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**LIBERIA SOUTH EAST REGION
PRIMARY HEALTH CARE PROJECT
(SER PHC)**

FINAL REPORT

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ABBREVIATIONS

CMO	-	Chief Medical Officer
CNO	-	Chief Nursing Officer
CM	-	Certified Midwife
CHC	-	Community Health Committee
CHO	-	County Health Officer
CHS	-	County Health Services
CHT	-	Community Health Teams
CHW	-	Community Health Worker
DPC	-	Data Processing Center
EHT	-	Environmental Health Technician
FFS	-	Fees For Service
GOL	-	Government of Liberia
HAC	-	Health Advisory Committees
IEC	-	Information, Education and Communication
LPN	-	Licensed Practical Nurse
LTA	-	Long-Term Advisor
MCH	-	Maternal Child & Health
MED	-	Management and Evaluation Division
MH&SW	-	Ministry of Health & Social Welfare
MLHW	-	Mid-Level Health Worker
NDS	-	National Drug Service
OPD	-	Out Patient Department
PA	-	Physician Assistant
PHC	-	Primary Health Care
RDF	-	Revolving Drug Fund
RN	-	Registered Nurse
SER PHC	-	South East Region Primary Health Care
STC	-	Short-Term Consultant
TNIMA	-	Tubman National Institutes of Medical Arts
TBA	-	Traditional Birth Attendant
TOT	-	Training of Trainers
TTM	-	Trained Traditional Midwife
VDC	-	Village Development Council
VHW	-	Village Health Team

I. EXECUTIVE SUMMARY AND SUMMARY RECOMMENDATIONS

Executive Summary

To achieve its long-term goal of making basic health care accessible to 90% of the population by the year 2000, the Government of Liberia began actively planning in 1980 for a national primary health care program. The Southeastern Region PHC Project (SER PHC) constitutes the first phase of this major effort by the Ministry of Health & Social Welfare to develop a nationwide program. This project was designed to bring PHC to two of the most needy and deprived rural counties in the Republic of Liberia, Grand Gedeh and Sinoe Counties. The purpose of the project was to expand basic health care service to 80% of the population in the two counties, and to strengthen the institutional infrastructure of the MH&SW, centrally and in the target counties. The project agreement between the GOL and USAID was signed in August 1983. The technical assistance contract with The MEDEX Group of the University of Hawaii, John A. Burns School of Medicine was signed in May 1984, and a technical assistance team arrived in country in August 1984. The first phase of the SER PHC Project was completed on September 30, 1989.

At the community level in Grand Gedeh and Sinoe Counties:

A self-sustaining, locally-controlled PHC network has been established in which communities collected money to start revolving drug funds, have appointed health committees to supervise these funds and the health workers in the network, and have encouraged development of health activities:

- Larger towns have been assigned Physician Assistants and Certified Midwives to develop health centers or health posts.
- Smaller communities have selected CHWs who are trained and supervised by the PAs.
- Traditional midwives have received additional training and supervision from the CMs.
- It was originally planned that 125 CHWs and 125 TMs would be trained for each county. By the end of the project, 109 CHWs and 337 TMs had been trained.

Efforts to improve planning and management effectiveness have been focused on both the county and central MH&SW levels:

- Management systems for personnel, finance, drug supplies, communications, transportation, facilities management, health information systems, and general supplies were developed in each county.
- Personnel have been hired and trained to implement these systems.

- Efforts at decentralization in the counties have begun, and a limited degree of autonomy has been given by the MH&SW to the counties to make local decisions in some selected areas such as finance.
- Because personnel are centrally paid by the MH&SW, it is anticipated that sufficient additional funds will be generated locally from fee-for-service and the revolving drug funds to make each system self-supporting.

A foundation has also been laid in this phase of the project at the central level for the development of the national PHC program:

- Manuals for each of the eight decentralized management systems were developed and distributed to the counties and to MH&SW personnel.
- Centrally, a National Drug Service has been organized to supply drugs and medical supplies at low cost for the nation.
- The national health training institutions of the nation have been strengthened with standardized and improved curricula to support primary health care.
- The capacity of the MH&SW to plan, and to develop health management systems, as well as to collect health statistics, has been improved.
- Appropriate personnel at all levels have been trained to support the activities of the PHC program. This training was accomplished at the national and district levels, as well as at Liberian and USA training institutions.

As the Project completes the first five years, there are a number of issues and problems which need to be addressed before the PHC system is expanded to other counties. Provision of foreign exchange for the NDS is a major issue which jeopardizes not only the life of the NDS but also the county PHC systems. Much has been accomplished in the area of decentralization, but major steps have yet to be taken in decentralizing the personnel and finance systems. The counties have accomplished much in this area, and the central level needs to renew its commitment to decentralize management systems within the MH&SW.

Supervision is the key to sustainability of the PHC system in the counties. The supervisory system has been weak, but improvements have been made during the past months. However, there is still a need for improvement, and supervision should be the major focus of the county level PHC effort.

Summary Recommendations

The following recommendations are summaries of the major recommendations made within this report:

1. It is imperative that the GOL provide foreign exchange funds for the NDS. The lack of offshore funds jeopardizes the life of NDS and the SER PHC Project.
2. It is recommended that USAID consider not funding a Phase II for the Project until regular allotments of foreign exchange from the government are being made to NDS. Without foreign exchange, NDS cannot purchase drugs to supply the counties.
3. Further decentralization is essential to continued development and implementation of PHC services in the counties. Renewed commitment at the MH&SW level to decentralize management development is necessary, particularly the personnel and financial systems.
4. It is essential that management be strengthened. Competent, motivated personnel need to staff each key position, and management staff need further guidance as they gain experience. Competent management systems are not easily developed in rural Liberia within just a few years.
5. Competent managerial personnel are essential to the effective functioning of management systems. It is, therefore, imperative that the CHOs and the Executive Committees in the counties make the difficult but necessary decision to dismiss personnel who are unable to perform satisfactorily.
6. Supervision has improved, but as of June, 1989, further improvement is needed. Efforts must be continued and intensified to improve and maintain good supervision at all levels.
7. Other policies should be considered in regard to the RDF Policy that would eliminate the excess accumulation of money in the communities and the potential misuse of these funds. Both the Maryland and Sinoe County plans should be studied and considered before either is adopted as policy.
8. It is too early yet to withdraw LTA support from Grand Gedeh and Sinoe Counties. Technical assistance from a management LTA should continue in the counties for two more years in Phase II. The advisor should work with the CHS staff on implementation of management and supervisory systems.

9. Physician input is still needed for the project counties. Assistance is needed in teaching staff how to run an efficient primary health care program within the austere limits of clinical personnel, equipment and diagnostic facilities available in the counties.
10. To ensure the financial viability of the project in both counties, key management personnel in both counties need to be trained on how to administer minimal budgets effectively and appropriately. A workshop, with good follow-up and on-going individualized training, is needed in Phase II.
11. Attitudes of all CHS staff -- clinical, management, rural and hospital -- must be improved if the project is to survive and be successful. This is a much more serious problem than has been recognized previously, as the community will not have confidence or seek the assistance of uncaring or rude staff.

II. DESCRIPTION OF PROJECT

Introduction

The primary purpose of this report is to document the development and accomplishments of the Southeast Region PHC Project. This report will describe the process and achievements of the MH&SW and the contractor, The MEDEX Group, John A. Burns School of Medicine, University of Hawaii. It will present some of the present and potential problem areas and suggest possible actions for continued progress towards the development of an effective national PHC program.

History

The MH&SW was still a young agency, having been established in 1972, when it became interested in developing a PHC program. One of the country's first PHC projects was the Maryland County VHW Project, which began in 1977 and was funded by the Dutch Government. The Lofa County Health Project, funded by USAID in the early 1970's, developed a PHC approach in northern Lofa County. By 1979, there were at least two PHC pilot programs operating in Liberia when the MH&SW made their first formal proposal for implementing a national PHC program in the draft plan of "Projects Identified for Implementation under the National Socio-economic Development Plan, 1980-84." This was followed by a National PHC Workshop in December 1980, which developed a draft PHC program plan. A formal Draft National PHC Program was prepared in April 1981 by the MH&SW's PHC Steering Committee. The continuously revised plan served as the basis for the development of the four-phase national PHC program which was to be implemented by the year 2000. The Southeast Region PHC Project marked the first phase of this program.

In August 1983, the MH&SW and USAID signed a Project Agreement to implement a five year Liberian PHC Project. In May 1984, USAID contracted with The MEDEX Group to provide technical assistance to the project. A five-person technical assistance team arrived in August 1984 including a Chief-of-Party/Management Specialist, two Public Health Physicians, a Logistics Specialist and a Training and Curriculum Development Specialist.

Existing Situation in 1984:

In 1984 it was estimated that only 35 percent of Liberian citizens had access to modern health care services, and this was mostly in the urban and peri-urban areas where curative-based health facilities were located. With the population increasing rapidly, the MH&SW could not cope with the continued strain on its limited capabilities and resources to provide health services to all its people, particularly those in the rural areas. The groups particularly vulnerable to the lack of adequate health services are mothers, infants and children. The infant mortality rate was estimated at that time to be 154 per 1000 live births, with 20 per cent of children dying before their fifth birthday. Maternal mortality was also high in women of reproductive age. The major causes of the high morbidity and mortality rates are infectious, nutritional and parasitic diseases. Malaria, intestinal and

upper respiratory infections, and anemia are some of the major causes of illness and death among children. Widespread cultural beliefs and practices are also significantly related to the high morbidity and mortality rates.

The population of 2,100,000 has had an annual increase of 3.2% per year. The population is primarily rural with 33% living in urban areas. Due to the humid tropical conditions, the country is primarily covered with dense tropical rain forest, rich in unclaimed natural resources. The exceptions are the coastal belt along the Atlantic Ocean, and the extreme north and northwest regions which have savanna woodlands. Rice farming is the main crop grown by rural farmers using a slash and burn system of agriculture.

County Health Situation in 1984:

Prior to the economic decline in the early 1980's, the MH&SW had supplied free drugs to the county hospitals and clinics, and only a small fee-for-service was charged. In 1984 the counties each had a basically non-functioning county hospital and a few rural clinics, all without drugs and with very minimal and inadequate equipment. Personnel were demoralized. One vehicle in poor repair was occasionally operational at each hospital. Some drugs were obtainable from medicine stores or from private entrepreneurs at high prices. Only the mission clinics and concessions supplied low-cost or free medical care.

Unlike the northern counties in which mission hospitals were established in the 1920's, the southeastern counties had never had the benefit of consistent, successful medical care and attempts to improve community health. They view illness through superstition and traditional beliefs which attribute its causes to witchcraft, evil spirits, and breaking of taboos. Deaths in Sinoe County are rarely attributed to natural causes, and many ill people die unnecessarily in the villages without seeking medical help. Safe sources of drinking water and latrines were very rare exceptions in the villages. Vaccine coverage was low, and maternal and child mortality from preventable conditions high.

Major Objectives and Outputs

The major objectives of the Southeastern Region PHC Project were:

1. to increase the proportion of rural Liberians with access to an appropriate mix of preventive, promotive, and curative PHC at low cost, concentrating on areas of high impact, and
2. to strengthen the institutional infrastructure:
 - a. centrally in the MH&SW, by strengthening its capability to manage, implement, support and expand the system; and
 - b. in the two southeastern project counties of Sinoe & Grand Gedeh in order to support the expansion of the national PHC program.

The major outputs expected by the end of the project in the original project document were:

1. 250 Village Health Teams, each comprised of 1 VHW and 2 to 3 trained Traditional Birth Attendants, for a total of 250 VHWs and 640 TBAs. The names were subsequently changed to Community Health Worker and Trained Traditional Midwife, respectively.
2. 250 Village Development Councils, supervising the 250 VHTs. The name was later changed to Community Health Committee.
3. Hospitals and clinics revitalized or established to provide medical services to the two counties and to support the Village Health Workers to include:
 - Two county hospitals
 - Nine health centers -- each with two PAs and one CM
 - Forty-seven health posts -- each with one PA and one CM
4. Training teams in each county for training CHWs and TTMs, each comprised of:
 - Two PAs
 - One Environmental Health Supervisor
 - Three CMs
5. Management systems developed and implemented to provide effective decentralized operations in the counties. This included strengthened Central administrative and management functions to support the decentralization.
6. RDFs, effectively functioning, in each hospital and village with a Health Center, Post or CHW.
7. Motorcycle purchase scheme, developed and effectively operating.
8. Revised national curricula for MLHWs with appropriate PHC content and emphasis -- including PAs, CMs, RNs, LPNs, and EHTs.
9. Curricula developed for training VHWs.
10. Creation of a National Drug Service able to supply the county health services with all the essential medications at low-cost.

The mid-term external evaluation in April, 1986, recognized that health posts and centers were not heavily utilized, and that trained personnel (particularly midwives) were in short supply. This resulted in a supplementary project paper in which the first three outputs were changed as follows:

1. 204 community health teams (instead of 250) were to be developed, each with 1 CHW, and at least 1 TTM (instead of 2 or 3 TTMs).
2. 204 community health committees were to be formed to supervise the 204 CHTs.
3. The number of planned health posts was reduced from 47 to 30. Personnel for health centers were reduced to one PA and one CM. Personnel for health posts were reduced to one PA, CM, or LPN.

The second external evaluation in November, 1987, further modified the outputs. They recognized what the Project had already realized -- that Sinoe and Grand Gedeh simply do not have sufficient towns to make 204 CHTs, 30 posts and 9 health centers feasible. It was estimated that the possible maximum number of CHTs would be 114. This level of mobilization would still meet the target coverage of 80%, since the health centers and posts serve as primary care units for a greater population than the original estimates.

The training unit concept was also modified by the Project as it developed. A training unit was formed in each Community Health Department, but the PAs in the posts and centers were used not only as mobilizers for the surrounding communities but as trainers for the CHWs. The MH&SW requested that the midwives in each health center act as trainers for the surrounding TMs, rather than midwives based in the county seat being responsible for the training. The County Training Unit then had the responsibility of supervising the rural PAs and CMs, assisting with training, and conducting continuing education for MLHWs.

Implementation Process

The implementation process for the project was facilitated by long and short-term advisors, written reports, workshops and seminars, printed manuals and participant training. The LTAs, including the Chief-of-Party/Management Specialist, the Logistics Specialist, the Public Health Physician for Grand Gedeh County, and the Curriculum Development Specialist began project activities in August 1984, and were joined five months later by the Public Health Physician for Sinoe County. A number of short-term advisors worked on a variety of issues and programs as required by the project, generally for about four weeks each. The consultants submitted detailed reports that they discussed with relevant MOH officials during preparation. Quarterly reports were prepared by the LTAs and an annual workplan was developed to provide information on progress and problems. One internal and three external evaluations were conducted during the course of the project to monitor ongoing activities. The 1986 external evaluation resulted in a revised project paper and modifications to the Project Agreement in which the outputs were revised.

The SER PHC Project utilized workshops and seminars as an important mode of project implementation. These workshops and seminars were used to inform people of plans and developments, for decision-making purposes, to clarify and resolve issues, to train service personnel in new procedures, to train community people in new systems and procedures, and to train community level health workers.

A primary means of establishing and diffusing new procedures and methodologies was the preparation and printing of standard reference manuals. Operations manuals were prepared and printed for the new management systems; PHC curriculum development manuals were printed for MLHWs; training manuals for CHWs and clinical reference manuals for MLHWs in the counties were written. The SER PHC Project staff drafted these manuals in collaboration with central level and county level health staff, and when necessary discussed them in workshops, before publishing them.

Participant training was a major component of the project used to strengthen the new system being developed. MH&SW staff at central and county levels, as well as faculty from the health training institutions were sent for long and short-term training overseas and in Liberia. In-country workshops were held to train staff and orient them in the new functions.

To implement the project in the communities, training units were developed in each county, and training teams were utilized to mobilize and train community participants for Health Advisory Committees, CHWs and TTMs.

Results

To achieve the objectives of the Project, The MEDEX Group synthesized the original outputs into eight major outputs which formed the basis of the development and implementation of the project at the central and county levels. In order to achieve the overall objective of establishing an effective and efficient health care delivery system, which provided a full range of PHC services to the populations of Grand Gedeh and Sinoe Counties, four outputs were defined.

1. Appropriate PHC personnel, properly trained and competent, deployed throughout the two counties,
2. Decentralized management systems capable of supporting the PHC system within the two counties,
3. Active Village Development Councils involved in planning and maintaining PHC services, and providing supervision and compensation to VHWs, and
4. All PHC personnel supported by a system of regular supervision linked to an ongoing program of in-service training.

To achieve the goal of establishing central-level institutions and management systems capable of supporting and coordinating the decentralized PHC delivery system, four outputs were defined for the central level.

5. Strengthened training institutions for mid-level PHC workers, including improved curricula based on community needs and job analyses; tutors with upgraded skills in competency-based training methodology, curriculum design, and training program planning and management.

6. MH&SW personnel competent to carry out management system analyses, to provide management training, and to conduct planning and management workshops at central and county levels.
7. Institutionalized decision making process within the MH&SW capable of establishing policies and priorities for the National PHC Program.
8. Strengthened central-level management systems oriented toward supporting the decentralized PHC services, especially planning and evaluation, finance and budgeting, logistics and supplies.

These outputs -- providing the conceptual framework to achieve the project objectives - were incorporated into the initial work plan and served as the foundation for the development and implementation of the Project.

County Level:

The main organizational strategy of the Project was to decentralize PHC operations to the county level as much as possible. To realize this, it was essential that a strong County Health Department be established to provide the support to the peripheral health centers and posts, and to the village communities to be mobilized, particularly those in the outlying areas.

Before community mobilization could occur, clinic personnel were upgraded and taught how to mobilize towns and train community level workers. Manuals for CHWs and a training manual for PAs to use when teaching them were developed and are in use. The Handbook For Health Personnel In Rural Liberia has been updated and revised to guide clinic personnel in both preventing and treating illness.

Eight management systems, with accompanying operation manuals, have been developed and are being implemented. These include:

- | | |
|----------------|---------------------------|
| Finance | Drugs & Medical Supplies |
| Personnel | Health Information |
| Communications | General Supplies |
| Transportation | Facilities and Equipment. |

The overriding poverty in these two counties contributes greatly to the difficulty in improving community health and making the health care networks self-sufficient. The towns in these areas were also not accustomed to working as a unit to improve health. Accurate maps and reliable data showing community sizes and population concentrations could not be found. An extensive survey after the project began in Sinoe County showed that only 40 to 50 communities were large enough to support a CHW. Nevertheless, 96 towns were mobilized within the 2 counties. Health committees were chosen and money collected to establish RDFs. The larger towns desiring clinics were assigned PAs, and occasionally also a CM to develop a health center. The lack of sufficient CMs made assigning one to each clinic impossible.

Once the village health committees were chosen and money collected, the communities selected individuals to be trained as CHWs by the PAs. Training was also given to upgrade the traditional midwives by the CMs. Supervisors of clinic personnel and CHWs were trained in supervision. To conduct local training, workshops have been used extensively, and monthly continuing education sessions have been established and are ongoing in both counties.

The roads in both counties are very poor and may become impassable during the rainy season. Many towns, as yet have no roads, and are reachable only by footpath through the forest. Jeeps and Landcruisers were supplied to the county health departments for management and supervision. The AMC Jeeps supplied initially were not sufficiently durable to withstand the difficult roads. This situation was remedied with the purchase by USAID of the Toyota Landcruisers, which are stronger vehicles. Yamaha motorcycles have been supplied to PAs and CMs on a revolving motorcycle scheme basis for use in supervising CHWs and TTMs. The motorcycles make it possible to reach some otherwise inaccessible places. In addition to difficult roads creating problems with the vehicles, the lack of good, reliable mechanics and maintenance personnel created difficulties with keeping the vehicles running. The breakdown of the vehicles caused many delays in project activities, especially during community mobilization. This situation was remedied to a certain extent, when the project trained its own mechanics.

USAID provided funds (outside the MEDEX contract) for office space for the community health departments with a new office building constructed in Zwedru, and for the renovation of portions of the hospital in Greenville. Health center construction, through self-help and the Project's Development Fund, has not been completed. Basic furniture and some small equipment have been supplied to the clinics, the community health departments, and the hospitals.

