effectiveness of the Provision of Nursing Fellowships

| Criterion | Methods for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. All students receiving Masters level fellowships have graduated | Examination of records and interviews with SHDS and CUC staff | 20 | | |
| 2. 90% of the students receiving SHDS fellowships for CUC p.b. nursing program have graduated | Examination of records and interviews with SHDS and CUC staff | 20 | | |
| 3. Masters level faculty at CUC has been increased as a result of the SHDS Masters fellowships | Examination of graduate follow-up studies or, if necessary, mailing of questionnaires | 20 | | |
| 4. 40% of the graduates of the CUC program receiving SHDS fellowships are currently faculty members at basic Schools of Nursing | Examination of graduate follow-up studies or, if necessary, mailing of questionnaires | 20 | | |
| 5. CUC indicates that the p.b. nursing program will continue after SHDS support ends with at least 50% of past SHDS fellowship support taken over by other funding sources. | Interviews with CUC staff | 20 | | |
| | **Total possible score:** | 100 | | |
| | **Total score awarded:** | | | |

Legend:

**90+ = Outstanding**
**75 to 89 = Adequate (+)**
**74 or less = Inadequate (-)**

**Rating:**

## Measurement of the Effectiveness of Anglophone/Francophone Nursing Collaboration to Promote the Nursing Role in PHC

| Criterion | Methods for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Anglophone/fr. nursing collaboration sponsored by SHDS, WACN and/or AFRO has led to the identification of common approaches to the promotion of the nursing role in PHC. | Examination of reports and interviews with SHDS, WACN and AFRO staff | 20 | | |
| 2. Anglo./fr. nursing collaboration sponsored by SHDS, WACN and/or AFRO has led to the development of plans for implementing common approaches to the promotion of the nursing role in PHC. | Examination of reports and interviews with SHDS, WACN and AFRO staff | 20 | | |
| 40% of the national participants at the Nursing/Midwifery Roundtable can provide evidence that as a result of the Roundtable one or more of the major reform areas mentioned in the report have been acted upon within their own countries. | Examination of Item 3 of the Roundtable report and interviews or questionnaires send to national participants | 20 | | |
| AFRO can provide evidence that at least some of the major recommendations prepared at the Roundtable have been acted upon. | Examination of Item 4 of the Roundtable report and interviews with SHDS and AFRO staff | 20 | | |
| Plans have been developed for continuation of the Anglo./fr. nursing dialogue after SHDS ends. | Examination of reports and interviews with WACN, AFRO and SHDS staff | 20 | | |
| Legend: | Total possible score: | 100 | | |
| 90+ = Outstanding (*) | Total score awarded: | | | |
| 75 to 89 = Adequate (+) | Rating: | | | |
| 74 or less = Inadequate ( ) | | | | |

The tables outlining the measurement of program effectiveness on pages 11-14 have been used by the SHDS Nursing Coordinator to carry out an informal assessment based on interviews of CEC members, WACN, CEC, School of Nursing, and AFRO staff, analysis of follow-up surveys of graduates, review of reports, etc. The results are presented on pages 110 - 113 of the Final Report by the Nursing Coordinator. (See Section I of the Internal Evaluation notebook for the Anglophone Nursing Program.)

## 2.4 Cost

The measurement of cost of the Anglophone Nursing Program can be divided into 3 components -- measurement of total cost of the Program by year, measurement of the cost of specific sample activities, and measurement of the cost-efficiency of these activities. Each of these measurements is discussed further below.

Total cost of the Anglophone Nursing Program by year

The manner in which total cost of the various SHDS program components can be calculated and some of the difficulties involved are discussed in detail in Section 3.2.4, page 17, of "Description and Application of the Internal Evaluation System..."

The table below can be used to present the budgets and estimated expenditures for the Anglophone Nursing Program by year. As can be seen, totals are calculated using figures from 4 separate budgets:

-- the SHDS/BU Anglophone Nursing budget

-- the SHDS/AFRO Anglophone Nursing budget, and

-- certain items in the SHDS/BU Boston and Abidjan Office budgets.

Budget and Estimated Expenditures
for the Anglophone Nursing Program Activities by Budget and Year

| Type of budget | Budget, including overhead | | | Expenditure, including overhea | | |
|---|---|---|---|---|---|---|
| | 1983 | 1984 | 1985 | 1983 | 1984 | 1985 |
| SHDS/BU Anglo./Nur. | | | | | | |
| SHDS/AFRO Anglo./Nur. | | | | | | |
| SHDS/BU Boston and Abidjan Office | | | | | | |
| Totals: | | | | | | |

Cost of sample activities

The average costs of sample activities can be estimated in somewhat the same manner as the total costs, by calculating or estimating the portion of expenditures under the same types of budgets attributable to those activities (including overhead, where appropriate). Examples of amounts budgeted and estimates of expenditures for a sample of activities are given on the following page:

Amounts budgeted and estimates of expenditures
for a sample of activities within the Anglophone Nursing Program

| Sample activity | Amount budgeted | | | | Estimate of expenditures | | | |
|---|---|---|---|---|---|---|---|---|
| | BU | AFRO | Bos/Abj | Total | BU | AFRO | Bos/Abj | Total |
| Planning and implementation of Curric. Dev. C.E. Workshop, Freetown, 1984 | | | | | | | | |
| Evaluation of CUC reformulated p.b. nursing curriculum | | | | | | | | |
| Reformulation of INIMA curriculum | | | | | | | | |
| Administration of SHDS fellowships for CUC p.b. nursing program for 1983 | | | | | | | | |
| Attendance of 2 CESSI directors at 1985 WACN meeting | | | | | | | | |

Cost-efficiency of sample activities

Cost-efficiency of an activity can be measured if one can first calculate the cost of a standard quantity of activity and then compare it with some standard. Costs for certain standard quantities of Anglophone Nursing Program activities are estimated below:

Estimates of costs for standard quantities
of Anglophone Nursing Program Activities

| Standard quantity of activity | Estimated cost |
|---|---|
| 1 day of participant training, c.e. workshop, Freetown, 1984 | |
| One curriculum evaluation (of CUC p.b. nursing program), including (list specific tasks) | |
| Reformulation of one curriculum (at INIMA), including dev. of program philosophy, program and intermediate objectives, course outlines and syllabi | |
| Administration of 1 SHDS fellowship at CUC for 1983 | |
| 1 day of attendance of CESSI director at WACN meeting, 1985 | |

Further work must be done to develop standards for costs of specific quantities of activities such as those listed above. Stnadards might be developed by first estimating costs for producing the same quantities of activities under several international health projects and then taking the lowest cost obtained as the standard for 100% efficiency.

Another method of approaching cost-efficiency would be to estimate the cost of producing specific quantities of activities for the same types of activities under the SHDS Project in consecutive years (1983, 84 and 85) and then to determine if the cost for producing the quantities of activities goes down from year to year. If so, the program could be said to be relatively more cost-efficient in producing the same activities over time. If this method of estimating cost-efficiency were agreed upon early in the project, if would provide an incentive for the staff for finding less expensive ways of conducting the same activities over time. It should lead to greater use of regional and local resources, an approach that fits well with the long term aims of the Project.

TO

## 2.5 Satisfaction

### Rating of user and provider satisfaction

The evaluation of the satisfaction with various aspects of the Anglophone Nursing Program completes the process of assessment of results. Satisfaction can be evaluated for both users and providers for several types of activities within the Anglophone Nursing Program, as illustrated in the table below:

Evaluation of Satisfaction with Various Types of Activities within the Anglophone Nursing Program

| Type of activity | User | Provider | How satisfaction measured |
|---|---|---|---|
| Continuing education workshops | Graduates | Organizers (WACN/SHDS) & facilitators | Questionnaire to sample of users and all providers |
| Reformulation of curriculum | Faculty & students using curriculum | Faculty involved in reform. of curriculum, consultants | Questionnaire to sample users (if curriculum has been implemented), questionnaires or interviews with providers |
| Curriculum evaluation | School administrators & fac. | Faculty & consultants involved in evaluation | Questionnaire or interviews with sample of users and all providers |
| Provision of Masters fellowships | Masters students or grads. that recd. fell. | Administrators of fellowship program | Questionnaires or interviews with all users and providers |
| Anglo./Francophone nursing collaboration | Nurses involved in collab. activities (WACN mtgs. Roundtable) | WACN, SHDS & AFRO staff involved in planing activities | Questionnaires to all or a sample of users, questionnaires or interviews to all providers |

The factors and questions that could be used to measure satisfaction of users with the various sets of Anglophone Nursing activities are presented on the following pages in tables that would be used to present the results. Questionnaires can be constructed easily, based on the questions listed in the tables. Section 3.2.5, page 20, of "Description and Application of the Internal Evaluation System..." discusses how questionnaires measuring satisfaction are constructed and how they can be scored.

Tables related t provider satisfaction with the same sets of activities, as well as questionnaires for all users and provders could be developed if there will be an opportunity to send the questionnaires and analyze the results. Otherwise these 5 tables can serve as examples of the type of system that can be developed to measure satisfaction.

Rating of User Satisfaction
With Continuing Education Workshops*

| Factor for measuring satisfaction of workshop graduates | Question used | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Training material design | How well designed were the workshop training materials? | 5 | | |
| 2. Teaching quality | How well taught was the workshop? | 5 | | |
| 3. Provision of knowledge & skills in curriculum development* | To what degree did the workshop provide you with knowledge and skills useful in the area of curriculum development?* | 5 | | |
| 4. Usefulness in work situation | To what degree do you feel you have been able to use what you've learned in the workshop in your job? | 5 | | |
| 5. Provision of information to improve your c.e. programs* | How helpful was the workshop in providing info. that will assist you in improving your c.e. programs?* | 5 | | |
| | Highest average score possible: | 5 | | |
| | Average score awarded: | | | |

Rating for satisfaction of workshop graduates: _____

Legend:
4.5+ = Outstanding
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate

* User satisfaction for each continuing education workshop sponsored by SHDS can be measured. Factors # 3 and 5 and the corresponding questions relate specifically to the "Workshop on Curriculum Development of C.E. Programs in PHC", Freetown, 1984. These factors and questions should be reworded for each workshop, depending on their specific foci and objectives.

Rating of User Satisfaction
with Reformulation of the Curriculum
of the TNIMA Basic Nursing Program

| Factor for measuring satisfaction of faculty & students using curriculum | Question used | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Quality of curriculum | How well designed do you feel the new curriculum is? | 5 | | |
| 2. Usefulness in your own teaching situation (for faculty) | What courses have you taught since the new curriculum has been implemented?<br>How useful is the new curriculum in providing you with guidance for these courses? | 5 | | |
| 3. Usefulness in providing knowledge and skills for the work situation | How useful do you feel the new curriculum is in providing knowledge and skills that will be of value to the students in their later work situations? (for faculty) | 5 | | |
| | What courses have you taken since the new curriculum has been implemented? How useful do you feel these courses have been in providing knowledge & skills that will be of value to you in later work situations? (for students) | 5 | | |
| 4. Comparison of old and new curricula (for faculty) | To what degree do you feel that the new curriculum is an improvement over the old one? | 5 | | |
| 5. Provision of relevant new emphasis on the nursing role in PHC | To what degree do you feel that the new curriculum provides a relevant new emphasis on the nurses role in PHC? | | | |
| | Highest average score possible: | 5 | | |
| | Average score awarded: | | | |

Rating for satsifaction of faculty and students using curriculum: _____

Legend:
4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

Rating of User Satisfaction with the Evaluation
of the Reformulated Curriculum of the CUC P.B. Nursing Program

| Factor for measuring satisfaction of school administrators & faculty receiving eval.report | Question used | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Quality of evaluation design | How well designed do you feel the evaluation was? | 5 | | |
| 2. Scope of coverage | To what extent do you feel the evaluation covered the range of issues or areas it should have? | 5 | | |
| 3. Validity of results | Do you think the evaluation provided results that are accurate and valid? | 5 | | |
| 4. Usefulness for improving the curriculum | Do you think the evaluation has provided results that have been (or will be) useful in improving the curriculum?<br>(Alternative question:) To what extent should the recommendations of the evaluation for changes in the curriculum be followed? | 5 | | |
| 5. Usefulness for own teaching situation | Has the evaluation provided results that have (or will be) useful for improving your own courses and other work with students? | 5 | | |
| 6. Value, considering cost and effort | Is the information provided by the evaluation valuable enough to justify the money and effort spent in doing it? | 5 | | |
| 7. Appropriateness of level of detail | To what extent does the evaluation report provide the appropriate amount of detail on the topics it covers? | 5 | | |
| | Highest average score possible: | 5 | | |
| | Average score awarded: | | | |

Rating for satisfaction of school administrators and faculty receiving the evaluation report: _____

Legend:
4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

Rating of User Satsifaction
With the Provision of Masters' Fellowships *

| Factor for measuring satisfaction of students or graduates that recd. fellowships | Question used | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Quality of fellowship administration | How satisfied were you with the administration of the fellowship you received? | 5 | | |
| 2. Quality of the Masters' Program | How well designed was the Masters' Program that you completed? | 5 | | |
| 3. Teaching quality | How well taught were the courses in the Masters Program? | 5 | | |
| 4. Provision of knowledge and skills in teaching and curriculum development | To what degree did the Masters Program provide you with useful knowledge and skills in the areas of teaching and curriculum development? | 5 | | |
| 5. Usefulness for advancement | To what extent has the completion of the Masters Program helped you to attain a more appropriate or higher level work position on return home? | 5 | | |
| 6. Usefulness in work situation | To what degree do you feel you have been able to use what you learned in the Masters Program, in your work, on return home. | 5 | | |
| | Highest average score possible: | 5 | | |
| | Average score awarded: | | | |

Rating for satisfaction of students or graduates that received fellowships: _____

Legend:

4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

* Plans for rating the satisfaction of the provision of fellowships for the CUC Post Basic Nursing Program could be developed, using a similar format to the one below.

Legend:
4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

Rating of User Satisfaction
With Anglophone/Francophone Nursing Collaboration
To Promote the Nurses Role in PHC

| Factor for measuring satisfaction | Question used | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| of participants in the Nursing/Midwifery Roundtable: | | | | |
| 1. Strengthening of Anglo./Fr. collaboration to promote the nurses role in PHC | To what extent do you feel the Roundtable has helped strengthen Angl./Fr. nursing collaboration to promote the nurses role in PHC? | | | |
| 2. Provision of useful recommendations | To what extent do you feel that the Roundtable developed useful recommendations and suggestions for reform that will strengthen the nurses role in PHC? (See items 3 & 4 of Roundtable report) | | | |
| 3. Liklihood that reforms will be instituted | To what extent do you feel that reforms suggested by the Roundtable have been (or will be) acted upon by your country because they were identified at the Roundtable? (See item 3 of report) | | | |
| 4. Liklihood that recommendations will be followed | To what extent do you feel that recommendations developed by the Roundtable have been (or will be) followed by the WHO/AFRO Regional Office? (See item 4 of report) | | | |
| 5. Cost-effectiveness | To what extent do you feel the expense of holding the Roundtable was worth the results that have or will be obtained from it? | | | |
| of participants at WACN General Mtgs.: 6. Strengthening of Anglo./Fr. Collaboration | Do you feel that the attendance of the CESSI Directors at the WACN General Mtg. has led (or will lead) to collaborative Anglo./Fr. efforts to promote the nurses PHC role? | | | |
| of all groups: 7. Usefulness of future collaborative efforts | Do you feel it is important in the future to continue to encourage Anglo./Fr. collab. to promote the nurses role in PHC or could this be done more efficiently by the two groups separately? | | | |

Highest average score possible:
Average score awarded:
Rating for satisfaction: _____

The tables outlining the measurement of user satisfaction on pages 19-23 have been used by the SHDS Nursing Coordinator to carry out an informal assessment based on interviews, analyses of follow-up surveys of graduates, review of reports, etc. The results are presented on pages 114-118 of the Final Report by the Nursing Coordinator. (See Section 1 of the Internal Evaluation Notebook for the Anglophone Nursing Program.)

Legend:
- Inadequate
+ Adequate
* Outstanding
0 Not assessed
? Undetermined

## 2.6 Evaluation Profile of the Anglophone Nursing Program

| | | |
|---|---|---|
| **Scope (2.1)** | | |
| Cont. ed. program | (35) | 35 |
| Curriculum reform. & eval. | (35) | 35 |
| Provision of fellowships | (20) | 20 |
| Anglo./Fr. nursing collab. | (10) | 10 |
| Total score: | (100) | 100 |
| Rating: | | * |
| **Quantity (2.2)** | | |
| Cont. ed. program | (35) | 27 |
| Curriculum reform. & eval. | (35) | 28 |
| Provision of fellowships | (20) | 20 |
| Anglo/Fr. nursing collab. | (10) | 4 |
| Total score: | | 77 |
| Rating: | | + |
| **Productivity (2.2)** | | |
| Staff days used for 1 partic. day of c.e. | | |
| Staff days used for one full curric. evaluation (at CUC) | | |
| Staff days used for reformulation of curriculum (at TNIMA) | | |
| Staff days used for reformulation of curriculum (at Gambia or Sierra Leone School of Nursing) | | |
| Staff days used for administration of one CUC fellowship | | |
| Rating, over-all productivity: | | + |
| **Effectiveness (2.3)** | | |
| Cont. ed. program | (100) | |
| Total score: | | |
| Rating: | | |
| Curric. reform. & eval. | (100) | |
| Total score: | | |
| Rating: | | |

| | | |
|---|---|---|
| **Effectiveness (2.3) (continued)** | | |
| Provision of nursing fellowships | (100) | |
| Total score: | | |
| Rating: | | |
| Anglo/Fr.nursing collaboration | (100) | |
| Total score: | | |
| Rating: | | |
| **Cost (2.4)** | | |
| Anglophone Nursing Program 1983 | | |
| Anglophone Nursing Program 1984 | | |
| Anglophone Nursing Program 1985 | | |
| Total cost: | | |
| Cost for standard units of activities | | |
| Planning/impl. c.e. workshop, Freetown | | |
| Evaluation CUC curriculum | | |
| Reformulation TNIMA curriculum | | |
| Administration CUC fellowship, 1 yr. | | |
| Attendance 1 CESSI director, WACN meeting, 1985 | | |
| **Satisfaction (2.5)** | | |
| Cont. ed. workshops | | |
| Average score (for users): | (5) | |
| Rating: | | |
| Curriculum reformulation (TNIMA) | | |
| Average score (for users): | (5) | |
| Rating: | | |
| Evaluation CUC curriculum | | |
| Average score (for users): | (5) | |
| Rating: | | |
| Provision of Masters fellowships | | |
| Average score (for users): | (5) | |
| Rating: | | |
| Anglo/fr nursing collaboration | | |
| Average score (for users): | (5) | |
| Rating: | | |
| (Continue, for providers) | | |

**Summary:** Scope: Outstanding Quantity: Adequate Productivity: Adequate
Effectiveness: Cost: Satisfaction:

## 3. The program process

In considering the program process it is important to examine both resources and management. Each of these will be considered in turn.

### 3.1 Resources

The resources that have been available for the Anglophone Nursing Program are summarized below:

Personnel: The Nursing Coordinator worked approximately half time on the Anglophone Nursing Program and half time on the Francophone Nursing Program (CESSI).

Two full-time WHO/AFRO teaching consultants were assigned for CUC Liberia from 1980 - 1984 to assist the faculty with teaching and curriculum development.

One full-time consultant was assigned to WACN to assist with specified continuing education program activities for 6 months during 1985.

Consultants and temporary advisors assisted with specific activities such as workshops, curriculum reformulation and evaluation, etc. The Nursing Coordinator estimated that 80% of these consultants were from the region.

Directors and staff of WACN, national Continuing Education Committees, CUC and the national nursing schools also worked on SHDS activities with their time, to a great extent, donated by their institutions.

Finances: The budget for the Anglophone Nursing Program is found in the SHDS Project records.

Facilities: Facilities for specific activities have been, for the most part, donated by institutions involved in the Program.

Technology: Expertise in continuing education, curriculum development and evaluation, as well as methods for integrating PHC into the nursing role have been built up over the life of the Project and drawn upon for the implementation of activities during the final three years.

The type of resource structure for the Anglophone Nursing Program and the SHDS Project in general is somewhat unusual in that it relies to such a great extent on the participation of regional and local institutions that contribute important resources.

Personnel constraints within local institutions and SHDS have been a major difficulty within the Program. For example:

-- A full-time consultant was assigned to WACN for 6 months in 1985. However, the WACN Chief Nursing Administrator was absent due to illness for 5 of those months. Thus limited assistance was given to the consultant and he was often, through necessity, called upon to perform WACN tasks outside his scope of work, compromising his ability to successfully complete SHDS related activities. (See Final Report, page 74.)

-- SHDS was unable to provide the amount of consultant time schools of nursing felt was needed to assist in curriculum reformulation efforts. Both the Gambia and Sierra Leone Schools of Nursing felt they needed a full time consultant for at least a year, while a total of only 15 days could be budgeted under SHDS.

-- The curriculum reformulation at the Sierra Leone School of Nursing was postponed due to the appointment of a new principal who felt she needed some time in office before making program decisions. The School finally undertook the curriculum revision without drawing on the available SHDS resources.

Financial constraints have had a major effect on certain components of the Anglophone Nursing Program. For example, the following activities had to be reduced or cancelled due to lack of budget:

-- The continuing education program developed jointly by WACN, SHDS and WHO/AFRO generated great interest in nursing related continuing education, leading to the request for SHDS funding of a number of additional workshops. Due to budget constraints SHDS was unable to supply this financial support.

-- Lack of clarity concerning budgetary support for the full time consultant for WACN led to delay in his assignment by several months.

-- The needs assessment which was to be conducted by the full time consultant at WACN was not supported by SHDS due to budget constraints.

-- ( [illegible] plans called for the provision of 12 fellowships for the CUC post-basi[illegible] nursing program, but only 10 were provided due to funding cuts.

