

AN EVALUATION
OF THE
LOFA COUNTY RURAL HEALTH PROJECT
LIBERIA

Karen E. Lashman

Director, Health Sector Analysis
Division of Program Analysis
Office of International Health
Department of Health, Education, and Welfare

Based on a country visit April 6 to 28, 1978

Revised
August 28, 1978

ACKNOWLEDGEMENTS

This report is the product of a three-week field visit to Liberia in April 1978. In that short time frame it would have been impossible to have fully gained the insights reflected without the cooperation of the many persons in-country who spent many long hours in interviews with me.

My sincerely appreciation to the AID Mission staff for their support of this effort and especially warm thanks to the IHS team, particularly Mr. Perry Tennison, Dr. Paul Mertens, and Ms. Gilda deLuca who shared not only their invaluable experience in Liberia and Lofa County which contributed significantly to this report, but also their homes.

And a final but very important thank-you to Karen Cox, Ginni Caviness and Laurie Solow of the OIH staff without whose patient and diligent proofing and typing this report would not have been disseminated.

TABLE OF CONTENTS

<u>Chapter</u>	<u>Page</u>
SUMMARY AND RECOMMENDATIONS	1
I. PROJECT OVERVIEW	5
A. Historical Perspective	5
B. Project Purpose	5
C. Project Design	7
D. Project Amendments/Recommendations	8
II. THE KEY ACTORS	10
A. Introduction	10
B. The Government of Liberia (GOL) and Ministry of Health (MOH)	11
C. The Agency for International Development (AID) Mission	14
D. The Indian Health Service	19
1. Counterparts	21
III. PROJECT COMPONENTS	27
A. Upgrading Personnel	27
1. Physician Assistants	30
a. PA Training	30
b. Rural Service	34
c. Refresher Training	35
2. Empirical Midwives	36
3. Certified Midwives	39
4. In-service Training	40
5. Foreign Training	42
B. Supplies and Equipment	42
1. Commodities	42
2. Vehicles	44
C. Facilities Construction/Renovation	49
D. Development of An Adequate Records System	54
E. Policy and Procedures Manual	61
F. Establishment of a Radio Communications System	64
IV. PROJECT OPERATIONS	66
A. The Three-Tiered Rural Health Delivery System	66
1. Health Posts	66
2. Health Centers	67
3. County Hospitals	69
4. The Theoretical Fourth Tier -- JFK National Medical Center	71
5. Mobile Teams	71
6. Village Health Committees (VHCs)	72
B. Administration	74
C. Supervision	76

111

<u>Chapter</u>	<u>Page</u>
D. Salaries	80
E. The Trust Fund	81
F. Health Sector Financing	85
1. Fee-for-Service	85
2. Sector Financing	86
V. KEY PROJECT GAPS	90
A. Introduction	90
B. The Well Program	90
C. Community Health Inspectors (CHIs)	93
D. Immunizations	99
E. Nutrition	100
F. Health Education	101
G. Family Planning	102
1. The Setting	102
2. The LCRH Project and Family Planning	104
3. Programmatic Issues	108
H. Project Advocacy	110
VI. ROLE OF WOMEN	112
VII. PROJECT IMPACT	116
A. Introduction	116
B. Health Indicators	118
C. Accessibility	120
D. Coverage and Utilization	125
VIII. COMPLEMENTARY/COMPETING ACTIVITIES	131
A. Traditional Practitioners	131
B. Church Groups	131
C. World Bank	132
ANNEX I - TRUST FUND ACCOUNT	134
ANNEX II - PERSONS INTERVIEWED	144
ANNEX III - HEALTH FACILITIES VISITED	146

IV

LIST OF TABLES

<u>Table Number</u>		<u>Page</u>
III-1:	Voinjama District Clinic Personnel	28
III-2:	List of Health Personnel in Kolalun District, Lofa County	29
III-3:	John F. Kennedy Medical Center, School of Physician Assistants Curriculum	33
III-4:	Foreign Training	43
III-5:	Total Patient Visits by Sex and Age for Selected Health Facilities, Upper Lofa County	59
IV-1:	Health Facility Quality Card Monthly Report Card	78
IV-2:	Comparative Salary Scale of Rural Health Workers, Liberia	81
IV-3:	Field Activities of Community Health Inspectors	84
V-1:	Field Activities of Community Health Inspectors.	99
VII-1:	Leading Causes of Morbidity and Mortality . . .	119
VII-2:	Tellewoyan and Curran Lutheran Hospital Statistics on Morbidity and Mortality	121
VII-3:	Hospital Reporting System in Tellewoyan Hospital	122
VII-4:	Frequency of Disease-Specific Diagnosis	123
VII-5:	Population coverage in Lofa County Districts . .	126

V

SUMMARY AND RECOMMENDATIONS

Current Status

With the poor coordination of timing of key project inputs, only now are the major components of the LCRH project all in place and a critical mass of components assembled so that the model can be given a fair chance for successful implementation and possible replication in the proposed national integrated health delivery system project.

Because PAs take three years to train, the first class of these paraprofessionals trained under the project's upgraded curriculum just graduated and were placed in the field. The two MOH junior personnel who received long-term training in public health only recently returned to Liberia to staff the rural health office of the MOH. The new data system was not instituted until early 1978 and currently is operational in only 25% of Lofa County's health facilities. The two principal LCRH advisors -- the COP and PHN -- have been stationed up-country just a little more than six months too short a time frame to have more than laid the groundwork for full project operations. The supply depot at Voinjama was completed in the first quarter of 1978 and can be expected to have a significant impact on the local availability of essential drugs and facility supplies and equipment. Village health committees are slowly evolving. All major planned facility construction or renovation should be complete by 1978. The well program is only beginning. Thus, in summary, the LCRH project is at a critical point at which its viability as a rural health delivery model is finally ready to be tested.

With so many resources already expended to get the system in place, the rationale of abandoning this model as a failure and superimposing an entirely new, untested model in its place is highly questionable, particularly amidst limited resources for the health sector. Rather what is needed is the securing of appropriate commitments from the three chief actors -- the GOL, USAID and IHS -- to give the project an honest trial. A clear delineation of roles and interrelationships is a pressing need if implementation is to proceed.

Future Directions

Given the fact that the majority of time during the project's first three years of operation has been spent on mobilizing project inputs, it is recommended that the LCRH project be extended at a minimum from June 30, 1979 to September 30, 1979 to permit the implementation phase enough time to be securely in place. This extension would also ensure continuity of rural health programming, by building a bridge between the LCRH project and the new integrated rural health delivery system.

The extensive number of discrete components of the LCRH project have served to dissipate actions over too many different directions, impeding the completely successful implementation of any one. The last year of the project can be most positively approached by refocusing of the project design, concentrating resources on those specific project areas which have already shown, or hold the most promise of success. These include, by priority:

- 1) Development of the policy and procedures manual, long outstanding and without which no rural health system can have a viable base. Responsibility for its formulation should be immediately delegated to the MOH LC rural health staff -- Ebba and Salifu-- under the direction of the COP.
- 2) Related to 1) above, strengthening of the supervisory and management structure -- the weakest link in the existing operating system. This infrastructure constraint must be addressed simultaneously at the central and county level -- a top down and bottom up approach -- if any improvement is to occur, particularly in the critical area of instituting and maintaining accountability through the health delivery system.
- 3) Operationalization of the environmental sanitation program with priority attention given to expanding the number of wells, latrines, and community health education to support them. The availability of a safe water supply is the most critical gap in present project inputs without which little if any long-term impact on improved health status can be achieved.