County drug and supply depots have been established in Greenville and Zwedru, and revolving drug funds established in those towns which have health centers or posts, and in the mobilized communities with CHWs. Over 100 RDFs are functioning, from large operations at the 2 county hospitals with more than \$30,000 capital each, to small community RDFs capitalized by little more than \$100 each. Many problems have been encountered but are being dealt with. The PHC reorganization and low-cost revolving drug funds were not designed for the economic interests of certain health personnel, black baggers, and medicine store operators who were profiting from the sale of personal stocks of drugs at inflated prices. The low-cost RDFs significantly reduced their sales and profits. This actually resulted in a death threat to one of the project physicians and his family. There was no tradition of being accountable -- it was expected that officials would use funds and resources for personal advantage.

It was finally realized that the hospitals had to be an integral part of the project -- not only were they the backup for the inevitable obstetrical emergencies, surgical emergencies, pneumonias, accidents, cases of cerebral malaria, meningitis, and other conditions which are initially diagnosed at the PHC clinics or identified by CHWs, but in addition, they are the largest volume provider of outpatient PHC and the principal source of health income in the county. Without the hospitals, the PHC system cannot sustain itself. The hospitals have subsequently been integrated into the system and partially improved.

Central Level:

At the central level, the objective was to establish central-level institutions and management systems capable of supporting and coordinating the decentralized PHC delivery system. To accomplish this, it was necessary to develop decentralized management systems to support PHC services. The approach used to develop these systems was one of participatory involvement of a large section of the MH&SW, both at the county and central levels. Using a system of management analysis, systems design, implementation and assessment, eight operations management systems were developed. Operation manuals have been written for each of the systems and are being used in the counties. The pace of implementation has been slower than desired, but given the constraints caused by the scarcity of both human and material resources, a significant amount has been accomplished. The central MH&SW has been strengthened to some degree with the development of the Management and Evaluation Division in the Bureau of Planning, Research and Development. This division has made steady efforts at improving the pace and quality of management systems development at the county level and exemplifies the type of central level support that can be provided to promote decentralization. Decentralization guidelines were developed to assist the MH&SW at the central and county levels. Although some steps have been taken towards decentralization, such as retention of fee-for-service funds by the CHS and the establishment of RDFs, decentralization has not occurred yet in two primary management systems, finance and personnel.

A Data Processing Center for health statistics has been established at the MH&SW and is being operated jointly by the Bureau of Preventive Services and the Bureau of Vital and Health Statistics. The purpose of the DPC is to provide the capability for the MH&SW to process the large volume of statistics which will be received as the health information system becomes fully operational.

The curricula for six categories of MLHWs in all training institutions were revised and standardized to include PHC concepts. In preparing the revised curricula, the Project staff emphasized the participatory approach to curriculum development, involving staff from the various training institutions as well as representatives from the six categories of MLHWs. The training institutions are utilizing these curricula and have also institutionalized the entire process of curriculum adaptation.

A large number of short and long-term training was provided in a variety of PHC related areas. By the end of the project, 16 key persons at the central and county levels, as well as in the training institutions, had been given one year or more of training abroad, and 47 persons attended shorter courses overseas. Local scholarships to TNIMA, Cuttington, and the Midwifery Training Center in Zwedru have funded 34 MLHWs.

The National Drug Service was established to procure low-cost drugs for the nation and is operative. A relatively full stock of drugs and medical supplies is available to qualified facilities at reasonable prices. A major problem, however, is the lack of foreign exchange which is needed to purchase additional supplies from abroad. During the early phase of development of the NDS, the National Formulary was written to guide the purchase of

drugs for the nation, and to define which drugs will be supplied to various levels of personnel.

Although no reliable statistics are available, the following child survival factors are in place which have or will inevitably lower mortality and morbidity rates:

- 1) Chloroquine is available in every village with a health center, health post, or CHW. (Malaria has taken a large toll especially in young children.)
- 2) Making oral rehydration solution has been taught to all health personnel and health committees and is being used. This is a proven technique for reducing the significant mortality from dehydration.
- 3) The increased vaccination coverage had prevented many deaths from measles and the resultant Kwashiorkor, and from Tetanus Neonatorum in the newborn infants. For example, the percentage of children immunized against measles in Grand Gedeh increased from 24% in 1986 to 48% in 1988, and from 40% to 58% in Sinoe County.

III. MANAGEMENT DEVELOPMENT

Introduction and Accomplishments

One of the recurring problems in health projects in Liberia has been the lack of adequate and consistent management and supervision at the county level. A key feature of the Southeastern Region PHC Project, therefore, was the plan to develop and integrate appropriate decentralized management systems that would control and sustain the project after USAID involvement was phased out. The eight management systems identified were:

Finance	Drugs & Medical Supplies
Personnel	General Supplies
Communication	Health Information
Transportation	Facilities & Equipment

The method used to develop these systems was one of participatory involvement of a large section of the MH&SW, both at the county and central levels, using a sequential system of:

Preparation,
Management Analysis,
Systems Design with advice from consultants & local personnel,
Implementation at the central and county levels, and
Assessment of the results with refinement of the systems.

The accomplishments using this method are listed below:

- 1) Two complete management development cycles were completed. The first from 1984-86 concerned the structure of the overall management system, as well as the development of the Personnel, Transportation and Finance management systems. In the second management development cycle, between 1986-88, the Communication, Health Information, General Supplies, Facilities and Equipment systems were developed. Specific detailed manuals were prepared and distributed for each of the eight systems.
- 2) Management personnel were served for each project county, all of whom are responsible to the CHO. The CHO is charged with overall management responsibility. These personnel are:

County Health Services Administrator	(CHSA)
County Finance Officer	(CFO)
County Logistics Officer	(CLO)
County Personnel Officer	(CPO)
Supervisory Personnel, including Clinic Supervisors, Mobilization Supervisors and MCH Supervisors.	

- 3) At central level within the MH&SW's Bureau of Planning, Research and Development, a Management Implementation Team was formed in mid-1987 to institutionalize the management implementation process within the MH&SW. Early in 1988, this unit was reconstituted as the Management and Evaluation Division to enhance its role to oversee and improve the implementation of the management systems at the county level.
- 4) The Data Processing Center, under the Bureau of Vital and Health Statistics, was established at the Bureau of Preventive Services to computerize health statistics gathered from the health information system for all counties. Additional computers for management were installed at the MH&SW central offices and the NDS.

Background and Approach

When the SER PHC Project began functioning in the counties in late 1984, the management of the county health systems, was basically dysfunctional. Management systems were not defined; management rested upon personalities; drugs and medical supplies were extremely limited; the hospitals had only one operating vehicle. Those resources that were available were usually mishandled, supervision was arbitrarily applied; discipline of personnel was haphazard. This state of affairs was partially due to the fact that the MH&SW, which had been supplying free medications, had not been able to purchase drugs for almost two years due to the depressed state of the economy. Without medications or supplies, the health system had begun to crumble due to lack of resources. In 1984, each county had only one administrative person, an Administrative Assistant, who received a few meager resources from the central MH&SW. He basically viewed himself as answerable to the central office and not the county health services, and considered his few resources as support for the county hospital, not the peripheral units.

The first step taken to correct this situation, and strengthen the CHS, was to institute fee-for-service charges with approval from the MH&SW to keep the money in the counties. This was followed by establishment of the RDF, which brought money into the CHS thereby enabling the system to maintain a stock of drugs for resale. This action, which brought monetary resources back into the CHS, was the single most important antecedent to the development of management systems. Without resources, there could be no development of these systems.

To develop the management systems, efforts were made to achieve consensus among decision makers through committee meetings, workshops, and discussions held basically at the central level, but also including people from the counties. As is the case in any system, a collection of bad habits and inefficient management practices existed. These had to be dealt with before moving on to develop new systems. It was necessary to recognize the need of individual managers to be assured that their authority would either be increased, or at least not be diminished, during the development of these new systems. Many of the managers and supervisors in the counties at first felt threatened by the changes, which created some resistance. This was dealt with by the LTAs in the counties through frequent discussions, meetings and workshops with the staff.

The approach to developing the management systems was that of participatory involvement of a large section of personnel from the MH&SW. Appropriate consultants were heavily utilized along with very extensive involvement of key personnel from the central and county levels. It was recognized early that, if those who will eventually operate and oversee management systems had not helped develop them and did not have a sense of ownership, the systems would most likely not succeed.

The Project, with the participation of the Central MH&SW, helped the counties reorganize their basic structure, objectives, and methodology of service delivery. The organizational structure of the CHS was redefined to ensure that the position of the CHO was clearly defined as having definite and overall authority within the CHS. An Executive Committee was also formed in each county which assisted the CHO in making decisions and which supported him in carrying out those decisions. Basic services were improved in the hospitals and clinics, but the focus of service delivery was shifted to the community level rather than providing services at the facility level. Attempts were also made to improve the attitudes of the staff so that they could see their function as one of serving the needs of their clients rather than serving themselves. A combination of workshops and continuing on-the-job training was utilized to accomplish these goals.

Decentralization

The central MH&SW had traditionally made most decisions for the county health services, even those of a small peripheral nature. It was realized that to have an appropriately functioning CHS, there was a need for the counties to take a large share of the responsibility in terms of decision-making and resource allocation. Decentralization had been designated as a major goal by the central MH&SW in the original project document. In early 1986, the Project developed guidelines to assist the MH&SW in formulating policy to decentralize its health activities. As this phase of the project ends, decentralization has been achieved in the use of local income and local decisions, but has only been partially achieved as a goal as the central MH&SW still remains responsible for hiring and dismissal of personnel, and for the payment of salaries. The two counties have earnestly undertaken their responsibilities in a decentralized system, but the central level needs not only to do more in supporting their efforts, but needs to take more decisive steps towards decentralization. As was previously mentioned, the specific problems arise mainly in the area of personnel management; central still has a tendency to become overly involved in actions concerning transfer and assignment of staff within the counties. Payroll still has not been decentralized, and until the counties have the authority and the means to pay the staff they supervise, there will continue to be an excessive reference to central level as the controlling authority.

Full implementation of the management systems in the counties has not yet occurred, and continued support is needed to assist the CHS staff in achieving this goal. The Fifth Year External Evaluation recommended that a long-term management consultant be hired to provide ongoing assistance to management personnel in the counties and to the members of the Management and Evaluation Division working with the county personnel during the final extension year to consolidate the management implementation efforts made to that point. They stated that, "It is questionable whether the county level officials possess the broad understanding of the system and the interrelationships among its elements to guide

the implementation process in the absence of MEDEX support." Although the need for a management technical advisor in the counties was also supported by the MEDEX LTA team and MEDEX/Hawaii, the decision was made by USAID to hire short-term management advisors for the two counties. Therefore, during the final five months, USAID contracted two consultants to work with the management personnel in the counties to provide training, to correct problems, and to make recommendations for improvement. The need for continued technical assistance for the two counties in management systems implementation was reinforced by the recommendations of the Final Evaluation team. They recommended more years of technical assistance to consolidate the management systems now partially operational in the two counties. Continued direction and day to day support of county personnel is required until there is complete understanding of not only the interrelationships between the systems, but also how each CHS staff member knows how to function efficiently and competently within these systems. Developing management systems takes significant time, as it involves changes in attitudes, motivation, working styles, acquisition of new skills and ways of thinking.

Problems and Recommendations

1. Problem:

Decentralization has been only partially achieved. Without the authority and means to perform their own payroll function, including the hiring and dismissal of CHS staff, the counties still find it difficult to effectively discipline personnel.

Recommendation:

Further decentralization is essential. Renewed commitment at the MH&SW level to decentralize management development is necessary. Specifically, the MH&SW should move towards a decentralization of the payroll system. If at the present time the MH&SW does not wish to delegate hiring and dismissal to the counties, the MH&SW should at least carefully consider each recommendation from the counties and seriously attempt to implement the requested action from the counties. Paychecks should be sent to the County Finance Officer or CHSA for distribution. However, it is essential that decentralization efforts continue at both the central MH&SW and county levels.

2. Problem:

Not all managerial positions in the counties have been filled with competent people, and county Executive Committees and Health Officers have been reluctant to dismiss inadequate performers.

Recommendation:

Competent managerial personnel in the counties are essential. Hard decisions have to be made concerning some personnel who are not competently handling their

'Primary Health Care Project - Fifth Year External Evaluation. University Research Corporation. Chevy Chase, MD, December 1987.

positions. National PHC policy places this responsibility with the CHOs and Executive Committees who must improve their capacity and willingness to execute personnel policy in the counties. Unless management functions properly, the Project will ultimately not succeed.

3. Problem:

Vehicles, although not generally grossly misused, are not controlled carefully as designated in the transportation manual.

Recommendation:

Vehicles must be better controlled, and scheduling of trips must be better integrated and coordinated. This is the responsibility of the County Logistics Officer who is supervised by the CHSA and CHO.

4. Problem:

Supervision, although improved, has been less than adequate.

Recommendation:

Supervision has been improved, but as of June 1989, needs further improvement. A concise supervisory manual recently developed for supervising clinics and CHWs needs to be followed closely with attention to how well supervisory personnel in the counties are following it.

5. Problem:

The HIS depends upon multiple forms, and attempts to gather information which is not entirely essential.

Recommendations:

- a. The Health Information System should be streamlined and fine-tuned further in Phase II -- less forms with further improvement in organization is desirable.
- b. With MEDEX Phase I input ending, the Data Processing Center and Health Information System should be further developed by a joint effort of SER PHC and CCCD. (CCCD is very interested in the Health Information System since without it they cannot tell if they are making an impact.)

6. Problem:

The project counties have no computers, but are being promised Zenith lap-tops through the CCCD Project. The central computers are in place, but keeping them supplied with ribbons, disks, and paper, as well as maintaining and repairing them is proving to be a problem.

Recommendations:

- a. Laptop computers which will operate on batteries charged by solar panels should be purchased for the counties for gathering at least in-patient morbidity data. The Toshiba T-1200F (cost \$1400 U.S.) is recommended as a first choice, since Toshiba has a reputation for standing up under conditions of warmth and humidity, and two floppy disk drives give lengthy trouble-free operation. A second choice would be a Zenith laptop with two floppy 3-1/2 inch disks.
- b. Funding for maintenance, repair, supplies, and solving program problems in computer software must be in the recurrent budget for all MH&SW computers, including those at the DPC. (The MH&SW is currently attempting to include this in the budget.)

7. Problem:

Although it is operationally necessary to have the four management officers under the CHO in each county (i.e., the CHSA, CFO, CLO, and CPO), it is unlikely the MH&SW will fund four such positions for each county as the PHC system expands.

Recommendation:

In the event the MH&SW does not hire four management personnel for each county, either of the two fall-back positions could be adopted:

- a. Hire three people:

County Health Services Administrator (CHSA)
County Financial Officer (CFO)
County Logistics Officer (CLO)

Add the responsibilities of the County Personnel Officer to those of the CHS Administrator.

- b. If the budget still will not allow three persons, hire only two:

County Financial Officer
County Logistics Officer

The CHO will have to make the administrative decisions the CHSA would otherwise be making. Personnel files will have to be kept by the Administrative Assistant for the hospital and the Clinic Supervisors for the health centers and posts and the CHWs.

- A spare hard disk with control card, and a floppy disk drive for the IBM computers, plus adequate floppy disks and ribbons which are often not available and very expensive locally
- Photosensitive drums and wipers should be in stock for photocopiers.
- d. The Sinoe and Grand Gedeh PHC mechanic-drivers who completed mechanics training in August 1987 need to be placed on the MH&SW recurrent budget as a mechanic instead of a vaccinator or driver. Their present \$90/month salaries are totally inadequate and it would be helpful for NDF to add \$50 monthly to their salaries. Given the critical need of the vehicles to continued project functioning, and that the project is depending upon them to keep the vehicles running, it is imperative that these mechanics be placed on the MH&SW's budget as soon as possible.
- e. U.S. Peace Corps involvement should continue. In addition to having Peace Corps PHC volunteers in the counties, a PCV with experience in repairing and maintaining computers, photocopy machines, mimeographs, typewriters, radios, and other office and communications equipment who could train a counterpart would be very valuable.

See Appendix A for the chronology of management development events.

IV. SINOE AND GRAND GEDEH COUNTIES

Introduction and Accomplishments

The two project counties were chosen partly because they were among the most medically and economically-deprived counties. Much has been accomplished in developing the PHC networks, but several significant problems remain.

On the positive side, the accomplishments in Sinoe and Grand Gedeh Counties are very significant.

- 1) Forty-nine towns were mobilized and health posts and health centers developed. PAs and CMs are in place, and these clinics are functioning. In Sinoe, there are currently five health centers, ten health posts staffed by PAs, and eleven health posts staffed by dressers. In Grand Gedeh, there are 4 health centers and 16 health posts staffed by PAs. (See Tables 1 and 2.)
- 2) Ninety-six smaller communities were mobilized. Two classes of CHWs were trained (August 1987 and June 1988), 61 in Grand Gedeh and 35 in Sinoe. One additional small class of 13 was trained in June 1989 in Grand Gedeh. Six trained CHWs have been lost to the program, while the rest are functioning.
- 3) Revolving Drug Funds have been started in all towns which have health centers or posts, as well as CHWs. It was a requirement that the town raise funds for an RDF before a health worker could be assigned or trained for that town. Most of these RDFs are still functioning well, except for the dresser health posts where the RDFs are inactive due to the dressers' long-established private business.
- 4) Clinic personnel have been upgraded and taught how to mobilize towns. physician assistants have been taught to train CHWs, and certified midwives taught to train TMs.
- 5) Traditional midwifery training for upgrading village traditional midwives has been carried out in phases during the project. In Sinoe, 117 were upgraded by the MCH Supervisor from 1977-1985 before the project became active in the county. In the third quarter of 1987, the MCH staff trained 49 midwives in three separate sessions. From July to December 1988, following the protocol from the MH&SW's Traditional Midwifery Training division, 121 TMs were trained. Similarly, the MCH Supervisor in Grand Gedeh upgraded 170 TMs from 1972 to 1983. During the project, in Grand Gedeh 107 TMs received training from July through November 1988, and approximately 50 more are currently being upgraded.
- 6) Clinic and CHW supervision, although not yet optimal, is improving, and being carried out on a schedule, particularly in Sinoe.

- 7) The eight management systems are in place and manuals written and distributed to guide the CHS staff in implementing the systems.
- 8) Statistics are being collected and consistently sent in to the MH&SW, Bureau of Health and Vital Statistics from many of the CHWs, almost all the clinics, and from the two hospitals.
- 9) Three new Landcruiser diesel station wagons in each county are meeting the need for CHD transportation. Each county also has an old Jeep station-wagon and pickup which are still operative, and used for in-town transportation.
- 10) Both County Supply Depots are operative, and drugs are in adequate supply both in the depots and in the facilities.
- 11) The vaccination teams are doing admirable jobs in preventing any significant outbreak of measles. The anticipated epidemics in early 1988 and 1989 never occurred.
- 12) Making and using oral rehydration solution has been taught to all clinic and CHW staff and CHCs. They understand it and many use it.
- 13) Personnel have been trained for all the key positions and are in place. Dr. A. Hiedala and Dr. K. Kiawoin, the CHOs for Sinoe and Grand Gedeh respectively, received their MPH degrees from Emory University and returned to their positions.
- 14) Monthly in-service training for clinic personnel is continuing.
- 15) Construction of health post and health center buildings, although severely trailing on the time-schedule, is underway. (Construction was not part of the contractor's scope of work or responsibility under the terms of the contract.)