-- Plans were made for CESSI staff to attend WACN workshops in order to foster anglophone/francophone collaboration. The funds for 1985 workshop attendance were cut due to budget constraints.

-- SHDS support for an Anglophone/Francophone conference on the role of nursing in PHC was also eliminated due to budget limitations.

On the other hand the at times severe resource constraints the SHDS Project faced has encouraged regional and national institutions to find their own resources for support of many of the desired activities, thus helping to foster greater self reliance. For example:

-- Since the demand for continuing education workshops far exceeded the support available from SHDS, there was a need to identify alternative sources of support which, incidentally might also be drawn upon after SHDS ends.

-- The Gambia School of Nursing was able to find financing for a full-time curriculum consultant from another source and, with this assistance, complete the revision of the School's curriculum.

-- The Sierra Leone School of Nursing had sent staff members to several curriculum development workshops sponsored by SHDS. Because SHDS consultant time was so limited, they had to rely, to a greater extent, on the expertise of their own staff developed during these earlier training activities. This fostered self reliance and further development of local skills.

-- WHO/AFRO felt that an Anglophone/Francophone nursing conference was important enough that it financed the "Nursing Roundtable" itself.

Despite these positive aspects of the situation, resource contraints continue to be a serious problem that threatens the long term viability of an on-going continuing education and curriculum development process in the nursing field.

Technology has been a final type of resource that has been extremely important within the nursing program process. Certain curriculum development and training techniques used throughout the SHDS Project have been employed in an effort to improve the quality of both the educational process and its results. These techniques have included:

-- Use of a competency-based approach to curriculum design

-- Identification of learning objectives, tasks, etc. as a basis for development of practical learning activities

-- Use of adult learning techniques and participatory training methods, active skill-oriented exercises, etc. within courses and workshops

-- Use of various types of systematic approaches to evaluation of training programs and curriculum assessments

A full assessment of the program process should include an examination of the extent to which these training and curriculum development techniques were used within the Anglophone Nursing Program. The results of using this type of educational technology should be assessed as part of the measurement of program effectiveness.

1.2. Management

The system of management within the SHDS Project that affects the Anglophone Nursing Program is quite complex. Briefly:

-- The SHDS Project staff is responsible for development of the yearly program activities and budget, as well as program implementation.

-- KEDSO to some extent can veto aspects of the program it may not approve of, as it controls the money.

-- The program must be approved by the PCC or PRC each year before it can be implemented.

-- WHO/AFRO is responsible for certain key administrative duties, such as requesting country participation in courses, inviting and paying participants and trainers from the region, etc. One part of the SHDS budget goes directly to AFRO for these activities. WHO/AFRO has personnel in charge of a regional nursing program and SHDS has endeavored, when possible, to collaborate and assist in activities related to regional nursing objectives.

-- The countries and institutions must also participate actively if the program is to be successful, for example, by requesting courses, hosting them, selecting appropriate participants, using their skills once they are trained, as well as playing a very active and time consuming role in such major activities as curriculum evaluation and reformulation.

A major constraint within the area of management has been the Anglophone Nursing Program's lack of full control over the management process, due to the complex organizational arrangements described above. Some of the negative effects of this lack of control are listed below:

-- Certain activities have been delayed due to major management and organizational difficulties or changes within the institutions themselves, often influenced by political events outside their control. For example, the CUC academic year was disrupted and TNIMA was closed for 18 months, causing considerable program delay at these two institutions. 1983 graduates of CUC were unable to find employment during 1984 and this may have been a factor in their lack of response to the follow-up survey.

-- Changes in program plans often had to be made, even after the yearly Implementation Plans and budgets in theory had been approved. This happened throughout the SHDS Project when, at various times, USAID found its available funds were less than projected. Management and planning processes within donor organizations will have to be improved before problems such as these can be eliminated.

The management system, however, has had some quite positive aspects, considering its complexity. As mentioned earlier, SHDS Project strategies in nursing as well as other program areas have strongly stressed a high level of regional and local involvement in the design and implementation of project activities. While, as illustrated above, joint decision making and active local participation has resulted in a number of program delays, it has fostered self reliance and helped to strengthen the skills that will be needed to conduct the program after SHDS involvement ends. However, the process of fully transfering program responsibilities and locating on-going sources of financial support definitely needs to be continued, or the program is in danger of losing the monentum it has gained.

4. Initial program state and transformation

A brief summary of the initial program state, for the major sets of activities, as well as the transformation that took place as a result of the Anglophone Nursing Program can be presented in a table such as the one below. This information could be entered by the evaluation team once the evaluation results have been gathered and analyzed. An example of how the information in the table might look for the first set of program activities is presented after the blank table.

Description of Initial Program State and Transformation

| Set of program activities | Initial program state | Transformation resulting from the Anglophone Nursing Program |
|---|---|---|
| Development of a cont. ed. program (Subobjective 1) | | |
| Curriculum reformulation and evaluation (Subobjective 2) | | |
| Provision of fellowships in nursing (Subobjective 1) | | |
| Development of Anglo/Fr. nursing collaboration to promote the nursing role in PHC (Subobjective 1) | | |

Example of types of information that could be entered:

Description of Initial Program State and Transformation

| Set of program activities | Initial program state | Transformation resulting from the Anglophone Nursing Program |
|---|---|---|
| Development of a continuing education program (Subobjective 1) | During Phase II of SHDS a number of intercountry workshops were held as part of an Anglophone Nursing Program. While technically this part of the Program involved only Sierra Leone, Liberia and The Gambia, exchanges and discussions with WACN began during this period. For example, intercountry workshops on curriculum development and PHC were held in Monrovia in 78, Banjul in 80 and Freetown and Makeni in 81 and WACN reps. participated as observers in 2 out of 3. A WACN rep. also served as a facilitator in a 10 week intercountry course on curric. dev, held in Monrovia in 1982.<br><br>During the same period SHDS nursing reps. were invited and participated in various WACN activities such as the WACN inauguration in April 81 in Banjul and the first WACN Annual General Meeting in Mar. 82. The SHDS Nursing Field Coordinator provided consultation relative to the WACN Fellowship Program in Nov. 82.<br><br>Thus in the 1978-82 period a number of intercountry planning activities and workshops helped build c.e. expertise within the region and the groundwork was laid for solid WACN/SHDS collaboration during the current phase of the SHDS Project. | During the 1983-85 period of the Project WACN and faculty members of the various Schools of Nursing, as well as WHO/AFRO were able to play a very active role in developing a plan for a system of c.e. within the region and sponsoring a number of c.e. workshops. This active role was possible, to a large extent, due to the training a number of faculty and WACN members had recd. as a result of workshops held during Phase II.<br><br>A WACN C.E. Committee was formed & actively coordinates the planning & implementation of the c.e. programs. Plans of action for c.e. have been developed for the future and a proposal for a regional WACN system of c.e. has been drafted but, unfortunately, not yet recd. funding. C.e. activities during 83-85 have included c.e. curric. dev. workshops in Freetown, Oct./Nov. 84 and Accra, late 85, sponsored by WACN/AFRO/SHDS as well as a regional workshop on research and several national c.e. workshops, funded by sources other than SHDS but held with SHDS participation.<br><br>1983-85 was a critical period for the Anglophone Nursing Program because it allowed for solid transfer of responsibilities in c.e. to WACN, AFRO and the country Schools of Nursing. Finances, however, are still a major constraint, since there are requests for many more workshops than can be funded and long term future support for a regional system of c.e. has still not been obtained. Thus further assistance to WACN in obtaining funding needed for an on-going c.e. system could be extremely useful. Assurance of on-going financing is essential for a real transformation to take place |

The SHDS Nursing Coordinator has used the format proposed for the description of Initial Program State and Transformation and presented a report for both continuing education and curriculum reformulation and evaluation on pages 120 - 172 of her Final Report. (See Section 1 of the Internal Evaluation notebook for the Anglophone Nursing Program.)

5. Lessons learned and recommendations

A summary of lessons learned under the Anglophone Nursing Program and resulting recommendations for the future can be developed only after the evaluation data has been collected and analyzed. This information could be presented succinctly in a table such as the one below.

Lessons Learned from the Anglophone Nursing Program and Recommendations for the Future

| Lessons learned | Recommendations for the future |
|---|---|
| | |

The type of information that could be provided in the table above would be particularly useful to management staff and donors that may be involved in planning future programs of a similar kind.

ANNEX 3

APPLICATION OF THE INTERNAL EVALUATION SYSTEM

-- EVALUATION OF OBJECTIVE III OF THE SHDS PROJECT

TABLE OF CONTENTS

PAGE

1. Goals, Objectives and Activities of the Objective III Program..... 1

1.1 Goals..... 1

1.2 Objectives..... 2

1.3 Activities..... 2

2. Evaluation of Program Results..... 3

2.1 Scope..... 3

2.2 Quantity and Productivity..... 5

2.3 Effectiveness..... 9

2.4 Cost..... 14

2.5 Satisfaction..... 17

2.6 Evaluation Profile..... 22

3. The Program Process..... 23

4. Initial Program State and Transformation..... 26

5. Lessons Learned and Recommendations..... 28

Annexes

1. Questions for Measuring Effectiveness..... 29

# APPLICATION OF THE INTERNAL EVALUATION SYSTEM
# -- EVALUATION OF OBJECTIVE III OF THE SHDS PROJECT

## 1. Goals, objectives and activities of the Objective III program

### 1.1 Goals

The goals of the Objective III program, as stated in the 1985 Implementation Plan for the SHDS Project Objective III, are:

1) To develop regional training capabilities in epidemiology and disease surveillance

2) To enhance the development of a national health information system capability in the region

Program goal(s) should specify results to be achieved over the long term (5-10 years) or over the life of the project (3 years). They should be results-oriented, time-specific and measurable.

Since the Objective III program goal, as now phrased, does not specifically describe desired results and is not time-specific or measurable, it is not possible to accurately measure whether it has been obtained.

An example of goals that could better meet these criteria for the current program is given below:

1) To provide 46 health workers with skills in field epidemiology within the region by the end of 1985

2) To provide at least 4 institutions within the region with the capability to provide training in field epidemiology by the end of 1985

3) To develop a functioning health information system (HIS) that provides data for primary health care (PHC) planning and management within a pilot area by the end of 1985, that can be used as a model for national PHC/HIS development within the region

## 1.2 Objectives

Below is a list of the objectives of the Objective III program, or "subobjectives", as they are termed in the yearly implementation plans. The wording of the subobjectives varies somewhat, in certain cases, from year to year. The wording below represents a version that most clearly reflects the objectives for all three years:

(Sub)objective 1: To establish regional training capabilities in epidemiology, disease surveillance and data collection

(Sub)objective 2: To create two epidemiologic demonstration and training (EDT) zones for the purpose of giving training to health personnel in the epidemiologic interventions in primary health care (PHC)

(Sub)objective 3: To develop a model national health information system (HIS) to train primary health care (PHC) personnel in the collection and use of data for the planning, management, and evaluation of PHC programs

(Sub)objective 4: To hold annual disease surveillance conferences in collaboration with WHO/AFRO and CCCD to review the status of disease surveillance in Africa

Objectives should differ from goals primarily as far as the time horizon. While goals measure results to be achieved over the long term, objectives should be short term, for a period of one year or less. As for the goals, they should be results-oriented, time-specific and measurable.

The Objective III program objectives or "subobjectives" do not meet these criteria, so again it is difficult to assess whether they have been obtained.

Below are some examples of reworded objectives for 1983:

Objective 1: To provide 11 health professionals with basic skills in field epidemiology and 1 health professional with capability to function as a Regional Medical Epidemiologist by the end of 1983

Objective 2: To provide at least 1 institution within the region with the capability to provide training in field epidemiology by the end of 1983

Objective 3: To create 2 epidemiologic demonstration and training (EDT) zones in a francophone and anglophone country and provide at least 2 workers with the capability to make epidemiologic interventions in PHC thru field training in these zones by the end of 1983

**Objective 4:** To develop a plan by the end of 1983 for establishment of a health information system (HIS) within a pilot area in one country that will train health personnel to collect and utilize data in the planning, management and evaluation of PHC programs

**Objective 5:** To provide 15 health workers with information on the status of disease surveillance in Africa through a conference by the end of 1983

### 1.3 Activities

Types of activities planned for the 1983-85 Objective III program include:

-- Development and revision of field epidemiology training materials

-- Provision of training in field epidemiology for OCEAC and OCCGE

-- Establishment of epidemiologic demonstration and training zones

-- Development and implementation of a model PHC/ health information system

-- Provision of disease surveillance conferences

A review of the Objective III program goals and objectives shows that they are generally consistent with the types of activities planned.

## 2. Evaluation of program results

### 2.1 Scope

The list of the types of activities included in the Objective III program given above indicates the scope of activities planned under the program.

The first step in assessment of the scope of activities involves determining whether the range of activities chosen is most appropriate for meeting the stated goals and objectives of the Objective III program. Examination of the scope of activities indicates that it does include the types of activities usually felt to be necessary for meeting goals and objectives such as those the program wishes to attain.

The second and final step in assessing the scope of activities involves rating the importance of each of the types of activities performed for the attainment of the program's goals and objectives and then assessing the extent to which the program performed the scope of activities planned. (See Section 1.2.1, page 10, of "Description and Application of the Internal Evaluation System..." for a complete explanation of the scoring and rating system used.)

A table providing the results of this assessment is given on the following page.

## Rating of the Scope of Activities Performed Under the Objective III Program

| Subobjective | Type of activity | Highest possible score | Score awarded | Explanation |
|---|---|---|---|---|
| 1 | Development and revision of field epidemiology training materials | 15 | 15 | |
| | Provision of training in field epidemiology for OCEAC and OCCGE | 30 | 30 | Training for OCCGE was cancelled but OCEAC training done |
| 2 | Establishment of epidemiologic demonstration and training (EDT) zones | 15 | 0 | Cancelled as not approved by Ivory Coast govt. |
| 3 | Development and implementation of a model PHC/health information system | 25 | 25 | |
| 4 | Provision of disease surveillance conferences | 15 | 15 | |
| | Total possible score: | 100 | | |
| | Total score awarded: | | 85 | |

Rating for scope of activities performed: **Adequate (+)**

**Legend:**

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

As illustrated in the table above, the Objective III program received an over-all rating of "adequate" as far as scope of activities. The program was not considered "outstanding" because the third type of activity, "establishment of EDT zones", was not undertaken. The rating system which would have awarded 15 points for this type of activity indicates that provision of on-the job field training in epidemiology is an important type of activity to include within the over-all program.

## 2.2 Quantity and productivity

### Quantity

The quantity of activities under the Objective III program can be most easily evaluated by comparing specific activities planned with those actually completed. The list of specific activities has been prepared by itemizing the specific activities planned under the 5 categories of types of activities listed in the table in Section 2.1. This list of specific activities, provided in the table on the next page, is a summary of the activities proposed in the three Project Implementation Plans for 1983, 84, and 85, as well as proposed outputs listed in the IOPS.

Each of the planned activities has been assigned a score, indicating its importance to the over-all program. (The points assigned in section 2.1 to the various types of activities have been divided between the specific activities under them.) The performance of the activities planned has then been scored by awarding none, some or all of the points possible for each activity, depending on the quantity of activities performed. (See Section 3.2.2, page 12, of "Description and Application of the Internal Evaluation System..." for a complete explanation of the scoring and rating system used.)

The results of the analysis are presented in the table on the next page. As can be seen, the program received a total score of ___ for quantity of activities completed, and thus a rating of _____.

Rating of Quantity of Activities Completed
Under the Objective III Program

| Sub-obj. | Activity | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1 | Developing, revising and producing training materials for a 6 week field epidemiology course | 15 | 15 | Completed |
| 1 | Conducting 3 6-week courses in field epidemiology at OCEAC for a total of 30 participants from SHDS countries | 12 | 12 | Completed, with ___ participants completing course |
| | Providing OCEAC course graduates with T.A. on their epidemiology projects | 5 | 5 | T.A. provided for graduates of 2 courses |
| | Collaborating with 1 to 2 training institutions in adapting the 6 week epidemiology course to their needs | 5 | 0 | Cancelled due to budgetary constraints |
| | Providing a year of training for 2 Regional Medical Epidemiologists to be stationed at OCCGE | 8 | 0 | Cancelled since OCCGE did not designate a candidate |
| 2 | Developing 2 epidemiologic demonstration & training (EDT) zones in 2 countries & providing 3 months training for 14 h. workers | 8 | 0 | Cancelled since approval for activity not obtained from Ivory Coast Minister of Health |
| | Developing a plan to use data processing equipment in the Ivory Coast EDT zone & training 4 INSP staff members in its use | 3 | 0 | |
| | Collaborating with WHO/AFRO to further develop the mid-level epidemiology course & produce a field training module | 4 | 0 | |
| 3 | Conducting a feasibility study and planing the development of an HIS in Sierra Leone, focusing on epid. data for use in PHC program management | 5 | 5 | Completed |
| | Designing and implementing a pilot project to test the use of the HIS in one district to provide data for PHC program pl. & mang. | 6 | 6 | Completed |
| | Providing at least 2 training sessions for personnel involved with the HIS | 4 | 4 | Completed |
| | Developing a plan to integrate the HIS into another district in Sierra Leone, as a further step towards creating a national PHC/HIS | 5 | ? | ? |
| | Evaluating the model system results | 5 | ? | ? |
| 4 | Conducting 3 annual disease surveillance conferences for a total of 50 attendees from SHDS countries | 15 | 15 | All conferences held. 3rd not held til early 1986 at AFRO req. |
| | Total score possible: | 100 | | |
| | Total score awarded: | | ? | |

Legend:

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

Rating of Objective III Program on quantity of activities performed: _____

Productivity

A general estimate of productivity can be made by comparing the amount of regular SHDS staff time used for implementation of the Objective III program with an estimate of the amount of staff time usually required for similar activities in a variety of fields. Within the SHDS Project only approximately half the time of one staff member was alloted to complete all Objective III program activities with some consultant time available (also to be organized and managed by this same staff member). Management of a workload of this type by one person working only half time on it is quite unusual, and since most of the activities were completed, general productivity of the program can be rated as "outstanding".

Specific productivity of the Objective III program on selected activities can be estimated by dividing the number of staff days for the entire activity by the number of participant days or some other appropriate unit of activity. Staff days included would be only those supported by the SHDS/BU and SHDS/AFRO budgets and include staff, consultant and temporary advisor time focused on the particular activities. Estimates of productivity for sample Objective III program activities can be provided by the table below, if the necessary figures for the activities and staff time are obtained.

Estimates of Productivity for a Sample of Objective III Program Activities

| Area of activity | Activities performed | No. of staff days used | Estimate of productivity |
|---|---|---|---|
| Development and revision of field epid. training materials | Training materials for 6 week course, pages total, developed and revised 3 times | staff days used | staff days used to complete tr. materials for 1 week of training or staff days used for completion of 100 pages of training materials |
| Provision of training in field epidemiology | 4 courses approx. days each pl. and held for participants | staff days used | staff days used for each participant-day of training |
| | graduates provided TA for field projects | staff days used | staff days used for TA for each field project |
| Development and implementation of model PHC/HIS | Dev. and impl. of model PHC/HIS in one district in Sierra Leone | staff days used | staff days used for dev. and impl. PHC/HSR in 1 district |
| | Trained dis-trict workers for days on HIS and computers | staff days used | staff days used for each participant day of training |
| Provision of disease surveil-lance conferences | 2 conf. held of 5 days each for total of part. | staff days used | staff days used for each participant-day of conferences |

The next step in evaluating the productivity of the program would involve comparing the estimate of productivity for the various areas of activity under the Objective III program, either with some accepted standard or with the productivity of other programs performing similar activities. At this point there is no accepted standard for productivity of activities of this type. It would be possible to develop standards for productivity for various types of activities, either based on the experience of the SHDS Project or, if possible, after estimating the productivity of a number of international health programs implementing activities of this same type.

An example of a section of a possible chart for measuring program productivity that could be used in the future, once standards for productivity have been developed, appears below.

Example of a possible chart for measuring program productivity:

| Area of activity | Standard for productivity | Productivity estimate for Obj. III prog. | Productivity rating | Explanation |
|---|---|---|---|---|
| Development of field epid. tr. materials | __ staff days or less for dev. tr. materials for 1 week tr. = outstanding<br>__ to __ staff days for dev. tr. materials for 1 week tr. = adequate<br>Over __ staff days for dev. tr. materials for 1 week tr. = inadequate | __ staff days used for dev. tr. materials for 1 week tr. | Adequate (for example) | |
| Provision of tr. in field epidemiology | __ staff days or less for each p/d training = outstanding<br>__ to __ staff days for each p/d training = adequate<br>Over __ staff days for each p/d training = inadequate | __ staff days used for each p/d training | Outstanding (for example) | |

It is quite possible that the level of productivity during these last three years of the Project is much higher than in earlier years of the project, due to the opportunities for taking advantage of earlier development work done in key areas. (For example, a draft of field epidemiology training materials had been developed, several epidemiology courses given at OCEAC and disease surveillance conferences held in collaboration with CDC.) Productivity in earlier years would have to be compared with present levels to determine whether this is true.

95

## 2.3 Effectiveness

The effectiveness of the Objective III program may be measured by assessing the effectiveness of the major sets of activities performed under the program, including:

-- Development and revision of field epidemiology training materials

-- Provision of training in field epidemiology for OCEAC

-- Development and implementation of a model PHC/health information system

-- Provision of disease surveillance conferences

Two types of activities mentioned under the section on "Scope" were not performed at all, including:

-- Provision of training in field epidemiology for OCCGE (a years training for 2 Regional Medical Epidemiologists)

-- Establishment of epidemiologic demonstration and training (EDT) zones

The effectiveness of these last 2 sets of activities thus cannot be measured, so the evaluation will focus on the first four sets of activities listed.

Measurement of effectiveness focuses in general on whether the activities have produced results which actually make a positive difference (or produce a positive effect) after the activities are completed. A system for measuring or rating the effectiveness of the sets of activities and reporting results is presented in table form on the following pages.