- 4) Mobilization of Village Health Committees in the project area. Success with VHCs to date has been variable. Nevertheless, in villages with highly motivated CHIs the results are impressive. Team members toured two of the more active VHC committees -- one in Kolahun and one in Konia District -- and witnessed first hand extensive latrine construction, spring protection, and basic community hygiene/cleaning programs -- all of which are internally financed and administered. In view of the substantial financial resource implications of the proposed MOH-paid village health worker scheme, this alternative "free" community resource demands priority attention.
- 5) Institution of a family planning program as an integral part of all MCH activities. At the currently high birth rates, estimated to be more than 3% annually, health services will have to double in just 23 years to "hold the line" in terms of present levels of coverage. Given the serious resource constraints already facing this pilot project in meeting the health needs of the residents of upper Lofa County alone, it is essential that every effort be made to promote and actively expand use of family planning among the Liberian population, particularly the rural females who have the highest fertility rates. To date, this component has not been assigned the high priority it demands. Despite the real sociocultural constraints, much more could be done. The small inroads already made should serve as a base for an active, highly visible family planning program throughout the county.
- 6) Launching of an expanded immunization program. Communicable diseases continue to be a primary cause of high morbidity and mortality particularly among under fives. Although the infrastructure exists, qualified personnel, supplies, and vehicles have not yet been effectively mobilized to deal with this major health problem. Particular attention should be given to expanded, timely outreach activities and ensuring vaccine efficacy. The LCRH project should be prepared to work closely with the WHO EIP program team to institutionalize communicable disease control in the county health system.

- 7) Strengthening of the existing supply and logistics component. The significant achievement of LCRH in improving availability of drugs and supplies to all project area health facilities must be firmly supported if this activity -- one of the more visible project successes -- is to be a model for the national system. The Liberian trained by the U.S. SLS advisor is making a substantial contribution to project performance but cannot work along. Assistants must be trained, and Martin Sumo's own skills continually reviewed and upgraded over the last year of the project. Additionally, Mr. Sumo needs the political support which a U.S. advisor can generate in absorbing some of the "heat" from new actions, including a drug supply control system, which may appear threatening to many health personnel. The project SLS advisor or another individual with similar skills should be recruited for periodic visits to backstop Mr. Sumo in his new role.
- 8) Extend the new reporting system to the remaining 75% of Lofa County Health facilities. The system is only as effective as the information which it provides. As a potential vehicle for resource allocation decisions, it must be as complete as possible, requiring renewed emphasis on training facility personnel to use accurately the data reports.

I. PROJECT OVERVIEW

I.A. Historical Perspective

The LCRH project is the outgrowth of a series of proposals and studies initiated in the early 1970s in response to an increasing GOL recognition and commitment to improvement of the health status of the population, particularly those in the rural areas. The original idea actually was formulated in a rural health plan developed in 1972 by Dr. Nehemiah Cooper, Medical Director of the John F. Kennedy (JFK) National Medical Center (NMC) which outlined an alternative approach to rural health delivery as an outreach activity of JFK. Its basic premises included: (1) the need for extensive use of trained paramedical personnel to meet the health needs of the vast majority of the population given highly skilled manpower shortages; (2) reliance on a preventive rather than curative care focus; and (3) the need for family planning as an integral component of any health program.

With the January 1973 request to AID to fund a pilot project to test this model, an APHA contracted feasibility study was initiated. That report, the so-called "Derryberry Report", while recommending project implementation, outlined numerous constraints to goal achievement which would have to be addressed in the design activity. A PP was prepared by AID/W in May 1973.

A subsequent revitalization of the MOH, and Presidential mandate for it to assume full responsibility for expanding the rural health system, led to modification of the project design. The final proposal of October, 1974, drawing heavily on these two earlier papers, is targeted on both the development of a broad-pyramid of rural health units, and the supporting components essential to make it a viable system. An evaluation of the design components, operation, and impact of this project over its first three years is the subject of the report which follows.

I.B. Project Purpose

The purpose of the project is to establish an integrated health/family planning delivery system in Lofa County which will provide more accessible, expanded and improved preventive and curative health services and family planning services to the

people of the county and* may be appropriate for replication in other Liberian counties.

A key unresolved issue that has pervaded the project is lack of consensus on the interpretation of its underlying purpose. Is the LCRH "pilot" project strictly a Lofa County project, or is it actually broader in its mandate, directed toward strengthening of the rural health delivery system per se and toward development of an appropriate low-cost model for Liberia, even though it would be focused in the first stage largely in Lofa County?

Varying interpretations have dominated over the project's life. At project outset, the designation of all counterparts from the MOH central level, rather than the county level, appeared to indicate that the GOL itself broadly interpreted the project purpose with implications beyond the county itself. Further, this assumption was supported by the fact that the MOH candidates for MPH training under LCRH sponsorship were informed that they were to assume MOH positions encompassing national responsibilities for design and implementation of a rural health system upon their graduation from the university, not, importantly, solely Lofa County staff positions.

With the changeover in both the Minister and Deputy Minister of Health at the end of the first year of the project, the orientation shifted significantly to reflect an understanding of the project as a vehicle merely to strengthen the Lofa County structure, however, not to develop a viable national model for rural health delivery. Under this new guidance, the MOH pushed to have all LCRH staff stationed up-country in Voinjama, the Lofa county seat. This broad divergence of opinion on an appropriate direction for the pilot project led inevitably to a significant restructuring of the project and designation of new counterparts -- all of which slowed down the planned implementation schedule, and impeded project progress toward goals. Ultimately it impacted on numerous project components including location of personnel and counterparts, level of support to the national PA training school, and approval of Trust fund disbursements.

* Prop, p. 4.

I.C. Project Design

The attitude toward the LCRH project of "theirs" rather than "ours" pervades the MOH and has resulted in the U.S. project advisors having to constantly battle, to date largely unsuccessfully, the American project image of LCRH. The underlying cause for the limited institutionalization and acceptance of direct responsibility for the project within the MOH can be attributed to the method by which the project's initial design was formulated which neglected to involve many of the "actors" critical for its successful implementation.

First, the project was conceived not by the MOH but rather by the Director of the JFK National Medical Center who perceived it as a logical outreach activity of the nation's fourth level of care. This original design concept was further supported by AID-funded consultants who provided technical inputs to the project in their "Derryberry Report" developed under the auspices of providing continued AID assistance to JFK. Only at the later stage of Governmental negotiations and planning of the AID sector program was the project base changed from JFK to the Ministry of Health. While the rationale for this significant modification of operational responsibility was sound -- that of forming the base for a MOH-administered rural health delivery system -- it served to undermine some of the crucial pillars of support.

Second, in what became recognized as a critical flaw in the original project design, the original orientation and goal setting session had no participation by either the Preventive Services Division of the MOH or the principal cadre of health personnel -- RNs, PNs, CMWs and CHIs -- all of whom would be significantly affected by the LCRH project. The emphasis on PA participation to the relative exclusion of these other health staff serving in rural areas precluded the formation of an integrated team concept and, thus, an approach to the delivery system.

Third, the failure to obtain direct representation from the county's local political groups, especially the County Superintendent and village chiefs, also undermined the political support base essential for project goals' achievement. Their decisions remained autonomous and often contradictory to LCRH plans such as the designation of sites for self-help clinics which met none of the project's criteria for health facility location.

Finally, to the extent that the project goals were unrealistic, inevitable given the lack of baseline data by which the present health situation could be accurately assessed, and appropriate, reasonable targets set for ameliorating poor health status, it was necessary to continually revise goals downward as new implementation plans were developed and previous targets unmet. Indirectly, this led to common perceptions of the LCRH project as a "failure" even before it had been given a fair chance.

In light of the above, it is crucial that the final year's revised implementation plan be developed through a formalized process which includes broad representation from all significant political groups at the MOH and county government level whose support is essential to the project. The institution of a week's workshop for conducting a county "needs assessment" and formulating an operating plan for the 1978-79 period, modeled after the Bong County planning exercise, would be a viable and valuable approach. Only in this way will the project have any hope of moving from its current "U.S. project image" to that of a truly Liberian experiment in rural health delivery design.

I.D. Project Amendments/Recommendations

Two formal amendments were made to the original PROP over its course. An airgram of 12/24/78 added a maintenance plan, requesting six months of specialized advisory services to establish a preventive maintenance program with linkages to JFK. It was subsequently deferred because of delays in mobilizing the up-country component of the project. The amendment also expanded original planned project outputs by adding a component to provide one year's U.S. IHS sponsored training of eight administrative officers who were to administer replication of the project in other counties. Although the training was to commence in October 1977, in actuality the program was accelerated.