TABLE 1
GROWTH OF CLINICS AND PERSONNEL
SER PHC PROJECT, SINOE COUNTY, LIBERIA
1985 - 1989

YEAR	1985	1986	1987	1988	1989
DRESSERS	18	18	17	17	16
PHYSICIAN ASSISTANTS	6	12	19	25	25
CERTIFIED MIDWIVES IN HEALTH CENTERS	0	3	4	8	8
COMMUNITY HEALTH WORKERS	0	0	23	35	33
DRESSER HEALTH POSTS (Mobilized for RDFs)	0	15	14	12	11
NURSE HEALTH POSTS	2	1	1	1	1
PA HEALTH POSTS	4	8	9	10	10
HEALTH CENTERS (PA & CERTIFIED MIDWIFE)	0	3	4	5	5

TABLE 2

**GROWTH OF CLINICS AND PERSONNEL
SER PHC PROJECT, GRAND GEDEH CO., LIBERIA
1985 - 1989**

YEAR	1985	1989
DRESSERS/AIDES	14	14
PHYSICIAN ASSISTANTS	7	21
CERTIFIED MIDWIVES IN CLINICS & CENTERS	2	14
COMMUNITY HEALTH WORKERS	0	61
DRESSER/NURSE POSTS (Mobilized for RDFs)	0	1
DRESSER/NURSE POSTS (Not Mobilized)	10	0
PA HEALTH POSTS	5	17
HEALTH CENTERS (PA & CERTIFIED MIDWIFE)	2	4

Data for Grand Gedeh has not been worked out as carefully year-by-year for growth as has the data for Sinoe County. Nevertheless, the 1985 figures when compared to those for 1989 clearly show the marked improvement.

PAs and CMs have been markedly increased. Health posts previously run by dressers have had qualified PAs placed in charge. CHWs, who previously did not exist in the county, have been trained and are in place.

Problems and Recommendations

In spite of the accomplishments, in order for this or any similar project to be self-sustaining, certain conditions must be met. Although some of these conditions are in place in the project counties, others presently are not in place, and some are needing improvement:

1. Supervision -- scheduled, appropriate, instructive and ongoing
2. Management -- efficient, knowledgeable, supportive, and honest
3. An adequate and constant drug supply at reasonable cost
4. Transportation for supervision, supply, management, and community health functions such as vaccination campaigns
5. Finances -- budgeted and adequate to support the operation, properly accounted for, and not misappropriated.

With deficiencies in some of these essential conditions, the necessary work to establish a truly self-sustaining system is far from complete. Several problems are threatening the system's survival.

1. Problem

The significant weaknesses which still exist in the counties are in management and supervision.

Recommendations:

- a. Phase II of the SER PHC Project should continue input into Sinoe and Grand Gedeh Counties for at least two additional years. Good progress has and is being made. However, these have been two of the most disadvantaged counties in the nation, both medically and administratively speaking. The presence of the project is needed to continue bringing about positive changes. Discontinuing project input sooner than this would be not only premature, but counterproductive to what has already been achieved.
- b. It is also too early yet to withdraw LTA support from Grand Gedeh and Sinoe Counties. Phase II should supply a LTA who can work with the Public Health Physician, County Health Officer, and management and supervisory personnel for two more years. Preferably, the LTA should have both appropriate rural third world public health knowledge and practical management skills. Emphasis should be placed on:
 - 1) The smooth functioning of all of the eight management systems,
 - 2) Improvement of staff attitudes,

- 3) Preventive health measures, including latrines, wells, ORS, and expanded vaccination coverage,
- 4) Improved supervision of health centers, posts, CHWs and TMs,
- 5) Regular in-service training one day each month for PAs, CMs and dressers, short weekly in-service training for nursing staff, and semi-annual in-service training for CHWs,
- 6) Increasing accessibility of PHC services,
- 7) Appropriate budgeting for the available minimal finances, and
- 8) Maximization of income to support the project.

c. Management must be strengthened. Not only are competent, motivated personnel needed to staff each key position, but the management staff needs further guidance as they gain experience. An appropriate advisor can provide the additional in-service training and continued support. Competent management systems are not easily developed or assimilated in rural Liberia within a few short years.

2. **Problem:**

Certain key management personnel are not adequately performing their jobs. The Grand Gedeh CHSA, for example, is chronically ill. The Sinoe CFO is not keeping accurate books or submitting reports, although he has received the same training both in-country and in the USA as the Grand Gedeh CFO, as well as additional guidance and assistance in setting up and maintaining his books. If key management personnel are not capable and diligent in carrying out their responsibilities, the systems being established within the counties will fail.

Recommendation:

Capable management staff are essential to the development and maintenance of an efficient PHC system. The CHO and the CHS Executive Committee are responsible for replacing unqualified or incompetent management staff. The Project Manager, LTA, and the Central Executive Committee have made recommendations, but under the project's decentralization policy, the final decision rests with the CHD. The CHD must employ key management personnel who are able and willing to diligently and accurately perform their job responsibilities and to comply with the system as designed.

3. **Problem:**

Although supervision of the clinics and CHWs has improved, it is still far from optimal.

Recommendation:

Continued efforts to improve and maintain good supervision at all levels must continue and be intensified. It is recommended that the brief Supervisory Manual be followed carefully with the CHO and LTA overseeing the supervisors.

4. Problem:

The staff has few people who can act as backup if a key person leaves. There is no one who can step in and quickly replace him or her.

Recommendation:

Training one person for a key position does not guarantee that the position will be held by the trainee for years or decades. Often the training becomes the avenue to a better position elsewhere. A developing nation needs potential substitutes for key positions. This report does not propose a satisfactory answer for the problem other than to say that it needs to be carefully considered beforehand, e.g., the resignation or transfer of a CHO who holds a Masters in Public Health.

5. Problem:

Many of the staff from other counties, both in the clinics and those centrally in Zwedru and Greenville, will leave when the project finishes. This has become increasingly clear as the project year comes to a close, and people have begun leaving. Both counties are considered as difficult places to live, and finding good replacements will not be easy.

Conditions are such that personnel do not want to stay. The pay for middle level health personnel is low. In spite of the recent 5% adjustment, salary levels have not increased over the past decade, while the value of the Liberian dollar has markedly declined. Salaries, paid in Liberian dollars, are shown below:

<u>Category of Personnel:</u>	<u>Annual Gross Salary</u>	<u>Monthly Net Salary</u>
Physician Assistants and Registered Nurses	(L) \$3,365	\$227
Certified Midwives and Practical Nurses	2,725	177

There is no additional pay incentive provided for work assignments in a difficult rural area. Personnel in other areas build in their own incentives by engaging in private practice or pilfering excess profits from the sale of drugs. In the project counties, these practices have been prohibited, and staff are supervised to ensure compliance. The two monetary incentives that have been provided through the project were per diem for workshops and the motorcycle scheme. Now workshops are few, and the

mileage stipend is no longer available. The one gallon of gas supplied for every 50 project miles is not sufficient to cover the cost of operation.

Most of the PAs are from other areas, and anxious either to return to their home counties, or to further their education, or simply find a more lucrative position.

Recommendations:

- a. Replacements must be found for the large number of personnel who have left. Salaries and positions should not be transferred from Grand Gedeh and Sinoe Counties. Finding replacements in a timely manner will require commitment and intensive work on the part of the MH&SW.
- b. Incentives are needed to retain CHS personnel in the counties, and should be seriously considered by the MH&SW. The counties cannot afford to wait too long before incentives are implemented. Possible incentives to be studied and considered by the Project and MH&SW staff are:
 - the Sinoe County RDF Plan may be a start since it legitimizes the PA keeping 5% of the money from the sale of drugs,
 - the Project's Development Fund could consider adding a small "rural hardship post bonus" to the monthly salary. Ideally, the MH&SW should add such a bonus, but getting it budgeted may prove difficult at this time. However, during Phase II it should be planned for and built into the MH&SW budget,
 - good housing at each clinic site is a definite incentive. The project should continue to construct housing for health personnel in Phase II,
 - the motorcycle scheme is a definite positive incentive. It should be continued and improved to make it viable, and
 - supervisors who thank and compliment personnel who are doing their job well is a definite incentive. This supportive attitude needs to be built into the training of supervisory personnel.
- c. Likewise, incentives must be found for rural physicians. It is very difficult to find physicians willing to go to the project counties. Losing those who have been trained in Public Health is a real setback. The annual salary of \$12,500 for a CHO, with limitations preventing him from engaging in private practice, which most of his colleagues elsewhere in Liberia are doing, does not encourage the Project physicians to stay.

6. Problem:

Unacceptable attitudes toward patients. Some of the personnel are uncaring, negligent or rude towards the patients, and patients have suffered needlessly or died as a result.

These attitudes are recognized by the citizens, and they impact negatively on the usage of the system.

Recommendation:

Attitudes on the part of rural and hospital staff, both clinical and management are improving but must continue to be improved. In-service sessions may be helpful. However, the most important factor is that the physicians as leaders set the example in attitude and action, as must the administrators, directors, and supervisors. Staff who are negligent must be disciplined. Serious problems need to be brought to the attention of the Chief Nursing Officer or Chief Medical Officer.

7. Problem:

Decentralization has not been achieved in the areas of hiring or dismissing personnel, or disbursement of monthly paychecks. This impacts on the counties' ability to effectively discipline personnel.

Recommendation:

The MH&SW should actually decentralize the county personnel system, including hiring and payroll. If this proves too difficult at the present, sending the checks through the CHO would be helpful as a temporary measure.

8. Problem:

In the personnel system, discipline measures are not being implemented when necessary. Attempts to institute significant discipline, e.g., by reducing offenders' paychecks for not coming to work or not following instructions, are frustrated by the ability of the disciplined personnel to obtain their checks without going through the CHSA or CHO. Also, clinic personnel who have misappropriated money have not been dismissed as is suggested by the personnel policies. Unless better discipline can be instituted, there will continue to be serious problems.

Recommendation:

Decentralize the personnel and financial management systems so paychecks are issued by the CHD. In the meantime, sending paychecks through the CHO or CHSA would help significantly. The CHD needs to be firm with personnel who misappropriate money and dismiss them from service.

9. Problem:

A well-stocked NDS is a necessity for the project counties to continue procuring their supply of medications. The lack of offshore funds for NDS to place its orders abroad poses a serious threat to the viability of the entire project, including the counties' PHC networks.

Recommendation:

Offshore funds for the NDS must be made available. If NDS collapses, the entire project collapses, including the county primary health networks.

10. Problem:

The project depends upon multiple mimeographed or photocopied forms for making requests, keeping records and gathering statistics -- approximately 75 in all. Both keeping the forms supplied and the management and supervision to assure they are filled in correctly is proving to be difficult.

Recommendation:

The forms need to be simplified and combined wherever possible; any forms not really essential should be eliminated.

11. Problem:

When the project began, the hospitals, except the outpatient departments, were not considered a part of the PHC project. However, the hospital is an important component of the PHC system in the counties, being part of the tiered referral system in PHC. It is evident that:

- a) Medically among the government facilities, Martha Tubman and F.J. Grante Hospitals are the major suppliers of outpatient services for simple PHC illnesses, and handle a large share of the prenatal and postnatal cases and thrice the average facility load for under-fives.
- b) The hospitals, as part of the PHC referral system, respond to and manage the life-threatening situations which cannot be handled in the periphery of the counties' health care network.
- c) Financially, the hospital is the backbone of the system and without utilizing its earnings to assist in the support of the county health department, the system will fail.

Recommendation:

In Phase II, when the project is expanded to other counties, the county hospital and the rural PHC network should be integrated from the start. The personnel must understand the concept of the CHS as integrating the curative, preventive and promotive health services provided by the CHD and the hospital. As an integral part of the CHS, the hospital income contributes to the overall funding.

12. Problem:

The project is not financially viable in Sinoe County at the present, and questionably viable in Grand Gedeh. There is a real question about the ability of the project

counties to raise sufficient funds and manage the funds to carry on all the needed functions of a CHS, with the exception, of course, of the salaries from the MH&SW. See Appendix B for an approximate expenditures budget, and a projected income budget for the Sinoe County Health Department.

Under the present circumstances, income is still insufficient for survival, but the gap can be closed. Hospitals fully staffed with physicians and nurses, providing complete curative and preventive services, could make the difference. There is need for close clinic supervision to discourage private practice, and close monitoring of the FFS and RDFs to prevent misuse of funds.

Recommendations:

- a. Income is not yet sufficient for survival. To achieve financial viability, income must be increased and better utilized. This requires increasing patient utilization. Increasing the number of patients encounters requires each clinic being open on a regular, consistent schedule with personnel available to see the patients.
 - Clinic fees increase when personnel are consistently present. PAs must be in their clinics the major portion of their time. This has not always been the case in the past.
 - The hospital OPD must be open 8 hours a day with pharmacy and laboratory support. The past custom of four hours of OPD per day is not sufficient.
- b. Find a surgeon or general practitioner skilled in basic surgery for F.J. Grante Hospital in Greenville. Unless better physician support can be obtained, patient care at F.J. Grante and income will both suffer. One physician cannot be expected to run the hospital single-handedly, and a CHO/Public Health physician will be kept busy handling the problems and supervision of the system in the outlying clinics and towns. Another physician, preferably a surgeon, is essential since no surgeon is presently available.
- c. Train key management personnel in both counties to effectively and appropriately cope with minimal budgets. Neither county at this point seems to understand how to manage resources or maximally utilize a minimal income for survival and continuation of programs without heavy MEDEX and Development Fund support. Appropriate reassignment of excess funds from the hospital RDF seems the least well understood. At least a workshop is needed with good follow-up and one-on-one training in Phase II.

13. Problem:

The environmental health technicians as a category of MLHWs have not been fully integrated with the project.

Recommendation:

Integration of EHTs should be an area of concentration in Phase II.

14. Problem:

The RDFs have not been functioning as planned. Many health committees are not serving at all as responsible overseers of the funds. Drug Fund money has often been misappropriated by both the health workers and health committees. Preventing this with supervision is taking an excessive amount of supervisory time and transportation.

Recommendation:

Both counties are currently trying different solutions. Both should be watched carefully and the results compared. Sinoe County is currently working on their own variation of the Maryland County Plan. In Maryland County, the Dutch project sells the drugs from the county supply depot to the clinics for 90 to 95 percent of the retail price in the clinics, whereas SER PHC sells them for approximately 50 percent. This permits a large accumulation of profits in the clinics in Sinoe and Grand Gedeh which is a strong temptation to PAs, CHWs, and CHCs to misuse the excess money as some have been doing. With the Maryland plan, no excess money accumulates in the clinics, and the profits at the County Supply Depot are used to help support the Community Health Department. Simply trying to monitor the 144 RDFs in the 2 SER PHC counties to prevent the profits from being pilfered is proving to be nearly impossible and taking up all the available supervisory time, leaving little or no time for other needed supervision. Furthermore, the supervisors, who are not mathematicians, are having difficulty correctly calculating what should be the capital of each RDF. Miscalculations lead to false accusations and demoralization of clinic personnel.

Since the Sinoe County plan requires the least supervision and offers an incentive for health workers, it is presently being recommended, as follows:

Drugs from the County Supply Depot will be sold to the clinics for 85% of retail, permitting significant profit to accumulate in the supply depot. The profit in the depot from the sales to each clinic will be divided equally between a fund for that town to use for development projects and CHS support of the clinic (supervisory transportation, vaccinating, workshops for clinic personnel, etc.) Books will be kept so the town will know how much money has accumulated in their development fund.

The additional 15% profit generated in the clinic will be used to acknowledge and provide an incentive for the health committee (10%) and the PA (5%) in the town. Supervision becomes simple because the capital value of the RDF remains constant. At any time stock value + cash on hand = \$300 or whatever the starting figure might be. If it is less, it is immediately apparent that money is being misused. The groundwork has been laid in the in-service sessions, and Sinoe County is scheduled to start the new plan October 1, 1989.

Meanwhile, Grand Gedeh County has improved its RDF situation in another way. The CHS is requiring that all towns with RDFs establish their own bank accounts and deposit their money in their account. Bringing the bank book to the supply depot and showing it is a prerequisite for obtaining more drugs. This helps considerably, because it does establish a record and accountability for money which has been deposited. Its weakness is that it does not prevent some of the money from being misappropriated before it is deposited. With intense supervision by the method described in the supervisory manual, such misappropriation can be detected, but considerable supervisory effort remains necessary. Its strength is that the village remains in total control of the RDF funds. It deserves watching and comparing for overall results with the Sinoe County method.

15. Problem:

The Health Information System forms are excessive in number and require more information than is truly necessary.

Recommendation:

Simplify, streamline, and improve the HIS forms based on the counties experience with them. CCCD is also very interested in health information because without the data they cannot tell what they are accomplishing. The SER PHC and CCCD Projects should work together on improving the system.

16. Problem:

Medical and nursing practices, both in treatment and prevention are weak in both counties. Physician input is still needed in teaching staff how to run an efficient primary health care within the limits of personnel equipment and diagnostic facilities available in the counties.

Recommendation:

The MH&SW should consider requesting a physician advisor with appropriate third world medical knowledge and skills be provided by a donor agency to assist in strengthening medical and nursing skills in the CHS. Emphasis should be given to:

- 1) Improved general nursing skills (very poor at the present),
- 2) Improved patient diagnosis and treatment, and
- 3) Barrier nursing techniques.

V. DRUGS AND MEDICAL SUPPLY SYSTEM

Background

The MH&SW had for many years operated a national drug supply facility known as the National Medical Supply Depot (NMSD) which sold drugs on credit and had difficulty placing timely overseas orders from low-cost world sources. As the Liberian economy worsened, NMSD became bankrupt. An external contractor, Management Sciences for Health, was brought in to study the situation. In October 1984, the MH&SW formed a working group to study their report, "Improving the Availability of Pharmaceuticals in the Public Sector in Liberia." In April 1985, the Minister accepted the working group's recommendations which included the following:

- a. Dissolution of the previous bankrupt National Medical Supply Depot,
- b. Formation of a new National Drug Service Board,
- c. Establishment of a new viable National Drug Service,
- d. Compilation of an essential drugs list and a national formulary, and
- e. Development of a pilot revolving drug fund scheme, leading to future development of a national revolving drug fund scheme.

Before the above report was studied and accepted, one of the objectives of the SER-PHC Project was the re-establishment of a viable NDS for Liberia, which would:

- 1) ensure an adequate supply of drugs for the project counties,
- 2) develop the capability of system expansion to supply the entire drug needs of the rest of the country,
- 3) develop record-keeping and control systems for use in procurement, inventory, issue and transfer of drugs,
- 4) develop pricing guidelines, and
- 5) strengthen the drug transport and distribution systems.

In addition to a new National Drug Service, the SER PHC Project also called for the development and implementation of county-level as well as village-level drug distribution systems for participating villages in Grand Gedeh and Sinoe Counties, including simple, effective record-keeping systems to ensure adequate material and financial controls.

Accomplishments (SER PHC Project)

- 1) Formation of a National Drug Service Board, which planned the establishment of the National Drug Service,
- 2) Establishment of the NDS, with managerial positions filled by competent, trained personnel,
- 3) The development, printing, and distribution of the National Formulary for Essential Drugs and Medical Supplies,
- 4) Establishment of RDF schemes at three levels--county, district and village,
- 5) Development and distribution of the following manuals for use by staff in the counties:

Drugs and Medical Supplies Manual
Hospital/Pharmacy RDF Handbook
Health Post/Health Center RDF Handbook
County Supply Depot Handbook
CHW Replenishment RDF Handbook,

- 6) Organization of an RDF Unit within the NDS to coordinate development of RDFs nationwide,
- 7) Establishment of county supply depots in the two project county hospitals, and
- 8) Procurement of commodities. Drugs and medical supplies were ordered for the NDS, and medical and general equipment were ordered for the two County Health Services.

National Drug Service

The newly-formed NDS Board was instrumental in planning the implementation of the NDS. Four sub-committees were formed to assist in the organization: Drug List and Formulary Committee, Supply System Committee, Finance Committee, and Administration Committee.

A job description for the General Manager's position was drawn up. The General Manager was hired in April, 1986, and by June of 1986, the NDS had formally commenced operations. Two other assistant managers remained to be appointed -- for Supply and Inventory, and for Finance. It was initially decided that a pharmacist should fill the position of Assistant Manager for Supply and Inventory, but this decision was rescinded. The two assistant manager positions were initially filled on a temporary basis by personnel serving in an acting capacity. Permanent assistant managers were finally hired over a year later.