The tables list both the criteria for measuring the effectiveness of the various sets of activities and methods for measuring the attainment of the criteria, as well as the scoring system to be used. It is proposed that some of the information needed for measurement of various criteria be obtained by means of mailed questionnaires because, unfortunately, travel and personal interviews for even a sample of respondents would be too costly.

A discussion of some of the problems of bias that may result from use of mailed questionnaires for measuring program effectiveness and how the evaluation system developed has attempted to deal with this is discussed in Section 3.2.3, page 15, of "Description and Application of the Internal Evaluation System...".

Examples of some of the questions that could be included in questionnaires and/or interviews related to the training in field epidemiology at OCEAC and the PHC/HIS are included in Annex 1. Similar types of questions could easily be developed for the other 2 sets of activities. Rules for scoring responses to the questionnaires are also discussed in "Description and Application of the Internal Evaluation System...", Section 3.2.3.

96

Measurement of the Effectiveness of the Work to Develop and Revise the Field Epidemiology Training Materials

| Criterion | Methods for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. The training materials include essential components such as:<br>- learning objectives<br>- guidelines for trainers<br>- learning materials for students<br>- instructions for exercises or other activities that insure students practice tasks they will perform later on the job<br>- guidelines or forms for assessment | Examination of the training materials themselves | 15 | | |
| 2. The training materials have been completed and have or will be distributed to course graduates and at least __ institutions | Examination of project records and interviews with project staff | 25 | | |
| 3. 50% of individuals & institutions receiving copies of materials have indicated reading or use has led to improvement of their work in field epid. or disease surveillance | Questionnaire to individuals and institutions receiving copies of training materials | 15 | | |
| 4. OCEAC plans to use the final version of the tr. materials in future courses | Questionnaire or interview with OCEAC director or training director | 20 | | |
| 5. WHO/AFRO has adopted the training materials as official documents | Interview with project staff | 10 | | |
| 6. At least 2 additional institutions are using or plan to use the materials in tr. activities | Interview with project staff | 15 | | |

Total possible score: 100
Total score awarded:

Rating: _____

Legend:
90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

Measurement of Effectiveness
of Training in Field Epidemiology at OCEAC

| Criterion | Methods for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. 80% of participants complete the course successfully | Evidence from pre/post test and course report | 30 | | |
| 2. 70% of graduates used knowledge/skills in job in some way* | By follow-up questionnaire to graduates | 15 | | |
| 3. 60% of graduates began to perform new epidemiological tasks covered in the course on a routine basis in their jobs* | By follow-up questionnaire to graduates | 25 | | |
| 4. 60% of graduates completed field epidemiology research projects after return to the job* | By follow-up questionnaire to graduates and/or examination of correspondence with graduates, records of follow-up visits, & copies of final reports on projects | 20 | | |
| 5. 80% of graduates completing projects report results have been disseminated or used in some way* | By follow-up questionnaire to graduates | 10 | | |
| | Total score possible: | 100 | | |
| | Total score awarded: | | | |

Rating: _____

Legend:

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

* Examples of questions that can be used to measure these criteria are provided in Annex 1, page 30 of this report.

## Measurement of Effectiveness of the Model PHC Health Information System

| Criterion * | Methods for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Info. from HIS reports can be traced to original source in 80% of sample cases (Traceability) | Examination of a sample of info. from at least 10 reports | 10 | | |
| 2. There is agreement between corresponding entries on the same info. in 90% of a sample of cases (Reliability) | Examination of a sample of at least 10 sets of corresponding entires | 10 | | |
| 3. There is a system for detecting errors in data entry (½ score) and are no errors of consequence in a sample of reports (½ score) (Validity)** | Interviews with SHDS staff or consultants and/or district personnel and examination of sample of 5 reports for errors of consequence in data collection and processing | 15 | | |
| 4. The HIS produces reports that are delivered to district & central personnel within a month of agreed upon dates at least 70% of the time (Timeliness) ** | Examination of records & interviews with selected district and central personnel | 15 | | |
| 5. The HIS produces data that is used by district and central personnel to plan, management and/or evaluate PHC activities (Utility) ** | Interviews with selected district and central personnel | 20 | | |
| 6. District personnel are able to perform work needed for HIS on their own (Autonomous functioning) ** | Interviews with SHDS staff or consultants and selected district personnel | 15 | | |
| 7. The S.L. Govt. plans to expand use of HIS to other districts (Replication)** | Interviews with selected central personnel and SHDS staff or consultants | 15 | | |

Legend:
90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

Total score possible: ____
Total score awarded: ____
Rating: _____

* Some of these criteria and questions have been adapted from a draft of Chapter 3, "The Management Information System" from a manuscript on the SEC Method of Evaluation by M.A. Haynes.

** Examples of questions that can be used to measure these criteria are provided in Annex 1, pages 31 to 32 of this report.

Measurement of Effectiveness
of the Annual Disease Surveillance Conferences*

| Criterion | Methods for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. 70% of attendees used knowledge/skills from conference in their jobs in some way | By follow-up questionnaire to conference attendees | 30 | | |
| 2. 40% of attendees have used dis.surveillance info. in new ways in planning at local and/or national levels as a results of info. gained at the conference | By follow-up questionnaire to conference attendees | 20 | | |
| 3. 50% of attendees have incorporated new methods of surveillance discussed at conference into their dis. surveillance programs | By follow-up questionnaire to conference attendees | 20 | | |
| 4. 25% of attendees have used microcomputers or used them in a new way in their jobs as a results of info. and experience gained at the conference | By follow-up questionnaire to conference attendees | 10 | | |
| 5. 40% of attendees indicate that info. from the conference has helped them solve problems within their own dis. surveillance programs | By follow-up questionnaire to conference attendees | 20 | | |
| | Total score possible: | 100 | | |
| | Total score awarded: | | | |

Legend:
90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

Rating: _____

* The criteria listed in this table have been chosen to measure the effectiveness of the Disease Surveillance Conference held in Sierra Leone 27 February - 2 March, 1984, as most of them relate specifically to the goals of that Conference. Somewhat different criteria would be developed for the conferences held in other years.

## 2.4 Cost

The measurement of cost of the Objective III program can be divided into 3 components -- measurement of total cost of the program by year, measurement of the cost of specific sample activities, and measurement of the cost-efficiency of these activities. Each of these measurements is discussed further below.

### Total cost of the Objective III program by year

The manner in which total cost of the various SHDS program components can be calculated and some of the difficulties involved are discussed in detail in Section 3.2.4, page 17, of "Description and Application of the Internal Evaluation System...".

The table below can be used to present the budgets and estimated expenditures for the Objective III program by year. As can be seen, totals are calculated using figures from 4 separate budgets:

-- the SHDS/BU Objective III budget,

-- the SHDS/AFRO Objective III budget, and

-- certain items in the SHDS/BU Boston and Abidjan Office budgets.

Budget and Estimated Expenditures
for Objective III Activities by Budget and Year

| Type of budget | Budget, including overhead | | | Expenditure, including overhead | | |
|---|---|---|---|---|---|---|
| | 1983 | 1984 | 1985 | 1983 | 1984 | 1985 |
| SHDS/BU Obj. III | | | | | | |
| SHDS/AFRO Obj. III | | | | | | |
| SHDS/BU Boston and Abidjan Office | | | | | | |
| Totals: | | | | | | |

### Cost of sample activities

The average costs of sample activities can be estimated in somewhat the same manner as the total costs, by calculating or estimating the portion of expenditures under the same types of budgets attributable to those activities (including overhead, where appropriate). Examples of amounts budgeted and estimates of expenditures for a sample of activities are given on the following page:

Amounts budgeted and estimates of expenditures
for a sample of activities under Objective III

| Sample activity | Amount budgeted | | | | Estimate of expenditures | | | |
|---|---|---|---|---|---|---|---|---|
| | BU | AFRO | Bos/Abj | Total | BU | AFRO | Bos/Abj | Total |
| Dev., revision and production of tr. materials for 6 week course at OCEAC | | | | | | | | |
| Field epidemiology course at OCEAC, 1984 | | | | | | | | |
| Average TA to course graduate on field epid. research project | | | | | | | | |
| Dev. of HIS in Bombali district of S.L. | | | | | | | | |
| Integration of HIS with that in Bo District of S.L. (If has taken place) | | | | | | | | |
| 1 training session on HIS for Bomball district personnel | | | | | | | | |
| Disease surveillance conference, S.L., 1984 | | | | | | | | |

Cost-efficiency of sample activities

Cost-efficiency of an activity can be measured if one can first calculate the cost of a standard quantity of activity and then compare it with some standard. Costs for certain standard quantitities of Objective III program activities are estimated below:

Estimates of costs for standard quantities
of Objective III program activities

| Standard quantity of activity | Estimated cost |
|---|---|
| Development and 3 revisions of tr. material for OCEAC course | |
| Production of 1 set of tr. materials for OCEAC course | |
| 1 day of participant training, OCEAC course, 1984 | |
| 1 staff day TA to course graduateson field epid. research project | |
| Development of HIS in Bomball District of S.L. | |
| Integration of HIS with that in Bo District of S.L. | |
| 1 day of participant training for HIS for Bomball District staff | |
| 1 day of participant attendance, Disease Surveillance Conf., 1984 | |

Further work must be done to develop standards for costs of specific quantities of activities such as those listed above. Standards might be developed by first estimating costs for producing the same quantities of activities under several international health projects and then taking the lowest cost obtained as the standard for 100% efficiency.

Another method of approaching cost-efficiency would be to estimate the cost of producing specific quantities of activities for the same types of activities under the SHDS Project in consecutive years (1983, 84 and 85) and then to determine if the cost for producing the quantities of activities goes down from year to year. If so, the program could be said to be relatively more cost-efficient in producing the same activities over time. If this method of estimating cost-efficiency were agreed upon early in the project, it would provide an incentive for the staff for finding less expensive ways of conducting the same activities over time. It should lead to greater use of regional and local resources, an approach that fits well with the long term aims of the Project.

## 2.5. Satisfaction

### Rating of user and provider satisfaction

The evaluation of the satisfaction with various aspects of the Objective III program completes the process of assessment of results. Satisfaction can be evaluated for both users and providers for several types of activities within the Objective III program, as illustrated in the table below:

Evaluation of Satisfaction with
Various Types of Activities within the Objective III Program

| Type of activity | User | Provider | How satisfaction measured |
|---|---|---|---|
| Dev. & revision of field epid. training materials | Recipients of tr. materials | Trainers and authors of tr. materials | Questionnaire to sample of users and all providers |
| Provision of training in field epid. at OCEAC | Graduates | Trainers | Questionnaire to sample of users and all providers |
| Development and implementation of a model PHC/HIS | Bombali Dist. and central admin. personnel who receive reports | SHDS staff & consultants & dist. staff entering & processing data | Questionnaire to sample of users and providers |
| Provision of annual disease surveillance conferences | Former attendees | Conference facilitators & SHDS staff | Questionnaire to sample of users and all providers |

The factors and questions that could be used to measure satisfaction of users with the various sets of Objective III activities are presented on the following pages in tables that would be used to present the results. Questionnaires can easily be constructed, based on the questions listed in the tables. Section 3.2.5 page 20, of "Description and Application of the Internal Evaluation System..." discusses how questionnaires measuring satisfaction are constructed and how they can be scored.

Tables related to provider satisfaction with the same sets of activities, as well as questionnaires for all users and providers could be developed if there will be an opportunity to send the questionnaires and analyze the results. Otherwise these 4 tables can serve as examples of the type of system that can be developed to measure satisfaction.

Rating of User Satisfaction
with Field Epidemiology Training Materials

| Factor for measuring satisfaction of recipients of tr. materials | Question used | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Quality of training material design | How well designed are the training materials? | 5 | | |
| 2. Usefulness as a local training tool | How useful do you feel the training materials would be for providing training in field epid. within your institution or work situation? | 5 | | |
| 3. Usefulness in providing knowledge and skills for work situation | How useful do you feel the training materials are in providing knowledge and skills that would be important to you and others in your work situation in the area of field epidemiology and disease surveillance? | 5 | | |
| | Highest average score possible: | 5 | | |
| | Average score awarded: | | | |

Rating for satisfaction of recipients of training materials: _____

Legend:

4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

## Rating of User Satisfaction With Training in Field Epidemiology at OCEAC

| Factor for measuring satisfaction of course graduates | Question used | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Training material design | How well designed were the course training materials? | 5 | | |
| 2. Teaching quality | How well taught was the course? | 5 | | |
| 3. Provision of knowledge & skills in field epid. & dis. surveillance | To what degree did the course provide you with knowledge & skills useful to you in your work in the areas of field epid. & disease surveillance? | 5 | | |
| 4. Usefulness in work situation | To what degree do you feel you have been able to use what you've learned in the course in your work? | 5 | | |
| 5. Provision of info. to improve program through research project | How helpful was the field epidemiology research project you selected in providing(info. that will improve your dis. surveillance program in some way?) or (you with practice in tasks that are likely to be useful in future work?) | 5 | | |
| | Highest average score possible: | 5 | | |
| | Average score awarded: | | | |

Rating for satisfaction of epidemiology course graduates: _____

**Legend:**

4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

Rating of User Satisfaction
With Model PHC Health Information System

| Factor for measuring satisfaction of personnel receiving HIS reports* | Question used | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| None | Do you receive reports from the HIS? (Show sample. For Sample of 3 of reports received by respondent, ask following questions:) | | | |
| 1. Timliness | How timely are the reports? | 5 | | |
| 2. Accuracy | How accurate is the information? | 5 | | |
| 3. Usefulness | How useful is the info. (for decisions you must make in your job)? | 5 | | |
| 4. Relevance | How relevant is the info. (for planning, management and/or evaluation of PHC programs)? | 5 | | |
| 5. Fairness | Would it be fair to allocate funds (for various aspects of the PHC program) on the basis of the information? | 5 | | |
| 6. Value | Is the info. valuable enough to justify the money and effort spent in producing it? | 5 | | |
| 7. Effectiveness of format | As a means of presenting the important info., how effective is the format? | 5 | | |
| 8. Appropriateness of level of detail | To what extent does the report provide the appropriate amount of detail on the topics it covers? | | | |
| | Highest average score possible: | 5 | | |
| | Average score awarded: | | | |

**Legend:**

4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

* These factors and questions have been adapted from a draft of Chapter 3 "The Management Information System" from a manuscript on the SEC Method of Evaluation being prepared by M.A. Haynes.

## Rating of User Satisfaction With the Annual Disease Surveillance Conferences

| Factor for measuring satisfaction of Conference attendees | Question used | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Relevance of Conference theme and objectives | How relevant do you feel the Conference theme and objectives were to your needs within your work situation? | 5 | | |
| 2. Attainment of Conference objectives | How well did the Conference meet its stated objectives? | 5 | | |
| 3. Usefulness of info. in work situation | How useful has the info. obtained at the Conference been to you in your work situation? | 5 | | |
| | Highest average score possible: | 5 | | |
| | Average score awarded: | | | |

Legend:

4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

Legend:

- Inadequate
+ Adequate
* Outstanding
0 Not assessed
? Undetermined

## 2.6 Evaluation Profile of the Objective III Program

| | | |
|---|---|---|
| **Scope (2.1)** | | |
| Dev./rev. tr. materials | (15) | 15 |
| Tr. in field epid. at OCEAC and OCCGE | (30) | 30 |
| Est. EDT zones | (15) | 0 |
| Dev./impl. of model PHC health info. system | (25) | 25 |
| Provision dis. surveillance conferences | (15) | 15 |
| Total score: | (100) | 85 |
| Rating: | | + |
| **Quantity (2.2)** | | |
| Dev./rev. tr. materials | (15) | 15 |
| Tr. in field epid. at OCEAC and OCCGE | (30) | 17 |
| Est. EDT zones | (15) | 0 |
| Dev./impl. of model PHC health info. system | (25) | ? |
| Provision dis. surveillance conferences | (15) | 15 |
| Total Score: | (100) | |
| Rating: | | |
| **Productivity (2.2)** | | |
| Staff days used to dev. 1 week of tr. materials | | |
| Staff days used 1 partic. day tr. in field epid. | | |
| Staff days used dev. & impl. PHC/HIS 1 district | | |
| Staff days used 1 partic. day tr. dis. sur. conf. | | |
| Rating, over-all productivity: | | * |

| | | |
|---|---|---|
| **Effectiveness (2.3)** | | |
| Dev. epid. tr. materials | | |
| Total score: | (100) | |
| Rating: | | |
| Tr. in field epid. at OCEAC | | |
| Total score: | (100) | |
| Rating: | | |
| Model PHC health info. system | | |
| Total score: | (100) | |
| Rating: | | |
| Disease surveillance conf. | | |
| Total score: | (100) | |
| Rating: | | |
| **Cost (2.4)** | | |
| Obj. III program 1983 | | |
| Obj. III program 1984 | | |
| Obj. III program 1985 | | |
| Total cost: | | |
| Cost for standard units of activities: | | |
| Dev./rev. tr. materials | | |
| Production 1 set tr. materials | | |
| 1 day part./tr. OCEAC course | | |
| 1 staff day TA to course grads. | | |
| Dev. HIS Bombali district | | |
| Integration of HIS with that in Bo | | |
| 1 day part./tr HIS Bombali dist. | | |
| 1 day part./attendance, Conf. | | |
| **Satisfaction (2.5)** | | |
| Dev./rev. tr. materials | | |
| Average score (for users): | (5) | |
| Rating: | | |
| Average score (for providers): | (5) | |
| Rating: | | |
| Tr. in field epid. at OCEAC | | |
| Average score (for users): | (5) | |
| Rating: | | |
| Average score (for providers): | (5) | |
| Rating: | | |
| Etc. | | |

Summary: Scope: Adequate Quantity: Productivity: Outstanding
Effectiveness: Cost: Satisfaction:

## 3. The program process

There are two major categories it is important to consider when examining the program process -- resources and management. Each of these will be considered in turn.

### 3.1. Resources

The resources that have been available from the Objective III program are summarized below:

Personnel: The Assistant Director for Objectives III and IV of the SHDS Project, working approximately half time on the Objective III program

Finances: The budget, as described under the cost section (4.2.4)

Facilicies: Facilities for specific activities have been, for the most part, donated by institutions involved in the Objective III program, although in some cases space has been rented for selected training activities.

Technology: Expertise in epidemiology curriculum development and training, health information systems and disease surveillance, etc. has been built up over the life of the project and drawn upon for the implementation of activities during the final 3 years.

The type of resource structure for the Objective III program and the SHDS Project in general is somewhat unusual in that it relies to such a great extent on the participation of regional and local institutions that contribute important resources.

Personnel constraints have been a major challenge within the program. Originally the Assistant Director was scheduled to work primarily on Objective III activities. Another full-time person was scheduled to work on Objective IV. There were some unexpected difficulties in recruitment, when the selected candidate dropped out at the last minute, and it was finally decided that what little money was available (as budget levels began shrinking) was needed for somethirg else. It has been a strain for the Assistant Director for Objectives III and IV to handle the Objective III program on just a half time basis.

Budget constraints have had some effect on the Objective III program. For example, originally the program planned to collaborate with training institutions to adapt the 6 week epidemiology course to their needs. This activity had to be cancelled, due to budget limitations.

Technology has been a resource that has been extremely important within the Objective III program. For example, a great deal of effort was expended during the 1983-85 period of the program to complete the development of high quality training materials for the 6 week epidemiology course given annually at OCEAC. It was felt that development and distribution of French language epidemiology training materials focused on providing practical skills needed in the African field epidemiology situation could fill an important gap in health training within the region. A full assessment of program process should include an examination of the extent to which the training materials incorporate certain techniques such as use of a competency-based approach to curriculum design, identification of learning objectives and tasks as a basis for development of practical learning activities, and use of adult learning techniques, participatory training methods, active skill-oriented exercises, etc. The results of using this type of educational technology should also be assessed as part of the measurement of program effectiveness.

Technology has also been quite important in development of the health informatio system component of the program. A full examination of program process should examine the specific technologies introduced into Sierra Leone, including the HIS structure developed and computer hardware, software, and training technique

3.2. Management

The system of management within the SHDS Project is quite complex, with varying amounts of responsibility and power held by a large range of groups, including the SHDS program staff, REDSO and AID Washington, the PCC, PRC, WHO/AFRO and the various countries and institutions participating in the program.

A major constraint within the area of management has been the SHDS staffs' lack of full control over the management process. Often unpredicted management and/or political problems with organizations with which the program has attempted to collaborate have prevented the successful completion of certain activities. For example:

— SHDS Objective III staff worked for some time to plan a year long training program for 2 Regional Medical Epidemiologists to be stationed at OCCGE but the activity had to be cancelled eventually since OCCGE never designated candidates for the training.

— Extensive efforts were made to develop an epidemiology training zone in the Ivory Coast, as well as to plan for the use of data processing equipment within the program. The activity was finally cancelled because needed approval could never be obtained from the Ivory Coast Minister of Health.

-- Continual management and organizational problems were encountered as the health information system was developed in Sierra Leone, as documented in consultant and staff trip reports. These difficulties, for the main part, were unavoidable in a country with severe economic problems.

Certain of these difficulties could not be predicted. However, in some cases, the Project had experienced similar problems in trying to work with these same groups in pre-1983 activities. In hindsight, it could have been better to concentrate as many program activities as possible on collaboration with organizations and countries where experience has shown that joint efforts are likely to be most productive.

The management system, on the other hand, has been quite creative. For example:

-- While the complexity of the management and organizational system has posed some problems, it has also had positive effects, in that it has fostered and in some cases necessitated the participation of key institutions and groups within the region (AFRO, national governments, regional and local institutions). Skills important for continuation of epidemiological and disease surveillance activities within the region have thus been strengthened.

-- The program strategy has called for use of regional and local personnel and resources, whenever possible, and budget constraints have also encouraged use of less expensive local resources. This has had a positive effect on development and use of local skills and increased the potential for continuation of Objective III activities after the termination of the Project.