An amendment of 4/15/77 revised this 1975 PROP amendment to authorize use of the two remaining JFK advisors as the maintenance specialists for the LCRH project, thereby linking the LCRH project to a total national system which would include the National Medical Center at JFK.

A January 1977 joint review of LCRH by AID and the MOH noted that despite some significant accomplishments, overall project performance was unsatisfactory with the majority of the targets

unmet. Several detailed recommendations were made to modify and/or strengthen the original project toward achievement of its principal goals. Of the six key recommendations, none had been instituted as of the team visit in April 1978:

- 1) emphasis on preventive health including commitment of commodities necessary to support these programs e.g. wells, latrines, and establishment of a multipurpose epidemiological team;
- 2) designation by the MOH of another LCRH project coordinator since the incumbent, the Director of Medical Services, had too many other MOH responsibilities to adequately exercise this important role; delegation to someone physically located in LC was recommended;
- 3) assignment of all four IHS PASA team members to LC with recruitment of replacement personnel, if necessary, to accomplish this relocation. Of particular note was the recognized more urgent need for a teacher/trainer advisor to backstop personnel supervisory and in-service training requirements at the county level, than to continue present work at TNIMA;
- 4) identification of an alternative tertiary care facility to ensure the presence of an effective support system for lower Lofa County's facilities which was more readily accessible to its widely dispersed health posts than Voinjama;
- 5) immediate development of the planned Policy and Procedures Manual; and
- 6) increased attention to analysis of the replicability of the project once a new project coordinator was named.

II. THE KEY ACTORS

II.A. Introduction

The project has been hampered by a constantly changing cast of key "actors" with lack of continuity in all of its key U.S. and Liberian participants. The American physician serving as Director of Medical Services in the MOH and the COP's initial counterpart was replaced just 11 months later by another DMS. The Minister of Health* has changed three times in the three years of project operations.

On the IHS side, all but one key full-time advisors have changed since project initiation. The first FP/G arrived August 1975 but was unable to move up-country until November 1975 because of housing delays. Subsequently, her field tour abruptly ended after just eight months in Voinjama with her resignation in July 1976. Her departure was followed by more than a one-year gap before assignment of a replacement for this important field-based advisory position due largely to AID indecisiveness on the type of person that should be recruited. A continuing battle emerged over whether, as the AID Health Officer urged, a health educator should be recruited and the FP/G position dropped, or as ultimately supported by AID management, whether a similar kind of health professional with MCH/FP skills should be placed. Once the decision was made to continue with the existing personnel mix, recruitment and processing consumed the balance of the year's hiatus.

The SLS arrived in-country in July 1975, but at MOH request, concentrated his initial work on training a counterpart at the National Medical Center. Plans to move him up-country in January 1977 were delayed by four months due to failure of AID to complete adequate housing preparations. After his departure from Liberia when his full-time contract ended in 1977, AID declined to approve his periodic short-term consultancies to follow-up his counterpart training, as originally built into the project

* A fourth minister was named in August of this year.

design, so that all continuity in this phase of the project was abruptly ended.

The COP resigned effective June 1977, with additional delay and no overlapping consultations with his successor who arrived in late September 1977. The assignment of the health officer as the AID project manager in 1976 represented the third person in this role in just the first 18 months of the project. Further, the project's first administrative assistant left in September 1977 and was not replaced until February 1978 leaving a four-month gap in project reporting, filing, and administrative and secretarial support.

II.B. The Government of Liberia (GOL) and Ministry of Health (MOH)

Despite the MOH Project Agreement to be "responsible for the problem in its entirety,"¹ it has failed to provide much of the support essential for the LCRH project's successful implementation. Key constraints to project achievement which the GOL and/or MOH control include:

- 1) The Project Coordinator has extensive full-time responsibilities in the MOH as Director of Medical Services which continually have taken precedence over the project and precluded his adequate participation and support in key decision-making.
- 2) Two of the critical assumptions built into the project design and essential for project performance were that the GOL would implement a comprehensive Civil Service System which would directly benefit the LCRH project, and that under its direct leadership a policy and procedures manual would be developed to guide personnel administration in the project. To date, neither of these have been instituted, although the absence of the manual particularly has been consistently noted by the advisors and MOH internal evaluation teams as a direct impediment to accomplishment of project objectives.

¹ ProAg, p. 6.

- 3) Diversion of commodities originally committed to the LCRH project either prior to their actual receipt at the county level, or after they are returned to Monrovia for repair. Although this equipment was purchased with GOL funds, it represented inputs expected to be in place to support project operations and without which outputs have been adversely affected; e.g., three vehicles, radios.
- 4) Reluctance to launch a major administrative reform of the health system which would hold staff accountable, and attack abuse at all levels. Without such an official stamp of approval for "cleaning up" the system, there is no incentive for good work performance. In fact, there are indications that under the present structure, hard working, dedicated employees not only are not recognized or rewarded, but, in fact, are belittled among their colleagues.
- 5) Continuation of the pattern of highly centralized control over the health system, despite the urgent need for discretionary authority at the county medical director level. Major decisions are still made top-down, without significant input from the local level to be most affected by these decisions. The hospital centralized subsistence budget is a prime example of the strict control exercised at the national level and at the same time, in view of the shortages of critical supplies and equipment at the county's Tellewoyan Hospital, of the serious problems which it causes in maintaining a viable delivery system.
- 6) The two administrative assistants who received long-term training under the LCRH project have not been placed in positions with broad rural health responsibilities as originally envisioned and agreed to by the MOH. Rather their work has been circumscribed to Lofa County with other rural health pilot projects designated as outside their sphere of influence. Further, despite the fact that the MOH knew when they would return to Liberia, sufficient salaries were not reserved in the MOH budget to ensure that financial remuneration was available commensurate with their newly upgraded skills; as a result the project was forced to pick up the difference between their appropriate salary and that allocated in

the budget through use of Trust Fund monies actually designated for other use.

- 7) The dedication of self-help clinics by the President abets their uncontrolled growth and, thus, places additional stress on the already limited health sector resources by negating a rational facilities location plan.
- 8) The freeport clearance procedure is unwieldy and excessively time-consuming. The GOL has not moved actively to lessen the bureaucratic "red-tape" resulting in substantial delays in receipt of key project commodities, e.g., AID-financed drilling rig in port since mid-December 1977 still not released as of late April 1978 visit.
- 9) Shortages of essential supplies abound and impede project operations. Such basic commodities as official reporting forms and official stationery are commonly out of stock and staff must expend long hours in developing own forms substantially reducing time available to undertake primary responsibilities. The CHIs interviewed by the team, for instance, had to expand a considerable amount of time typing forms on which to report village visits because their supervisor had not received any for several months. Photocopying materials are in short supply and concentrated at the county seat so that they remain inaccessible to outlying posts. Several health personnel interviewed noted the potential value of official MOH stationery to notify chiefs and health facility staff of field visits and, thus, enhance their receptiveness to, and support of, the rural health system's leadership.
- 10) Much of the Liberian funds available for the project (non-Trust fund contribution) have been lost over the project's three years of operation due to unfilled vacancies in budgeted staff positions. The project's financial consultant estimated that 23 man-years of effort were lost in FY 1977 alone in such positions, despite strikingly evident continued shortages of health personnel to adequately staff facilities throughout the county.

- 11) The Government has not strongly addressed the pervasive problem of illegal, untrained health practitioners in the rural areas -- the so-called "black baggers" -- who are a major provider and a still highly successful competitor to the Government health facilities. Unless actions are immediately undertaken to more forcibly to control them, the blackbagger will continue to divert a significant portion of the potential facility patient-load, thereby, adversely affecting achievement of reduced morbidity and mortality objectives.
- 12) Salary levels are still not competitive with other Ministries resulting in the health sector commonly being able to attract only the lower half of high school graduating classes.