The Drug List and Formulary Committee developed the National Formulary for Essential Drugs and Medical Supplies with assistance from a consultant. It was printed and issued in 1986 and serves as a reference manual for clinical workers. The Formulary consists of 139 monographs for drug items, each with generic names and brand names as applicable, uses, doses, warnings, and dispensing instructions. The 139 items constitute all items on the essential list for TBAs, CHWs, Health Posts, Health Centers, and county hospitals. Also included in the Formulary are instructions for prescribing and dispensing drugs, estimating doses for children, therapeutic classification of separate lists showing drugs for various health workers and health facilities including JFK Medical Center, essential x-ray and laboratory supplies, and essential medical supplies. The Formulary was distributed to all MH&SW workers with drug therapy responsibilities, and was sold to private sector professionals. The Drug List and Formulary Committee is responsible for assessing the need on an annual basis for any revisions in the Formulary.

The financial management and operation of the NDS was of primary importance if the government was to have any success in establishing and implementing a national drug organization. A major issue which needed to be settled before the new National Drug Service could commence its operations was to pay the outstanding debts amounting to approximately \$800,000 for the National Medical Supply Depot. A short-term consultant was brought in to work with the Project staff in conducting an in-depth analysis of the old NMDS financial management system and to make recommendations on strengthening and adapting it to meet the needs of the NDS. At this time, the need for foreign exchange to make the NDS fully functional was established, and it was emphasized that the GOL would need to give as high a priority for foreign exchange for drug and medical supply purchases as for the purchase of petroleum. Unless the NDS has the ability to purchase low-cost supplies from abroad, they will not be able to function.

Drugs and Medical Supplies System

In the counties, RDF schemes were established at three levels:

- 1) the county levels in the two county hospitals,
- 2) health center/health post levels in the districts and towns, and
- 3) the community/village level with the CHWs.

The first revolving drug fund scheme in the project was established by the Martha Tubman Hospital in Zwedru. A preliminary design for a RDF scheme was completed in early 1985, and the hospital commenced an emergency RDF with a loan of \$3,000 from the Development Funds. This loan was subsequently repaid by the county.

By early 1986, a four-person RDF Team was formed to assist the project in developing a RDF scheme for the health services in the two counties. The team consisted of the NDS General Manager, a certified public accountant, the LTA Logistics Specialist and the Peace Corps Volunteer Logistics Coordinator. The RDF team made visits to existing RDF scheme sites in Bong, Lofa, Nimba and Maryland counties to gain an in-depth understanding of mechanisms used to establish the systems and to gain accountability. The team also had to address the need for skill assessments for understanding and running an RDF in Grand Gedeh and Sinoe Counties. Design of the RDF scheme addressed issues of pricing, financial management, inventory control and staff training.

The basic design of the RDF scheme for the counties was developed in an RDF design meeting with representatives from the various RDF operations in Liberia. RDF schemes were designed for the village, health center/post, and county hospital levels with handbooks produced for each of these levels. These handbooks were field tested in the counties. In February 1988 a workshop was held to evaluate the hospital and health center/health post RDF schemes which then led to the final design of the RDF procedures.

Training materials were developed for the health center/health post levels, and a series of training workshops were held in the counties for PAs and those mid-level health personnel who would be working with RDFs. The County Logistics officers and clinic supervisors were also given on-the-job training in RDF management since these officials would provide supervision and monitoring of the RDF schemes in the communities.

The National PHC Coordinating Committee designated the NDS to coordinate the development of RDF schemes, since there are a large number of schemes being operated by various groups around the country. A RDF Unit has been organized within the NDS. This unit is responsible for assisting with initial design, training, assistance in implementation, monitoring, and data repository. Direct supervision of the RDFs, however, remains with the county health services.

Because of the long distance to NDS in Monrovia, it was decided that county supply depots should be established in each county, housed in the hospital facilities. Since the county RDF schemes were undercapitalized, approximately \$25,000 of drugs and medical supplies were donated by the project to each county supply depot.

Commodities

Commodities were ordered for the County Health Services offices and facilities and for the NDS. A list of drugs and medical supplies had to be drawn up for the NDS and a list of medical and general equipment for the CHS. The project obtained external consultant services to devise specifications for the medical equipment. Specifications should have been available from other projects; however, this was not the case, and it created some delays. A procurement services agent was selected by the MH&SW and USAID on a competitive tender basis, and a contract awarded to the firm of AAPC. The notion of ordering drugs and medical supplies in three tranches was adopted as no adequate consumption patterns were available. It was felt that by using three tranches some consumption experience would be accumulated, which could then be used to adjust quantities in the subsequent tranches.

Equipment and furniture were needed for the CHS offices and health facilities. A local firm was contracted to make wooden furniture such as desks, examination tables, bedside cabinets, file and supply cabinets, stools, etc. An appropriate design was used with the intention of the items having a life of at least twenty years with little or minimum maintenance. All of the items ordered were delivered to the counties by December 1987, so that the furniture was available when the CHS offices and health facilities in the village areas were completed.

Problems and Recommendations

1. Problem:

The major constraint that the NDS has encountered from its inception has been the lack of foreign exchange. Many efforts have been made by the NDS senior management staff, the SER PHC Project senior staff, LTAs, and USAID to seek foreign exchange funds from the GOL, but funds have yet to be made available on a regular and continuing basis. The initial drug and medical supply stock provided by USAID needs to be replenished. Unless NDS can purchase the needed replacement stock with off-shore funds, the life of the organization is in jeopardy. NDS requires \$80,000 to a \$100,000 monthly in foreign exchange. Since the inception of NDS, GOL has provided \$25,000 in 1987, and \$30,000 in 1988 when it was under pressure from USAID. Starting in January of 1989, the GOL promised to provide \$40,000 per month in foreign exchange. Only \$40,000 was provided, however, during the first 6 months. During its three years of operation, the growth and development of NDS has been impressive. Yet, the GOL has provided during this period only a total of \$135,000 in foreign exchange. It is essential for the future survival of NDS that the National Bank provide foreign exchange funds on a continued, sustained basis, otherwise the current USAID-provided stock cannot be replenished. It is essential to the functioning of a successful PHC program in the counties that drugs be available to them from a well-stocked and fully functioning NDS. The lack of offshore funds provided by GOL raises the continuing question of the GOL's commitment to primary health care as a national program.

Recommendation:

It is recommended that continued funding and support for PHC programs in Phase II by USAID be provided only if the GOL provides foreign exchange to NDS on a regular basis, since without foreign exchange NDS cannot continue to supply the needed drugs. The promised \$40,000 per month is minimal and should be the lowest acceptable figure. An adequate amount is \$100,000 per month and will increase as sales increase to supply all 13 counties.

2. Problem:

At the time of the Logistics Advisor's departure, he wrote that sales at NDS were still weak but would increase once the RDFs were fully established and functioning in the project counties and in other counties, and as CHW schemes became operational. In 1988, NDS had budgeted sales figures of \$500,000, and actual sales were \$613,403. For 1989, budgeted sales figures are \$1,000,000, and sales for the first 6 months were \$466,835 (\$33,165 less than budget, but 52% greater than last year's average.) The General Manager states that sales would be nearly double this amount if NDS were fully stocked. Further, the NDS Board is skeptical about permitting NDS to decrease some of its shortages by purchasing drugs from Monrovia pharmacies for local currency. Obviously, NDS could do very well if the promised foreign exchange were actually provided.

Sales have also increased in the County Supply Depots. An assessment of RDFs completed by the MED and NDS in January, 1989, showed that sales had increased on an average of 20-25% in the two project counties.

Recommendation:

The recommendation here is the same as the previous one to increase sales; foreign exchange is needed to purchase and replace adequate stock.

3. Problem:

Before his departure, the LTA Logistics Specialist wrote a memo to the NDS Board criticizing the functioning of the Board and calling for a major reorganization. The criticism was based on the fact that there was significant organizational weakness as outlined in the following:

- a) Board meetings were held infrequently in 1987 which was a violation of the By-laws which call for one meeting per quarter,
- b) Inactivity of some board members,
- c) Irregular and infrequent meetings of the Executive Committee of the NDS Board, and
- d) Lack of financial monitoring due to inactivity of the Finance Committee.

Recommendations:

In his memo, the LTA made the following recommendations:

- a) The NDS Board should be reorganized, and the size of the Board decreased from 15 to 12 members.
- b) The Executive Committee should meet monthly.
- c) Detailed monthly financial statements should be prepared, presented and analyzed by the Executive Committee, and by the NDS Board. These statements should include an income statement from which the Board can monitor the capital position of NDS. A comparative statement of income and expenditure should be prepared which would include: budget figures and actual figures for the month under consideration; year-to-date budget figures and actual figures; all budget categories should be included in this comparative income and expenditure statement.
- d) The Finance Committee should either be dissolved or change its function to become a committee which mainly reviews the budget.

- e) Minutes of all meetings should be completed and distributed within one week of the meeting being held.

No further recommendations are needed. The NDS Board has made changes as recommended by the LTA and as mandated in its by-laws. The Board has not reorganized, but has recommitted itself to the mandates of the by-laws. There are currently 18 members on the Board and 2 SER PHC observers. The Board has been meeting regularly every quarter, and the Executive Committee meets monthly. An external auditor has been contracted to do regular monitoring and audits. The Finance Committee meets regularly before quarterly Board meetings to review the financial statement for the quarter.

4. Problem:

Attempts have been made through the Executive Mansion, at least by one private party, to be appointed as the sole procurement agent for GOL drugs and medical supplies. Opposition to this arrangement was made by NDS as well as the Minister of Health. A critically negative impact to NDS would occur if a sole procurement agent for GOL drugs and medical supplies were to be appointed.

Recommendation:

USAID in Phase II should oppose the appointment of a sole procurement agent for GOL drugs and medical supplies. If the matter recurs, it will require the intervention of the Minister of Health.

5. Problem:

Commodities procurement turned out to be a much more complicated aspect of the project than was originally anticipated. The AAPC firm proved to be ineffective and inefficient in purchasing project commodities. In May 1986, AAPC forwarded bid reports, analyses and recommendations for most drugs and medical supplies as well as medical equipment. Decisions were made generally within one week and telexed back to AAPC. The firm had indicated they could have the first tranche of supplies to Liberia by July 1986. However, by September 1986, only two small airfreight shipments had been received. As a result of the delays in receiving the commodities, a severely restricted range of items was available at NDS for distribution to Grand Gedeh and Sinoe Counties. By December 1986, shipments had commenced coming in, but this was only 58% of drugs and medical supplies, and 30% of the medical equipment. By this date, original plans had called for the second tranche to be on its way to Liberia. Since this first tranche arrived so much later than originally planned, a decision was made to combine the second and third tranches to reduce the range of items to 46 vitally-needed drugs and medical supply items, and to procure them in large enough quantities so that they could be made available to the entire country.

Due to the problems and delays with the procurement services agent, project activities were significantly delayed and compromised. The two project counties had to purchase drugs and medical supplies at much higher prices on the local market

when shipments did not arrive. Local staff were trained and ready to proceed, and there was a patent need for these drugs and medical supplies. Apparently, AAPC had no previous experience in purchasing drugs and medical supplies, so this was an error in selection.

Recommendation:

In Phase II, USAID should choose a better procurement agent. Commodities procurement is a time-consuming, extensive and complicated process. Careful consideration should be given in future phases of the project to the best method to use to procure large amounts of commodities. If the process is too time-consuming and complicated to be handled by USAID, it might be expedient to have the technical contractor assume this responsibility.

6. Problem:

Renovation of the NDS facilities have not yet been completed due to the building contractor's failure to complete the terms of the contract and the GOL not living up to its commitment to provide foreign exchange. USAID has arranged with a new contractor to complete renovation of the building, including installation of the air conditioners and completion of the housing for the generator.

Recommendation:

No further recommendations are needed.

7. Problem:

Supervising the RDFs in the counties under the present RDF system is proving to be an unmanageable and extremely time-consuming task, especially for supervisors who are not particularly mathematically oriented. It has greatly reduced the time available for other necessary supervision. The weakness in Sinoe County's financial records is also causing concern.

Recommendations:

- a. Adopt a variation of the Maryland RDF Plan to improve RDF financial honesty in the counties and decrease the time needed for supervision of the monetary side of the RDFs.
- b. Implementation of the county management systems, particularly the financial management systems is essential for the operation of county-wide RDFs. It is extremely important that the Community Health Departments in both counties have competent County Financial Officers to maintain efficient fiscal systems and to supervise the RDFs.

VI. CURRICULUM DEVELOPMENT AND TRAINING FOR PHC

Introduction and Accomplishments

In the area of Curriculum Development and Training, the SER PHC contract called for the contractor to:

1. review health worker training programs, with emphasis on mid-level training programs for physician assistants, registered nurses, certified midwives and health inspectors,
2. prepare and implement detailed plans for strengthening PHC manpower development, including the development and implementation of revised, standardized curricula for mid-level health workers, and
3. arrange for all project-sponsored participant training with assistance and concurrence from the MH&SW and USAID/Liberia.

The accomplishments in this area are listed below:

1. Curricula in all training programs for physician assistants, certified midwives, health inspectors, licensed practical nurses and registered nurses were revised to include primary health care, and the curricula for courses taught in more than one institution (CMs, LPNs, and RNs) were standardized.
2. Training institutions were strengthened through the training of key faculty members and the development and/or provision of improved training materials.
3. Key MH&SW central level and county level staff were trained through relevant short and long-term participant training programs.
4. Curricula were developed for the orientation and training of village-level health workers.
5. The Project sponsored local training of 34 MLHWs.
5. 16 persons were sent for master's degree training, and 47 persons received short-term training overseas.

Curriculum Development Activities

To appropriately revise and adapt the curricula for the five types of MLHWs to include PHC, and to standardize the curricula throughout the six training institutions, preliminary assessments were made of all the training institutions in the country. When these

assessments were completed, the specific needs for strengthening each institution were identified. These needs were:

- a. insufficient faculty, as well as lack of properly trained faculty,
- b. lack of adequate training equipment and supplies, and
- c. curricula that did not fully address the changing needs of the health delivery system.

Having assessed the needs of the training institutions, uniform or standardized job descriptions were then developed for each category of MLHW. Two Curriculum Development Adaptation Workshops were held in 1985 in which faculty from all the training institutions participated. These workshops were held to begin the process of curriculum adaptation by bringing together representatives from all the training institutions as well as central and county level personnel involved in the project. By the end of the second workshop in July 1985, job descriptions were revised for each category of MLHW, and a Curriculum Development Committee had been formed. It was this committee's task to follow-up and organize on-going activities of the curriculum adaptation process. The formation of this committee was instrumental in enlisting the participation and support of all the training institutions during the entire process of curricula development.

It was necessary to strengthen the PHC components of all curricula, particularly in the areas of teaching, management and supervision, and community development. The use of the competency-based approach and the process of task analysis to identify the learning objectives were instrumental in deleting obsolete material. New learning activities emphasized community-based practical experiences and reduced reliance upon hospital-based care.

The curriculum revision and adaptation process for each MLHW program was undertaken with a series of curriculum adaptation workshops, beginning with the CMs, and followed by the physician assistants, licensed practical nurses, registered nurses and the environmental health technicians.

The implementation of the new curricula began in the academic year 1987 with all the training institutions using the standardized curricula. The entire process of curriculum adaptation itself has been institutionalized -- training institutions understand the concepts and approach required for further adaptation and revision of curricula. There have been two significant evaluation exercises conducted since the major curriculum revision was completed.

To provide PHC field experiences for students at TNIMA, an urban community health clinic was established with the support of the community. The clinic was opened in the squatter community skirting JFK Hospital and TNIMA. A committed Community Health Advisory Board manages the clinic with the technical guidance of the TNIMA faculty. Attendance at the clinic continues to increase and has allowed the community to expand

1988, with 107 trained. The 1988 training followed the plan of the Ministry's Traditional Midwifery Training Unit using their materials. Additional training was being done in Grand Gedeh from June through August in 1989, with an estimate that 50 traditional midwives will complete the course.

Participant Training

The participant training program was designed to assist in the strengthening of faculty skills at the various MLHW training institutions, and to provide training in PHC and management for those project staff in the two project counties and in the central MH&SW offices who were integral to the development of the PHC program. Three of the key individuals who were sent for long-term master's degree training were the SER-PHC Project Manager, Mrs. Louise Mapleh, and the two physicians who are the County Health Officers in Grand Gedeh and Sinoe counties, Dr K. Kiawoin and Dr. A. Hiedala, respectively. The original project design called for 22 persons (44 person years) to receive long-term master's-level degree training. This number was reduced to 16 after the mid-term project redesign. Sixteen persons received master's degrees in nursing, nursing education, or public health, including health administration and management, MCH, international health, nutrition and community health, and communication. (Refer to Appendix E, Participant Training Summary.)

Forty-seven persons received short-term training out of the country, primarily in the USA. A variety of courses were attended by members of the project staff in the areas of PHC, supervision, project management, financial management, personnel management, logistics, training, and curriculum development. (Refer to Appendix E for a listing of trainees and courses attended.)

A special local scholarship program was instituted in January 1987 to assist in the training of critically needed categories of health workers, i.e, CMs, PAs, post-basic RNs and CMs. Thirty-four persons have received scholarship support at Cuttington University, Phebe School of Nursing, and TNIMA. (See Appendix E)

Another major aspect of in-country training was a series of workshops which were held during the course of the project. An in-country training plan was developed that would provide health workers and others in the project area with the information and skills needed to carry out their functions in the PHC program.

Plans for strengthening and amalgamating the Divisions of Health Education and Continuing Education were begun in 1985 with the creation of an ad hoc Information Education and Communications Committee (IEC). A consultant was brought in to work on the details of the merger of the two divisions into a new IEC Division. A work plan was drawn up for 1986 with plans for a second IEC consultancy in April 1986 contingent upon sufficient progress being made in forming the new unit. This second consultancy never occurred. A Director of the IEC Division was finally appointed in September 1987, but no other changes have been implemented. Funds have not been allocated for the new unit. The Health Education and In-Service Education Units appear to function much as they have in the past except in-service education has been moved to the Bureau of Preventive Services. The SER PHC project has procured equipment to support and

the facility to include a delivery room. The clinic has provided the TNIMA faculty and students with the valuable experience of organizing and implementing a community-based project.

Manpower Planning and Development

A Manpower Development Committee was formed consisting of the MH&SW division heads and the directors of the MLHW training institutions. This Committee's findings were presented to the Minister of Health along with a series of recommendations to improve the situation. (See Appendix D on Manpower Development Committee.) Some progress has been made in implementation of the recommendations. Since there are insufficient jobs available to graduates of the health training institutions, the schools have reduced their enrollments and have prioritized the training of MLHWs. The establishment of a National Board for Health Science Professionals is imminent. The draft document calling for establishment of this board has been presented to the Minister of Health.

Strengthening of Training Institutions

Faculty from several training institutions were sent for either short-term or long-term training during the course of the project. (See Appendix E, Participant Training Summary.) As a result, faculty at training institutions have been strengthened both quantitatively and qualitatively. Additionally, faculty gained skills in teaching, curriculum development and adaptation, and PHC development through the numerous in-country workshops and seminars held to support project activities.

To provide adequate training materials and equipment to upgrade the level of training at the various institutions, a three day faculty workshop was held to strengthen resource identification and development skills. Critically needed books and other equipment for the programs were identified, and a comprehensive book order was received from USAID in 1988.

Community Health Worker Curriculum Development

Curricula and training materials were developed for training CHWs and TMs. Two curriculum development workshops were held in March 1987 in Sinoe and Grand Gedeh Counties with key staff of the CHDs from each county and the curriculum development staff from the central Project office. The CHD staff felt it was important to develop the CHW curriculum and manuals in the counties, not at the central level. Two manuals, a trainer's and a trainee's manual, were developed and utilized in the training of CHWs. A consultant was brought in to assist with the design of the CHW curriculum and production of the two manuals. Two periods of training were held in both counties -- Class I from Aug. 1-23, 1987, and Class II for 3 weeks in June and July, 1988. Grand Gedeh trained 1 additional class of 13 from June 4-23, 1989.

Upgrading of traditional midwives took place as follows: There were 2 periods of training in Sinoe -- July-August, 1987 with 49 trained, and June-December, 1988, with 121 trained. There was 1 main period of training in Grand Gedeh from June-December,

strengthen IEC's functions. However, renewed efforts should be made by the MH&SW to implement the earlier recommendations to strengthen this unit.

Problems and Recommendations

1. **Problem:**

The budgetary cuts have seriously jeopardized the ability of training institutions to provide the material resources of books and equipment, and to provide the necessary transportation for student clinical experiences.