4. Initial program state and transformation

A brief summary of the initial program state, for the major sets of activities, as well as the transformation that took place as a result of the Objective III program can be presented in a table such as the one below. This information could be entered by the evaluation team once the evaluation results have been gathered and analyzed. An example of how the information in the table might look for the first set of program activities is presented after the blank table.

Description of Initial Program State and Transformation

| Set of program activities | Initial program state | Transformation resulting from the Objective III program |
|---|---|---|
| Development & revision of field epidemiology tr. materials (Subobjective 1) | | |
| Provision of tr. in field epid. at OCEAC & for OCCGE (Subobjective 1) | | |
| Est. of EDT zones (Subobjective 2) | | |
| Development & implementation of model PHC health info. system (Subobjective 3) | | |
| Provision of annual disease surveillance conferences (Subobjective 4) | | |

Example of types of information that could be entered:

Description of Initial Program State and Transformation

| Set of program activities | Initial program state | Transformation resulting from the Objective III program |
|---|---|---|
| Development & revision of field epidemiology tr. materials (Subobjective 1) | In _____ a first draft of training materials for the field epid. course was prepared by Dr. A. Roisin. Assessment of the course materials at the end of the first course given at OCEAC (dates) suggested materials had the following deficiencies:<br>-- (Insert info. from reports from Phase II and/or staff interviews)<br><br>A first revision of the materials was prepared by _____ on _____, making the following changes:<br>-- (Insert info. from reports from Phase II and/or staff interviews) | Based on feedback from earlier courses, the SHDS staff felt the field epid. tr. materials still needed major revision, if they were to be published in final form for use at OCEAC and elsewhere in the region. As described in the section on "process", the materials were field tested and revised extensively 3 times and a trainers guide was produced during the 1983-85 period. ___ copies of these materials were produced in _____ for distribution to _____.<br><br>This lengthy and time-consuming process of repeated field testing and revision has produced training materials of superior quality designed specifically for use in francophone Africa. Production of these materials fill an important need for materials for French-language field epidemiology training of medium-term length focused on the African situation. Response to the materials has indicated the extent to which they are now used and likely to be used in the future by various groups. For example:<br>-- (Insert info. obtained from staff interviews) |

## 5. Lessons learned and recommendations

A summary of lessons learned under the Objective III program and resulting recommendations for the future can be developed only after the evaluation data has been collected and analyzed. This information could be presented succinctly in a table such as the one below.

Lessons Learned from the Objective III Program
and Recommendations for the Future

| Lessons learned | Recommendations for the future |
|---|---|
| | |

A summary of lessons learned and recommendations could be particularly useful to management staff and donors that may be involved in planning future programs of a similar type.

## Annex 1:

## Questions for measuring effectiveness

Annex 1

Examples of Questions that Could be Used to Measure Effectiveness of Training in Field Epidemiology at OCEAC

| Criterion (from table on page 11) | Question for course graduates |
|---|---|
| 2. | Have you used the knowledge and skills you gained in the field epidemiology course at OCEAC to some extent in your job? ___Yes ___No<br><br>If "Yes", please describe how you used the knowledge and skills and give examples.<br><br>If "No", please explain why not.<br><br>(Leave adequate space for response) _____ |
| 3. | Have you begun to perform new tasks on a routine basis in your job in the areas of passive and/or active surveillance that you learned in the field epidemiology course at OCEAC?<br><br>If "Yes", please describe briefly the new tasks you now perform on your job?<br><br>If "No", please explain why not.<br><br>_____ |
| 4. | What was the name of the field epidemiology research project that you designed during the epidemiology course at OCEAC?<br><br>_____<br><br>Have you been working on the project since your return to your job?<br>___ Yes ___ No<br><br>If "Yes", please describe briefly what work you have done on it.<br>If "No", please explain why not.<br><br>_____<br><br>Have you finished the project? ___Yes ___No<br>If "Yes", when did you finish the project? _____<br><br>If "No", do you plan to finish it? ___Yes ___No<br><br>If "Yes", when? _____<br><br>If "No", why not? _____<br><br>_____ |
| 5. | If you have completed the field epidemiology research project discussed in the question above, please answer the following question:<br><br>Have the results of your project been disseminated and/or used in any way? ___ Yes ___ No<br><br>If "Yes", please describe how the results have been disseminated and/or used.<br><br>If "No", please explain why not. |

## Annex 1

### Examples of Questions that Could be Used to Measure Effectiveness of the Model PHC Health Information System

| Criterion* (from table on page 12) | Question* |
|---|---|
| 3. | (For SHDS staff or consultants and/or district personnel): |
| | Is there a system for detecting errors in data entry for the HIS that is used on a regular basis as a means of quality control? ___ Yes ___ No |
| | If "Yes", please describe the system for detecting errors and how it functions. |
| | If "No", why not? |
| | (Leave adequate space for response) _____ |
| 4. | (For selected district and central personnel): |
| | Could you list the most important reports that should be produced by the HIS on a regular basis and delivered to district and/or central administrators. |
| | _____ |
| | Is there an agreed upon schedule for the delivery of these reports? ___ Yes ___ No |
| | If "Yes", what is the schedule for each report? |
| | If "No", why not? |
| | _____ |
| | Over the past year, when were the above reports actually sent? |
| | _____ |
| | If dates reports were sent do not correspond with dates reports were scheduled to be sent, do you know why not? |
| | _____ |
| 5. | (For selected district and central personnel): |
| | Do you or your department use any of the data presented in the HIS reports to assist with the planning, management and/or evaluation of PHC activities? ___ Yes ___ No |
| | If "Yes", please describe what data you use and how you use it. |
| | If "No", why not? |
| | _____ |

* Some of these criteria and questions have been adapted from a draft of Chapter 3, "The Management Information System" from a manuscript on the SEC Method of Evaluation by M.A. Haynes.

| Criterion (from table on page 12) | Question |
|---|---|
| 6. | (For SHDS staff or consultants and selected district personnel): Are district personnel able at this point to perform on their own the work needed for functionning of the HIS (including collection and analysis of data, operation of data processing equipment, production of reports, etc.)? ___Yes ___No<br>If "Yes", please describe briefly what tasks they perform.<br>If "No", what tasks can't they yet perform by themselves, and what assistance is needed to provide them with the needed skills? |
| 7. | (For selected central personnel and SHDS staff or consultants): Does the Sierra Leone Government plan to expand the use of the HIS to other districts (or has it done so already)? ___Yes ___No<br>If "Yes", please describe the plans and/or activities thus far.<br>If "No", why not? |

# ANNEX 4

## APPLICATION OF THE INTERNAL EVALUATION SYSTEM

## -- EVALUATION OF OBJECTIVE IV OF THE SHDS PROJECT

## TABLE OF CONTENTS


PAGE

1. Goal, Objectives and Activities of the Applied Research (AR) Program ..... 1

   1.1 Goal ..... 1

   1.2 Objectives ..... 2

   1.3 Activities ..... 3

2. Evaluation of Program Results ..... 3

   2.1 Scope ..... 3

   2.2 Quantity and Productivity ..... 5

   2.3 Effectiveness ..... 9

   2.4 Cost ..... 14

   2.5 Satisfaction ..... 17

   2.6 Evaluation Profile ..... 20

3. The Program Process ..... 21

   3.1 Resources ..... 21

   3.2 Program Management ..... 22

4. Initial Program State and Transformation ..... 24

5. Lessons Learned and Recommendations ..... 26

Annexes

1. Questions for Measuring Effectiveness ..... 27

2. Questions for Measuring Satisfaction ..... 30

## APPLICATION OF THE INTERNAL EVALUATION SYSTEM
## -- EVALUATION OF OBJECTIVE IV OF THE SHDS PROJECT

### 1. Goal, objectives and activities of the applied research (AR) program

#### 1.1 Goal

The goal of the applied research program, as stated in the 1984 and 1985 Implementation Plans for the SHDS Project Objective IV, is:

" To strengthen African individual and institutional capacity to carry out applied research which will improve the delivery of primary health care (PHC) services"

Program goal(s) should specify results to be achieved over the long term (5-10 years) or over the life of the project (3 years). They should be results-oriented, time-specific and measurable.

Since the AR program goal, as now phrased, does not specifically describe desired results and is not time-specific or measurable, it is not possible to accurately measure whether it has been obtained.

An example of goals that could better meet these criteria for the current program is given below:

" To provide 147 health professionals within the region with competency in the design of applied research projects and 37 of these same professionals with competency in training others in applied research by the end of 1985"

" To increase, by the end of 1985, the number of professionals by at least 20 that are doing training in AR and the number of professionals by 75 that are conducting AR research projects that are focused on assisting in the improvement of the delivery of PHC services "

" To assist, by the end of 1985, at least two institutions within the WHO/AFRO AR network to increase the number of AR training activities and research projects they are involved in which will help in the improvement of the delivery of PHC services "

In future programs the staff should be involved early in development of appropriate goals. It would be useful to consider the possibility of doing a baseline survey or inventory of resources related to applied research within the region at the beginning of future programs. (An activity eliminated from the current program due to budgetary constraints.) This could include information on regional and national institutions involved in applied research, staff available with expertise in AR, and what activities have been recently conducted in AR and AR training. Information on the status of the WHO/AFRO AR network should also be gathered. Data of this type would be useful for program planning and also provide the information needed for development of goals that could be fully results oriented, time-specific and measureable.

## 1.2 Objectives

Below is a list of the objectives of the applied research (AR) program, or "subobjectives", as they are termed in the yearly implementation plans. The wording of the subobjectives varies somewhat, in certain cases, from year to year. The wording below reflects a composite, representing the most important aspects of each wording of the subobjectives:

(Sub)objective 1: To collaborate with WHO/AFRO to conduct workshops and offer consultation to develop applied research training within the region

(Sub)objective 2: To develop and fund applied research projects within the region

(Sub)objective 3: To disseminate results of applied research training activities and projects and encourage their utilization

(Sub)objective 4: To collaborate with WHO/AFRO in the development of a plan for a network of training institutions which will promote applied research (1983-84) and a program to support applied research within the region (1985)

Objectives differ from goals primarily as far as the time horizon. While goals measure results to be achieved over the long term, objectives should be short term, for a period of one year or less. As for the goals, they should be results-oriented, time-specific and measurable.

The AR program objectives or "subobjectives" do not meet these criteria, so again it is difficult to assess whether they have been obtained.

Below are some examples of reworded objectives for 1983:

Objective 1: To provide 47 health professionals within the region with competency in design of applied research projects and 17 of these same professionals with competency in training others in AR, by the end of 1983

Objective 2: To fund and provide technical support for 4 applied research projects focused on improvement of PHC for a total of up to $50,000 by the end of 1983

Objective 3: To disseminate AR training materials, information on lessons learned in AR within the SHDS project and results of AR projects completed during 1983, and to encourage their utilization within the region

Objective 4: To assist WHO/AFRO in the development, by the end of 1983, of a collection of information on AR activities related to PHC and institutions with AR training capability, as well as a plan for a network of institutions to promote AR within the region

123

1.3 Activities

Types of activities planned for the 1983-85 applied research program include collaboration with WHO/AFRO on:

-- development of AR training materials

-- training in AR

-- implementation of a small grants program

-- dissemination of training materials and results of the AR program and projects

-- development of AR programs in training institutions of the WHO/AFRO AR network

-- development of a long-term plan for on-going AR activities within the region

A review of the AR program goal and objectives shows that they are generally consistent with the types of activities planned, which have been listed above. The evaluation team feels it would be useful to determine whether activities focused on strengthening the capacity of key institutions to provide training and conduct research in AR are more productive than similar activities focused on strengthening individual capacity in training and research throughout the region. If results from the analysis of program effectiveness show this to be the case, it would indicate that the goals, objectives and activities should have been somewhat different in emphasis, focusing more squarely on institutional development related to AR.

2. Evaluation of program results

2.1 Scope

The list of the types of activities included in the AR program given above indicates the scope of activities planned under the program.

The first step in assessment of the scope of activities involves determining whether the range of activities chosen is most appropriate for meeting the stated goal and objectives of the AR program. Examination of the scope of activities indicates that it does include the types of activities usually felt to be necessary for meeting goals and objectives such as those the AR program wishes to attain. As mentioned in the previous section, it may be that an evaluation of program effectiveness will indicate that activities focused on strengthening institutional capacity in AR are most productive. If so, this would indicate that the scope of activities should be altered.

The second and final step in assessing the scope of activities involves rating the importance of each of the types of activities performed for the attainment of the program's goals and objectives and then assessing the extent to which the program performed the scope of activities planned. (See Section 3.2.1, page 10, of "Description and Application of the Internal Evaluation System..." for a complete explanation of the scoring and rating system used.)

A table providing the results of this assessment is given below.

Rating of the Scope of Activities Performed
Under the AR Program

| Subobjective | Type of activity | Highest possible score | Score awarded | Explanation |
|---|---|---|---|---|
| 1 | Development of AR training materials | 10 | 10 | |
| | Training in AR | 22 | 22 | |
| 2 | Implementation of a small grants program | 22 | 22 | |
| 3 | Dissemination of training materials and results of the AR program and projects | 14 | 14 | |
| 4 | Assistance with development of AR programs in training institutions of the WHO/AFRO AR network | 20 | 20 | |
| | Assistance with development of a long-term plan for on-going AR activities within the region | 12 | 0 | This activity was cancelled, due to a request by the REDSO staff |
| | Total possible score: | 100 | | |
| | Total score awarded: | | 88 | |
| | Rating for scope of activities performed: | | Adequate (+) | |

Legend:

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

As illustrated in the table above, the AR program received an over-all rating of "adequate" as far as scope of activities. The program was not considered "outstanding "because the last type of activity, "assistance with development of a long-term plan for on-going AR activities within the region", was not undertaken. It was felt by the evaluators that this type of activity, which would have encouraged transfer and continuation of key activities, was critical to the long term impact of the program. Further discussion of this issue is provided under the section on program process (3).

125

## 2.2 Quantity and productivity

### Quantity

The quantity of activities under the AR program can be most easily evaluated by comparing specific activities planned with those actually completed. The list of specific activities has been prepared by itemizing the specific activities planned under the 6 categories of types of activities listed in the table in Section 2.1. This list of specific activities, provided in the table on the next page, is a summary of the activities proposed in the three Project Implementation Plans for 1983, 84, and 85.

Each of the planned activities has been assigned a score, indicating its importance to the over-all program. (The points assigned in section 2.1 to the various types of activities have been divided between the specific activities under them.) The performance of the activities planned has then been scored by awarding none, some or all of the points possible for each activity, depending on the quantity of activities performed. (See Section 3.2.2, page 12, of "Description and Application of the Internal Evaluation System..." for a complete explanation of the scoring and rating system used.)

The results of the analysis are presented in the table on the next page. As can be seen, the program received a total score of ___, for quanitity of activities completed, and thus a rating of _____.

126

Rating of Quantity of Activities Completed
Under the AR Program

| Sub-obj. | Activity | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1 | Finalizing AR training materials and developing new modules for decision-makers and training of trainers | 10 | 5 | HSR course finalized, dev. new modules cancelled due budget constraints |
| | Conducting 2 reg. TOT AR courses (37 part.) | 6 | 6 | 2 TOT courses given |
| | Supporting 4 in- c. AR workshops (70 part.) | 6 | 4½ | 1 workshop cancelled due budget constraints |
| | Working with 2 network institutions to hold AR courses for their staffs (40 part.) | 6 | 6 | Courses given at INSP and INRSP |
| | Assisting 2 or more training institutions to integrate AR into their curricula | 4 | 0 | Activity cancelled due to budget constraints |
| 2 | Distributing AR guidelines and funding info. | 2 | 2 | On-going distribution |
| | Assisting in project development for up to 12 new projects | 3 | 3 | Assistance provided for dev. 34 new proposals |
| | Funding up to 12 new projects for a total of up to $170,000 | 12 | ? | |
| | Offering technical assistance for projects underway | 5 | 5 | T.A. offered to all projects underway |
| 3 | Distributing copies of the SHDS--WHO/AFRO HSR course and guide | 2 | 2 | Distributed as appropriate |
| | Preparing and distributing a document on lessons learned in AR program and guidelines for AR activities in the region | 2 | ? | |
| | Assisting researchers with dissemination of their results | 5 | ? | |
| | Conducting 2 AR conferences within region | 5 | 5 | Both conferences held. 2nd postponed to early 86. |
| 4 | Developing regional inventory of AR training and support resources | 4 | 2 | Inv. of support resources completed, inv. tr. res. cancelled due budget constr. |
| | Assisting 1 or 2 network institutions to develop AR programs and collaborate with national AR institutions | 16 | 12 | Partial assistance INSP More complete assistance given to INRSP |
| | Developing long-term plan for AR activities in the region | 9 | 0 | Cancelled due REDSO request |
| | Developing plan for exchange of AR training materials and strategies on inter-regional basis | 3 | 3 | Completed thru Yaounde conf. and collaboration with WHO Geneva |
| | Total score possible: | 100 | | |
| | Total score awarded: | | ? | |

Rating of AR program on quantity of activities performed: ?

Legend:

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

127

## Productivity

A general estimate of productivity can be made by comparing the amount of regular SHDS staff time used for implementation of the AR program with an estimate of the amount of staff time usually required for similar activities in a variety of fields. Within the SHDS Project only approximately half the time of one staff member was alloted to complete all AR program activities with some consultant time available (also to be organized and managed by this same staff member). Management of a workload of this type by one person working only half time on it is quite unusual, and since most of the activities were completed, general productivity of the program can be rated as "outstanding".

Productivity on specific activities can also be generally judged as outstanding. For example, approximately 2 days of staff time are generally needed to prepare for 1 day of training. Under the AR program only ___ day was available to prepare for each day of training, and yet the work was completed satisfactorily.

Specific productivity of the AR program on selected activities can be estimated by dividing the quantity of activities performed, in a sample of key areas, by the number of staff days required to complete the activities. Staff days included would be only those supported by the SHDS/BU and SHDS/AFRO budgets and include staff, consultant and temporary advisor time focused on the particular activities. Estimates of productivity for sample AR program activities can be provided by the table below, if the necessary figures for the activities and staff time are obtained.

Estimates of Productivity for a Sample of AR Program Activities

| Area of activity | Activities performed | No. of staff days used | Estimate of productivity |
|---|---|---|---|
| Provision of AR courses and workshops | 82 AR courses approx. 12 days each for ___ participants | ___ staff days used | ___ staff days used for each participant-day of training |
| Development and funding of AR projects | ___ new AR projects developed and awarded for total of $ _____ | ___ staff days used | ___ staff days used on average for each AR project<br>___ staff days used on average for each $ _____ awarded |
| Dissemination of AR results | ___ researchers assisted with dissemination of their results | ___ staff days used | ___ staff days used for assisting each researcher |
| | 1 AR conference held for 5 days for ___ participants | ___ staff days used | ___ staff days used for each participant-day of the conference |
| Assistance to AR network institutions | 2 network institutions assisted to develop AR programs | ___ staff days used | ___ staff days used to assist each institutions |

The next step in evaluating the productivity of the program would involve comparing the estimate of productivity for the various areas of activity under the AR program, either with some accepted standard or with the productivity of other programs performing similar activities. At this point there is no accepted standard for productivity of activities of this type. It would be possible to develop standards for productivity for various types of activities, either based on the experience of the SHDS Project or, if possible, after estimating the productivity of a number of international health programs implementing activities of this same type.

It would be very interesting to compare the productivity of several projects conducting similar types of activities but at times using differing organizational arrangements. This would involve the cooperation of USAID and several projects. Those that might be considered for a comparison include 1) PRICOR, 2) family planning OR projects supported by USAID through the Population Council in Asia and Columbia University in Haiti and Africa, and 3) other projects such as the national HSR program in Malaysia, WHO/AFRO funded AR projects, etc.

An example of a section of a possible chart for measuring program productivity that could be used in the future, once standards for productivity have been developed, appears below.

Example of a possible chart for measuring program productivity:

| Area of activity | Standard for productivity | Productivity estimate for AR program | Productivity rating | Explanation |
|---|---|---|---|---|
| Provision of AR courses + workshops | ___ staff days or less for each p/d training = outstanding<br>___ to ___ staff days for each p/d training = adequate<br>over ___ staff days for each p/d training = inadequate | ___ staff days used for each p/d training | Outstanding | |

It is quite possible that the level of productivity during these last three years of the project is much higher than in earlier years of the project, due to the opportunities for taking advantage of earlier development work done in key areas. (For example, the HSR Course training materials and system for administering the small grants program were already well developed.) Productivity in earlier years would have to be compared with present levels to determine whether this is true. This issue will be discussed in more detail in the process section.

## 2.3 Effectiveness

The effectiveness of the AR program may be measured by assessing the effectiveness of the major sets of activities performed under the program, including:

-- AR training courses and workshops (Subobjective 1)

-- Development and funding of AR projects (Subobjective 2)

-- Dissemination of results of training activities and projects (Subobjective 3)

-- Assistance with development of a network of AR training institutions and plans for a WHO/AFRO program to support AR within the region (Subobjective 4)

Measurement of effectiveness focuses in general on whether the activities have produced results which actually make a positive difference (or produce a positive effect) after the activities are completed.

A system for measuring or rating the effectiveness of the sets of activities listed above and reporting results is presented in table form on the following pages.

A discussion of some of the problems of bias that may result from use of mailed questionnaires for measuring program effectiveness and how the evaluation system developed has attempted to deal with this problem is dealt with in detail in Section 3.2.3, page 15, of "Description and Application of the Internal Evaluation System...".

The scoring and rating of effectiveness of the various sets of activities can be completed if a decision is made to send out follow-up questionnaires to collect part of the information needed and the results are analyzed-- a process which could take some time, but would not be difficult if done systematically throughout the life of the project. Examples some of the questions that should be included in the questionnaires are provided in Annex 1.