II.C. The Agency for International Development (AID) Mission

Overall administrative and logistical support from the AID Mission has been inadequate to ensure optimum project performance. Administratively, project progress has been hampered by lack of leadership both in terms of continual changes in persons assigned managerial responsibility for this contract as well as the failure to institute a formal, regularized mechanism for IHS-AID operational interaction. At the LCRH project outset, the AID program manager did establish a close working relationship with the COP. But with his transfer at the end of his tour-of-duty, the close interaction necessary began to breakdown as AID management of the IHS PASA contract was shifted to several different persons in the Mission, each of whom had a distinct interpretation of the project purpose which resulted in the IHS team having to adjust and respond to a constantly evolving project design. With the arrival of the AID health officer, significant project changes were instituted often against IHS advice; open conflict between AID and IHS arose on several issues including interpretation of the term "pilot project,"* and delegation of ultimate authority for project decision making. The health officer and AID overruled the IHS COP on several occasions on critical project decisions which the IHS felt adversely affected project outcome. Ultimately, these

* See project purpose, Part I.

conflicts led to the first IHS COP resignation since he could not work within the altered project design framework.

The problem of project management was compounded by the fact that although AID did make intermittent efforts to provide administrative backstopping for the project over the past three years, it has remained severely short-staffed. Thus, as of the team visit, the AID program officer and his staff who are currently directly responsible for the LCRH project, as well as the "follow-on" national rural health project, had never visited the field to personally assess the project performance. Further, in the three years of project operations, with the exception of a few trips by the Health Officer, only once had a key AID official ever been up-country to obtain a first-hand view of LCRH activities; the Mission Director made a short day's visit in 1977. The very recent trip of the Acting Mission Director, who spent a few hours with the COP in Voinjama about three days prior to the evaluation team's arrival, inevitably caused more resentment among IHS team than good will.

Logistically AID support has been grossly inadequate. The Lofa County-based IHS advisors do not have even a minimum level of essential commodities and supplies to ensure a viable living or working environment. Indeterminate delays and serious lack of planning in obtaining and preparing housing for the team have severely impeded project operations as staff have had to expend a considerable amount of time addressing basic living needs such as water, and electricity. Despite the fact that the AID Mission had at least a six-month lead time to locate suitable housing in Voinjama for the second COP prior to his arrival, signing of a lease was delayed and progress on completing the house very slow. Thus, when the COP arrived in-country, AID moved him into the IHS supply and logistics advisor's house, without the latter's prior consultation, where he has remained for the entire eight months of his tour of duty.* Translated into project impact terms that represents almost three-quarters of a year of the COP direction and technical input to the LCRH project without any of his professional books for reference, or any of his furniture or personal belongings to assist in making his living quarters

* The SLS completed his assignment soon thereafter, and the COP has remained in this temporary housing.

comfortable. Of note is that during the team visit the COP was spending the vast majority of his day supervising final construction work on his new house.

The PHN took over the house used by the previous FP/G advisor but likewise has continual problems in provision of adequate, safe water supplies, and electricity. Local water, when available, is filled with such heavy sedimentation that it has stained all of her clothing, towels, sheets, etc. She remains entirely dependent on imports of bottled water from Monrovia, via the intermittent field trips by one of the project's engineers, with rain water collected in large barrels on the front porch as emergency backup. On numerous occasions she has lost all of her refrigerated food due to generator breakdowns. In such cases she must await the visit of the project engineer before electricity is restored. In the interim, as during the first portion of the team visit, she must live by kerosene lanterns and flashlights. Even when the generator is functioning, fuel shortages necessitate her limiting use to a few hours each morning and evening, at the end of which she must go alone with a lantern into the side shed and turn off the generator.

These already poor living conditions are exacerbated by the fact that these advisors have little privacy since virtually all field visitors must stay in one of the two houses during up-country work. Thus, for instance, the two evaluation team members and accompanying IHS teacher-trainer were housed and fed by the IHS advisors during their 8-day stay in Voinjama. The constant flow of visitors from Washington is documented in the guest house registration book. Understandably there is much resentment over AID plans to close the guest quarters once the COP moves into his assigned house. Without such alternative housing for short-term advisors, review teams, etc., IHS advisors would continue to have to periodically share their own houses with "outsiders," a situation which few Monrovia-stationed AID advisors would tolerate.

At the same time, these clearly less-than-optimum living arrangements stand in sharp contrast to the quarters provided neighboring World Bank staff employees managing the Lofa County Agricultural Development Project. All staff have adequate housing including their own individual water reservoirs and fully

operational generators. The presence of an in-house maintenance-capability at Voinjama is a major factor for the considerably better living conditions of these advisors than those of the IHS.

Examining the working situation, the lack of secretarial support and direct communications further impedes project performance. The geographic isolation of these two key advisors is exacerbated by the lack of direct timely, accessible and regular communications to the balance of the IHS team in Monrovia and AID, the project manager. The COP and FP/G remain dependent on the hospital's radio to transmit and receive vital information on project operations, administration, etc.

The resultant separation of the COP from the balance of the US advisors has had a direct negative impact on the functioning of LCRH project team.

In assuming his position in the virtual isolation of Voinjama, the COP has been forced to abrogate his authority over two of the seemingly most important functions of his job: 1) exercise of judgement over the appropriateness of Trust Fund expenditures; and 2) contacts with the MOH as it plans the national integrated rural health delivery system for which LCRH was to serve as the pilot.

The COP does not have even the minimal level of administrative backstopping to make his role a viable one. Without any local secretarial support, he must handwrite all memos, reports, etc. and forward to the project's administrative assistant for typing and dissemination. Turn around time between the field and Monrovia is commonly 10 days to two weeks. The instances of failure to obtain and send correspondence in a timely fashion to effect key decisionmaking are far too numerous to detail individually but a few cases will serve to effectively illustrate the serious communication problem. A letter from the MOH project coordinator in Monrovia of November 15 requiring an urgent reply was not received by the COP until December 7th and had to wait several additional days for reply while a typewriter and secretarial assistance was enlisted locally.

The team consistently noted overlapping functions, seemingly duplicative efforts, and at least some degree of friction between the AID-funded LCRH and Health Planning and Management contracts. The primary underlying reason for this programmatic tension is the lack of guidance over their respective workscopes by the AID

Mission. Optimally, these two projects should play complementary roles in strengthening the rural health system, one largely from ensuring better planning, and concomitantly improved resource allocation decisions and LCRH in operationalizing and institutionalizing a viable service network. Conversely in the absence of strong AID leadership, the potential benefits of both contracts which represent a substantial U.S. Government financial and human resource commitment will be significantly reduced.

Recommendations:

To strengthen project administration, it is recommended that priority attention be given to filling the vacant health officer position. The team feels that suitable candidates are available and would be willing to serve in Liberia if given sufficient responsibility to make the job attractive. Without such a focal point at the AID mission to whom all contractors must report and who would fill the critical gap of coordinating sector inputs, fragmentation and duplication of efforts under existing health projects will continue.

Of crucial importance to the development of a workable national rural health delivery scheme is the assignment of a long-term health planner who would develop related projects in direct collaboration with the MOH for potential funding by international donor organizations including but not limited to AID. Without such an assured integrated design effort, there is much evidence to suggest that the new proposed project will suffer from the same serious problem as the LCRH project -- "U.S. project" image.

To ensure adequate IHS team communication if not supervision between the Voinjama and Monrovia-based staff, it is imperative that the COP be provided his own radio with direct, reliable linkage to the AID mission. It is not sufficient for him to depend on the MOH radio relays nor is it optimum for him to always communicate directly through the MOH, particularly on internal staff issues. Further, utilization of the MOH system mandates that all messages be extremely short so that official GOL business can be transacted, thus, reducing his access.