Recommendation:

Books, but not training equipment such as models, charts, projectors, etc. were supplied in Phase I. It is recommended that the Project should also supply training equipment in Phase II.

2. **Problem:**

Continuing education is critically needed, but has not yet received the attention it deserves in the central MH&SW. The merger of the In-Service and Health Education Divisions into the IEC Division occurred by 1986, but no significant changes, except for the appointment of a Director, have taken place within the unit. In-service training and continuing education programs have as yet not been developed. Budget for supplies has been non-existent and equipment and supplies from the SER PHC, and the CCCD Projects are just arriving.

Recommendations:

- a. The MH&SW should implement the original plans for creating an IEC Division with a comprehensive plan for both in-service training and continuing education programs.
- b. Continuing education credits should be made mandatory for annual licensure by the regulatory professional boards. Continuing education opportunities should be provided for as many health workers as possible at least annually.

3. **Problem:**

The morale of the staff at most government facilities, be they training institutions, hospitals, CHOs, or health centers, was very low due to inadequate pay (the government is often several months behind in paying its employees), lack of incentives to improve their performance or to accept hardship posts, lack of supervision and leadership, and lack of equipment, drugs and other supplies and materials.

Recommendation:

The MH&SW should consider adopting incentive programs for its employees as previously recommended under Section IV, Problem No. 5.

4. Problem:

During the project, several key personnel were sent abroad for training at crucial stages of project activity.

Recommendation:

Prior to expansion of the project into other counties, personnel from those counties should be identified from the CHS staff. These individuals should be sent for training during the first two years of Phase II before the project expands beyond Grand Gedeh and Sinoe Counties.

Other Issues

1. During the first two years of the project, the political and economic instability of Liberia created problems and delays in project activities. The political turmoil in November 1985, the closure of TNIMA from 1984 to March 1985, and the "go-slow" action of the faculty in July 1986 over late payment of salaries caused many delays and slowed down curriculum development activities.
2. Faculty shortages in training programs and institutions were compounded when faculty members were sent for long-term participant training. The financial problems of the government made it difficult to hire replacements for those on study leave since trainees retain their governmental salaries while on leave. The problem still exists with the freeze on hiring.
3. A significant problem still remains in the entire health manpower training area. With a depressed economy, there are few jobs available for MLHW graduates. This has resulted in training institutions having to reduce their freshmen enrollments; there is the fear, however, that this could lead to the eventual closure of these institutions with the resultant loss in human and material resources in which the Project has invested to upgrade these institutions.
4. Monitoring and evaluating curriculum implementation has been inadequate in the past, but is now improved under the Board of Nursing and Midwifery for RNs, LPNs, and CMs. The PA and Environmental Health curricula will be monitored by the new Board of Health Manpower Sciences as recommended by the Curriculum Development Specialist LTA before her departure.
5. It is advisable that the Scholarship Committee which was reconvened for the SER-PHC Project participant training program needs to be strengthened so that it holds meetings regularly to review all applications for scholarships. The Committee should become permanent.

6. The Medical School has included primary health care in some of its courses. It is recommended that the curriculum be reviewed and primary health care be strengthened to ensure that the values of the PHC approach are ingrained in every graduating physician. Graduating physicians are not being adequately taught the procedures necessary to save lives in a rural PHC hospital. A partial list of such needed procedures frequently not taught in medical school follows:

Obstetrical:

- | | |
|---------------------------------------|----------------------|
| 1. Vacuum extractor delivery | 5. Breech delivery |
| 2. Removal of retained placenta | 6. Caesarean section |
| 3. Symphysiotomy | 7. Ectopic pregnancy |
| 4. Autotransfusion of abdominal blood | |

Surgical:

- | | |
|---------------------------------|--------------------------------|
| 1. Strangulated Inguinal Hernia | 3. Handling of trauma |
| 2. Appendectomy | 4. Closure of perforated bowel |

Pediatric:

1. Administration of intraperitoneal fluid
2. Hospital treatment of severe kwashiorkor
3. Salvage of tetanus neonatorum

Medical and Laboratory:

1. Rapid rehydration of cholera/severe dehydration
2. Simple Spinal Fluid analysis (Albumin urine stick, dextrose blood stick, WBC counting chamber)
3. Homemade blood typing serum
4. Simplified basic type and crossmatch

VII. CONCLUSIONS

1. Supervision, management, drugs, and transportation are the key factors in developing a successful primary health care program. A PHC system requires an infrastructure that will support its activities in the rural communities and the periphery. Management systems are needed to provide support from the county seat to those in the outlying areas. Once the personnel are placed in the field, supervision is a key factor in maintaining an efficient staff of MLHWs and CHWs. Supervision provides motivation, direction, instruction and support to personnel. Transportation is a key factor not only in mobilization but in supervision. Drugs are also a key factor in the success of the program. If there are no drugs available, the curative aspect of the program will not succeed, and this in turn destroys the credibility of the health workers when they are attempting to do preventive health motivation and work.
2. Activities should be done simply and at low costs, so that they can be continued and duplicated by the CHS. Neither the MH&SW nor the CHS have sufficient financial resources to support elaborate systems, or equipment when external project support ends. A great deal of reliance has been placed on electrical office equipment such as typewriters, copy machines and stencil machines. Although these are excellent labor-saving devices, the costs both in time and money of maintaining this equipment may outweigh the advantages. One questions the prudence of having such equipment in the counties particularly, when there is virtually no electricity available on a regular basis, and when maintenance for this equipment is nil. Careful consideration should be given to appropriate technology for these areas in terms of their needs, and what is available. Costs for community mobilization and training of community level health workers need to be kept within the range of what the CHS can afford to fund. Workshops to support these activities were costly, and alternatives should be considered to reduce workshop costs.

Health information data collection should be kept as simple as possible. The MH&SW may be asking too much in requiring that 134 diagnoses be collected monthly. The health centers and posts should not be overburdened with data collection; focus should be placed on simple gathering of data that has the possibility of being collected.
3. The original Project Paper did not call for inclusion of the county hospital in the plan for primary health care development. Yet, the hospital is part of the tiered referral process in PHC. It was evident as the Project began working in the counties that the hospitals could not be excluded from PHC development. Furthermore, hospital earnings are essential to support the rural community health activities. Financial viability of the SER PHC Project requires a substantial supplement from the income of an active county hospital. As the Project moves into other counties, the hospital should be integrated into the system from the start.
4. Revolving drug funds are an open invitation to misappropriate money when profits accumulate. Multiple RDFs requiring close supervision to prevent clinic personnel or health committees from misusing the profits becomes an impossibility to properly

- monitor. Other means must be found to eliminate the temptation or possibility of misusing funds. Using a plan where profits are removed from the clinic level by selling the drugs to the clinics for nearly the retail price is the only practical method for removing this temptation. It is easier to supervise the profits at 1 County Supply Depot than at 50 clinics and community health villages.
5. Significant income from the sale of drugs at the County Supply Depot can help to support the Community Health Department.
 6. Where hard choices are necessary by the Government, assurances are not substitutes for required decision-making followed by positive actions. Examples of where such choices and decisions need to be made are in:
 - a. provision of foreign exchange for NDS,
 - b. decentralization of personnel and finance systems,
 - c. on the county level making hard management decisions correctly and following through, such as in personnel actions, and
 - d. deployment by the MH&SW of physicians to the county hospitals.
 7. Foreign exchange is absolutely essential. USAID needs to adopt a policy of "No money for foreign exchange -- no project agreement from USAID." During the course of the Project, the Counties adopted the slogan, "No money, no drugs." The Project is in turn asking for money for drug purchase in return for continuation of the Project. Given the experience of the last few years, USAID should institute stricter requirements before funding an additional phase.
 8. The above issue leads to the question of the GOL's ultimate commitment to the development of a PHC program nationwide. In certain crucial areas, they have not lived up to their responsibilities and made the hard decisions that must be made. The provision of foreign exchange is one major area, as is the decentralization of management systems, particularly in the crucial areas of finance and personnel.
 9. The variables affecting the proper functioning of such a project are significantly more numerous and complicated than those conceived in the Project Paper. Basic human attitudes and values are involved, and in spite of appropriate training and good management systems rude and uncaring attitudes by health personnel can destroy the project.
 10. One of the most effective training methods is individualized instruction, working with a patient advisor who is willing to teach, especially in diagnosis, supervision, and administration. Initially, the project used workshops to train and educate staff to the PHC system being developed. These workshops proved to be an effective method of training groups of people. However, as the project moved into the implementation and supervisory stage of development, individualized supervision and training became more effective than continuing with the workshop method.

11. This is a lesson the project has had to continually relearn: to buy equipment, particularly vehicles, that are appropriate to the conditions or environment in which they will be used. The American Jeeps initially purchased for the project were unable to withstand the rigors of the rural roads in the two counties and the continual use necessitated by project activities. Toyota Landcruisers outperform American vehicles on Southeastern Region back roads. If an initial waiver is not obtainable, buy only those American vehicles absolutely required to start the project and obtain a waiver as soon as possible.
12. It was the experience of the contractor that a lot of time and effort was lost because many of the procurement and logistics requirements of the Project were not included in the original contract between USAID and the contractor. These were originally to be handled by the USAID Mission, but they were unable to do so in an adequate and timely manner that could accommodate Project schedules and needs. At the request of USAID and through contract modifications, The MEDEX Group assumed several of these responsibilities, i.e., vehicle maintenance and repair, management of the county guesthouses, and purchasing of major equipment. The procurement of commodities, although handled through a procurement services contract was slowed down, because the procurement agent was not sufficiently familiar with many of the commodities, particularly the medical commodities. It is suggested that in future contracts procurement and logistics matters be included in the original contract. Project experience dictates that the contractor should not undertake any responsibilities unless they are specifically mandated in the contract or until a contract amendment has been completed.
13. In both counties, PHC staff have been trained who are intelligent, competent and dedicated workers. These people need to be provided with incentives to remain in a setting which is at best difficult and extremely challenging. Many of the staff are not living in their home counties and would like to return home. Others are looking for better places to live and work. The current trained staff are a major asset of the Project and everything possible should be done to keep them working with the project. If the Project is not to lose the valuable manpower resources they have recruited during the past four years, it is important to look for intelligent and innovative ways not only to retain the present staff, but to recruit additional staff especially as they expand into other counties.

APPENDICES

- A. CHRONOLOGY OF MANAGEMENT DEVELOPMENT EVENTS
- B. ANNUAL PROJECTED INCOME FOR CHS, SINOE COUNTY; ANNUAL BUDGET FOR SINOE COUNTY CHS
- C. CHRONOLOGY PROJECT EVENTS IN SINOE AND GRAND GEDEH COUNTIES
- D. MANPOWER DEVELOPMENT COMMITTEE
- E. PARTICIPANT TRAINING SUMMARY
- F. CHRONOLOGY OF CURRICULUM DEVELOPMENT AND TRAINING EVENTS
- G. PERSONNEL OF SER PHC PROJECT
- H. SHORT-TERM CONSULTANTS
- I. GRAPHS OF DISEASES AND SELECTED VACCINATION STATISTICS

APPENDIX A

CHRONOLOGY OF MANAGEMENT DEVELOPMENT EVENTS

1. March 1985 -- Senior Level Management Workshop -- Held in Monrovia two days. Resulted in the formation of methodology on implementation of management development. Decentralization explored, RDF program in Senegal presented.
2. May 1985 -- Management Analysis Training Workshop -- ten days. Five analysts trained by STC Mr. Seymour Greben.
3. June 1985 -- Management Analysis Internship -- Bong County for the five trainees.
4. June-August 1985 -- Analysis of Transportation, Personnel and Finance Systems in project counties by recently-trained analysts.
5. September 1985-February 1986 -- Analysts write reports of the above.
6. October 1985 -- Decentralization Issues Meeting -- In Monrovia, one day. This resulted in the development of the document Decentralization Guidelines by the Chief of Party, Richard Ainsworth, which spelled out the elements of the eight management systems.
7. February 1986 -- Senior Officials Management Analysis Review Workshop -- three days to review, revise and approve the three management system reports on Transportation, Personnel and Finance.
8. Working Groups were then formed to design the management systems. David Alt was engaged as a consultant to help with the Transportation and Personnel Manuals. By September 1986, these manuals were completed.
9. September 1986 -- STC Mr. Yaw Adu Boahene conducts Finance Training Program for the newly-hired County Finance Officers. Following this he was engaged to revise the inadequate Finance Manual originally done by Management Control Systems.
10. Last months of 1986 -- Discussion groups held by Chief of Party Richard Ainsworth in counties to implement the Personnel and Transportation Manuals.
11. November 1986 -- Second Management Analysis Training Workshop by consultant, Seymour Greben. Six successful candidates.
12. December 1986-January 1987 -- Internship in Bong County for management analyst students.
13. Early 1987 -- CFOs and CHSAs finally hired in counties.

14. February - March 1987 -- Management Analysts, assisted by consultant William Albright, do analysis of Health Information System, Communications, General Supplies, and Facilities & Equipment Systems.
15. April 1987 -- Second Senior Officials Management Analysis Review Workshop by STC Sy Greben. Working groups formed to assist in the development of the above management systems.
16. May-July 1987 -- Consultants David Alt and William Albright draft the manuals - Health Information System, Communications, General Supplies, and Facilities and Equipment.
17. June 1987 -- Management Implementation Team (MIT) formed within the MH&SW's Bureau of Planning, Research, and Development. Staffed by Martha Kortu, assisted by consultant Laurie Ackerman who traveled regularly to the counties holding workshops and discussions to strengthen the management systems.
18. November-December 1987 -- Finance Manual revised by STC Vickie Cooper.
19. January-March 1988 -- Health Information System Manual revised by L. Ackerman.
20. March 1987 -- Richard Blakney completes Drugs and Medical Supplies Manual and Handbooks.
21. Early 1988 -- MIT expanded, name changed to Management Evaluation Division (MED). F. McGee added for financial management, Deddeh Jones added as a nurse. Later, Alice Karmo joins staff.
22. May 1988 -- Data Processing Center started at Preventive Services under the Bureau of Vital & Health Statistics to computerize data from the project counties, and eventually from the entire country. Seven persons trained in word processing, and four in data processing. Richard Ainsworth writes data collecting and processing program for DPC.
23. September 1, 1988-August 31, 1989:
 - a) MED continues support functions to county management.
 - b) Dr. Paul Mertens works during the one-year extension as the Management Advisor and only remaining MEDEX person.
24. April-August 1989 -- Local-hire management consultants Seth Boama (Grand Gedeh) and Faye Hannah (Sinoe) study management problems in the counties and work with the management personnel.

APPENDIX B

**ANNUAL PROJECTED INCOME FOR CHS, SINOE COUNTY;
ANNUAL BUDGET FOR SINOE COUNTY CHS**

Presented in this appendix are the approximate annual total county financial income (hospital, clinics, and drug supply depot) and an approximate expenditures budget for the Sinoe CHD excluding:

- a) personnel paid for by GOL, and
- b) drugs covered by the revolving fund.

**Approximate Projected Income for Government Health Institutions
in Sinoe County for 1989 and Amounts Available
for CHD and Hospital Expenses**

	FEE FOR SERVICE FUNDS		REVOLVING DRUG FUND		TOTAL AVAIL. FFS+RDF
	TOTAL FFS	AVAILABLE	TOTAL RDF	AVAILABLE	
COMM. HLTH. SERV. HEALTH CENTERS & HEALTH POSTS	\$3,000	2,100 (70%)*	12,000 RETAIL	(NONE ALLOWED)	2,100
COUNTY SUPPLY DEPOT	-	-	30,000# wholesale	2,400 (8%)#	2,400
HOSPITAL	10,000	10,000	30,000** retail	12,000 (40%)**	22,000
TOTAL AMT. \$26,500 AVAILABLE					

NOTES:

At the present level of income, the expenditures are approximately 25% greater than the income.

* This is the recently-recommended available percentage. The other 30% would go for direct clinic needs: soap, kerosene, clinic repair.

** When the hospital RDF is fully capitalized, approximately 40% of the income is more than that needed for drug replacement. This is also true of the clinics. However, the agreement that their RDFs were solely for the town makes it not permissible for the CHS to utilize this clinic RDF excess.

This assumes nearly \$5,000 sales from the depot to the CHWs and TBAs per year; \$7,000 to posts and centers, and \$18,000 to the hospital. The drugs sell for about a two thirds markup, i.e, \$6,000 of drugs purchased from the depot sell for about \$10,000 to the public. The supply depot realizes about an 8% profit above costs of transportation and purchase from NDS. This profit can be added to available funds

to support the needed community health department and hospital costs which are not funded by the GOL or guaranteed by a revolving fund.

Note that the hospital accounts for 73% of the hospital-health center-health post income, and for 83% of the total available income not specifically earmarked for drug replacement or given in the form of paychecks.

The income figures above assume active clinics and an active hospital with some surgery but not a full surgical load. A full surgical load and increased clinic activity would increase it.

Grand Gedeh, which has a surgeon in the hospital, generates more income and would come closer to breaking even.

A very conservative budget for annual expenses for the Sinoe County Community Health Department and Hospital, excluding personnel (GOL salaries) and drugs (covered by the RDFs), follows on the next page.