Rules for scoring responses to the questionnaires include:

-- Results from the questionnaires will be used only if the response rate is over 50%.

-- Measurement of percentages meeting the various criteria will refer to percentages of those answering the questionnaires.

-- If the required percentage is met, a full score will be awarded. Percentages lower than the required level will be awarded a proportionally lower score.

## Measurement of Effectiveness of AR Training Courses and Workshops

| Criterion | Methods for measuring attainment of criterion | Poss. score reg. | Poss. score TOT | Score awarded reg. | Score awarded TOT | Explanation |
|---|---|---|---|---|---|---|
| For all courses: 1. 80% of participants complete course successfully | Evidence pre/post test or exam and course report | 35 | 25 | | | |
| 2. 70% of graduates used know./skills in job in some way | By follow-up questionnaire to graduates | 20 | 15 | | | |
| 3. 50% of graduates finalized and submitted AR proposal | By follow-up questionnaire to graduates | 15 | 12 | | | |
| 4. 50% of graduates conducted AR | By follow-up questionnaire to graduates | 30 | 23 | | | |
| For TOT courses also use: 5. 50% of grads. trained others using course techniques or materials | By follow-up questionnaire to graduates | | 15 | | | |
| 6. 30% of graduates developed curricula related to AR | By follow-up questionnaire to graduates | | 10 | | | |
| | Total score possible: | | | | | |
| | Total score awarded: | | | | | |

Rating for regular courses: _____

Rating for TOT courses: _____

**Legend:**

90+ = Outstanding (*)

75 to 89 = Adequate (+)

74 or less = Inadequate (-)

## Measurement of Effectiveness of Small Grants Program

| Criterion | Method for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. 75% of proposals funded focused on priority problems | Comparison of proposal topics with list of priority topics in SHDS/AR guidelines | 35 | | |
| 2. 75% of projects scheduled to be completed, have been completed within 6 mo. of sched. date | Examination of project records, int. evaluation report, interviews with project staff | 10 | | |
| 3. 75% of projects completed have final reports that have significance for the improvement of health care | Examination of project records and project final reports | 30 | | |
| 4. 75% of projects completed have disseminated results within the region within a year after completion | Examination of project records and results of interviews or questionnaires sent to P.I.s | 15 | | |
| 5. P.I.s of 50% of projects completed can provide evidence that their res. results have been used to improve health care within 1½ years after completion | Examination of project records and results to interviews or questionnaires sent to P.I.s | 10 | | |
| | Total possible score: | 100 | | |
| | Total score awarded: | | | |

Legend:
90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

Rating: _____

Note: It may be difficult to gather all the information needed for rating of the effectiveness of the small grants program at this time. Many of the projects may not be completed at the time of the evaluation. Experience has shown that it often takes 1 or 2 years for results to be published after research has been completed, and this time period will not have passed for many of the research projects. Use of results for improvement of health care also often takes some time and traditionally has been difficult to measure. If all information is not available, the evaluation team may decide the assessment cannot be made at this time, or attempt to measure effectiveness based only on those measures for which data is available.

## Measurement of Effectiveness of Dissemination of Results

| Criterion | Method for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. 50% of those receiving copies of the RSR Course indicate they or others have used the materials | Questionnaire sent to individuals and institutions that have received copies of training materials | 20 | | |
| 2. 50% of those receiving copies of the lessons learned document indicate they or others have found document useful in their work | Questionnaire sent to individuals and institutions that have received copies of lessons learned document | 15 | | |
| 3. 50% of the researchers that have completed projects have disseminated results within the region within a year that provide info. useful in improving h. care | Questionnaire sent to researchers that have completed research projects, examination of content of final reports and publications | 20 | | |
| 4. 50% of the researchers that have completed projects indicate project results have been used to improve health care in some way within 1½ years | Questionnaire sent to researchers that have completed research projects | 25 | | |
| 5. 50% of the participants attending the two AR conferences indicate that the conf. has led to further involvement in AR activities focused on improvement of h. care | Questionnaire sent to individuals that attended the AR conferences | 20 | | |
| | Total possible score: | 100 | | |
| | Total score awarded: | | | |

Legend:

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

Rating: _____

Note: If attainment of some of the criteria above cannot be measured because the activities have not been completed long enough, the scoring system can be adjusted to measure only those effects that can realistically be measured.

## Measurement of Effectiveness of Assistance with Development of an AR Network and Plan for WHO/AFRO Program to Support AR within the Region

| Criterion | Method for measuring attainment of criterion | Poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Inventory of AR training and support resources has been completed and distributed to 3 or more institutions in region. | Examination of project records, interviews with project staff | 7 | | |
| 2. 50% of institutions receiving the inventory indicate they have used it. | Questionnaires sent to institutions and individuals that have received copies of the inventory | 8 | | |
| 3. The 2 network institutions assisted by SHDS have further developed their AR programs as a result of this assistance. | Examination of project records and trip reports, interviews with project staff, possibly a questionnaire sent to network institution directors | 35 | | |
| 4. The 2 network institutions assisted by SHDS have collaborated with national AR institutions, as a result of this assistance. | Same as for No. 3 | 20 | | |
| 5. A long term plan for AR activities in the region has been developed collaboratively by WHO/AFRO and SHDS and there are indications that it has been or will be used. | Examination of project records and trip reports, interviews with project staff, possibly interviews with AFRO staff and/or a mailed questionnaire | 20 | | |
| 6. A plan for exchange of AR training materials and strategies on an interregional basis has been developed, and there are indications that it has or will be used. | Examination of project records and reports, interviews with project staff. | 10 | | |
| | Total possible score: | 100 | | |
| | Total score awarded: | | | |

Legend:

90+ = Outstanding (*)
75 to 89 = Adequate (+)
74 or less = Inadequate (-)

Rating: _____

## 2.4 Cost

The measurement of cost of the AR program can be divided into 3 components -- measurement of total cost of the program by year, measurement of the cost of specific sample activities, and measurement of the cost-efficiency of these activities. Each of these measurements is discussed further below.

### Total cost of the AR program by year

The manner in which total cost of the various SHDS program components can be calculated and some of the difficulties involved are discussed in detail in Section 3.2.4, page 17, of "Description and Application of the Internal Evaluation System...".

The table below can be used to present the budgets and estimated expenditures for the AR program by year. As can be seen, totals are calculated using figures from 4 separate budgets:

-- the SHDS/BU Objective IV budget,

-- the SHDS/AFRO Objective IV budget, and

-- certain items in the SHDS/BU Boston and Abidjan Office budgets.

Budget and Estimated Expenditures
for Objective IV Activities by Budget and Year

| Type of budget | Budget, including overhead | | | Expenditures, including overhead | | |
|---|---|---|---|---|---|---|
| | 1983 | 1984 | 1985 | 1983 | 1984 | 1985 |
| SHDS/BU Obj. IV | | | | | | |
| SHDS/AFRO Obj. IV | | | | | | |
| SHDS/BU Boston and Abidjan Office | | | | | | |
| Totals: | | | | | | |

### Cost of sample activities

The average costs of sample activities can be estimated in somewhat the same manner as the total costs, by calculating or estimating the portion of expenditures under the same types of budgets attributable to those activities (including overhead, where appropriate). Examples of amounts budgeted and estimates of expenditures for a sample of activities are given on the following page:

Amounts budgeted and estimates of expenditures
for a sample of activities under Objective IV

| Sample activity | Amount budgeted | | | | Estimate of expenditures | | | |
|---|---|---|---|---|---|---|---|---|
| | BU | AFRO | Bos/Abj | Total | BU | AFRO | Bos/Abj | Total |
| TOT course Lome, 83 | | | | | | | | |
| In-country workshop, INRSP 84 | | | | | | | | |
| Course in network inst. INSP 83 | | | | | | | | |
| Assistance, dev. average res. proj. | | | | | | | | |
| Average T.A. on-going res. proj. | | | | | | | | |
| Dist. 1 set HSR course & guide | | | | | | | | |
| Average T.A. dissem. results | | | | | | | | |
| AR conference Dakar 84 | | | | | | | | |
| T.A. network inst. INSP -INRSP | | | | | | | | |

Cost-efficiency of sample activities

Cost-efficiency of an activity can be measured if one can first calculate the cost of a standard quantity of activity and then compare it with some standard. Costs for certain standard quantities of AR program activities are estimated below:

Estimates of costs for standard quantities of AR program activities

| Standard quantity of activity | Estimated cost |
|---|---|
| 1 day of participant training TOT Course, Lome 83 | |
| 1 day part. training, in-country workshop, INRSP, Bam. 84 | |
| 1 day part. training, course in network inst., INSP 83 | |
| 1 staff day T.A. on res. project development | |
| 1 staff day T.A. to on-going res. project | |
| Distribution 1 set HSR course & guide from Abidjan | |
| 1 staff day T.A. on dissemination res. results | |
| 1 day part. training, AR conference, Dakar 84 | |
| 1 staff day T.A. to network inst. INSP/INRSP | |

130

Further work must be done to develop standards for costs of specific quantities of activities such as those listed above. Standards might be developed by first estimating costs for producing the same quantities of activities under several international health projects, such as those listed in section 2.2 and then taking the lowest cost obtained as the standard for 100% efficiency.

Another method of approaching cost-efficiency would be to estimate the cost of producing specific quantities of activities for the same types of activities under the SHDS Project in consecutive years (1983, 84 and 85) and then to determine if the cost for producing the quantity of activity goes down from year to year. If so, the program could be said to be relatively more cost-efficient in producing the same activities over time. If this method of estimating cost-efficiency were agreed upon early in the project, it would provide an incentive for the staff for finding less expensive ways of conducting the same activities over time. It should lead to greater use of regional and local resources, an approach that fits well with the long term aims of the Project.

## 2.5 Satisfaction

### Rating of user and provider satisfaction

The evaluation of the satisfaction with various aspects of the AR program completes the process of assessment of results. Satisfaction can be evaluated for both users and providers for several types of activities within the AR program, as illustrated in the table below:

Evaluation of Satisfaction with
Various Types of Activities within the AR Program

| Type of activity | User | Provider | How satisfaction measured |
|---|---|---|---|
| AR courses and workshops | Graduates | Trainers | Questionnaire to sample of users and all providers |
| Dev. & funding of AR projects | Principal Investigators | SHDS staff | Questionnaire to all users and providers |
| Dissemination of AR training and project results | Recipients of tr. materials & proj. reports | SHDS staff | Questionnaire to sample of users and all providers |
| Assistance to AR network institutions | Directors & staff of network instit. | SHDS staff | Questionnaire to directors and sample of staff and to all providers |

The factors and questions that could be used to measure satisfaction of users with the AR courses and workshops and with the small grants program are presented on the following pages in the table that would be used to present the results. The questionnaires that could be used to obtain the results are presented in Annex 2. Section 3.2.5, page 20, of "Description and Application of the Internal Evaluation System..." discusses how the questionnaires measuring satisfaction are constructed and how they can be scored.

Additional questionnaires for user satisfaction with the other 2 types of activity, as well as questionnaires for providers, could be developed if there will be an opportunity to send the questionnaires and analyze the results. Otherwise these sample questionnaires can serve as examples of the type of system that can be developed to measure satisfaction.

## Rating of User Satisfaction with AR Courses and Workshops

| Factor for measuring satisfaction of course graduates | Question used (See Annex 2 for details) | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Training material design | How well designed were the course training materials? | 5 | | |
| 2. Teaching quality | How well taught was the course? | 5 | | |
| 3. Provision of AR skills | To what degree did the course provide you with the knowledge and skills needed to design AR projects and conduct AR? | 5 | | |
| 4. Usefulness in work situation | To what degree do you feel you have been able to use what you've learned in the course in your work? | 5 | | |
| | Highest average score possible: | 5 | | |
| | Average score awarded: | | | |

Rating for satisfaction of AR course graduates: _____

| Additional factors for measuring satisfaction of TOT course grads. | Question used (See Annex 2 for details) | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 5. Provision of skill in AR curriculum design | To what degree did the course provide you with the knowledge and skills needed to design AR curricula and/or training activities? | 5 | | |
| 6. Provision of AR training skills | To what degree did the course provide you with the knowledge and skills needed for training others in AR? | 5 | | |
| | Highest average score possible: | | | |
| | Average score awarded (includes average of scores on all 6 questions) | | | |

Legend:

4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

Rating for satisfaction of TOT course graduates: _____

189

Rating of User Satisfaction
with the Small Grants Program

| Factor for measuring satisfaction of P. Investigators | Question used (See Annex 2 for details) | Total poss. score | Score awarded | Explanation |
|---|---|---|---|---|
| 1. Clarity and completement of funding info | How clear and complete was the info. provided by SHDS on its AR grant program and how to apply for funding? | 5 | | |
| 2. Guidance on proposal development | (If you requested help) How helpful was SHDS in providing guidance on proposal development? | 5 | | |
| 3. Timeliness of application processing | How timely was the SHDS Project in processing your application for funding? | 5 | | |
| 4. Timeliness of funding and administrative support | How timely was the SHDS Project in providing the funding and administrative support needed for the implementation of your research project once it was approved? | 5 | | |
| 5. Usefulness of T.A. during the research process | (If you requested T.A.) How helpful have the SHDS staff and/or consultants been in providing you with T.A. as you conduct your research? | 5 | | |
| | Highest average score possible | 5 | | |
| | Average score awarded: | | | |
| | Rating for satisfaction of Principal Investigators: | | | |

Legend:

4.5+ = Outstanding (*)
3.5 to 4.4 = Adequate (+)
3.4 or less = Inadequate (-)

Legend:

- Inadequate
+ Adequate
* Outstanding

0 Not Assessed
? Undetermined

## 2.6 Evaluation Profile of the AR Program

| | | |
|---|---|---|
| **Scope (2.1)** | | |
| Dev. training materials | (10) | 10 |
| Training in AR | (22) | 22 |
| Small grants program | (22) | 22 |
| Dissemination AR tr. mat. & project results | (14) | 14 |
| Assistance AR network institutions | (20) | 20 |
| Development plan for AR activities in region | (12) | 0 |
| Total score: | (100) | 88 |
| Rating: | | + |
| **Quantity (2.2)** | | |
| Dev. training materials | (10) | 5 |
| Training in AR | (22) | 16½ |
| Small grants program | (22) | |
| Dissemination AR tr. mat. & project results | (14) | |
| Assistance AR network institutions | (20) | 14 |
| Dev. plan AR activities in region and inter-regional exchange | (12) | 3 |
| Total score: | (100) | |
| Rating: | | |
| **Productivity (2.2)** | | |
| Staff days used for each part. day of AR training | | |
| Staff days used for dev. one AR project of $_____ | | |
| Staff days used to assist 1 researcher with dissem res. | | |
| Rating, over-all productivity: | | * |

| | | |
|---|---|---|
| **Effectiveness (2.3)** | | |
| AR courses and workshops | | |
| Total Score: | (100) | |
| Rating: | | |
| Small grants program | | |
| Total Score: | (100) | |
| Rating: | | |
| Dissemination of results | | |
| Total Score: | (100) | |
| Rating: | | |
| AR network and reg. plan | | |
| Total Score: | (100) | |
| Rating: | | |
| **Cost (2.4)** | | |
| AR program 1983 | | |
| AR program 1984 | | |
| AR program 1985 | | |
| Total cost: | | |
| Cost for standard units of activities: | | |
| 1 part.day tr. TOT course | | |
| 1 part.-day tr. in-country workshop | | |
| 1 part.-day tr. network institution | | |
| 1 staff day TA res. prop. dev. | | |
| 1 staff day TA res. project | | |
| Dist. 1 set course and guide | | |
| 1 staff day TA dissem. results | | |
| 1 part.-day tr. AR conference | | |
| 1 staff day TA to network instit. | | |
| **Satisfaction (2.5)** | | |
| AR courses and workshops | | |
| Average score (for users): | (5) | |
| Rating: | | |
| Average score (for providers) | (5) | |
| Rating: | | |
| Small grants program | | |
| Average score (for users): | (5) | |
| Rating: | | |
| Average score (for providers) | (5) | |
| Rating: | | |

Summary: Scope: Adequate Quantity: Productivity: Outstanding
Effectiveness: Cost: Satisfaction:

141

## 3. The program process

There are two major categories it is important to consider when examining the program process--resources and management. Each of these will be considered in turn.

### 3.1 Resources

The resources that have been available for the AR program are summarized below:

Personnel: The Assistant Director for Objectives III and IV of the SHDS Project, working approximately ½ time on the AR program

Consultants and temporary advisors from inside and outside the region, programmed to assist with specific activities

Staff of regional and local institutions whose time has been donated for work on SHDS activities

Finances: The budget, as described under the cost section (4.2.4)

Facilities: Facilities for specific activities have been, for the most part, donated by institutions involved in the AR program, although in some cases space has been rented for selected training activities

Technology: Expertise in AR training, small grants administration and technical assistance, etc. has been built up over the life of the project and drawn upon for the implementation of activities during the final 3 years.

The type of resource structure for the AR program and SHDS Project in general is somewhat unusual in that it relies to such a great extent on the participation of regional and local institutions that contribute important resources.

Personnel constraints have been a major difficulty within the program. Originally one full-time person was scheduled to work on the AR program. There were some unexpected difficulties in recruitment, when the selected candidate dropped out at the last minute, and it was finally decided that what little money was available (as budget levels began shrinking) was needed for something else. It has been a strain for the Assistant Director for Objectives III and IV to handle the AR program half time.

Budget constraints have had a major effect on certain components of the AR program. For example, the following activities had to be cancelled due to lack of budget:

-- Development of new training modules for decision-makers and training of trainers

142

-- One Anglophone in-country AR workshop

-- Assistance to 2 or more training institutions to integrate AR into their curricula

-- Preparation of a document on lessons learned (postponed until 1985 due to budget constraints)

-- Development of a regional inventory of AR training and support resources

On the other hand, the program has demonstrated how much can be done creatively with limited resources. For example:

-- The level of funding for individual research projects is not as high as in many small grants programs. This constraint has forced P.I.s to design appropriate research projects, using resources at a level more likely to be realistically available from local sources in the future.

-- The demand for AR courses and workshops far exceeded the SHDS Project's ability to fully fund them. In-country workshops were sponsored, with SHDS providing training materials, limited technical assistance for planning, and, in some cases, just one trainer from the region. The country (such as in the case of the Senegal workshop) covered all other expenses. When no money has been available to meet requests (as for a request from Burkina Faso for a workshop) the SHDS staff has assisted the local group to develop a low cost budget (in this case less than $10,000) and submit it for funding to other groups. (The AID Mission in Ouagadougou agreed to fund the Burkina workshop.)

## 3.2 Management

The system of management is quite complex. Briefly:

-- The SHDS Project staff is responsible for development of the yearly program activities and budget, as well as program implementation.

-- REDSO to some extent can veto aspects of the program it may not approve of, as it controls the money.

-- The program must be approved by the PTC or PRC each year before it can be implemented.

-- WHO/AFRO is responsible for certain key administrative duties, such as requesting country participation in courses, inviting and paying participants and trainers from the region, approving and funding research projects, etc. One part of the SHDS budget goes directly to AFRO for these activities.

-- The countries and institutions must also participate actively if the program is to be successful, for example by requesting courses, hosting them, selecting appropriate participants, using their skills once they are trained, etc.

A major constraint within the area of management has been the SHDS staffs' lack of full control over the management process, due to the complex organizational arrangements described above. Some of the negative effects of this lack of control are listed below:

— Certain activities have been delayed due to problems of reorganization at WHO/AFRO. The second AR Conference has been postponed from 1985 to 1986, due to a request from AFRO, because it felt unable to handle the administrative support necessary during 1985.

-- REDSO requested that one of the Subobjective 4 activities that SHDS felt was key to a successful program be dropped-- "assistance with development of a long-term plan for on-going AR activities within the region". (See page 4.) REDSO felt planning should not be undertaken if funding was not certain, while the SHDS staff felt planning should go ahead for activities that could be realistically undertaken with WHO/AFRO funds and other resources already available. The evaluation team felt this type of long-term planning and development of strategies for transfer of key AR activities was critical if the program were to have a long term impact. (Thus the AR program only received a score of "adequate" for scope of activities, because this planning was not undertaken.)

The management system, on the other hand, has been quite creative, considering the programs complexity and limited resources:

-- While the complexity of the management and organizational system has posed some problems, it has also had positive effects, in that it has fostered and in some cases necessitated the participation of key institutions and groups within the region (AFRO, national governments, regional and local institutions). Skills important for continuation of AR activities within the region have thus been strengthened.

-- The program strategy has called for use of regional and local personnel and resources, whenever possible, and budget constraints have also encouraged use of less expensive local resources. This has had a positive effect on development and use of local skills, and increased the potential for continuation of AR activities after the termination of the project.

-- This phase of the program has probably been the most productive, in that it has been able to reap the benefits of development activities in earlier years ( for example, the development of the HSR Course training materials and development of the structure for the small grants program). The Project extension allowed time for greater depth of programming at limited additional cost and further work on transfer of skills.

## 4. Initial program state and transformation

A brief summary of the initial program state, for the major sets of activities, as well as the transformation that took place as a result of the AR program can be presented in a table such as the one below. This information could be entered by the evaluation team once the evaluation results have been gathered and analyzed. An example of how the information in the table might look for the first set of program activities is presented after the blank table.