It is imperative that AID provide sufficient inputs to raise the living standards of the Voinjama IHS staff to an acceptable level, consistent with that of other donor staff. If AID does

not have sufficient administrative resources to do so directly, IHS should consider renegotiation of the PASA agreement for the last year to provide the necessary resources. Of vital importance is acquisition of a safe water supply. Additionally funds should be allocated to the COP to buy secretarial services on the local market. The current turn-around time necessary if all reports, memos, etc. must be sent to Monrovia to the project secretary/administrative assistant is excessive and undesirable for this leadership position.

II.D. The Indian Health Service

The PROP originally called for the Indian Health Service to provide under a PASA with AID four full-time advisors to implement the project -- a Chief of Party, a teacher trainer, a family planning generalist and a supply and logistics specialist. Additionally, the project was assigned on a part-time basis an evaluator (SS/E) and a financial consultant (FC). It was proposed that the COP expend 75% of his time in Monrovia and 25% in Lofa County.

As of the evaluation team visit, the U.S. advisors comprising the Lofa County Rural Health Project "team" include the following full-time personnel:

<u>Name</u>	<u>Title</u>	<u>Organizational Affiliation</u>	<u>Geographic Assignment</u>
Dr. George Berg	Chief of Party (COP)	Indian Health Service (IHS)	Voinjama
Ms. Gilda deLuca	Public Health Nurse Advisor (PHN)	AID	Voinjama

Dr. Paul Mertens	Teacher-trainer (TT)	IHS	Monrovia - Tubman Nation- al Institute of Medical Arts (TNIMA)
Mr. Perry Tennison	Engineer (E)	IHS	Monrovia - JFK Office
Mr. Fred Brown	Engineer (E)	IHS	" "
Mrs. Joyce Maddy	Secretary/Admin. Assistant	IHS	" "

In addition, the project is now or has received periodic consultative services of the following individuals:

Dr. Michael Fuchs	Evaluator (SS/E)	IHS	IHS, Region IX California
Mr. Hal Thompson	Project Manager	IHS	Rockville, Md.
Mr. David Creighton	Supply and Logistics (SLS)	IHS	formerly full- time in Voinjama; now on consultancy as requested
Mr. Ralph Lauxman	Financial Consultant (FC)	IHS	" "

Despite this significant level of human resources, the fragmentation of their roles and lack of integration of their activities has precluded the project from fully benefiting from their inputs. The COP, geographically and communication-wise removed from the balance of his "team" and the MOH official, is not exercising the essential leadership or advocacy role for the project. The current operational mandate of the IHS advisors is vague and tends to be individually interpreted. There is no formal annual work plan to guide each advisor's activities nor

importantly, an overall, integrated plan for how all these individual activities relate and support project goals. There are no regular, formalized team meetings and no periodic correspondence between the COP and team members. Conferences are held on an ad hoc basic, as issues dictate. Additionally, there is no reporting requirement by team members to the COP nor regular communications between team members by radio. The ultimate effect of the isolation of the COP coupled with the relative autonomy of the other IHS advisors is the lack of a true team effort. Rather, the project reflects a series of discrete, non-integrated activities, directed to varying extents by an individual advisor.

The advisors' work has tended to be more service-delivery oriented than based on a conscious attempt to institutionalize the process before LCRH project termination, as highlighted by the counterpart relationships.

II.D.1. Counterparts

A critical assumption of the project was that all US advisors would be appointed Liberian counterparts. The failure for appropriate counterparts to be provided has been a chief impediment to institutionalization of the project.

As of the team visit, only the FP/G had a defined Liberian nurse-midwife who was being trained since the project's commencement, initially under the first assigned US FP/G.

Although the nurse-midwife selected for the project as counterpart to the US PHN advisor is clearly highly qualified for the position, she has not officially been delegated the duties essential to fulfilling the role for which she is being trained. Rather that position -- public health coordinator -- is formally assigned to another person -- the former Director of Nursing of Tellewoyan Hospital. The functions of this public health position strikingly overlap in several key areas with those which the counterpart thought she would assume upon the project's termination. Although the team is trying to have the nurse-midwife position formally recognized within the county health structure, in fact, she still holds the title of "consultant," a tenuous position at best for successfully institutionalizing the project prior to its end.

The COP counterpart has been vague; since the project was decentralized to Lofa County. At project outset when the primary focus was at the national level the counterpart to the first COP had been the Director of Medical Services, also named as the Project Coordinator on the Liberian side; however, with the COP's relocation up-country the counterpart is apparently the county medical director and/or the community health physician -- both of whom are Indian expatriates under direct hire to the MOH. Given the recognized scarcity of Liberian physicians to serve as county medical directors, this dependence on expatriates can be expected to remain in the foreseeable future as the number of Liberian-trained physicians slowly expands. But from the viewpoint of the project's impact on developing a system which will remain beyond it, there is little guarantee that the two Indian physicians will remain in these key LC health positions. Despite the manpower shortages, the Government should have assigned a Liberian to at least one of these critical management positions in LC, particularly given the fact that the project was to create a viable model for possible future replication in other counties with a view toward developing a national rural health delivery scheme which would require Liberian leadership. With no direct Liberian counterpart, institutionalization of the project even at the county level alone is seriously threatened. Further, the young, newly graduated Liberian physician whom the COP recently has designated as his immediate counterpart for the last year of LCRH project is merely serving his social service year requirement. In an interview with one team member he confirmed that he has no intention of remaining in rural service beyond his year's commitment, but rather plans overseas specialty training. Even if ideally he were to return to Government service at a later time, it is important to note that there would be no continuity in leadership of county outreach/preventive health activities set in motion by the project.

With regard to the teacher-trainer, he has neither had nor did he actively recruit a counterpart since the project began. His role has been predominantly a service-rather than a transfer-of-skills-oriented one, focused on actually supplementing the teaching staff at TNIMA. While he has made some important contributions to upgrading the school's PA curriculum including development of five operating guides for curative care, he has

worked independently more in isolation of, than in collaboration with, Liberian officials. Consequently, it is doubtful that the special skills which he brought to the project will be left behind when he ends his assignment.

The two engineers recently transferred from full-time JFK project assignments to LCRH have no counterparts, again negating the possibility of any transfer of the important capabilities in maintenance, well construction, etc. which they bring to the project.

The two MOH employees who received long-term training under the project, and only recently returned to staff the MOH's LCRH project office, have no direct counterpart relationship with any of the US project advisors, and only minimal interaction on a daily basis with the project team. Assigned major responsibility for the development of the final revised implementation plan, they have been given little guidance by the project on appropriate new directions.

Maximizing counterpart relationships has also been impeded by the fact that the principal MOH-designated COP counterpart at the national level--The Director of Medical Services--was not assigned full-time responsibilities in the MOH which have demanded most of his attention. At the same time, no alternatives were available since the two administrative assistants to serve as the DNS staff for the LCRH project were sent to Hawaii for long-term training. Similarly, the SLS' first counterpart relationship was entirely unsatisfactory since the Director of Drugs and Medical Supplies had little time to devote to the development of a pilot rural health delivery system. As a result, he changed course and concentrated his efforts on training a person to run the Voinjama subdepot.

The supply/logistics specialist and his LC counterpart stand as striking proof of what two fully motivated individuals can accomplish even over a short-time frame. The establishment of a viable drug supply distribution and control system including the setting up of a country supply depot for storage and rapid dissemination of commodities, as needed, to the periphery are clearly one of the project's most visible successes. Yet even if this component is to be fully institutionalized, additional follow-up work with the Liberian is necessary.

The geographic assignment of advisors appears to have been frequently determined on the basis of criteria external, and even detrimental, to project achievement. The timing of the teacher-trainer's assignment to the LCRH project is a prime example of poor coordination of and deployment of personnel inputs. His date of arrival in-country -- September 1975 -- to assume his position as part of the LCRH team precluded his participation in the PA training program in which he was to work since by that time already two-thirds of the academic year was completed. Seeking an alternative workscope, therefore, he explored the possibility of conducting a training course to upgrade the skills of untrained dressers, but the idea proved unfeasible as their low academic level limited teaching capability. Further, although hired to assume the IHS teacher-trainer project advisor position which was officially located in Monrovia at the PA training school, he continued to live up-country in Zorzor District in the same house which he had while serving as a missionary physician on the alleged grounds that he could not find suitable housing in Monrovia. When he finally did relocate to the capital in April 1976, eight months after joining the project, one month already had passed since the new PA class had begun. His direct input to TNIMA was further delayed by a field visit to Hawaii in May and June 1976 for orientation to the MEDEX paramedical training program and its specialized modules. Thus, for almost one full year of his employment, he provided minimal input to the project.