APPROXIMATE ANNUAL BUDGET FOR SINOE COUNTY CHD and HOSPITAL

Community Health Department

1)	Vehicles -- Three Toyota diesel Landcruisers for supervision, vaccinating, training, MCH, etc. Conservative use at 1,200 miles per month and 20 mpg	
	Diesel fuel = 60 gallons/month or 720 gallons/yr @ 2.40/gal	\$1,728
	Maintenance and repair -- \$100/vehicle/month x 12 months	3,600
2)	Motorcycle mileage reimbursement -- average \$250/month	3,000
3)	Training	
	Food for monthly in-service at \$40/month	480
	Supplies for training at \$20/month	240
	One workshop per year at \$1,000	1,000
4)	IEC costs	
	Paper, toner, mimeo ink, stencils, etc. per year	1,200
	Repair of photocopy, stencil cutter, mimeo, etc.	1,000
		<hr/>
	Subtotal Community Health:	\$12,248

Hospital Costs (other than personnel and drugs)

1)	Food for patients at \$12 per day x 365 days	\$4,380
2)	Transportation -- 1 CJ8 Jeep and 1 Jeep pickup	
	Gasoline at 30 miles/day, 10 mpg = 1,095 gallons x \$3.75	4,106
	Repair & maintenance -- \$150/vehicle/month = \$300/month	3,600
3)	Hospital maintenance and repair	2,000
4)	Minor equipment replacement and/or repair	1,000
5)	Generator:	
	Diesel fuel at 2 gallons/night = 730 gallons x \$2.40	1,752
	Generator repair and maintenance, yearly estimate	1,000
6)	Bed linens, replacing mattress covers, paint for beds	800

7) Kerosene, soap, cleaning supplies	2,000
8) Incidentals	1,000

Subtotal Expenses for Hospital: \$21,638
Hospital and CHD Total Yearly Expenses: \$33,886
Annual Income To Cover These Expenses: \$26,500
Annual Shortfall: (\$7,336)

APPENDIX C
CHRONOLOGICAL PROJECT EVENTS IN
SINOE AND GRAND GEDEH COUNTIES
GRAND GEDEH COUNTY, 1985 - 1989

Third and Fourth Quarter, August-December, 1984

- 1) MEDEX LTA team including Public Health Physician, Dr. Indermohan Narula for Grand Gedeh arrives in Monrovia August 13
- 2) Housing for MEDEX LTA and guesthouse identified in Zwedru and renovation begun

First Quarter, January-March, 1985

Grand Gedeh County Health Department PHC Orientation February 25-March 1

Second Quarter, April-June, 1985

- 1) Informal assessment of health facilities, most inoperative from lack of drugs. Other universal problems were:

Poor equipment	No transportation
No standardized record system	Very little supervision
No paper for records	
- 2) Radio communication with Monrovia established
- 3) Training Unit formed

Third Quarter, July-September, 1985

- 1) County officials orientation workshop August 4-6
- 2) Site assessments continue

Fourth Quarter, October-December, 1985

- 1) Training Unit Supervisor Karwely and MCH Supervisor Collins sent to MEDEX Hawaii, "Strengthening PHC Supervision" course
- 2) EPI Skills Development Workshop held November 4-6
- 3) November 12 coup attempt disrupts project activities

First Quarter, January-March, 1986

- 1) Successful annual vaccination campaign
- 2) Monthly continuing education initiated
- 3) Site assessments of health facilities nearly completed

Second Quarter, April-June, 1986

- 1) RDF for hospital started
- 2) Financial management system installed, CFO Kingsley hired
- 3) Four-week Child Survival & Community Mobilization course held for PAs
- 4) Community mobilization meetings started
- 5) First five motorcycles distributed

Third Quarter, July-September, 1986

- 1) Yaw Adu-Boahene, STC, conducts financial management workshop
- 2) Sunil Mehra, STC, completes community assessment tool "Learning About People"
- 3) PAs map and begin interviewing communities
- 4) Five new PAs and five new CMs assigned to county

Fourth Quarter, October-December, 1986

- 1) Successful week-long National Vaccination campaign week of November 24-28
- 2) Workshop October 27 introducing, "Learning About People"
- 3) Town meetings for community mobilization continue
- 4) ELRZ broadcasting PHC purposes and messages
- 5) Health workers being trained in using oral rehydration fluids
- 6) CHSA, CLO, and CPO chosen

First Quarter, January-March, 1987

- 1) Thirteen of 14 clinics collected \$300 for RDFs
- 2) RDFs in clinics established
- 3) Health Advisory Councils (HAC) workshop March 16-17
- 4) Community Mobilization Training Workshop February 2-21
- 5) Two workshops held in March for CHW curriculum and syllabus
- 6) CHW Curriculum Development sessions March 3-6 in Greenville and March 30-April 4 in Zwedru

Second Quarter, April-June, 1987

- 1) Fifty-four communities being mobilized for CHW training
- 2) In April, completed development of CHW Manual and Trainer's Manual in joint sessions with Sinoe County in Zwedru
- 3) RDFs in clinics fully functioning
- 4) Plans for health broadcasting on ELRZ expanded
- 5) Two-day administrative workshop with consultant Kess Hottle
- 6) Second two-day administrative planning and coordination workshop with Kess Hottle for both counties in Greenville April 14-15
- 7) CHS senior staff participated in Senior Management Analysis Workshop April 22-24 in Monrovia
- 8) CHS senior staff participated in final review of Management Manuals, Sinoe County, June 22-27
- 9) Poor condition of vehicles and refusal of stations to accept gasoline coupons hampered transportation
- 10) CFO Kingsley sent to short-term management course at University of Connecticut
- 11) Intensive vaccination activities carried out in Gbarzon District
- 12) ORS packets distributed to all clinics

Third Quarter, July-September, 1987

- 1) Training of PAs as CHW trainers (2 weeks) July 6-17
- 2) First class of 39 CHWs trained (3 week course) August 3-21
- 3) Mobilization Review Workshop August 31-September 1
- 4) PA Supervisor Williams and Mobilization Officer Wheagar attend MEDEX/Hawaii "Supervision in Child Survival Program" in Hawaii
- 5) Management Implementation Team holding in-service sessions for administrative staff and training hospital personnel in the use of hospital forms
- 6) Heavy rains causing bad roads made supervision impossible
- 7) Dr. Kiawoin, CHO, sent to Emory for one year for MPH degree

Fourth Quarter, October-December, 1987

- 1) Completed the installation of the 39 CHWs
- 2) Adapted the "Learning About People" booklet for CM use to mobilize communities to train TBAs
- 3) HIS form workshop November 4-7
- 4) Workshop held to review RDF records
- 5) Annual vaccination campaign conducted December 5-12

First Quarter, January-March 1988

- 1) Certified Midwives conducting community assessments for TM training
- 2) Health Action Committee workshop January 27-29
- 3) Key staff attended the yearly planning conference in Harper, Maryland County, February 1-5
- 4) Towns selected for second phase CHW training
- 5) Revised with Sinoe County the Mobilization Training Manual February 22-27

- 6) Participated with Sinoe County in Mobilizer Training Refresher Workshop March 7-11
- 7) Continuing education being conducted monthly for PAs, CMs, and hospital staff
- 8) Three new Toyota diesel Landcruisers arrived for Grand Gedeh purchased by the USAID
- 9) CHS Supply Depot established

Second Quarter, April-June, 1988

- 1) Joint workshop with Sinoe County in Zwedru to revise CHW Manual and CHW Trainer's Manual, April 4-8
- 2) Training of Trainers for CHW workshop held in May
- 3) CHW Class II began training June 27
- 4) Dr. Konde, transferred from Greenville, began work as a surgeon
- 5) Some PAs found to be pilfering RDF money--steps taken to correct this and recover funds
- 6) Dr. Narula, LTA, departed for England June 25 at the end of his term

Third Quarter, July-September, 1988

- 1) CHW class of 13 completes training July 19
- 2) Upgrading of approximately 125 TMs began in August
- 3) Supervision of clinics intensified
- 4) CLO Doerue attended the Logistics Management Workshop in Botswana August 15-September 2
- 5) Transportation reduced by fuel shortage

Fourth Quarter, October-December, 1988

- 1) Five towns with non-operational clinics mobilized
- 2) Supervisory Skills Workshop October 11-12 and Management Seminar October 31 both by MED
- 3) HAC Workshop December 12-14

- 4) TM Upgrading by 9 CMs completed November 26, 107 TMs upgraded
- 5) Dr. Kiawoin returns from Emory with his MPH
- 6) Successful annual vaccination campaign in November

First Quarter, January-March, 1989

- 1) Mobilization Refresher Workshop February 20-24
- 2) Health Worker Awards Day March 3
- 3) Supervision continues with a study in progress to determine whether mobilized communities are being maintained

Second and Third Quarters, April-August, 1989

- 1) Eleven new communities mobilized for CHWs during April and May. Two communities where CHWs left positions remobilized
- 2) TOT for five CMs to train traditional midwives May 22-26
- 3) Upgrading of approximately 50 TMs June 4-August 24
- 4) Training of 13 CHWs (Class III) June 4-23
- 5) Continuing education for CHW Class II 3 days in June
- 6) Workshop on correlating Danish Water and Sanitation Project and SER PHC Project eight days in July
- 7) Supply Depot completed in May -- shelves not yet built
- 8) Management consultancy (Seth Boama based in Grand Gedeh for individualized training and systems analysis) April-August.

SINOE COUNTY

1985 - 1989

January-June, 1985

The original Project Paper called for project activities to begin in Sinoe County six months after Grand Gedeh.

- 1) LTA Public Health Physician Dr. Jimi LaRose arrives in March. Early organization and planning begun.
- 2) Winthrop Morgan, USPCV, assigned to project.

Third and Fourth Quarters -- July-December, 1985

- 1) Sinoe County Training Unit formed
- 2) Workshops begun
 - a) First in-service workshop - 60% attendance
 - b) Sinoe County Health Team workshop
 - c) Orientation Workshop September 2-6
- 3) Management analysis done in both counties
- 4) Preliminary work on how to work with villages
- 5) Clinical supervisors changed. New clinical supervisor, Mr. Johnson Toe Chea, appointed
- 6) Three supervisors sent for training to MEDEX/Hawaii, "Strengthening PHC Supervision" course
- 7) Letter with death threat in late September causes Dr. LaRose to return to Monrovia. Letter finally resolved and person jailed. County medical director transferred. Coup attempt prevents Dr. LaRose's return to Sinoe until December 1985.

January-December 1986

Workshops being held for PAs upgrading and training in clinical skills, preventive aspects, and mobilization. In-service training continues throughout the year. Basic Middle Level Health Workers Manual developed by Dr. LaRose.

First Quarter -- January-March 1986

- 1) Monthly Continuing Education
- 2) Informal discussions with Lexington, Kpanyan towns, and Upper Jedepo regarding starting community health committees with a clinic and RDF
- 3) Steps started toward forming RDFs

Second Quarter -- April-June 1986

- 1) Mobilization of towns for RDFs with PAs begins
- 2) Hospital starts its RDF soon thereafter
- 3) Six new PAs arrive in county
- 4) Six new motorcycles arrive
- 5) Monthly PA in-service and weekly hospital staff in-service held on a regular basis
- 6) Two-week county supervisory workshop conducted by STC Tom Coles
- 7) New hospital financial system started
- 8) Hospital personnel strike and progress slows

Third Quarter -- July-Sept 1986

- 1) STC Sunil Mehra develops, "Learning About People" to orient personnel to community thinking and needs
- 2) Community mobilization training begins
- 3) Twelve selected towns mobilized and choose to have PAs drugs purchased for RDFs for these towns
- 4) Community health department teaching school-children and teachers to make and use sugar-salt solution

October-December 1986

- 1) STC Sunil Mehra continues work with community mobilization
- 2) Mobilization of towns for RDFs with dressers already in place begins, of 18 dressers, 16 eventually mobilized (4 in towns where PAs also to be assigned due to FA clinic mobilization).

- 3) Alberta Hitchings and Faye Hannah, USPCVs/Health arrive in county.
- 4) RDF money from mobilized towns used to purchase drugs from private sector, since NDS not yet operational, at a greater cost.
- 5) Health Advisory Council (HAC) workshop for towns with PAs held with over 100 in attendance. RDFs and sugar-salt solution taught. Following the workshop, ten PAs with drugs sent to ten mobilized towns.
- 6) Three new CMs complete training and arrive in county. Assigned to health centers.

November 1986

- 7) National Vaccination Campaign held for three weeks (instead of one week). Fifteen towns with health facilities covered with vaccines.

December 3-5, 1986

- 8) Workplan for 1987 developed by all key personnel at retreat for health workers.
- 9) Dresser's Handbook developed by Dr. LaRose.
- 10) Project evaluation by Dr. Richard Brown and Dr. Andrew Cole insists on original goals of 125 CHWs and 125 TBAs being trained as rapidly as possible in each county. This results in a massive concentration on mobilization and CHW training in 1987.
- 11) Mobilized towns waiting to build clinics receive none of the materials promised by the project Development Fund. Building delayed and interest of towns in building decreasing.

January-December 1987

In-service training and workshops for upgrading personnel again continue throughout the year.

First Quarter -- January-March, 1987

January:

- 1) Workshop to upgrade dressers held for three weeks. Dresser's Manual for workshop developed by Dr. LaRose. Of 18 dressers, 15 qualify on completion of training.
- 2) Mobilization visits to reactivate dresser health posts completed.

End of January:

- 3) Dr. Jimi LaRose, Sinoe County Project LTA, resigns to take another assignment.
- 4) RDF training held for PAs February 18-20 by Richard Blakney, and RDF manuals distributed. Two containers with supplies and equipment sent by sea to the county.
- 5) Winthrop Morgan, USPCV, working with the project in mobilization, completes his assignment with Peace Corps and works for the project as mobilization consultant from February through July, significantly moving the project forward in spite of the lack of an LTA.

February-April

- 6) Manuals developed for CHWs and for CHW Training by the Training Unit jointly with Grand Gedeh and with consultants. For finalization of CHW Manual, two weeks' time spent meeting jointly by units--one week in each county.
- 7) AMC Jeeps continue to break down.

Second Quarter -- April-June, 1987

- 1) Mobilization of towns for CHW training in progress. Initial mobilization visits made to 32 towns. It is becoming obvious that only 30-50 towns in the county are large enough for CHWs after the towns where PAs are assigned are excluded. Eighteen towns complete mobilization for CHWs this quarter.
- 2) Voogbardee and Butaw mobilized as health posts and PAs assigned. Mobilization completed in Nyenwiliken in remote Upper Jedepo District and town awaiting assignment of a PA.
- 3) The Training Unit, with J.T. Chea, Nyan Zikeh, M. Yekee, Marie Watkins, and others, and the USPCVs Faye Hannah, Bert Hitchings, and Win Morgan, admirably continues active and appropriate training. (With this excellent training unit a physician would not be required for training personnel except as a consultant.) Significant workshops not listed elsewhere this quarter include:
 - a) Second Senior Officials Management Review Workshop in April
 - b) Workshop for HACs from PA towns in May
 - c) Workshop for HACs from Dresser towns June 1-4

- 4) Kess Hottle, management consultant, spends March and April in Sinoe County, further diminishing the effects of the loss of the LTA. His work included:
 - Drawing up an organizational chart
 - Developing policies and directives
 - Handling the transportation crisis
 - Design and installation of a mail distribution cabinet
 - Job description review
 - Giving performance review experience to the nursing director, county personnel officer, and senior health inspector by working with them to review their personnel
 - Developing the role of a mechanic/driver
 - Daily contact with administrative officers
- 5) Richard Ainsworth, Chief-of-Party, makes frequent visits to the county to assist as much as possible in substituting for an LTA.
- 6) Amos Karmo, CFO, sent to the University of Connecticut for further short-term financial training.

June 1987

- 7) Trainers developed for training PAs to train CHWs
- 8) AMC Jeeps rapidly breaking down, causing major problems with transportation for mobilization and supervision. These are proving to be much too fragile and entirely inappropriate vehicles for Sinoe County roads. A limited stock of most-used parts sent to the county to help keep the vehicles operating.
- 9) No building supplies from the Development Fund have yet reached the county, and towns are definitely becoming discouraged and losing interest in building clinics and houses for health workers.

Third Quarter -- July-September 1987

- 1) New LTA, Paul Mertens, M.D., arrives in county.
- 2) Training of PAs as CHW trainers, two weeks mid-July
- 3) Training of first class of 23 CHWs, three weeks August 1-20. Two sites used, Tubmanville and Pynetown.
- 4) Two-week TBA upgrading program held by M. Watkins and S. Monger at three sites August and September.

- 5) Dr. A. Hiedala, CHO, leaves in August for a one year MPH program at Emory University in Atlanta. Dr. Victoria N. Browne is appointed as CHO in his absence.
- 6) In the absence of a Liberian replacement, Paul Mertens, the LTA, is appointed the acting public health physician for Sinoe County.
- 7) Some building supplies finally reach the county and clinic construction gets off to a slow start.
- 8) Amos Karmo returns from training in September.
- 9) With the exceptionally heavy rainy season the roads are becoming impassable and attempts to mobilize and train are destroying the AMC Jeeps. Many areas are entirely unreachable even with 4-wheel-drive in July and August. By early September the road to Zwedru and Monrovia becomes totally impassable for any vehicle. Greenville runs out of rice, gasoline, kerosene and flour before the roads open up again in November.

Fourth Quarter -- October-December 1987

- 1) CHWs installed in ceremonies individually in their towns.
- 2) Written 48-page supplement to the CHW picture manual, A Guide for Community Health Workers in Rural Liberia, developed by LTA and Training Unit for the majority of CHWs who prove to be literate.
- 3) Significant workshops:
 - a) Three workshops for PAs -- Management, EPI, and CHW Supervision held serially October 26-30
 - b) Workshop to orient county officials (district superintendents, commissioners, mayors, chiefs, etc.) to the purposes and benefits of the project held November 9 and 10 -- 180 participants anticipated, but 250 attend!
 - c) European Economic Community (EEC) workshop to orient PAs for mobilizing communities for development of wells and latrines held December 8-15.
- 4) The new external project evaluation in November completely reverses the recommendations of the evaluation one year previous. The project is to concentrate on management and supervision, keep PAs at their posts, and minimize mobilization for further CHW training and minimize workshops.
- 5) Three-course training of CMs as trainers of TBAs in Harper in December for two weeks

- 6) Three months of extremely heavy vaccinating (November 1987-January 1988) by Sinoe County vaccination team blocks anticipated January-February measles epidemic which never develops! In November and December 13,006 doses of vaccine given out.
- 7) Plans for a separate Administration and Training building had been changed to planning a renovation of the northern wing of the building for this purpose, with relocation of the operating room, and development of a county supply depot facility. The plans proved inappropriate, and were modified with USAID to improve them this quarter.
- 8) The roads were impassable for half of the quarter. By mid-November the roads began to open up again as the rains decreased. Gasoline again became available in Greenville in late November.
- 9) Construction of clinics continued at a very slow pace. It is proving hard to redevelop enthusiasm after the prolonged period with no building supplies.
- 10) Physician coverage was in short supply with Dr. Browne ill most of December.

First Quarter -- January-March 1988

- 1) Wells and latrines mobilization of towns by PAs for EEC project in January. Sixty towns mobilized for drilled wells.
- 2) Workshops and Conferences:
 - a) Project Planning Conference for 1988 -- Harper, February 15.
 - b) Mobilization refresher workshop for PAs March 9-11.
- 3) Renovation begins on F.J. Grante Hospital in February to construct administrative offices and a training area.
- 4) Revision of Mobilization manual -- joint Grand Gedeh and Sinoe Counties training units -- in Greenville February 22-27.
- 5) Opening of Sinoe County Medical Supply Depot March 7 with assistance from Richard Blakney after two containers of drugs and supplies arrive from Monrovia.
- 6) Measures instituted to speed up extremely slow construction of clinics. Hospital pickup reassigned to construction supervisor.

- 7) Dr. Agbodza arrives in March to cover surgery for 2-1/2 months.
- 8) With physician staffing:
 Dr. Browne on maternity leave March 1-May 31.
 Dr. Conde, hospital surgeon, transferred to Zwedru early March.
- 9) Construction continues to lag far behind schedule and keeping Jeeps running is proving very difficult for the mechanic.
- 10) Difficulties with CHW supervision became evident, leading to a change in strategy for getting PAs out to the CHW sites and for strengthening of the supervisory system.
- 11) It is becoming increasingly evident that in a few of the clinics funds are being misappropriated. The clinic supervisor is investigating and taking corrective measures with the HACs.

Second Quarter -- April-June 1988

- 1) Revision of CHW and CHW Trainers Manuals in joint Training Unit workshop in April in Zwedru.
- 2) Arrival of the three new Toyota Diesel Landcruiser Stationwagons in early April. They deliver 18-25 mpg (compared to 10-13 mpg for Jeeps), and the diesel is less costly per gallon -- \$2.40 if purchased in barrels compared to \$3.50 for gasoline. They are built much stronger than the Jeeps.
- 3) Modification of the written CHW manual supplement for the use of dressers expanded from 48 to 56 pages by the Sinoe County training unit and LTA in time to distribute and use at the Dressers' workshop April 25-28 -- A Handbook for Dressers in Liberia.
- 4) Follow-up workshop for Dressers April 25-28.
- 5) Additional workshop for training CMs to train TBAs in May, 1988.
- 6) One week refresher for PAs for training CHWs in May.
- 7) Training of second group of 13 CHWs in June and July.
- 8) Key administrative personnel in finance and logistics are not doing their jobs. All attempts to improve this have not resulted in satisfactory performance. No balance sheet has been turned out by the finance officer in the entire period since his return from training. Replacements will need to be found.

Third Quarter, 1988

- 1) July 1988 -- Training of TBAs by CMs begins. It will continue for 4 months.
- 2) The LTA was on vacation June 27-July 25. Upon his return, he was oriented to the Monrovia office by Richard Ainsworth in preparation for assuming the Management Specialist position with Monrovia as home-base for the year's Project extension.
- 3) Richard Ainsworth departs post July 29, 1988, and Paul Mertens assumes the position during the month of August. August is a transitional month, with LTA time divided approximately equally between Sinoe County and the Monrovia SER PHC office.
- 4) No replacement has been found for the surgeon. Dr. V. Browne is still alone at F.J. Crante Hospital in Greenville.
- 5) Dr. A. Hicdala returned September 26 from Emory University with his MPH.
- 6) September survey of RDFs shows 5 of 15 PA clinics are short of predicted levels of RDF funds.
- 7) Logistics officer in Sinoe County dismissed for insubordination.
- 8) Audit of Sinoe County accounts shows poor bookkeeping, records poorly-organized, and not all income recorded.

Fourth Quarter, 1988

- 1) 121 TMs complete training, 8 sites used.
- 2) Temporary logistics officer sent to Sinoe County.
- 3) Workshops were held for Community Health Committee members and CHWs from new towns October 11-12, and for the first class of CHWs December 5-9. MED held a supervisory skills workshop October 13-14 and a management seminar October 26-27.

First Quarter, 1989

- 1) Construction of health centers at a standstill with change in methods and lack of cement.
- 2) Temporary logistics officer Saye Zonen taken off probationary status and becomes permanent.