Description of Initial Program State and Transformation

| Set of program activities | Initial program state | Transformation resulting from the AR program |
|---|---|---|
| AR training courses and workshops (Subobjective 1) | | |
| Development and funding of AR projects (Subobjective 2) | | |
| Dissemination of results of res., training activities and projects (Subobjective 3) | | |
| Development of AR network and plans for WHO/AFRO program to support AR within the region (Subobjective 4) | | |

Example of types of information that could be entered:

Description of Initial Program State and Transformation

| Set of program activities | Initial program state | Transformation resulting from the AR program |
|---|---|---|
| AR training courses and workshops (Subobjective 1) | The AR Course training materials had been developed in 1982 | The training materials were published in 1983 and in 1984 further revisions and a second printing took place. WHO/AFRO accepted the materials as official training materials for use in the region |
| | 2 TOT AR courses had been given in the region by the end of 1982, including courses at the Lome and Lagos Regional Training Centers in 1982 | Two additional TOT courses were given, including an additional TOT course at the Lome RTC in 1983 and an anglophone TOT course in Banjul in 1985. The TOT course in Lome influenced both the Medical School and other training institutions to make the following changes: (add as data available) |
| | Several in-country workshops had been held, by the end of 1982, including:<br><br>They had resulted in: | Additional in-country workshops were held in:<br><br>They resulted in: |
| | Work with AR network institutions to hold courses for their staffs had not begun. | Courses for AR network institutions staff and others were held at INSP, Abidjan, in 1983 and at INRSP, Bamako in 1984.<br><br>The Course at INSP resulted in:<br><br>The course at INRSP Mamako led to the development of 19 proposals, of which ___ were funded, strengthened INRSP's collaboration with the MOH and Med. School, helped strengthen it's prog. in AR and contributed to it's official recognition by AFRO as a network inst. |
| | No training institutions had been assisted in integrating AR into their curricula, although the two CESSI programs had requested help in this area | No assistance was given, due to budgetary constraints. |

140

5. Lessons learned and recommendations

A summary of lessons learned under the AR program and resulting recommendations for the future can be developed only after the evaluation data has been collected and analyzed. This information could be presented succinctly in a table such as the one below.

Lessons Learned from the AR Program
and Recommendations for the Future

| Lessons learned | Recommendations for the future |
|---|---|
| | |

A brief summary of lessons and recommendations could be particularly useful to management staff and donors that may be involved in planning future programs of a similar type.

## Annex 1:

## Questions for measuring effectiveness

## Annex 1

### Examples of Questions that Could be Used to Measure Effectiveness of AR Training Courses and Workshops

| Criterion (from table on page 10) | Question for course graduates |
|---|---|
| 2. | Have you used the knowledge and skills you gained in the AR course to some extent in your job? ___Yes ___No<br>If "Yes", please describe how you used the knowledge and skills and give examples.<br>If "No", please explain why not.<br>(Leave adequate space for response) |
| 3. | Have you finalized one or more AR proposals and submitted them for approval and/or funding since you completed the AR course? ___Yes ___No<br>If "Yes", please provide information on what AR proposals you have finalized and to whom you have sumbitted them.<br>"If "No", please explain why not. |
| 4. | Have you conducted any applied research or been involved in AR projects of others since you completed the AR course? ___Yes ___No<br>If "Yes", please describe what AR you have conducted or AR activities of others you have been involved in.<br>If "No", please explain why not. |
| 5. | Have you trained others since finishing the AR course, using the training techniques or materials used in the course? ___Yes ___No<br>If "Yes", please describe what training activities you have been involved in and what techniques and/or training materials from the AR course you have used.<br>If "No", please explain why not. |
| 6. | Have you developed curricula or course materials related to AR since you took the AR course?<br>If "Yes", please describe what cirricula or course materials related to AR you have developed and how they have been or will be used.<br>If "No", please explain why not. |

Examples of Questions that Course be Used to Measure Effectiveness of the Small Grants Program

| Criterion (from table on page 11) | Question for Principal Inventigator: |
|---|---|
| 4. | Have you completed the research project that was funded by the SHDS Project? ___Yes ___No<br>If "Yes", when did you complete it? _____<br>If "No", when do you expect to complete it?_____<br>If the research has been completed, have you distributed or disseminated results from the project through reports, publications, meetings or workshops, etc.? ___Yes ___No<br>If "Yes", could you please discribe how you have distributed results, to whom you have sent them, and when.<br>If "No", why not? Do you expect to sent out results in the future?<br>(Leave adequate space for response) |
| 5. | If you have completed the research project that was funded by the SHDS project, please answer the question below:<br>Have the results of your research project been used in any way, as far as you know, to improve health care? ___Yes ___No<br>If "Yes", could you please describe how the results have been used to improve health care, including who used them and when.<br>If "No", please explain, if you can, why not. |

## Annex 2:

## Questions for measuring satisfaction

## Annex 2

### Draft Questionnaire for Graduates for Measuring User Satisfaction with AR Courses and Workshops

Criterion (from table on page 18)

**Questions for all course graduates:**

1. How well designed were the course training materials?

1.

1. Very poorly designed
2. Somewhat poorly designed
3. Somewhat well designed
4. Quite well designed
5. Extremely well designed
6. Don't know

Comments: _____

2. How well taught was the course?

2.

1. Very poorly taught
2. Somewhat poorly taught
3. Somewhat well taught
4. Quite well taught
5. Extremely well taught
6. Don't know

Comments: _____

3. To what degree did the course provide you with the knowledge and skills needed to design AR projects and conduct AR?

3.

1. Not at all
2. To a very limited degree
3. To a moderate degree
4. To quite a high degree
5. To a very high degree
6. Don't know

Comments: _____

4. To what degree do you feel you will be able to use (or have you been able to use) what you've learned in the course in your work?

4.

1. Not at all
2. To a very limited degree
3. To a moderate degree
4. To quite a high degree
5. To a very high degree
6. Don't know

Comments: _____

**Questions only for TOT Course graduates:**

5. To what degree did the course provide you with the knowledge and skills needed to design AR curricula and/or training activities?

5.

1. Not at all
2. To a very limited degree
3. To a moderate degree
4. To quite a high degree
5. To a very high degree
6. Don't know

Comments: _____

6. To what degree did the course provide you with the knowledge and skills needed for training others in AR?

6.

1. Not at all
2. To a very limited degree
3. To a moderate degree
4. To quite a high degree
5. To a very high degree
6. Don't know

Comments: _____

152

## Draft Questionnaire for Principal Investigators for Measuring User Satisfaction with the Small Grants Program

| Criterion (from table on page 19) | Questions for P.I.s: |
|---|---|

1. How clear and complete was the information provided by SHDS on its applied research grant program and how to apply for funding?

1.

1. Not clear and complete at all
2. Quite unclear and incomplete
3. Somewhat clear and complete
4. Quite clear and complete
5. Extremely clear and complete
6. Don't know

Comments: _____

2. Did you request any help from SHDS in proposal development? ___Yes ___No Was any help in proposal development provided by SHDS staff or consultants? ___Yes ___No If you answered yes to the second question, please answer the question below:

2.

How helpful was SHDS in providing guidance on proposal development?

1. Not helpful at all
2. Only slightly helpful
3. Somewhat helpful
4. Quite helpful
5. Extremely helpful
6. Don't know

Comments: _____

3. How timely was the SHDS project in processing your application for funding?

3.

1. Not timely at all
2. Quite slow
3. Somewhat timely
4. Quite timely
5. Extremely timely
6. Don't know

Comments: _____

4. How timely was the SHDS project in providing the funding and administrative support needed for the implementation of your research project once it was approved?

4.

1. Not timely at all
2. Quite slow
3. Somewhat timely
4. Quite timely
5. Extremely timely
6. Don't know

Comments: _____

5. Have you requested any technical assistance from SHDS on your research project? ___Yes ___No

5.

Has any technical assistance been provided by SHDS staff or consultants for your research project? ___Yes ___No

If you answered yes to the second question please answer the question below:

How helpful have SHDS staff and/or consultants been in providing you with technical assistance as you conduct your research?

1. Not helpful at all
2. Only slightly helpful
3. Somewhat helpful
4. Quite helpful
5. Extremely helpful
6. Don't know

Comments: _____

SHDS PROJECT 1983-1985:

**FORMAT** FOR FINAL REPORTS FOR EACH OBJECTIVE

Draft, Nov. 21, 1985, ' djan
(Final Abidjan Draft)

# SHDS PROJECT 1983-1985
## FORMAT FOR FINAL REPORTS FOR EACH OBJECTIVE

Table of Contents


| | Page |
|---|---|
| 1. PROGRAM BACKGROUND AND STRATEGIES | 1 |
| 2. REPORT AND EVALUATION OF "END OF PROJECT STATUSES" (EOPS) | 2 |
| 2.1. Report and evaluation of EOPS ___ | |
| 2.1.1. Summary of accomplishments related to EOPS | 2 |
| 2.1.2. Planned activities and their rationale | 3 |
| 2.1.3. Status of activities, outputs and verifiable indicators | 4 |
| 2.1.4. Inputs | 10 |
| 2.1.5. The program process | 11 |
| 2.1.6. Program efficiency and effectiveness | 12 |
| 2.1.7. Lessons learned | 17 |
| 2.2. Report and evaluation of EOPS ___, etc. | 18 |
| 3. ASSESSMENT OF STRATEGIES | 18 |
| 4. SUMMARY OF LESSONS LEARNED | 19 |
| 5. RECOMMENDATIONS | 20 |

1. PROGRAM BACKGROUND AND STRATEGIES

Could cover, in narrative or table form, information on topics such as:

- Focus of Objective
  (Official wording of the objective and its focus)
- Background
  (Overview of problems and needs leading to initial project development, brief summary of 1978-82 SHDS program and what it achieved)
- Needs and strategies
  (Needs preceived at end of 1982, strategies for 1983-85 and their rationale)
- Subobjectives and End of Project Statuses(EOPS)
  (Official list of subobjectives and EOPS, and how they are interrelated)

156

## 2. REPORT AND EVALUATION OF "END OF PROJECT STATUSES" (EOPS)

2.1. Report and evaluation of EOPS __:*
Subobjective __:*

2.1.1. Summary of accomplishments related to EOPS ___

* Write out official wording of EOPS and the one or more subobjectives to which it relates.

2.1.2. Planned activities and their rationale

| Code | Planned activity and site | Activity No./Year |
|---|---|---|
| | | |

Rationale for the activities

(Brief narrative describing the rationale for selecting these activities to attain the EOPS)

2.1.3. atus of activities, outputs and verifiable inc tors

Summary Table

| Planned Activities | Status of Planned Activities | Planned Outputs (from EOPS) | Realized Outputs (1983-85) | Verifiable Indicators (from EOPS) | Verifiable Indicators* (1983-85) | Comments |
|---|---|---|---|---|---|---|
| | | | | | | |

* Tables could be attached to present much of the information on verifiable indicators. Some standard formats that could be used for reporting on indicators that are similar for the various objectives are attached.

2.1.3. Status of activities, outputs and verifiable indicators (continued)

Details on outputs and verifiable indicators

(This section could include narrative providing any details on outputs and verifiable indicators that are necessary and could not be included in the "Summary Table". The narrative (if any) could be followed by any detailed tables used for reporting on outputs and indicators. These tables can be referenced either in the "Summary Table" (i.e. See Table ___, p. ___) or in the narrative section.)

(It would be useful to have some tables that are standard among the objectives. These could include, at a minimum:

- Census of Objective Courses, SHDS-WHO/AFRO 1983-85 (p. 6) for EOPS involving training. See Helfenbein's draft report for sample of how it could be completed.

- List of Participants by course (p. 7) for EOPS involving training. Florence is in the process of updating and printing out lists in this format for all 1983-85 courses from the P.I.S.

- List of Facilitators by course (p. 8) for EOPS involving training if this is felt to be relevant. Florence is also producing all these reports.

- List of SHDS Documents 1983-85 (p. 9) This list can be prepared with one or more pages for each EOPS. Thus the relevant pages can be inserted with each EOPS as "verifiable indicators" and can also be combined as a "Master List" if desired. We'll try to have copies of all documents listed available in an "evaluation" file for evaluators to easily look at.

  Yao is preparing a possible computerized format for this list to consider, but for now information wil be typed in.

Other tables, figures, models, etc. could be included as it seems appropriate for each objective. (i.e. reports on the status of research proposals and projects for Obj. IV, tables and models such as those Helfenbein has developed for his draft report, etc.) These could be different for each Objective though good formats could be used whereever applicable.

The four standard tables mentioned above appear on the following four pages.

160

CENSUS OF OBJECTIVE COURSES, SHDS-WHO/AFRO 1983-85

TYPE OF COURSE:

| Course/Workshop (Activity Number/year) | Funded by | Dates | Site | No. of Days | Language | | Participants | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Fr. | Eng. | Country | Institution | No. | Tota |
| | | | | | | | | | | |

Printout from MIS,
Participant File

LIST OF PARTICIPANTS:
NAME OF WORKSHOP
SITE, DATES

| NAME | NATIONALITY | TITLE | BUSINESS ADDRESS<br>HOME ADDRESS | BUSINESS PHONE<br>HOME PHONE |
|---|---|---|---|---|

LIST OF FACILITATORS:
NAME OF WORKSHOP
SITE, DATES

| NAME | NATIONALITY | TITLE | BUSINESS ADDRESS<br>HOME ADDRESS | BUSINESS PHONE<br>HOME PHONE |
|---|---|---|---|---|

THE _

# LIST OF S DOCUMENTS 1983-85

F DOCUMENT:

| Act./ Yr. | Name of document | Prepared by | Date | # Pages | Summary of contents | Location | Distribut |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

- Inputs

Report should cover, at minimum, the inputs listed in the EOPS. Two possible formats for reporting are given below:

Format I:

| Planned activities (or Code) | Inputs (from EOPS) | Inputs provided and source | Comments and assessment |
|---|---|---|---|
| | | | |

Format II:

Input listed in EOPS:

Inputs provided and source:

Comments

Strategy:

Selection criteria:

Assessment:

2.1.5 The program process

Could be in brief narrative or table form. Issues covered might include:

- Selection of sites, staff and participants

  How they were selected
  Criteria for selection
  Characteristics of those chosen
  Any problems or constraints
  Assessment of the process

- Description and assessment of program process

  Brief description of program process of each activity, each type of activity, or a sample of the activities, including technical and administrative aspects.
  Any problems or constraints, program changes and why they were made
  Analysis/assessment of program process

Note: The description of the program process for training activities might cover, among other things:

Types of training methods used, assessment of how well they worked
Whether "training of trainers" was goal, if so, TOT strategies and how they worked
Nature and quality of interactions among various groups
Course administration, how it was organized and functioned
Methods of course evaluation, how accurate and useful they appeared to be
Types of technical follow-up support given or planned, its adequacy, further follow-up needed

## 2.1.c Program efficiency and effectiveness

### Cost-efficiency

This item needs further reflection. Below is a first draft of a possible report prepared by Mr. Yao. We need to explore further what data can be gathered without too much effort, and what can be said that is really meaningful.

PAGE : 1

SHDS COST EFFICIENCY OF ACTIVITIES

| ACTIVITY TITLE & NUMBER | SHDS & AFRO BUDGET | SHDS & AFRO ACT : EXPENDI | DIFFERENCE % | DISCREPANCY CODE | UNIT CODE | COST PER EFFORT UNIT | UNIT WEIGHT |
|---|---|---|---|---|---|---|---|
| CESSI CRI DHR 4.2/85 | 1650 | 1600 | 3.0 | 03 | 09 | 70 | 4.5 |
| OCEA COURS 10 6.1/84 | 1500 | 1670 | -11.3 | 06 | 11 | 560 | 4.9 |

167

2.1.6. Program efficiency and effectiveness (continued)

Program effectiveness

Medium-term effects:

Write-up will depend on individual program and what types of information are available at this point. It seems useful to "capture" the wide range of information known only to program staff, even if there is not a systematic analysis in the first draft. Types of "effects" that might be listed and/or discussed could include:

- Effects of training on graduates and their work
  - Brief description and summary of results of any systematic follow-up studies done on course graduates, with indication of where details can be found, who conducted study, etc.
  - Information on effects on graduates and their work obtained by correspondence, during site visits for other purposes, from other reliable sources, etc. (Types of effects emphasized would depend on focus of particular course, learning objectives, etc.) Source of info. could be mentione
- Effects of training on course facilitators and their work

  (Similar to issues for course graduates)
- Effects of "training of trainers" strategies, if this was part of plan
  - Extent to which trainers have trained others
  - Use of training materials developed for the courses by trainers or other groups
- Effects of training on the institutions involved, health programs, health care, etc.
- Various types of unplanned effects, both positive and negative
  - "Spin-off" effects, such as additional courses being requested, with funding possibly being picked up from other sources
  - Other organizations "copying" SHDS approaches, using African facilitators trained through the SHDS program, using SHDS training materials, etc.
  - "Synergistic" effects among the various SHDS "Objectives"
- Whether any systematic follow-up assessments should be conducted related to these activities in the future and, if so, what their foci should be, possible data gathering methods, etc.

Note: Two possible tables, focusing on "training of trainers" and transfer of skills to staff from the AFRO region follow.

165

Table ___: Use of former participants as facilitators in AFRO/SHDS and other Courses

| Course/Workshop | Dates | Place | Total # Facilitators | # Facilitators who were former participants | % Facilitat who were fo participant |
|---|---|---|---|---|---|
| | | | | | |

Summary

| Year: | 1983 | 1984 | 1985 |
|---|---|---|---|
| Average % Facilitators who were [illegible] | | | |

Table ___: Use of Facilitators from the AFRO Region for AFRO/SHDS Courses

| Course/Workshop | Dates | Place | Total # Facilitators | # Facilitators from AFRO Reg. | % Facilitators from AFRO |
|---|---|---|---|---|---|
| | | | | | |

Summary

| Year: | 1983 | 1984 | 1985 |
|---|---|---|---|
| Average % Facilitators from the AFRO Region | | | |

2.1.7. Lessons learned

(This is an optional section, depending on whether it is felt :"Lessons learned" should be detailed for each EOPS or just summarized for the Objective as a whole in Section 4.)

2.2. Report and evaluation of EOPS __, etc.

3. ASSESSMENT OF STRATEGIES

This section would over the Objective and its programs as a whole. It could both refer back to strategies covered in section "1" and also cover any important strategies emphasized during the analysis of the various EOPS (section "2").

## 4. SUMMARY OF LESSONS LEARNED

This could be a separate section or be combined with section"3" as "Assessment of strategies and lessons learned". It could succinctly summarize some of the conclusions that could be drawn based on analysi earlier sections, focusing on:

- Lessons learned in the development and implementation of the program that would be helpful as future programs are planned and/or that could give useful guidance to other groups

5. RECOMMENDATIONS

- Recommendations concerning changes in the current program
- Recommendations concerning development of future programs

2.1.6. Program efficiency and effectiveness (continued)

Evidence of institutionalization:

This section could cover any information available on whether the program appears to be "institutionalized" or well-integrated and supported within the institution(s) in which it took place (or elsewhere)and whether it is likely to continue in the future without SHDS support. Some of the issues that might be addressed are summarized below:

- What parts of the program or activities described under the EOPS should be "institutionalized", if possi Where and in what form.
- What evidence is there that the type of institutionalization desired has or will take place. For exampl
  - -- That there is a critical mass of staff trained in the new approaches needed to continue the program or activities
  - -- That the institution has made plans to continue the program or activities under its own auspices
  - -- That financial support needed for the program will be available from the institution itself or other sources (nat. govt., WHO/AFRO, other donors)
  - -- That the approaches of the SHDS-sponsored program have been incorporated into other activities or programs of the institution
  - -- That the institution and its staff is recognized as having new skills in the area on which it collaborated with SHDS and is called upon to contribute its expertise in this area. (i.e. staff being called upon to train staff in other institutions and countries, etc.)
- What problems or constraints are there?
- Is further information on the status of institutionalization needed? How could it be gathered?
- Is further action needed, to encourage or plan for institutionalization?

# DEVELOPMENT OF A COMPUTERIZED MANAGEMENT INFORMATION SYSTEM TO SUPPORT THE INTERNAL EVALUATION PROCESS

Prepared for:

The Project for Strengthening Health Delivery Systems
in West and Central Africa

By:

James A. French
Sipho Msikinya

Under a subcontract with:

Charles R. Drew Postgraduate Medical School

August 22, 1986

176

TABLE OF CONTENTS


| | PAGE |
|---|---|
| 1. INTRODUCTION TO THE COMPUTERIZED MODEL | 1 |
| 1.1 Preliminary Considerations | 1 |
| 2. ORGANIZATION OF THE MODEL | 2 |
| 2.1 Information Structure | 2 |
| 2.2 Information Components and Flow | 2 |
| 2.2.1 Standard Plans and Reports | 2 |
| 2.2.2 Variance Reports | 3 |
| 2.2.3 Status Reports | 3 |
| 2.2.4 Special Reports | 3 |
| 3. RELEVANCE TO THE INTERNAL EVALUATION SYSTEM | 4 |
| 3.1 Scope | 4 |
| 3.2 Productivity | 4 |
| 3.3 Quality | 4 |
| 3.4 Cost | 4 |
| 3.5 Satisfaction | 4 |
| 4. LOGISTICS AND GUIDELINES FOR AUTOMATION | 4 |
| 4.1 Hardware | 5 |
| 4.2 Software | 5 |
| 5. SYSTEM ILLUSTRATION | 6 |
| 5.1 System Data on Scope and Quantity | 7 |
| 5.2 System Data on Productivity | 9 |
| 5.3 System Data on Quality and Satisfaction | 10 |
| 5.4 System Data on Cost | 10 |

# DEVELOPMENT OF A COMPUTERIZED MANAGEMENT INFORMATION SYSTEM TO SUPPORT THE INTERNAL EVALUATION PROCESS

## 1. INTRODUCTION TO THE COMPUTERIZED MODEL

This report has two main objectives. The first is to present guidelines for developing a computerized project information system which, due to its design, satisfies the project information requirements encountered in the four project phases of planning, implementation, documentation, and evaluation. Secondly, plans will be presented for the creation of an automated information system which is to supply data for the evaluation model discussed in the report entitled "Description and Application of the Internal Evaluation System Developed for the SHDS Project". This information system is currently under development.