When discussions were held on the desirability of relocating advisors directly in LC, an October 1976 memorandum noted that the COP and teacher-trainer could not live in Voinjama due to family considerations, despite the fact that strong arguments existed for at least a significant level of these advisors input up-country.

* T/T actually had lived in Liberia for many years as a missionary doctor but returned to U.S. for home leave prior to commencing IHS assignment.

The problem of ensuring a concerted effort toward achievement of LCRH goals is compounded by the dual loyalty of the two engineers detailed to the LCRH from the JFK project, as of October 1, 1977. While it was assumed that they would phased out of the JFK operations and provide direct support to the LCRH project, in actuality at least 50% of their time currently is expended in non-LCRH related work. As of late April '78, P. Tennison had spent only two days in the field since being assigned to LC effective October 1, 1977. He has assumed major responsibility as Deputy Chief of Party to handle the administrative workload including collaborating directly with the MOH in Monrovia in the absence of the COP's fulltime input at the national level, as well as total responsibility for instituting the well drilling operation in Lofa County. Nevertheless, his continual diversion to JFK activities seriously and inevitably impairs his contribution to LCRH and ultimately adversely affects optimum project performance. Mr. Brown conversely has made, on the average, two field trips per month for several days duration each up-country, principally in response to continual breakdowns in IHS advisor's generators or project equipment. But, during his duty in Monrovia -- which represents the largest proportion of his time -- he expends an estimated 90% of the work-week providing technical support to JFK. With the launching of the well program, and in light of the striking need for instituting a preventive maintenance capability at the county level, there is an urgent need to detail an engineer up-country full-time to provide technical backstopping and concomitantly train a Liberian counterpart. As long as these two advisors remain in Monrovia, and no additional staff are available to address the county-level problems, the project will not be able to meet its maintenance and well program goals. At the same time, it must be recognized that unless these engineers' role is clarified, the LCRH project will remain accountable for this component. It is suggested, therefore, that an engineering position officially located in Voinjama be created and be designated a counterpart with the understanding that the incumbent will live up-country. If the current full-time engineering advisor cannot accept this assignment, an alternative candidate should be recruited and the

* See Prop Amendment section

existing contract terminated as of its expiration date, October 1, 1978. The team sees little justification for this important field project component to be based in Monrovia.

Optimally, given the project's rural health focus, the majority of IHS advisors should be concentrated in Voinjama. The actual geographic dispersion pattern with the largest number of personnel in Monrovia appears counter to project needs. Of particular note is the weak justification for maintaining a teacher-trainer advisor full-time at TNIMA over the project's last year for several reasons: 1) given the Government's recent endorsement of a new paramedical program for the national IHDS project which would significantly alter existing curriculum, the value of additional programmatic support to the PA training school is questionable; 2) there is a strong need for developing and implementing an in-service training component at the field level over the last year, a task best addressed directly from the field where the health staff's knowledge and work performance can be continually assessed; and 3) with the full-time detail of the Deputy Chief of Party to Monrovia to provide administrative backstopping and play a vital liaison role with the MOH as it develops the new national program, there is a serious question as to how a second full-time Monrovia-based advisory position, that of the teacher-trainer, could usefully and legitimately be justified for one more year. It is recommended, therefore, that his role in the revised implementation plan for LCRH be carefully assessed and delineated.

To reduce competing demands for time of the LCRH staff by JFK and the LCRH project (which alone will require their full-time commitment over the last year if even the more focused objectives of the revised implementation plan are to be met), it is strongly recommended that the JFK office be closed and the Monrovia-based LCRH project staff immediately be moved into another building outside of the hospital complex. Otherwise they will continue to be diverted from their primary work responsibilities.

With the striking need for secretarial support in Voinjama, limited project support funds and the current division of responsibilities between the COP and DCP, consideration should be given to part-time secretarial support in Monrovia, utilizing the balance of funds for hiring someone locally in Voinjama to administratively backstop the COP and PHN.

III. PROJECT COMPONENTS

III.A. Upgrading Personnel

The LCRH project has had considerable success in upgrading the quantity and, importantly, quality of health personnel available to staff the rural health posts and centers. In striking contrast to rural health facilities nationwide which are still staffed largely by untrained health workers -- predominantly dressers and empirical midwives -- the listing of health personnel and their professional level in the project's Kolahun and Voinjama Districts is truly impressive and represents a notable project achievement, particularly when viewed in light of the fact that the project is only in its third year (See Table III-1 and III-2). Of note is that only two health posts in Kolahun District -- Porluma and Kiantahun are not headed by an RN or PA; and only one in upper Lofa County is still staffed solely by an untrained dresser -- Bondi Health Post. Further, Kiantahun did have a PA but when he was told that he must be supervised by the highly experienced and qualified CMW who has been heading the post for several years, he requested a transfer. And Bondi Health Post not only is a low population density area but also remains on a main road by which its surrounding population have fairly easy access to the Bakalamai health post within 10 miles, as well as Tellewoyan Hospital's outpatient department in Voinjama, 12 miles away.

Goal: The training program for the personnel of the proposed system will include the following: (1) training of paramedical personnel for health centers/posts with curriculum based on a) an assessment of the health service needs of the rural areas; and b) a task analysis of the specified functions the paramedic is to perform; (2) both group and specialty-based orientation and refresher training for individuals selected for the health centers; and (3) specific training for a) individuals selected for senior positions in the Health Centers; b) midwives; c) empirical MWs; d) an educator trainer; e) a health educator; and f) private Liberian physicians.

* Prop, pp. 29-30.

TABLE III-1
**VOINJAMA DISTRICT
CLINIC PERSONNEL**

1. Mr. Robert S. GayGay	Supervisor	Telleweyan Hospital
2. Mr. Robert S. Tegba	P. A.	Mbolema Clinic
3. Mrs. Helen Mente	Emperical Midwife	Mbolema Clinic
4. Joseph M. Brown	P. A.	Karzar Health Post
5. Mr. Alfred V. Kellie	P. A.	Kpademai Health Post
6. Mr. Menibah Kondeh	Dresser	Kpakemai Health Post
7. Mr. Jehnney Cooper	L. P. N.	Kpakamai Health Post
8. Mr. David Sellie	Nurse Aide	Vezaia Health Post
9. Mrs. Senie Zogo	Emperical Midwife	Vezaia Health Post
10. Mr. Nichelus Kermah	P. A.	Vezaia Health Post
11. Mr. Edwin Ballah	P. A.	Lawalazue Health Post
12. Mr. Stephen Armah	Dresser	Lawalazue Health Post
13. Mr. James Nah	P. A.	Barkienmai Health Post
14. Miss. Mary Yallah	C. M.	Barkienmai Health Post
15. Mrs. Kaisah Kamara	Emperical Midwife	Barkienmai Health Post
16. James Yamkpasua	Dresser	Bondi Health Post
17. Ames Varney	P. A.	Sarkenemai Health Post
18. Mr. Alfred Sama	Nurse Aide	Sarkenemai Health Post
19. Mrs. Malen Keneh	Emperical Midwife	Sarkenemai Health Post

TABLE III-2

REPUBLIC OF LIBERIA
 MINISTRY OF HEALTH AND SOCIAL WELFARE
 ZIMMERS HEALTH CENTER, ZIMMER CITY
 OFFICE OF THE DISTRICT SUPERVISOR

List of health personnel working in Zolahun District, Lofa County:

A. Zolahun Health Center

1. Dr. Edward S. Grant M.D.
2. Mr. Augustine Z. Samuka P.A. Supervisor (Zolahun District)
3. Mr. Joseph Z. Sackie P.A. Supervisor
4. M/S Helena S. Janga R.N. & P.H. 5B
5. Mr. John Boleah R.N.
6. Mrs. Winifred Z. Zimba R.N.
7. Mrs. Anna Bombo C.M.
8. M/S Charlotte Barbor C.M.
9. Mrs. Karpo Kartu T.M.
10. M/S Lydia Kingsley T.M.
11. M/S Anna Sarella T.M.
12. Mrs. James Mono Uziel Aid
13. Mr. John Bombo Dresser
14. Mr. Johnson Bath Aid
15. Mr. Joseph S. Seepoe L.P.N. Lab. Tech.
16. Mr. Andrew F. Popel Lab. Tech.
17. Mr. Kalba Kamara Driver
18. Mr. George Ndebe Registrar/Clerk

B. Karamohun Health Post

19. Edward Sumo Johnson P.A.
20. Kama Tulay Aid
21. Francis Puainqaye Aid
22. Cornelia Kporko T.M.
23. John Ngwisa Cleaner

C. Foya Field Health Post

24. Edwin Siba P.A.
25. George Coker Dresser

D. Foya Torgia Health Post

26. Alfred Nans P.A.
27. Hama Today T.M.

E. Wacooinga Health Post

28. Joseph Tlumo P.A.

F. Shelloe Health Post

29. Alexander P. Barah P.A.
30. Thomas Saa Dresser

G. Parlura Health Post

31. Carlton Kamara L.P.N.

H. Nyondraoilahun Health Post

32. Fred Sheriff P.A.
33. Karpo Kallie T.M.

I. Ugryn Health Post

34. Augustine Garmoh P.A.
35. Patrick Robinson L.P.N.
36. Mono Sifa Aid
37. Today Kasia T.M.

J. Karamohun Health Post

38. Emmanuel F. Monjoe P.A.
39. Lucia Ndebe T.M.

K. Sukosu Health Post

40. James Mono R.N.
41. Arua Kennel Dresser

L. Poraiahun Health Post

42. Uca Butler P.A.
43. Karpo Boley T.M.

M. Kalntahun Health Post

44. Prisca T. Dixin C.M.
45. William Tulay Aid
46. Siaso Tulay T.M.

N. Fanyonia Health Post

47. John Teah Nyima P.A.
48. Louis Zalkol T.M.

O. Bolahun Health Post

49. Edwin Charles P.A.
50. Jenella Batana R.N.
51. Beatrice Farkollie T.M.
52. Allison Akol T.M.
53. Daniel Amosona Dresser
54. James Ketar Cleaner
55. William Twenty-Five Dresser
56. Anstee B. Kallie Lab. Tech.

P. Division of Environment Health
 Ground Clinician

57. William Japigaye P.H.J.
58. Harli Juku Sanitary Laborer-Zolahun
59. Saa Turmodu Sanitary Laborer-Zolahun
60. Guma Chie/don Nahun District

60. Sondkeh Zande P.H.J.
- Klasi Chie/don

61. Ambrose Tall P.H.J.
62. John Fallah P.H.J.

Lower Ground Clinician

63. Willie Z. Doolu P.H.J. Aid

Submitted By AK Samuka
 Augustine Z. Samuka P.A.S.
 District Supervisor
 ZIMMERS DISTRICT, LOFA COUNTY

Best Available Document

Actual training has concentrated on just three cadre--physician assistants, certified midwives and empirical midwives, as discussed in the following sections.

III.A.1 Physician Assistants

III.A.1.a. PA Training

The timing of the PA training component of the LCRH program simultaneous to rather than in advance of proposed project activities which were dependent on the existence of this cadre underscores the project design failure to correlate carefully inputs and expected outputs. Because training of these pivotal role staff was not commenced until after the formal project initiation, and the course is three years in duration it was inevitable that skilled manpower shortages would preclude the effective implementation of many of the key programmatic activities over the majority of the project period. Only now, with the fourth and final year of the pilot project beginning, is the first class of PAs who were trained under LCRH upgraded curriculum in place in their field assignments so that their participation can be incorporated and assessed. This serious gap in project inputs highlights the need for more precise delineation of the critical timing requirements of all inputs for the proposed nationwide integrated rural health delivery system project. Within the PA program itself, numerous weaknesses have been noted over the entire process from recruitment to placement.

The current recruitment process begins with the political and school authorities notifying the community of physician assistant (PA) training opportunities; per the Tubman National Institute of Medical Arts (TNIMA) letter of notification. Applicants are then interviewed and given a basic examination in English and Mathematics. The only additional prerequisites are that the candidate be between 17 and 35 years of age, have a rural background, and have recent rural contact. There are several constraints to this selection process:

- 1) There is no correlation between PA candidate selection and the health manpower needs per county, only on a

national scale. Theoretically, PAs should be available nationwide, as needs dictate. In actuality, given the substantial heterogeneity of tribal customs and languages, not all PAs are equally well suited to serve in a given community.

- 2) The efficiency of the program is adversely affected by the high dropout rates of PA students. Of the entering class, an estimated 40 percent will drop-out before completion of the three-year program due to academic and behavioral reasons. Such a high failure rate highlights the urgent need for instituting a more rigorous, comprehensive screening program to identify the most qualified applicants with the highest potential of graduation. Of particular importance is the need to establish a PA aptitude test based on those personal qualities most important to performance of job and conduct. Ultimately the identification of these criteria for "success" should be as, if not more, important in the PA selection process as academic skills.

The financial implications of the excessive dropout rates are considerable. With LCRH project supplementing the training costs of 17 students with monthly stipends of \$35 each or \$7,140 annually and UNICEF funding up to 25 students per class, the fact that 40 percent will not finish training and work in the sector, represents a substantial non-productive investment in health manpower. Given the scarce resources of the country itself, and limitations on the amount of external funding which can be expected to assist sector development; a more cost-effective approach is imperative.

Each graduating PA signs a written commitment to work wherever assigned, and is obligated to work for the Government for the length of training. In contrast to paramedic programs in some other countries, there has been no problem of loss of PAs to higher levels of care of the health system. Since PAs receive no training in hospital-based medicine, their alternative work opportunities are closely circumscribed.

The major changes at TNIMA made as a result of the project have been: 1) the faculty was strengthened with the input of a full-time AID teacher-trainer over the past three years; and 2) a core curriculum has been developed.

There is considerable evidence of improvements in the training since LCRH began. Qualifying exams held for the first time in January 1978 for PA licensing requirements indicated significantly improved scores among the last few graduating classes. Although the results may be somewhat biased by the fact that they had the benefit of the most recent academic participation and thus were better prepared for such an exam, nevertheless, the results have been corroborated by supervisory field staff assessing work performance.

The Chronic Disease Module and symptom complex cards developed by the IHS teacher-trainer advisor have proven to be valuable tools for field operations and were reportedly constant reference materials for post and center personnel.

A major weakness in training to date, however, has been the failure to develop an integrated approach to manpower training. There has been no systematic task analysis of current health personnel's work nor definition of the kinds of activities which each staff member at the post or center should perform upon which to develop a rational curriculum. Both gaps and overlap in training the rural health cadre are, therefore, inevitable.

Thus, although the LCRH project has given priority attention to upgrading the PA curriculum at (TN/MA) with the work of a teacher-trainer, the curriculum content was consistently identified by assigned PAs and PA supervisors as weak in two key areas -- deliveries and maternal/child health --, both of which have a significant impact on morbidity and mortality rates. It has been suggested that the TN/MA facility has long recognized the small amount of time proportionately allotted to these subjects in the training program but consciously chose to concentrate PA's curriculum on other areas since it was felt that other rural health workers, particularly MWS, would fill this important gap with their highly focused education. This has not always occurred.

Under the existing curriculum, only minimal attention is given to the two key preventive health activities of

* See Physician Assistant Curriculum in Table III-3.