Second and Third Quarters, 1989 (April-August)

- 1) Faye Hannah, management consultant, working with small groups and individual staff to improve management systems, April-August.
- 2) Remobilization of three communities where CHWs dropped out
- 3) CHW Class I and II Continuing Education Workshop June 26-30
- 4) Workshop for HACs August 1-4
- 5) Construction of Health Centers progressing again with cement brought up by project truck from Monrovia
- 6) Change in RDF system to Sinoe RDF Plan (variation of Maryland County system) planned for fourth quarter

APPENDIX D

MANPOWER DEVELOPMENT COMMITTEE REPORT

This Annex summarizes the presentation to the MH&SW, by the Manpower Development Committee, of issues, recommendations, and progress to date.

Issues:

1. MH&SW cannot absorb current graduates of MLHW programs.

In 1985, out of the 145 MLHW graduates, only 40 (27.6%) were employed. Unfortunately, the 161 MLHW graduates of the 1986 graduating classes have limited employment opportunities.

2. Problems of Training Institutions.

- a) Faculty: Almost every training institution in the country is facing acute shortages of faculty to teach their programs. This problem is compounded by a high turn over rate, inability to replace faculty on study leave, and the lack of motivation and incentives. Appropriate academic qualifications and experience of the faculty to hold teaching positions is another area of concern.
- b) Logistic and Financial Support: The budgetary cuts have seriously jeopardized the ability of training institutions to provide the necessary transportation for student clinical experiences, and material resources in the form of books and equipment for the teaching programs. The freeze on hiring new faculty is paralyzing the operation of the programs. Faculty on educational leave for periods of two years, and those leaving their positions are not replaced.
- c) Clinical Affiliations: Conditions at the only psychiatric facility in the country have deteriorated to the extent that all training institutions have suspended clinical experience for their students. Attempts to identify alternate experiences have not been fully successful, leaving a serious gap in graduation requirements.

The dwindling in-patient and out-patient numbers at hospitals and health facilities are also causing problems in identifying appropriate and adequate clinical experience for students in most institutions. The inability to provide the rural clinical affiliations for PHC practice is another serious problem.

3. Accreditation.

The PA and EH programs have no regulatory boards to set standards of practice. Non-enforcement of accreditation criteria in nursing schools is degrading standards of education.

4. Continuing Education.

Faculty have no incentives and few opportunities to strengthen their skills. This situation is also critical for field workers. The concern of the manpower committee was manifest in the proposal for a survey of the manpower in the country to identify the manpower and in-service education needs. This proposal awaits funding for implementation.

Recommendations:

The Manpower Development Committee made the following recommendations to the Minister of Health and Social Welfare for discussion and action.

1. Given the critical unemployment situation in the country compounded with faculty shortages, it is proposed that training of MLHWs be prioritized as follows:

- a) CMs
- b) PAs
- c) LPNs
- d) Post-Basic RNs
- e) RN CMs
- f) Laboratory technicians

The other categories of workers are not considered essential at this time.

Recognizing that complete closure of schools will create serious problems for reopening programs at a future date, it is proposed to limit freshman enrollment for the 1987 academic year as follows:

TNIMA:	CM	8 to 10
	PA	10 to 15
	RN	10 to 12
	EH	10 to 12

The TNIMA LPN program to be temporarily suspended and EH program implementation to be contingent on identifying the appropriate leadership and faculty for the school.

Phebe:	CM	10
	RN CM	5 to 8
	LPN	10 to 15
Ganta:	RN	8 to 10
Zwedru:	CM	8 to 10
Zorzor:	LPN	10 to 15

The Curran School to be requested to suspend their CM program, due to faculty problems, but as they have a rich clinical field, it is proposed that students from other schools affiliate with the Curran Hospital.

CUC: Post-Basic B.Sc.R.N. program 10 to 15

That the Cuttington University College be urged to temporarily suspend the freshmen basic BSN class of 1987 and concentrate on the post-basic program, which should be expanded to include PAs, Midwives and EH technicians.

2. That the Nursing Board be urged to conduct accreditation visits and make their recommendations to the MH&SW early 1987.
3. That the MH&SW establish a board to regulate the practice of PAs, EH technicians, Dental Assistants, and X-ray and Laboratory Technicians.
4. The importance and need for CE programs is critical. However, the manpower survey should be completed to adequately plan for such a program. MH&SW is urged to follow up on funding sources to carry out such a survey as proposed and submitted to the WHO by the Manpower Development Committee in October 1986.

Progress to Date on the Recommendations:

The Minister of Health & Social Welfare commended the work of the Committee, and agreed that the issues raised were serious and that the recommendations made were timely and well thought out.

As all institutions had already started the admission process, it was agreed to defer implementation of the first recommendation until the next academic year. However, TNIMA suspended the LPN program, and Zwedru did not take in a Freshman class of Midwifery students.

The Liberian Board of Nursing and Midwifery was requested to conduct accreditation visits as soon as feasible and to report its findings to the MH&SW. An accreditation visit to Zorzor is planned for November 1987.

It was decided to establish a Regulatory Board for licensure of those Health Science Professions that currently have no licensure. A task force with representatives from each of health care professions was appointed to work on the draft constitution and legislation. The first draft has been completed.

CE was recognized as a major area of need. It was agreed to remind the WHO representative of the urgency for conducting the manpower survey as the first step in the CE process.

APPENDIX E

PARTICIPANT TRAINING SUMMARY

LONG-TERM

<u>NAME</u>	<u>TITLE & ORGANIZATION</u>	<u>TRAINING DATES</u>	<u>UNIVERSITY</u>	<u>DEGREE & AREA OF STUDY</u>
Amara, Sarah	Director, Physician Assistant Program, TNIMA	September 1985-May 1987	Syracuse University	M.S. Nursing/MCH
Amet, Isabella Simbeye	Nutrition Services, Bureau of Curative Services, MH&SW	July 1986-July 1987	John Hopkins University	M.P.H. Nutrition
Bropleh, Mary	Chief Nursing Officer, Bureau of Curative Services, MH&SW	August 1985-May 1987	Catholic University of America	M.S. Nursing Education/ Curriculum Development
Cooke, George	Assistant Manager for Supply and Inventory, National Drug Service, MH&SW	August 1985-April 1987	University of Hawaii	M.P.H./Health Planning & Administration
Cooper, Regina	Physician, Maryland County Health Department, MH&SW	July 1986-July 1987	Johns Hopkins University	M.P.H./MCH
Franklin, David	Faculty, Cuttington University College	September 1985-August 1987	University of California	San Francisco, M.S.Nursing/ Community Mental Health
Hiedala, Abebu	County Health Officer, Sinoe County Health Services, MH&SW	August 1987-September 1988	Emory University	M.P.H./International Health
Kesselly, Kota	Director, Community Health Department, Phebe, Bong County, MH&SW	August 1987-July 1988	Tulane University	M.P.H./Community Health Development
Kiawoin, Kedrick	County Health Officer, Grand Gedeh County Health Services, MH&SW	August 1987-December 1988	Emory University	M.P.H./Health Administration
King, Esther	Faculty, Phoebe School of Nursing	September 1985-August 1987	Boston University	M.S. Nursing/MCH
Kuawogai, Vivian	Faculty, Cuttington University	August 1985-May 1987	Catholic University of America	M.S. Nursing/MCH

LONG-TERM (continued)

<u>NAME</u>	<u>TITLE & ORGANIZATION</u>	<u>TRAINING DATES</u>	<u>UNIVERSITY</u>	<u>DEGREE & AREA OF STUDY</u>
Lawuobahsumo, Jacob	Director, Ganta School of Nursing	August 1987-July 1989	Columbia University	M.S Nursing Education/Curriculum
MaCauley, Rose Jallah	Director, Family Division, Bureau of Preventive Services, MH&SW	August 1986-August 1987	University of North Carolina	M.P.H./MCH
Makwi, Kylkon	Physician, MH&SW	September 1986-June 1987	Loma Linda University	Did not complete requirements for M.P.H. in nutrition, nor has he returned to Liberia.
Mapleh, Louise	Project Manager, SER PHC Project, MH&SW	August 1985-December 1986	University of North Carolina	M.P.H., Public Health Nursing Administration
Wulah, Victo ia	Faculty, TNIMA, MH&SW	August 1986-December 1987	University of North Carolina	M.P.H. Completed degree, but has not returned to Liberia.

SHORT-TERM TRAINING

<u>NAME</u>	<u>TITLE & ORGANIZATION</u>	<u>TRAINING DATES</u>	<u>TRAINING INSTITUTION</u>	<u>PROGRAM TITLE</u>
Barney, Thomas	County Health Services Administrator, Grand Gedeh CHS, MH&SW	April-June 1986	University of Connecticut Health Center	Project Management
Camano, Ivan	Chief Medical Officer, MH&SW, Monrovia	August 1986	Management Sciences for Health	Microcomputers for Managing Health
Chea, Johnson Toe	Clinic Supervisor, Sinoe CHS, MH&SW	October 1985	The MEDEX Group, University of Hawaii	Strengthening Supervisory Systems in Primary Health Care
		January-April 1989	Institute of Public Service (IPS), International, University of Connecticut	Project Analysis and Implementation
Chon, David	Health Services Administrator, Sinoe CHS, MH&SW	June-July, 1989	IPS, International, The University of Connecticut	Fundamentals of Management
Collins, Joetta	MCH Supervisor, Grand Gedeh CHS, MH&SW	October 1985	The MEDEX Group, University of Hawaii	Strengthening Supervisory Systems in Primary Health Care
Cooper, Arthur Mulbah	Phebe Hospital, MH&SW, Gbarnga County	May 1986	The MEDEX Group, University of Hawaii	Strengthening Primary Health Care at the Health Center and Community Level
Davies, Joseph Welai	Deputy Minister, MH&SW	May-August 1986	Boston University	Health Care in Developing Countries
Desuah, Martha	Midwifery School, Grand Gedeh County, MH&SW	November 1987	The MEDEX Group, University of Hawaii	Curriculum Development for Training in Primary Health Care and Child Survival Strategies
Dorue, Zedueh Albert	County Logistics Officer, Grand Gedeh CHS, MH&SW	August 1988	Institute for Development Gaborone, Botswana	Purchasing and Supply Management
Duncan, Jessie	Administrator, Tubman National Institute of Medical Arts, MH&SW	December 1987-January 1988	Management Training and Development Institute	Management Communication for Development; Project Development and Management; Project Analysis and Evaluation
Flomo, Mary	Assistant Project Manager, SERPHC Project, MH&SW	January-April 1989	Institute of Public Service (IPS), International, University of Connecticut	Project Analysis and Implementation
Gaba, Linda-Mae Ayele	Instructor, Cuttington University College, School of Nursing	November 1987	The MEDEX Group, University of Hawaii	Curriculum Development for Training in Primary Health Care and Child Survival Strategies

SHORT-TERM (continued)

<u>NAME</u>	<u>TITLE & ORGANIZATION</u>	<u>TRAINING DATES</u>	<u>TRAINING INSTITUTION</u>	<u>PROGRAM TITLE</u>
Galakpai, Moses	Deputy Chief Medical Officer, MH&SW	September-October 1986	Management Sciences for Health	Human Resources Management
Gee Kear, Ruth	Tubman National Institutes of Medical Arts, MH&SW	January 1987	The MEDEX Group, University of Hawaii	Curriculum Development for Training in Primary Health Care and Child Survival Strategies.
Gwesa, Flomo	MH&SW, Monrovia	May-August 1986	Boston University	Health Care in Developing Countries
Howard, Nora	Instructor, Tubman National Institutes of Medical Arts, MH&SW	November 1987	The MEDEX Group, University of Hawaii	Curriculum Development for Training in Primary Health Care and Child Survival Strategies.
Jallah, J.	Physician, MH&SW	May 1985	The MEDEX Group, University of Hawaii	Strengthening PHC at the Community & Health Center Level

Jones, Dedeh F.	Management Associate, MH&SW	June-July 1989	IPS, International, The University of Connecticut	Project Analysis and Implementation
Karmo, Alice A.	Health Planning Officer, MH&SW		IPS, International, The University of Connecticut	Project Analysis and Implementation
Karmo, Amos	Sinoe County CHS, MH&SW	May-July 1987	IPS, International, The University of Connecticut	Financial Management
Karwely, Joseph	Grand Gedeh CHS, MH&SW	October 1985	The MEDEX Group, University of Hawaii	Strengthening Supervisory Systems in Primary Health Care
Kiawoin, Kedrick	County Health Services Officer, Grand Gedeh CHS, MH&SW	May 1985	The MEDEX Group, University of Hawaii	Strengthening PHC at the Community & Health Center Level
Kingsley, Ernest	Finance Officer, Grand Gedeh CHS, MH&SW	May-July 1987	IPS, International, The University of Connecticut	Financial Management
Korto, Martha	Director, Management & Evaluation Division, MH&SW	November-December 1988	The University of Connecticut Health Center	Community Research and Evaluation Program
Kpissay, R. Monolu	MH&SW, Monrovia	May-July 1986	IPS, International, The University of Connecticut	Fundamentals of Management
Bayoh-Kpoto, Kalfala	Tubman National Institutes of Medical Arts, MH&SW	May-August 1986	IPS, International, The University of Connecticut	Systematic Design and Management of Training

SHORT-TERM (continued)

<u>NAME</u>	<u>TITLE & ORGANIZATION</u>	<u>TRAINING DATES</u>	<u>TRAINING INSTITUTION</u>	<u>PROGRAM TITLE</u>
Kullie, William	Personnel Dept., MH&SW, Monrovia	May-July 1986	IPS, International, The University of Connecticut	Personnel Management
Lawubahsumo, Jacob	Harley School of Nursing, Ganta Hospital, MH&SW	November 1986	The MEDEX Group, University of Hawaii	Nursing Leadership in Primary Health Care and Child Survival Programs
Mapleh, Louise	Project Manager, SER PHC Project, MH&SW	December 1987-January 1988 December 1988.	Management Training and Development Institute International Conference on Oral Rehydration Therapy, Washington, D.C.	Management Communication for Development; Project Development and Management; Project Analysis and Evaluation
Massaquoi, B. Abraham	Clinical Supervisor/Instructor, Tubman National Institutes of Medical Arts, MH&SW	May 1986	The MEDEX Group, University of Hawaii	Strengthening Primary Health Care at the Health Center and Community Level
85 Mhenduah, Weimie-Dehtho	Instructor, Tubman National Institutes of Medical Arts, MH&SW	September 1986	The MEDEX Group, University of Hawaii	Design and Implementation of Child Survival Programs in the Community
Monger, Saretta	MCH Supervisor, Sinoe County CHS, MH&SW	January 1987	The MEDEX Group, University of Hawaii	Curriculum Development for Training in Primary Health Care and Child Survival Strategies
Morris, Cecilia	Lecturer, Cuttington University College	November 1986	The MEDEX Group, University of Hawaii	Nursing Leadership in Primary Health Care and Child Survival Programs
Nah, Solomon Nagbah	Instructor, Tubman National Institutes of Medical Arts, MH&SW	September 1987	The MEDEX Group, University of Hawaii	Supervision in Primary Health Care
Reeves, Rosalind A.	Tubman National Institutes of Medical Arts, MH&SW	May-August 1986	IPS, International, The University of Connecticut	Systematic Design and Management of Training
Sackor, Isaiah	MH&SW, Monrovia	August 1988	Institute of Development Management, Gaborone, Botswana	Purchasing and Supply Management
Yancy-Salifu, Albertha	Executive Secretary, MH&SW	February-April 1986	Information Systems Center, Tulane University	Microcomputer Training Program

SHORT-TERM (continued)

<u>NAME</u>	<u>TITLE & ORGANIZATION</u>	<u>TRAINING DATES</u>	<u>TRAINING INSTITUTION</u>	<u>PROGRAM TITLE</u>
Samah, George	Comptroller, MH&SW	January-April 1986	IPS, International, The University of Connecticut	Public Financial Management
Smith, Samuel	Sinoe County CHS, MH&SW	October 1985	The MEDEX Group, University of Hawaii	Strengthening Supervisory Systems in Primary Health Care
Subah, Marion K.	Director, IEC Division, MH&SW	December 1987-January 1988	Management Training and Development Institute	Management Communication for Development; Project Development and Management; Project Analysis and Evaluation
Watkins, Marie	Sinoe County CHS, MH&SW	January 1987	The MEDEX Group, University of Hawaii	Curriculum Development for Training in Primary Health Care and Child Survival Strategies
Wheager, John	Clinical Supervisor, Grand Gedeh County Health Services, MH&SW	September 1987	The MEDEX Group, University of Hawaii	Supervision in Primary Health Care
Williams, Joseph Kargbeh	Mobilization Officer, Grand Gedeh County Health Services	September 1987	The MEDEX Group, University of Hawaii	Supervision in Primary Health Care
Wolo, MacArthur	MH&SW, Monrovia	May-August 1986	IPS, international, The University of Connecticut	Project Management for Local Development
Wonokay, Peter	General Manager, National Drug Service, MH&SW	May 1986	Management Sciences for Health	Managing Drug Supply for Primary Health Care; Revolving Drug Funds Seminar
Yekee, Marietta	Director of Nurses, Sinoe CHS, MH&SW	October 1985	The MEDEX Group, University of Hawaii	Strengthening Supervisory Systems in Primary Health Care
Zikeh, Nyah	Community Mobilization Supervisor, Sinoe County Health Services, MH&SW	September 1987	The MEDEX Group, University of Hawaii	Supervision in Primary Health Care

LOCAL SCHOLARSHIP

<u>NAME</u>	<u>TRAINING INSTITUTION</u>	<u>PROGRAM OF STUDY</u>	<u>DATES</u>
1. Hannah Johnson	CUC	Nursing	1987
2. Sumo Goyah	CUC	Nursing	1987
3. Barbara Synder	CUC	Nursing	1988
4. Nyapu Darkemu	CUC	Nursing	1988
5. Samuel Kpartor	CUC	Nursing	1988
6. Tamba Fokoe	UL	Mass Comms	1988
1. Ricks Mensah	TNIMA	PA	1987
2. Abiodu Smart	TNIMA	PA	1987
3. David Hallowanger, Jr.	TNIMA	PA	1987
4. Bakar Poyi	TNIMA	PA	1987
5. Cooper Karnue	TNIMA	PA	1987
6. Momodu Kromah	TNIMA	PA	1987
7. Amos Ross	TNIMA	PA	1987
8. Sando Roberts	TNIMA	PA	1987
9. Anthony Sopah	TNIMA	PA	1987
10. Adolphus Kenta	TNIMA	PA	1987
1. Veronica Myanfore	TNIMA	CM	1987
2. Lucy Nagbe	TNIMA	CM	1987
3. Reddy Toliver	TNIMA	CM	1987
4. Klannah Brownell	TNIMA	CM	1987
5. Savah Kromah	TNIMA	CM	1987
6. Mary Mendin	TNIMA	CM	1987
1. Rufus Logan	TNIMA	PA	1987
2. Saye Mason	TNIMA	PA	1987
3. James K. Selay	TNIMA	PA	1987
4. Kolubah Dorbor	TNIMA	PA	1987
5. Pewu McGill	TNIMA	PA	1987
6. Rebecca Scotland	TNIMA	PA	1987
1. Sarah Vinton	TNIMA	CM	1989
2. Ceaneh Nurse	TNIMA	CM	1989
3. Mary Moore	TNIMA	CM	1989
1. Beatrice Clements	Phebe	RNM	1988
2. Rebecca Jallah	Phebe	RNM	1988
3. Margarette Beyan	Phebe	RNM	1988
4. Benetta Kesselly	Phebe	RNM	1988

PA = Physician Assistant
 CM = Certified Midwives
 RNM = Registered Nurse Midwife
 CUL = Cuttington University College
 UL = University of Liberia
 TNIMA = Tubman National Institutes of Medical Arts
 Phebe = Phebe Hospital School of Nursing

APPENDIX F

CHRONOLOGY OF CURRICULUM DEVELOPMENT AND TRAINING EVENTS

January-March 1985

1. Training of Trainers Workshop, January 21-25, 1985, for LTA team, personnel from training institutions, MH&SW Central level management staff; to orient participants to process of competency-based training and adult learning methodologies.
2. Mrs. Mary Bropleh, Deputy Chief Nursing Officer appointed in January 1985 as Training Officer, and counterpart to Curriculum Development Specialist, Dr. Rita Morris.
3. Curriculum Development Workshop, February 12-16, 1985; for heads of training institutions, key central and county level personnel; to initiate process of curriculum adaptation and to complete task of analysis of MLHWs relevant to community health needs.
4. Curriculum Development Committee formed with nine members with responsibility for carrying out curriculum development activities.