### 1.1 Preliminary Considerations

There is a common tendency to equate computer-automated information with heightened data accuracy. However experience shows that without proper planning and organization, automated information will hold as little value for management as manually compiled information. Indeed, an organization can produce and manage accurate and useful information without the use of computers. Successfully transmitting manual information depends on, a) having a clearly defined system in place for directing that information from its sources to the decision-making levels of management, and; b) the quantity of information not being so great so as to preclude cost-effectiveness in a relatively labor-intensive system. Developing an information management plan is the necessary first step in creating any information system. Computers can be introduced into a system later, if it appears likely that automation will improve the speed and/or accuracy of data collection, analysis, and reporting.

A fundamental distinction exists between organization and planning on the one hand, and computers on the other. Whereas the former are management techniques, the latter is, of course, a technology. This simple distinction can be critical for international health care project managers to retain, in particular those whose projects call for computer-aided management, yet which operate in developing countries. In such cases there is a heightened need for reliable pathways for information transfer, but usually very few channels are open for this to occur. Persistent and often severe technical problems can arise when any computer technology is introduced into an environment not tailored to support it. These problems can be managed, however, by selecting appropriate equipment and, equally as important, by maintaining a supportive environment specifically suited for that equipment.



178

Micro-computer technology has proved to hold several advantages as a tool for data collection, storage, and reporting under diverse and often harsh circumstances. It is relatively inexpensive and easily maintained, and has grown to become thoroughly exploitable using a very large and powerful array of institutional software options. When used to its maximum potential this technology can improve the efficiency of management of even the meagerest of resources.

## 2. ORGANIZATION OF THE MODEL

The information system proposed in this report was created as a model to supply the data for the internal evaluation process developed under the Drew sub-contract. This is expressed within the system as its capacity to report on comparisons of planned and completed project related activity. Its design also incorporates the ability to furnish the project managers with management data. This function is achieved as a result of the structured monitoring process, which will be discussed in detail below.

### 2.1 Information Structure

In order to monitor both global project performance and specific project components, the MIS consists of a structured network of project data interfaces. This structure has two major features. The first compares all planned project related activity and expenses to actual events. The second feature reorganizes detailed data on planned and actual project-related activities and expenses into larger categories so as to eventually produce global project status reports.

### 2.2 Information Components and Flow

The system produces standard plans, reports, variance reports and global status reports. In addition, special reports may be produced when needed. Plans are projections of project activity, personnel utilization, expenditures, etc. which are based upon planning data provided by the project executives. Reports, on the other hand, describe actual activities, personnel utilization and expenditures. Variance reports compare plans with what actually takes place. Global status reports summarize the data from these more detailed reports to provide an overview for the Chief Executive Officer. Special reports can also be generated whenever information which is not contained in the standard reports is required.

#### 2.2.1 Standard Plans and Reports

Data on the separate components spanning all project activities are recorded by the system in the form of standard plans and reports (see Table #1).



179

### 2.2.2 Variance Reports

Reports can be generated to assess and compare planned and actual figures for specific project activities or sub-activites without giving gross results for the entire project. These reports are known within the system as Variance Reports. They compare the Work Plan and Work Flow Report, or the Expenditure Plan and Expenditure Report, or the Quality and Satisfaction plans and reports without reducing the amount of detail found in the source documents. They can be particularly useful to mid or top-level level management for detailed monitoring when required (see Table #1).

### 2.2.3 Status Reports

The information system produces four types of global project status reports These are:

3) The Financial Status report
1) The Work Status report
2) The Quality Status report
4) The Satisfaction Status report (see Table #1)

Each project status report is derived from the figures collected by comparing plans with progress. Thus a Work Status Report is derived from a comparison of the Work Plan and the Work Flow Report. Similarly, the Financial Status report is derived from two sub-reports, the Expenditure Plan and the Expenditure Report. An Activity Quality Status report and an Activity Satisfaction Status report are generated in the same fashion.

Each of these reports provides critical information needed for periodic internal evaluations, and is the primary source of project data for top-level management and funding agencies. An advantage to establishing a single source of project data is that managers will have access to the same information that is eventually used by evaluators. This permits management to adjust the work plan, or re-allocate resources in response to the latest progress statistics.

### 2.2.4 Special Reports

Special reports may be required from time to time that provide information not available in the standard reports above. For example, in a project such as SHDS that conducts many training activities, there may be a need for periodic reports listing workshops and courses, as well as facilitators and participants. Formats for producing reports of this type have already been developed and are part of the current SHDS Project Information System.

## 3. RELEVANCE TO THE INTERNAL EVALUATION SYSTEM

The design of this information system allows it to be used directly in evaluating program results. The evaluation model monitors five categories of results. The information system provides the data needed for evaluation of each of these five result areas as discussed below. Table #1 also illustrates the relationship between the information system and the internal evaluation model.

### 3.1 Scope

Data on types of activities and performance is needed to assess project "scope". The data needed is found in the Work Plan and the Work Flow Report.

### 3.2 Productivity

Productivity can be assessed by determining quantity of activities performed and then dividing quantity by amount of staff time orFTE's used to produce the activities. Information on quantity of activities is found in the Work Flow report. Information on amount of staff utilization per activity is found in the Personnel Utilization Report. Using the guidelines set forth by the internal evaluatiom system, productivity measures can be obtained from this information.

### 3.3 Quality

The report "Description and Application of the Internal Evaluation System developed for the SHDS Project" outlines the types of data to be gathered by the information system that can be used to evaluate quality and satisfaction.

### 3.4 Cost

Cost information can be found in the Expenditure Plan, the Expenditure Report, the Cash Flow Projection, the Cash Flow Report, and the Financial Status Report.

### 3.5 Satisfaction

See above paragraph on Quality.

## 4. LOGISTICS AND GUIDELINES FOR AUTOMATION

One should consider it a given that at the outset of any project it is impossible to accurately predict all of its information variables (i.e. data types, quantity, sources, and especially report formats and frequencies). Therefore it is important that the project's staff possess hardware and software which is flexible enough to adapt to changing information demands during the course of the project. This next section will review the tools necessary to standardize the flow of information in a complex project.



181

## 4.1 Hardware

### 4.1.1 Considerations for Selecting Hardware

The selection of computer hardware in an international setting is a critical part of project planning. There are several factors to be used in judging the many market options. These are: 1) serviceability, 2) operating system and memory capacity, 3) networking capacity, and 4) cost. Operating conditions in most developing environments are harsh and must be planned for in advance. Even where servicing is available, spare parts can be difficult to obtain. Therefore it is important to develop an internal capacity to service frequent problems such as chip failure. Among other things, this requires that a stock of spare parts be maintained, and that the staff be trained in such simple servicing procedures. Compatability and software options are determined by the second set of factors. If the project has to exchange data with funding or other outside agencies, compatability (format) becomes critical. Also, certain powerful software packages require at least 256K bytes of Random Access Memory, and for a large project access to high volume storage devices such as hard disks is usually necessary. Thirdly, the success of an information system in an organization is largely determined by the amount of routine use it receives. Networking the system by installing several "work stations" facilitates access to it, and can help establish it as a routine office device. The final consideration, cost, will vary greatly with the particular project; it should, however, always be measured against the other three variables.

### 4.1.2 Current Hardware

The model being developed employs IBM-XT compatible hardware. This choice was made for the advantages related to IBM's wide use, resulting in a high degree of transferrability to other users of IBM equipment. Serviceability and cost were not factors in the selection of equipment during development of the system. They normally would be important factors for an actual system.

## 4.2 Software

### 4.2.1 Considerations for Selecting Software

A competent Management Information System consists of four types of software: accounting (spreadsheet), word processing, data base management, and project management. An optional fifth type, graphics, is suggested when it is not an integrated function of any of the first four. (Some software packages, called "integrated software", combine all of these features into a single program. In some cases the integrated

package may not provide all of the enhanced functions of specialized packages.)

The information system should not be restricted to only one of the above types of software. In fact, given the inherent restrictions of most packaged software, very few projects could depend entirely on only one applications package. Using several types of software reduces the risk of over-reliance on a single type, and increases the number of possible applications. Another constraint to avoid when choosing software is the inability of certain programs to exchange data with other project software. This will effect the system's ability to generate punctual reports whose formats and information are relevant to management's expectations and needs.

The first type of software, spreadsheet, can be used for budget planning and expense monitoring. Its features usually include the ability to list all project expenses and perform any number of calculations with them. Word processing software can be used to generate text reports of all types. Data base management software enables the user to build complex project data bases, and should also enable him to generate reports to any needed specification. Data base management software is especially useful in providing customized reports that the next type of software, project management, may not be capable of providing. Project management software is used primarily by management to plan and monitor project status. It can, depending on the program, provide the user with project diagrams, including schedules, Critical Path lines, GANTT charts, PERT charts, and certain costs/resources monitoring features. Finally, graphics software can be used to enhance the presentation of the outputs from any of the above.

### 4.2.2 Current Software

The software chosen for this model includes all four types, in addition to the optional graphics package. These choices are: Lotus 1-2-3 for spreadsheets, Wordstar (or comparable program) for word processing, dBase III plus for data base management, and Harvard Total Project Manager and Harvard Presentation Graphics as the last two types. Working examples were generated using dBase III plus, the two Harvard Software packages, and, of course, the word processor for this report.

## 5. SYSTEM ILLUSTRATION

This section will illustrate the steps required to manipulate each of the five types of data listed above using the software described earlier. The system, which is still under development, provides a working model for one of the four SHDS objectives. For other areas still being developed, the



183

report will elaborate on one or more methods of building a working model using the software available to us.

## 5.1 System Data on Scope and Quantity

### 5.1.1 Standard Plans and Reports

Standard plans and reports for information concerning the project's scope include the Work Plan and the Work Flow Report. The system presently accomodates both of these documents. The Work Plan, which is the project's basic agenda, is recorded in two different ways. The software employed for this are of two types: Project Management and Data Base Management.

### 5.1.2 Project Management Software

Harvard Total Project Manager allows the user to schedule the project's work load and display it in several helpful formats. Figure #1 shows a portion of the Strengthening Health Delivery Systems 1983 work plan. This graph is called a project roadmap. It can display all or part of any project, and clearly illustrate the network of tasks and milestones which the project intends to achieve.

The Work Flow is monitored by HTPM by the inclusion of an "actual start date" data field which is entered by the user in the same location in the program as the planned dates are entered. From this information, the lag throughout the project is calculated by the program. The program then calculates the Work Done percentage by, "adding together the products of each task's planned duration and its percent complete, and dividing the result by the sum of all the tasks."[1]

Figure #2 shows the segment's schedule for 1983. This display shows the activities for the entire year. The software allows the scope of the schedule to be determined by the user. Therefore, a weekly display could also be generated if so desired, or the display could be presented on the schedule organized by activity. The schedule function allows staff or management to keep informed at all times as to what should be phased in or phased out over the entire project.

---

[1]Total Project Manager - Version 1.0 Harvard Software Incorporated page 14-4.



184

### 5.1.3 Data Base Management Software

There is a second option within the system for storing data on Scope and Quantity. This is using the DBMS software, which in this case is dBase III plus. This software allows the user to program data entry methods, conduct a full range of manipulations to that data, and then produce reports in any format desired. The advantage this software type has over the previous option is that it is by far the more flexible of the two. The relative disadvantage is that the program requires the acquisition of a certain level of expertise to comoletely exploit its many powerful features. The makers of dBase III plus have recently addressed this disadvantage, however, and now there are many built-in functions in the program which did not exist in the earlier versions.

In the present system, dBase has been used to generate a single data-entry form to record both planning and actual data on personnel utilization (see figure #3). A print-out of the source program which generates this form follows figure #3. The data for this form is entered on all concerned personnel on a weekly basis. (Currently under development is a monthly entry feature.) The program records the identification code for the individual, and can keep track of the hours spent on up to five activities per form. At the end of each month, the program will tally these figures and present the mangager with a report on the person's activities. He or she can then compare that to the work plan. If the planning is done using this program as well, then the percentage of intended work done can easily be calculated by incorporating a procedure similar to that which calculates percentage work done in the HTPM program reviewed above.

### 5.1.4 Variance Reports on Scope and Quantity Data

Variance Reports show discrepancies between activities planned and activities performed.

The HTPM program calculates the variance by calculating the percentage of work done - which is a measure of variance from 100% - by using the method described in the previous section. The program organizes this data for all of the project's tasks in a "Task Progress Report Form."

The DBMS software, if programmed to do so, can present a similar report as described above. This would require that the target dates for each task be recorded using the program. Provided with this data, the program can be easily modified to present detailed figures or graphs depicting any discrepancies.



85

### 5.1.5 Status Reports Using Scope and Quantity Data

Project Status Reports summarize project progress into a single measure per project activity (in the case of the SHDS, project activity would be equal to Objective) without separate task detail. These reports are sometimes necessary when a global indicator of status is desired, either by an executive or a funding agency. Producing reports which summarize project progress are instances when graphics software becomes convenient. The HTPM program does not output gross project indicators to the exclusion of detailed task data. This leaves the information system user with three options: a) to manually compile status data on project tasks and reorganize them using a graphics package into a summarized form; b) to use HTPM's "DIF" format output function which transfers task status data to other programs in a format which can be converted to global figures and then be fed into graphics software for illustration, or; c) to employ a flexible HTPM feature. HTPM allows the user to nest sub-projects into a "super project". Thus, SHDS's Objective III could be one of four tasks in a super project (Objectives I,II III, &IV), which in turn consists of sub-projects unlimited, except by disk storage capacity, in their number and complexity. Therefore all of the tasks in the project's Objective III could be considered together as one task. Producing a Task Progress Report Form for the super project would in effect give global project activity status figures.

## 5.2 System Data on Productivity

### 5.2.1 Standard Plans and Reports

Standard plans and reports providing information that can be used in calculating productivity include the Personnel Utilization Plan and the Personnel Utilization Report. The Personnel Utilization Plan is simply a schedule for each of the project's technical staff to follow for each activity-task. The plan can extend for any time period, but would normally be organized in monthly segments. The Personnel Utilization Report, on the other hand, is simply a compilation of actual time spent on each activity task by the technical staff members. Time units for both of these documents must be uniform. Full Time Equivalents, a measure of time distribution, could then be calculated based upon comparing time units scheduled versus time units actually devoted to a task. Computer-generated versions of these documents have been prepared in Figure #3.

### 5.2.2 Harvard Total Project Manager

The HTPM program incorporates the scheduling features needed to produce the Personnel Utilization Plan. HTPM includes a



136

section on Resource Management, the purpose of which is to allocate and schedule resources to a project's separate tasks. Once entered, this information can be displayed in either of two ways. The first arrangement displays an "Allocation Graph", which is a Gantt chart showing the schedule for a single resource across all of the project's

tasks over a specified period of time. The second format lists all the resources used in a project. In the case of the Personnel Utilization Plan, these resources in question are only human resources; however, HTPM can keep track of the entire set of a project's resources.

HTPM's resource list can also be made to display the actual duration of each resource use per task. This can be displayed on the same document as the scheduled-use list, and thus a quick variance check can be performed.

## 5.3 System Data on Quality and Satisfaction

The data format for all plans and reports on activity quality and satisfaction is highly project-specific, and therefore does not come as a featured element in the HTPM program. Annexes 2, 3, and 4 of the report "Description and Application of the Internal Evaluation System Developed for the SHDS Project" give examples of survey methods for assessing program quality or effectiveness and the satisfaction of those providing and receiving services related to the project. The dBase III plus program can be used to emulate these surveys. Forms design becomes critical to the successful computerization of such data. The rating system illustrated on page 19 of annex 2 (Evaluation of Objective II-Anglophone Nursing) provides a good example of a form employing a quantifiable method of data collection for this type of data. A program can be made to include Variance Report and Status Report generators.

## 5.4 System Data on Cost

### 5.4.1 Standard Plans and Reports

The information system's financial segment includes expenditure and cash flow data. There are separate plans and reports for both expenditures and cash flow. The Expenditure Plan is a project-wide budget, detailing cost figures for all activities and tasks. The Report is simply the ledger of expended funds for each task. Cash Flow figures record the planned and actual expenses from fixed sources, thereby providing projected and actual net figures on the real amount of funds available from each source at any one time.



137

5.4.2 Expenditure Data

HTPM allows the project planner to input cost information during the initial resource scheduling procedure described in the Productivity section above. The program automatically calculates projected costs from the resource allocation data and the task duration figures. This data is reported in the Project Resource List which in effect is the Expenditure Plan for the entire project, or any portion thereof. Actual costs are recorded by entering the actual cost of a resource and adding that amount to any other costs. This can be done in the Roadmap section of the program for each specific task. The program automatically adds the two actual cost figures and provides a total actual cost figure for each project activities task.

5.4.3 Cash Flow Data

Cash Flow manipulations require spreadsheet software. This type of software, such as Lotus 1-2-3, is capable of keeping up-dated cash figures for all project funding sources. The only requirement is that all transactions be entered on an immediate basis to give accurate results.

5.4.4 Variance Reports on Cost Data

Expenditure variance reports compare planned expenditure with actual costs. This information is contained in the "Task Detail" report in the HTPM program. It can also be sent to a graphics program to appear as a bar chart, or line graph. Cash Flow variance can be done on a spreadsheet program in regular text form, or the data can be sent to a graphics package as well.

5.4.5 Financial Status Report

Financial Status Reports provide a general financial picture for the entire project, or for each of its major activities. Such reports are generated in graphic form using HTPM, and are called Project Cost Graphs (see figure #4). This bar chart displays planned costs versus actual costs, showing for each the portion of resource cost and added costs. The graph can be modified to display this information on a cost/time interval basis, or as cumulative costs over the length of the project. This graph is generated using the same data originally entered while allocating resources and entering actual costs per task.



188

STANDARD REPORTS

TABLE #1

| BASIC PLANS & REPORTS | VARIAN E REPORTS (OPTIONAL) FOR CEO* | STATUS REPORTS FOR CEO | TYPE EVAL INFO PROVIDED |
|---|---|---|---|
| Work Plan<br>Work Flow Report | Work Variance Report | Work Status Report | Scope & Quantity |
| (Work Plan)<br>Personnel Util. Plan<br>Personnel Util. Report | Personnel Util. Variance Report | | Productivity |
| Activity Quality Plan (Standards)<br>Activity Quality Report | Quality Variance Report | Quality Status Report | Quality |
| Expenditure Plan<br>Expenditure Report | Expenditure Variance Report | Financial Status Report | Cost |
| Cash Flow Plan<br>Cash Flow Report | Cash Flow Variance Report | | |
| Activity Satisfaction Plan (Standards)<br>Activity Satisfaction Report | Satisfaction Variance Report | Satisfaction Status Report | Satisfaction |

*Chief Exec. Officer

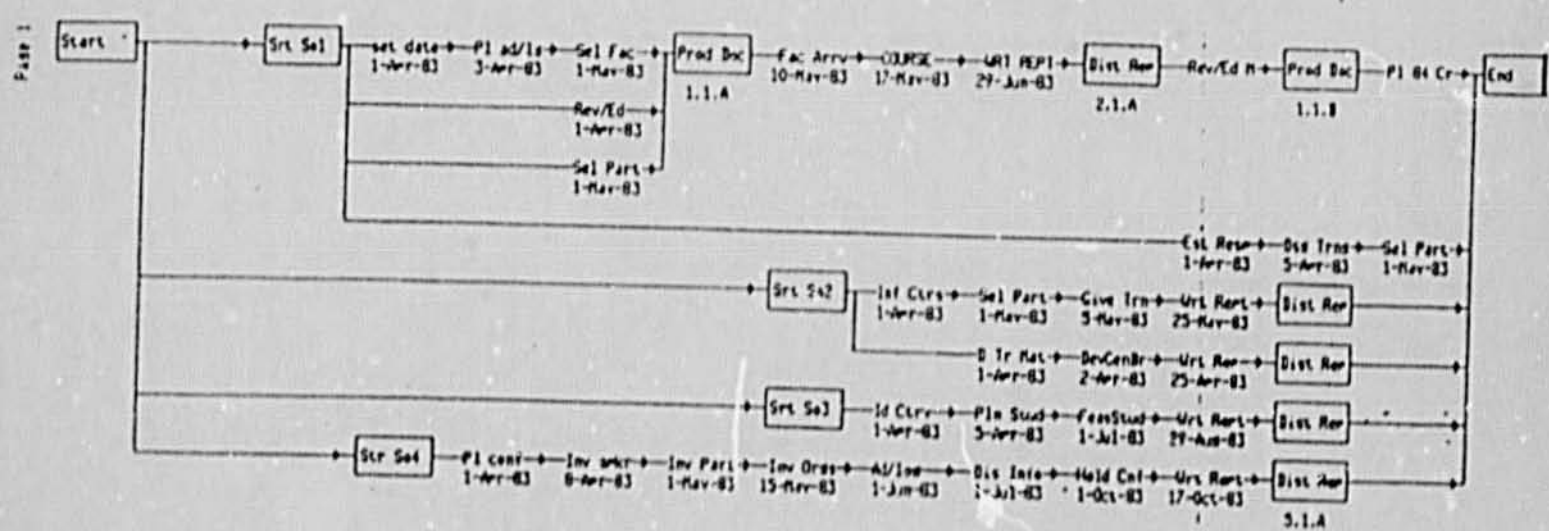

Page 1
ROADMAP OF SKOS 1983 OBJECTIVE 3 ACTIVITY PLAN.
21-Nov-1982
Start
Srt Sel
set date
1-Apr-83
Pl adl/ls
3-Apr-83
Sel Fac
1-Nov-83
Rev/Ed
1-Apr-83
Sel Part
1-Nov-83
Prod Doc
1.1.A
Fac Arrv
10-Nov-83
COURSE
17-Nov-83
GRI REPI
29-Jun-83
Dist Rep
2.1.A
Rev/Ed M
Prod Doc
1.1.B
Pl Bk Cr
End
Est Rese
1-Apr-83
Dse Trns
5-Apr-83
Sel Part
1-Nov-83
Srt Sel2
Id Ctrs
1-Apr-83
Sel Part
1-Nov-83
Give Trn
5-Nov-83
Urt Rept
25-Nov-83
Dist Rep
D Tr Mat
1-Apr-83
DevCenBr
2-Apr-83
Urt Rep
25-Apr-83
Dist Rep
Srt Sel3
Id Ctrs
1-Apr-83
Pln Stud
5-Apr-83
FeasStud
1-Jul-83
Urt Rept
29-Aug-83
Dist Rep
Str Sel4
Pl cont
1-Apr-83
Inv wkr
8-Apr-83
Inv Part
1-Nov-83
Inv Orgs
15-Nov-83
Al/Ios
1-Jun-83
Dis Info
1-Jul-83
Hold Cnf
1-Oct-83
Urt Rept
17-Oct-83
Dist Rep
5.1.A

Figure 1

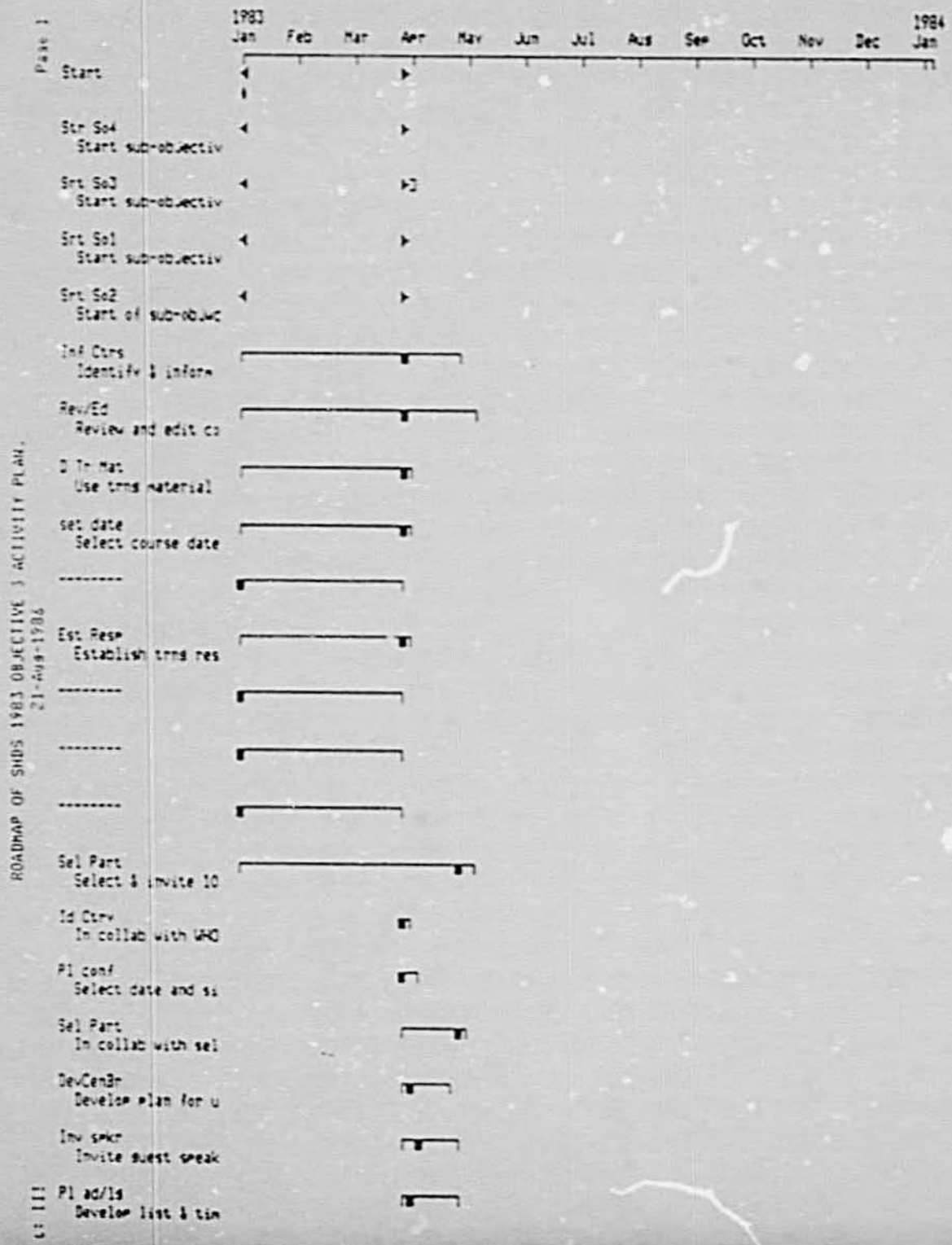

ROADMAP OF SHDS 1983 OBJECTIVE 3 ACTIVITY PLAN.
21-Aug-1986
Page 1
1983
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
1984
Jan
Start
Str So4
Start sub-objectiv
Srt So3
Start sub-objectiv
Srt So1
Start sub-objectiv
Srt So2
Start of sub-objec
Inf Ctrs
Identify & inform
Rev/Ed
Review and edit co
D Tr Mat
Use trng material
set date
Select course date
Est Resp
Establish trng res
Sel Part
Select & invite 10
Id Ctry
In collab with WHO
Pl conf
Select date and si
Sel Part
In collab with sel
DevCenBr
Develop plan for u
Inv spkr
Invite guest speak
Pl ad/ls
Develop list & tim

Figure 2

ROADMAP OF SHDS 1983 OBJECTIVE 3 ACTIVITY PLAN.
21-Aug-1986

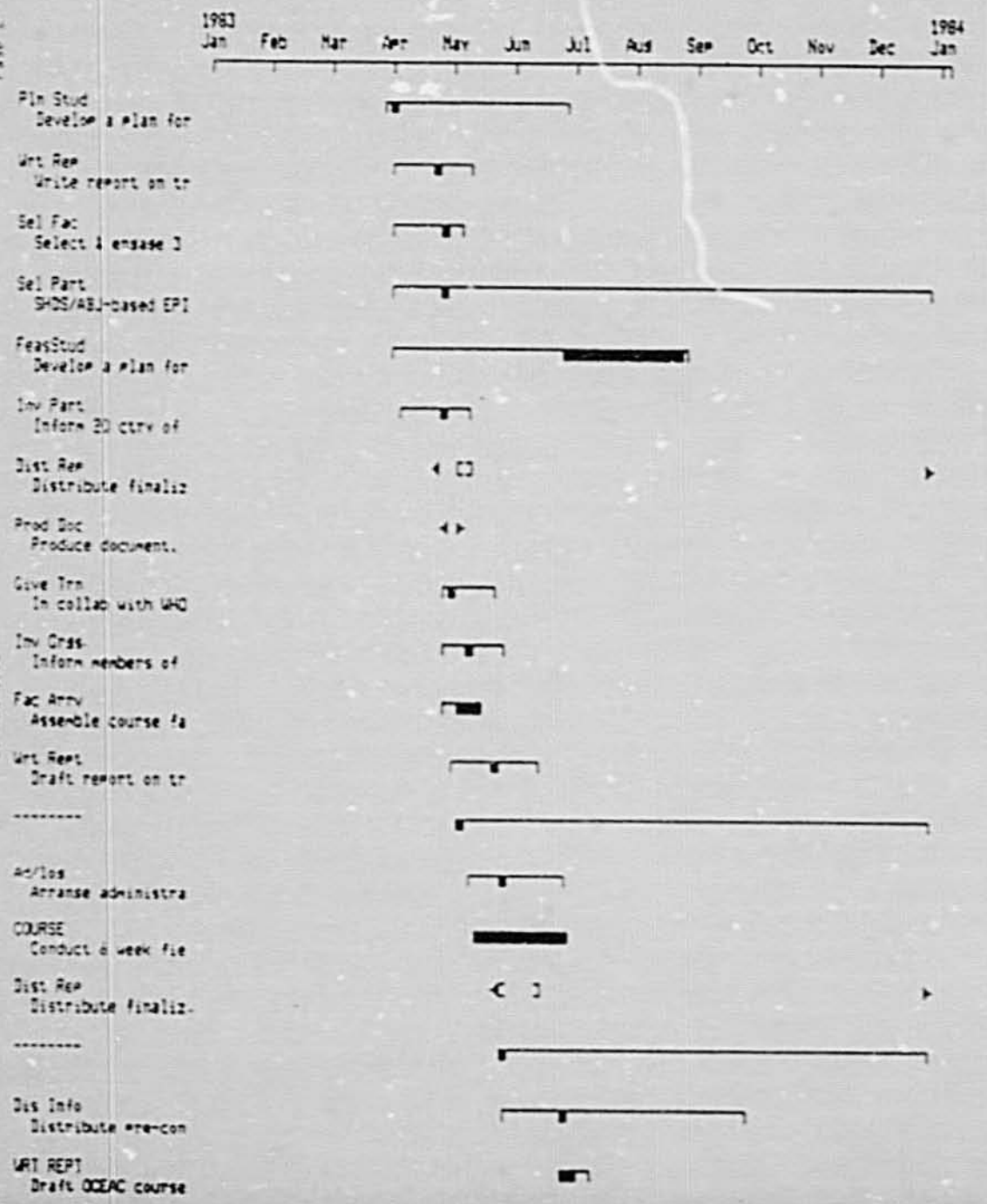



Figure 2 cont'd

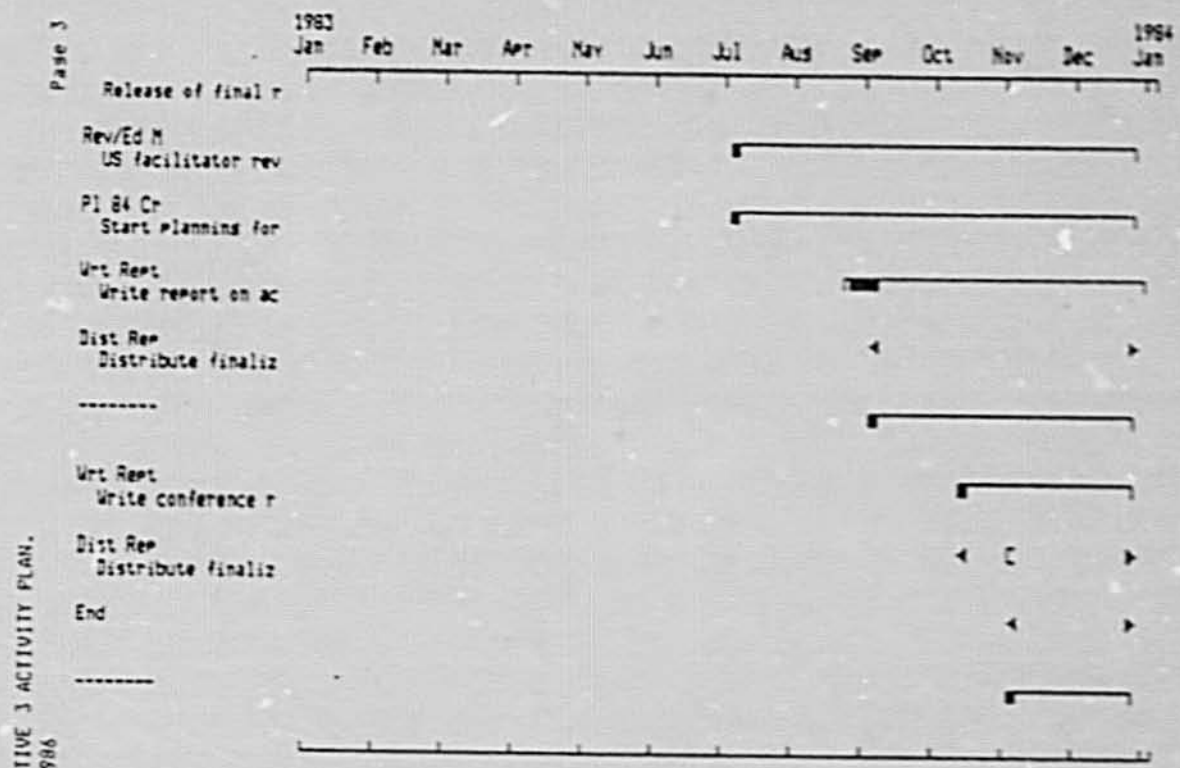



Figure 2 cont'd

# D A I L Y  P E R S O N N E L - A C T I V I T Y
## A S S I G N M E N T S

Week Beginning : MM/DD/YY

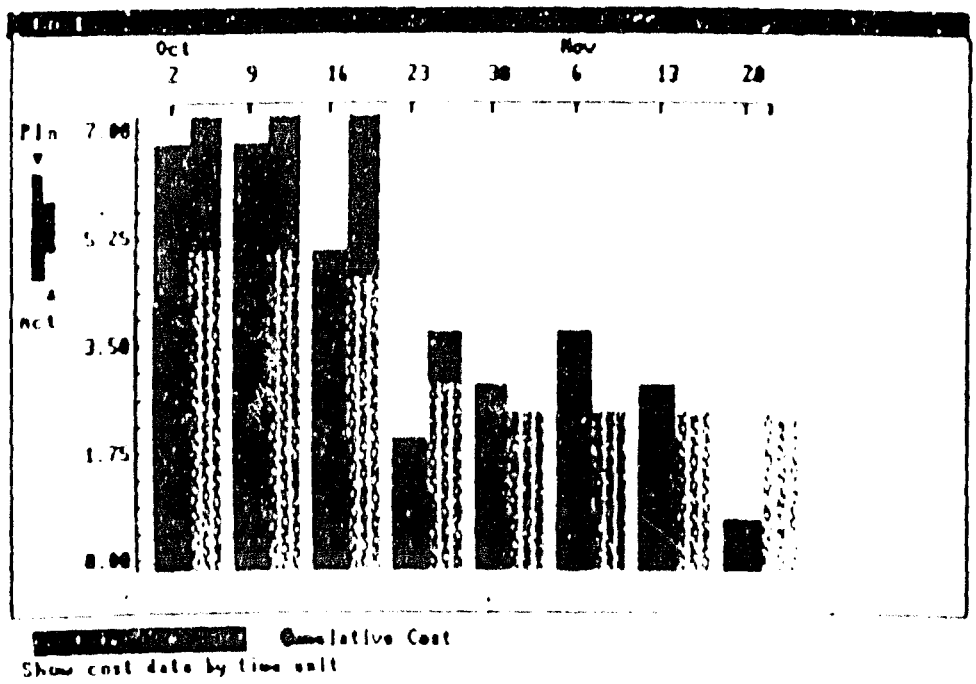
Name : _____ _____ (I)
(Last) (First)

| Activity Code | Day of Week Sun | Mon | Tue | Wed | Thu | Fri | Sat | Total |
|---|---|---|---|---|---|---|---|---|
| 0.0.0.0.1 | 00.00 | 00.00 | 00.00 | 00.00 | 00.00 | 00.00 | 00.00 | 00.00 |
| 0.0.0.0.2 | 00.00 | 01.00 | 01.00 | 00.00 | 01.00 | 00.00 | 00.00 | 03.00 |
| 0.0.0.0.3 | 00.00 | 01.00 | 02.00 | 01.00 | 01.00 | 01.00 | 00.00 | 06.00 |
| 0.1.0.0.1 | 00.00 | 01.00 | 01.00 | 01.00 | 01.00 | 01.00 | 00.00 | 05.00 |
| 0.0.1.0.0 | 00.00 | 02.00 | 01.00 | 01.00 | 01.00 | 00.00 | 01.00 | 06.00 |
| | 00.00 | 05.00 | 05.00 | 03.00 | 04.00 | 02.00 | 01.00 | |

Figure 3

The project cost graph shows the cost of the project, either per unit time or cumulative, as a function of time. It breaks costs down both into planned and actual costs and into resource and other costs. Overhead costs from the project form are distributed evenly across the time scale intervals of the project.

To get to the project cost graph, get a project in the project list and then select **cost** in the command line.




## 15-6. Project Cost Graph

If you have a color monitor, light blue shows planned resource costs, dark blue shows planned other costs, light green shows actual resource costs, and dark green shows actual other costs.

Planned costs are to the left, actual to the right. Resource costs are above, other costs are below.

The vertical scale shows dollars, thousands of dollars, or millions of dollars, whichever is appropriate.

## Project Cost Commands

**Per time unit** Displays the cost of the project for each interval unit of the time scale.

**Cumulative** Displays the cumulative cost of the project over the time scale.

To leave the project cost graph, press **Esc**. HIPM returns you to the project list.

```
* Personnel Weekly Activity Plan Entry
*
*                                  *****
*                        Initialize Variables
*                        --------------------
*
store 0 to lne                              / Line Counter
store space(2) to midnum                    / Employee I.D. Number
store space(25) to mlname, mfname           / Employee Last Name;
                                              Employee First Name
store space(1) to miname, opt               / Employee Middle Initial;
                                              Other I.D. Selector
store space(8) to mwsdte                    / Starting Date of Week
store space(15) to mactcode                 / Activity Code Number
*
*                                  *****
*                 Intialize Entry Form and Procedure
*                 ----------------------------------
*
do mcon002.fmt
store .T. to perentry

do while perentry
 @ 5,21 get mwsdte function "¼D¶"
 read
*
*                                  *****
*                      Check for Proper Date Entry
*                      ---------------------------
*                      If no date is entered,
*                      turn off program continuation
*                      flag, exit from programm.
*
 if substr(mwsdte,1,2)  "  "
  store .F. to perentry
  release midnum, mlname, mfname, lne
  release miname, con, mwsdte, mactcode
  return
 endif
*
*                                  *****
*                      Identify Activity Performer
*                      ---------------------------
*        If activity performer is not identified, quit from
*        program else determine if additional performer
*        identification is required.  If additional identification
*        is required, get it.
*
 @ 7,1 say "  Employee I.D. Number : "
 @ row(),col()+2 get midnum
 read
 if midnum  "  "
  store .F. to perentry
  release midnum, mlname, mfname, lne
  release miname, con, mwsdte, mactcode
```

```
  return
 else
  @ 7,1 say "  Other Identification Required ? (Y/N)[N] "
  @ row(),col()+2 get opt picture "!"
  read
  if opt = "Y"
 @ 7,1 say "   Name : ______________________ ______________________ "
 @ 8,1 say "                (Last)                 (First)          (I)"
   @ 7,12 get mlname
   @ 7,37 get mfname
   @ row(),col()+3 get miname
   read
   if substr(mlname,1,1) = " "
    store space(25) to mlname
    store .F. to perentry
   endif
  else
   @ 7,1 say "  Employee I.D. Number  :  " + midnum + "
  endif
 endif
 store mwsdte + midnum + substr(mlname,1,9) to mlatch
 store "ACASREC.NDX" to ndxfle1
*
*                              *****
*                  Initialize appropriate files
*                  ----------------------------
*
 if file(ndxfle1)
  select A
  use mcon002a index acasrec
 else
  select A
  use mcon002a
  index on dtoc(WBEGIN) + midnum + substr(MLNAME,1,9) to acasrec
 endif
 release ndxfle1
 append blank
*
*                              *****
*                 Initialize Data Entry Variables
*                 -------------------------------
*
 store .T. to actentry
 store 0 to dentry
 store space(35) to mhzarry1, mhzarry2, mhzarry3, mhzarry4, mhzarry5
 store 0 to tot1, tot2, tot3, tot4, tot5, tot6, tot7
 store 13 to lne
 store 1 to actcntr
 do while actentry
```

```
*
*                                  *****
*                      Input Activity Code Number
*                      --------------------------
*                      If no activity identification
*                      is entered, return to preceeding
*                      step.
*
  @ lne+1,1 get mactcode picture "9.9.9.9.9"
  @ row(),col()+12 say "Press Return to confirm "
  @ row(),col()+2 get con
  read
  @ lne+1,15
  if substr(mactcode,1,1) = " " .or. actcntr = 6
   store .F. to actentry
  else
   store "ACT" + str(actcntr,1) + "CODE" to actcdvar
   store "ASSIG" + str(actcntr,1) to actasvar
*
*                                  *****
*                  Save the previously entered data
*                  --------------------------------
*
   replace WBEGIN with ctod(mwsdte), EMPLNAME with mlname
   replace EMPFNAME with mfname, EMPMI with miname
   replace EMPNUM with midnum
   replace &actcdvar with mactcode, LATCH with mlatch
   release gets
   store 18 to clmn
   store 1 to daycntr
   store 0 to lnetot
*
*                                  *****
*                          Weekly Data Entry
*                          -----------------
*             Enter the Work Time Input Required by this
*             Particular Activity Performer for the
*             Identified Activity
*
   do while daycntr <= 7
    store "mhzarry" + str((lne-12),1) to hzarry
    store "tot" + str(daycntr,1) to vtarry
    @ lne+1,clmn+4 get dentry picture "99.99"
    read
    store (trim(&hzarry)) + str(dentry) to &hzarry
    store (lnetot + dentry) to lnetot
    store &vtarry + dentry to &vtarry
    @ (lne + 1),65 say lnetot picture "99.99"
    @ 21,clmn+4 say &vtarry picture "99.99"
    store (clmn + 6) to clmn
    store (daycntr + 1) to daycntr
    store 0 to dentry
    replace &actasvar with lnetot
    store space(len(mactcode)) to mactcode
   enddo
```

```
  endif
  store (lne + 1) to lne
  store (actcntr + 1) to actcntr
 enddo
 store space(len(mlname)) to mlname
enddo
*
*                        Close Data Files
*                        ----------------
*
use
```

```
 * MCON002.FMT
 * Time Activity Plan
 *  - By Operative/Employee
 *
 *
 CLEAR
 SET TALK OFF
 SET BELL OFF
 *
? "=============================================================================="
? "              D A I L Y   P E R S O N N E L - A C T I V I T Y "
? "                          A S S I G N M E N T S"
? "==============================================================================="
? "   Week Beginning :  XX/XX/XX "
?
?
?
?
? "------------------------------------------------------------------------------"
? "                                          Day of Week"
? "  Activity Code        Sun   Mon   Tue   Wed   Thu   Fri   Sat   Total  "
? "------------------------------------------------------------------------------"
?
close format
return
```



20