April-June 1985

1. Consultant, Pam Prescott-Kim, reviewed PA Program, including the curriculum and the strengths and weaknesses of the faculty and assisted with facilitation of the Curriculum Development Workshop II; June 1985.
2. Consultant, Sherry Erzinger, assisted in planning, preparation and facilitation of Curriculum Development Workshop II and assisted in planning and preparing Continuing Education materials.
3. Curriculum Development Workshop II, July 2-6, 1985; for representatives from training institutions, key MH&SW central level personnel; to draft job descriptions for all MLHWs; and to identify eight topics of continuing education based on needs.

July-September 1985

1. Seven Long-Term Participant Trainees admitted to USA universities for MA degree study in Health Care Administration, Curriculum Development, Community Mental Health, Maternal and Child Health.

2. Mrs. Bropleh leaves for MA degree training in Nursing under SER PHC Project Scholarship, and Mrs. Jessie Duncan appointed as replacement Training Officer, and Counterpart to LTA, Dr. Rita Morris.
3. AD HOC IEC Committee formed to study the merger of the MHSW's Divisions of Health Education and In-Service Training into a comprehensive Information, Education and Communication (IEC) Division under the Bureau of Preventive Services.
4. Dr. Joshua Adeniyi completed a ten-day consultancy in August 1985, to work on the details of the merger and development of the IEC Division.

October-December 1985

1. Curriculum Development Advisor and Training Officer attend the West African College of Nursing, Curriculum Development Workshop in Ghana, October 27-November 9, 1985. The Liberian delegates developed a course on Supervision for Mid-Level Health Workers.
2. Recommendations were made to the Minister of Health for the IEC Division merger plans and approved in October 1985. A work plan for IEC Division was drawn up for 1986.

January-March 1986

1. Guidelines developed for short-term scholarships and submitted to Scholarship Committee for review and adoption.
2. Certified Midwives Curriculum Workshops, February 5-14, 1986; CM faculty and supervisors; to review CM curriculum and begin adaptation and standardization process.
3. PA's Curriculum Review Workshop, February 17-28, 1986; PA faculty and supervisors; to review PA curriculum and begin adaptation process. MEDEX Consultant, Tom Coles conducted the workshop which focused on teaching participants the adaptation process.

April-June 1986

1. Certified Midwives Curriculum Workshop II, March 31-April 4, 1986. Curriculum adaptation process completed.
2. Five Long-Term Participant Trainees were admitted to American universities for MPH degree study in health administration, nutrition, maternal and child health.

3. Supervising and Supporting Health Workers in Liberia, April 4-18, 1986; for faculty, county supervisors from Sinoe and Grand Gedeh Counties; to develop supervisory skills. MEDEX Consultant, Tom Coles conducted the workshop.
4. Training Resources for MLHW Programs Workshop, June 18-20, 1986; faculty of training institutions; books identified and list for ordering supplies and equipment developed.

October-December 1986

1. The People's United Community Clinic (PUCC) officially opened in October 1986. The clinic is organized as an urban health center providing PHC field experiences for TNIMA students.
2. LPN Curriculum Review and Adaptation Workshop. November 16-22, 1986; faculty of three LPN programs; LPN curriculum revision and standardization.
3. PA Curriculum Review Workshop II, December 26-30, 1986; faculty; completion of PA curriculum adaptation.

January-March 1987

1. Curriculum Manuals for PA, CM, and LPN Programs published and distributed to training schools for implementation with 1987 freshman classes.
2. Teaching Methods and Evaluation Course, January 19-30, 1987; faculty of MLHW programs; to improve teaching and evaluation skills. (consultant name ?)
3. RN Curriculum Review and Adaptation Workshop, February 16-25, 1987; faculty from RN programs and Liberian Board of Nursing and Midwifery members; RN curriculum revised and standardized.
4. CHW Curriculum Development Workshops, March 3-6, 1987, Sinoe County, March 30-April 4, 1987, Grand Gedeh County. CHD training teams and CMT members, CHAL.

April-June 1987

1. EHT Curriculum Adaptation and Review Workshop, April 16-30, 1987; EHT faculty and resource persons; EHT curriculum revision completed.
2. Formation of National Board for Health Professions was proposed to Minister of Health. Task Force appointed to work on Licensure and Accreditation Policies and Procedures. First draft for Licensing of Health Care Practitioners completed. April-June 1987.

3. The LTA Curriculum Development Specialist completes tour of duty and departs Liberia, June 1987.

July-September 1987

1. Four Long-Term Participant Trainees depart for American universities for Master's level training. The two CHOs from Grand Gedeh and Sinoe Counties are included in this group.
2. First draft for accreditation of Health Sciences Professions Programs completed and accepted as working document.
3. Follow-up Curriculum Implementation Visits made to four of MLHW training schools to determine areas of implementation and progress.
4. Revision of Anatomy/Physiology Student Text Book for MLHW training programs undertaken with assistance of LTA, Sinoe County, Dr. Paul Mertens. This revision provides up-to-date training materials to complement the revised curricula.

October-December 1987

CMs TOT Workshop, December 7-18, 1987, in Harper, Maryland County. TOT workshop for CMs as trainers of traditional midwives. Participants from Grand Gedeh, Sinoe and Maryland Counties.

April-June 1988

Textbooks ordered through USAID in Spring 1987 for MLHW training institutions received and distributed.

July 21-15, 1988

Curriculum Evaluation Workshop held to evaluate revised curricula of MLHW training institutions.

March 12-17, 1989

CHW National Curriculum Workshop held with representatives from all the PHC projects in Liberia attending. A detailed outline of a national CHW curriculum was developed.

APPENDIX G

PERSONNEL OF SER PHC PROJECT

Ministry of Health & Social Welfare

Mrs. Louise Thomas-Maple Management	Project Manager, SER PHC Project Counterpart to Chief of Party Specialist Advisor, March 1987
Mrs. Mary Flomo	Deputy Project Manager
Dr. Abebu Hiedala	CHO, Sinoe County; Counterpart to Public Health Physician
Dr. Kedrick Kiawoin	CHO, Grand Gedeh County; Counterpart to Public Health Physician LTA
Mrs. Jessie Duncan	Administrator, TNIMA; Curriculum Development Officer for SER PHC; Counterpart to Curriculum Development Specialist Advisor, July 1985
Mr. Peter Wonokay	General Manager, NDS; Counterpart to Logistics Specialist Advisor, April 1986
Mr. George Cooke	Deputy Manager - Inventory & Supply, NDS
Dr. Moses Galakpai	Deputy CMO; PHC Coordinator
Mr. Eric Johnson	Assistant Minister for Planning

Long-Term Advisors The MEDEX Group, University of Hawaii

Mr. Richard Ainsworth	Chief of Party Management Specialist August 1984-July 1988
Mr. Richard Blakney	Logistics Specialist - August 1984- April 1988
Dr. Indermohan Narula	County Public Health Physician Grand Gedeh County; August 1984- July 1988

**Long-Term Advisors
The MEDEX Group, University of Hawaii
(continued)**

Dr. James LaRose	County Public Health Physician Sinoe County; January 1985- January 1987
Dr. Paul Mertens	County Public Health Physician Sinoe County; June 1987-August 1988 Management Advisor - August 1988- August 1989
Ms. Rosemary DeSanna	Project Coordinator, Hawaii August 1984-September 1989
Faculty and Staff, The MEDEX Group, John A. Burns School of Medicine, University of Hawaii	
Dr. Richard A. Smith	Director, The MEDEX Group
Dr. Rodney N. Powell	Director for Development and Operations
Mr. Patrick Dougherty	Health Management Advisor
Mr. Gregory A. Miles	Health Management Advisor
Mr. Frank R. White, Jr.	Management Development Director
Mr. Thomas G. Coles	Human Resources Development Director
Mr. Sunil Mehra	Communications Specialist
Dr. Mary O'Hara-Devereaux	Director of Planning & Education
Dr. Melinda Wilson	Director of International Courses
Ms. Evelyn A. Hein	Business Manager

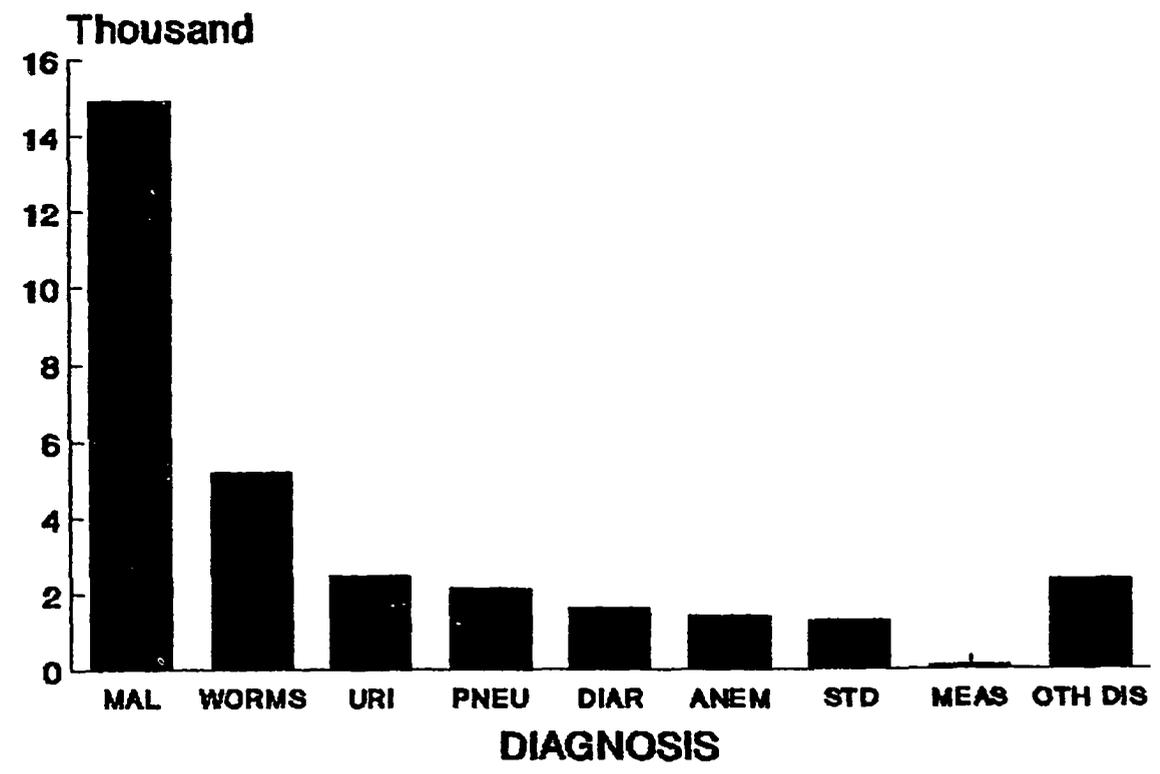
APPENDIX H
SHORT-TERM CONSULTANTS
SER PHC PROJECT
1985 - 1988

January 3-27, 1985	Gregory Miles	Training of Trainers Workshop
April 22-June 17, 1985	Seymour Greben	Management Systems Analysis
June 17-July 6, 1985	Pamela Prescott-Kim	Physician Assistant Curriculum Review
June 24-July 26, 1985	Sharry Erzinger	MLHW Curriculum Development Workshop
July 13-27, 1985	Joshua D. Adeniyi	Health Education/ Information, Education and Communication
September 23-October 31, 1985	STV/Sanders and Thomas	Development of Procurement Specifications for Commodities List in U.S.A.
October 25-November 1, 1985	Patrick Dougherty	Management Systems Development
October 25-December 7, 1985	Frank White	Financial Review, NDS
November 14-December 6, 1985	Seymour Greben	Management Systems Analysis
November 4-December 4, 1985	Victor Evans	Drug Supply Systems
November 6-December 6, 1985	Theo Ferguson	Drug Formulary

January 15-March 2, 1986	Seymour Greben	Management Systems Analysis
February 1-March 17, 1986	Theo Ferguson	Drug Formulary (in Holland)
February 7-March 8, 1986	Tom Coles	Physician Assistant Curriculum Review Workshop
February 17-April 2, 1986	Subah, Belleh & Assoc.	Management Skills Training Workshop
April 1-23, 1986	Tom Coles	Supervision for CHS
June 1-July 17, 1986	Svend E. Holsoe	Community Analysis of Counties
May 3-June 3, 1986	Yaw Adu-Boahene	Financial Management
June 10-September 11, 1986	David R. Alt	Management Systems Development
June 23-July 11, 1986	Stanley Sheriff	Job Analysis and Descriptions for CHS Staff Positions
July 11-August 23, 1986	Sunil Mehra	Community Needs Assessment in Counties
September 8-November 5, 1986	Donald Grant (CIPFA)	Finance - JFK Hospital
October 3-November 8, 1986	Frank White	Drug Supply and Inventory Operations of NDS
October 16-December 12, 1986	Seymour Greben	Management Systems Analysis
October 17-November 7, 1986	Patrick Dougherty	Materials Management Systems, JFK Hospital
November 14-December 13, 1986	Sunil Mehra	Community Mobilization
January 3-February 20, 1987	Sharry Erzinger	Training Methods and Evaluation Skills
December 15, 1986-January 12, 1987	Seymour Greben	Management Systems Analysis

January 15-March 2, 1987	William Albright	Management Analysts Supervision
March 27-May 1, 1987	Gregory Miles	CHW Curriculum Development
April 1-May 22, 1987	Seymour Greben	Management Systems Analysis
February 25-April 26, 1987	A. Kess Hottle	Health Management Advisor for Sinoe County
April 16-July 19, 1987	David R. Alt	Management Systems
April 16-July 19, 1987	William Albright	Management Systems
March 1-July 31, 1987	Winthrop Morgan	Community Mobilization
April 15-September 15, 1987	Randy Gillum	County Logistics
June 12-July 24, 1987	Sunil Mehra	CHW TOT Workshop
June 15-December 15, 1987	Laurie Ackerman	Management Development
December 1-6, 1987 and January 4-February 10, 1988	Victoria J. Cooper	Financial Management
December 16, 1987- March 2, 1988	Laurie Ackerman	Management Development
April 5-June 30, 1988	Victoria Cooper	Financial Management

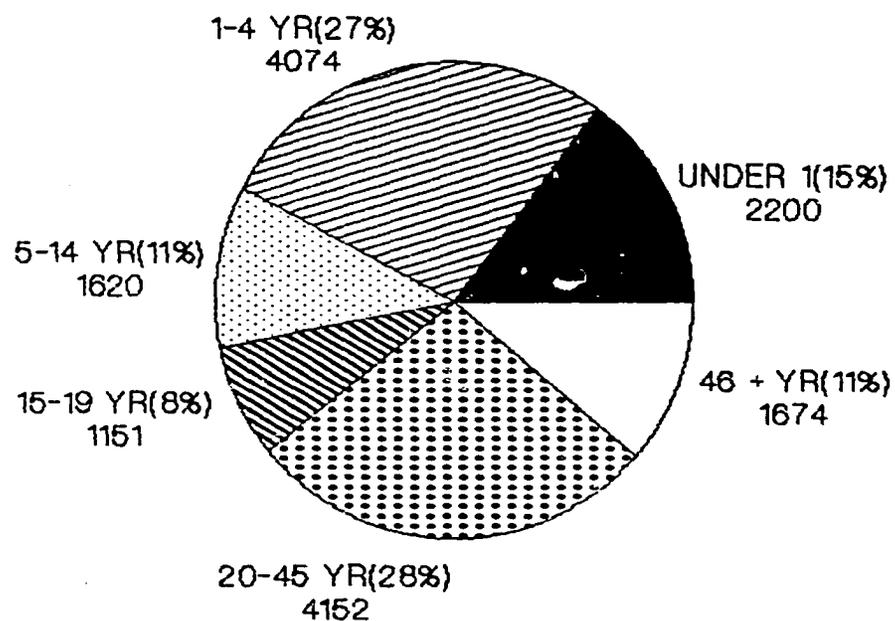
**OUTPATIENT DIAGNOSIS - 1988
SINOE AND GRAND GEDEH 31,384 Visits**



Bureau of Vital and Health Statistics

MALARIA BY AGE

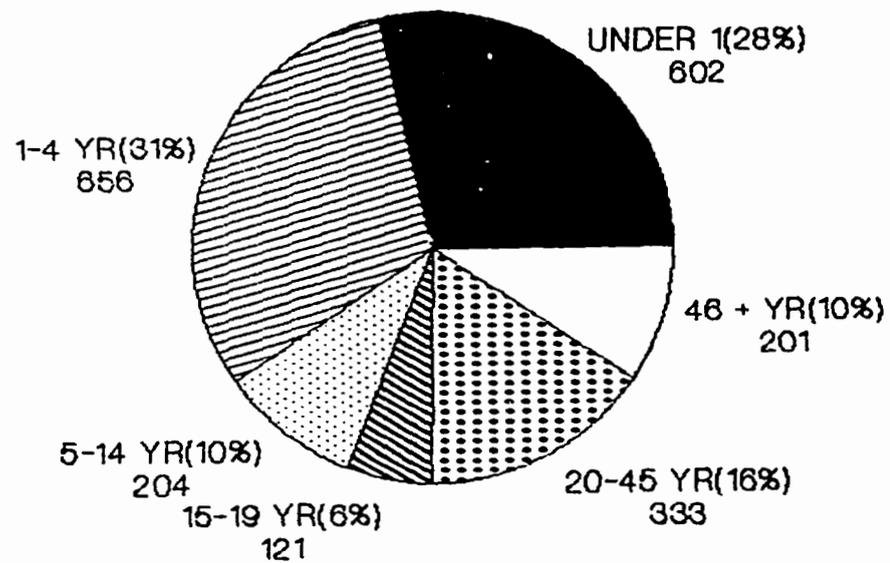
SINOE AND GRAND GEDEH - 1988



Source - MHSW - BVHS

PNEUMONIA BY AGE

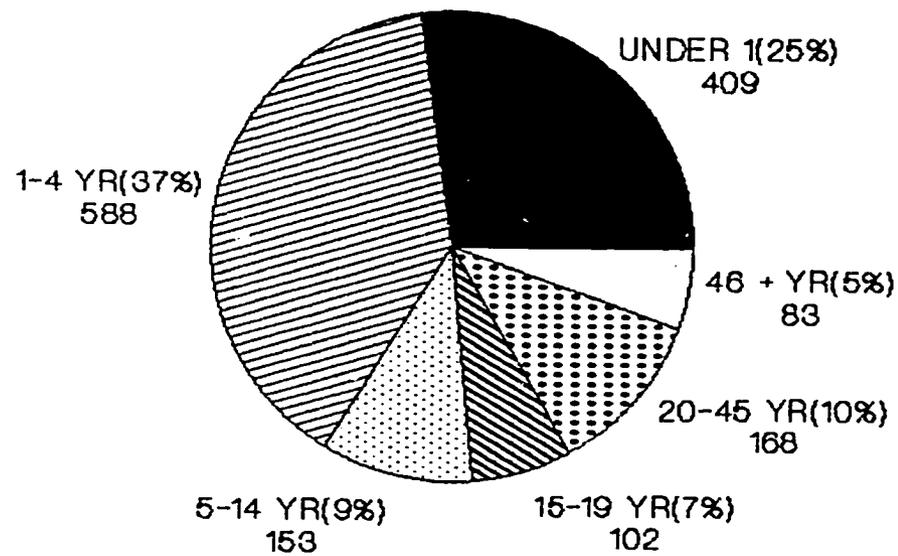
SINOE AND GRAND GEDEH - 1988



Source - MHSW - BVHS

DIARRHEA BY AGE

SINOE AND GRAND GEDEH - 1988



Source - MHSW - BVHS