TABLE III-3

JOHN F. KENNEDY MEDICAL CENTER
SCHOOL OF PHYSICIAN ASSISTANTS
Curriculum - 1978

COURSES	HRS /WK	HRS /SEM	COURSES	HRS /WK	HRS /SEM
SEMESTER I			SEMESTER II		
*ANATOMY & PHYSIOLOGY (Lecture) LAB & DEMONSTRATION	3 2	60 40	EPIDEMIOLOGY, TROP. & COMM. DISEASE CONTROL I (Includes Epidemiology, Comm. Dis. Control & Parasites)	3	60
*Microbiology & Parasitology (Lect) Lab & DEMONSTRATIONS	5 2	100 40	ADVANCED FIRST AID & MEDICAL-SURGICAL EMERGENCIES	4	80
PHARMACOLOGY MATH REVIEW (1st 10 wks)	2	20	/Dermatology	2	40
*BASIC PHARMACOLOGY (2nd 10 wks.)	2	20	*ADVANCED PHARMACOLOGY	2	40
*ENGLISH, SPELLING & COMPOSITION	2	40	BAR, MO&E, & T&O&P	2	40
*PUBLIC HEALTH ORGANIZATION	3	60	ENVIRONMENTAL HEALTH, FOOD SANITA- TION & COMMUNITY HEALTH ORG. NIS	3	60
PERSONAL HEALTH & FIRST AID	5	100	ELEMENTS OF INTERNAL MEDICINE (Modules on C.I., Resp., Endocrine, GIB, Cardiovasc, Urinary, & Repro- ductive Systems)	4	80
SOCIOLOGY	2	40	COMMUNICATIONS SKILLS (case reports & textbook research)	1½	30
				1½	30
	28/30	560		25½	510
SEMESTER III			SEMESTER IV (August)		
EPIDEMIOLOGY, TROP. & COMMUNICA- BLE DISEASE CONTROL II (Includes TB & Leprosy Control & Chronic Dis.)	3	60	FORENSIC MEDICINE & MORTUARY PATHOLOGY	10	40
PRIMARY OPHTHALMOLOGY	2	40	LABORATORY DIAGNOSIS	10	40
COMMUNICATIONS SKILLS	1½	30	COMMUNICATIONS SKILLS	1½	6
PRIMARY DENTISTRY	2	40	The balance of Semester IV is taken up with up-country rotations for initial rural experience, obstetrical experi- ence, pediatric experience, work with rural community health teams, and outpatient experience.		
PRENATAL CARE & OBSTETRICAL EMERGENCY CARE	3	60			
SURGERY & GYNECOLOGY	2	40			
PEDIATRICS	3	60			
STATISTICS	2	40			
EMOTIONAL BEHAVIOR & HEALTH EDUC.	3	60	Semesters V & VI is spent on preceptorship (practical) experience at various county hospitals under supervision of county doctors (March to December 22nd)		
DIAGNOSIS & TREATMENT OF COMMON DIS	4	80			
	15½	510			86

* Core Courses total 400 hours
New Courses
Total class hours 1666 hours

National Board Exam for Licensure (January (2nd Monday))
Graduation - February

Agnes Dugbe
Agnes Dugbe/Director

environmental sanitation and health education. Yet the PA sees large groups of people in the posts, particularly on special clinic days, e.g., prenatal, under fives, to whom health education could be usefully targeted. Further, since PAs live in the community surrounding the posts, they could play a valuable role in educating the people on the types of activities which they can undertake themselves to improve their own health status.

Overall, the basic content of the curriculum has undergone minimal revision with the LCRH project and continues to draw heavily in its focus on the typical African health problems identified by WHO. The dominant influence has been physicians and concomitantly curative medicine. There has, to date, been no significant curriculum modification based on feedback from the PAs on curriculum weaknesses or gaps, with the notable exception of statistics. In fact there is some evidence to suggest that minimal importance has been attached to curriculum evaluation over the project's three years. Only very recently has the teacher-trainer initiated field trips up-country to assess PA work performance.

Of particular value to development of appropriate health manpower training in Liberia would be a study on traditional health beliefs and practices particularly as they vary among the heterogeneous tribes which rural health workers must serve.

III.A.1.b. Rural Service

All doctors in the national medical school must spend one year in rural service unless they obtain a government scholarship for postgraduate work. The number of physicians available for rural care, however, has been severely constrained by the small medical school classes. Traditionally the poor quality of training generally felt to be available in-country seriously limited student interest and those youth determined to be physicians usually studied abroad. Amidst increasing awareness of the limited capability of foreign-trained physicians to respond effectively to Liberian and particularly rural, health needs, the reputation of the school has been enhanced and it is currently attracting more students. As a result the most recent class has had the maximum allowable number of students -- 25. Nevertheless, even among those who actually complete the rural

service year the ability of these areas to attract physicians for long-term commitments remains poor. Of the 1977 class of 12, only three opted to remain in the rural area which they had served during their required year; and only an estimated one or two out of five students of the class of 1978 will choose rural service.

III.A.1.c. Refresher Training

In class tests covering the period 1966-1978 mean scores have risen significantly among graduating PAs. Nevertheless, the need for refresher training is strikingly apparent as one observes the vast differences in PAs' capabilities, even among those graduating in the same class. A two-week refresher course has been set up for those who do not pass their licensure exam, or approximately 20% of the TNIMA graduates to date (21 failures of 105 graduates).

More comprehensive refresher training has been instituted at TNIMA with a total of 20-40 PAs annually receiving a refresher course of one month's duration. Candidates are identified by their physician or PA supervisors with a view toward every PA receiving such a course to upgrade skills at least once every three years. The effectiveness of the refresher training is seriously limited by two factors, however: 1) the lack of regularized, formal employee evaluations which would identify a given PAs strengths and weaknesses. In the absence of a civil service system, one of the project's critical assumptions, there are no criteria or standards by which a PA's performance can be assessed nor a mechanism to feedback this information into the training program and thus, redress individual-specific performance and curriculum imbalances. All "evaluations" are informal, ad hoc work reviews by the PA supervisor done on a personal basis without record or documentation; 2) related to 1) above, standardization rather than personalization of the refresher training, with all PAs receiving the same course despite significant variations in their capabilities and work areas in need of strengthening; and 3) the lack of a system to reevaluate performance once the refresher course is completed; feedback to TNIMA from the field would provide a basis for revising refresher courses to ensure that they effectively redress weak spots in quality care delivery.

Recommendations:

Even if it is not feasible to develop an individualized curriculum to meet each PA's specific needs, at a minimum,

candidates for refresher training should be grouped by overall categories, based on an unsatisfactory level of job knowledge and/or performance. The recent PA national licensing examination would be a useful tool for such a categorization process in the absence, over the short-term at least, of other performance guidelines by which a given PA could be assessed. The policy and procedures manual should provide a better model for defining and evaluating expected work standards.

III.A.2. Empirical Midwives (EMWs)

An integral component of the LCRH project is upgrading the large number of existing traditional midwives. Under direction and guidance of the first FP/G advisor and her counterpart, the first EMW course was held at Tellewoyan Hospital April-August, 1976. The comprehensive curriculum which included family planning focused on capitalizing on the role of the traditional MW as community counselor and referral agent to expand her value to the health system through enhanced knowledge and capabilities in maternal and child care.

Although the original intent of the program was merely to upgrade skills and have EMWs return to the communities, at the urging of the FP/G and COP, positions were created for the EMWs as direct facility-based employees of the MOH. This, in effect, catalyzed the creation of a EMW cadre within the MOH personnel structure which was of questionable value to the health system.

Their usefulness to their assigned health posts is constrained significantly by their extremely limited capabilities. Largely illiterate, and "trained" only in basic pre- and post-natal care and deliveries, the EMW cannot play even a supportive role in treatment of the vast majority of patients who attend the post on a given day nor in completion of the daily record system. At the same time, the MOH hiring of the first EMW class has served as an enormous incentive for enrollment in the second class. In fact in the first few weeks into the April - August 1978 training period for the second class at Tellewoyan Hospital, it was found that two of the students actually had received EMW training elsewhere and already were certified but had joined the class in anticipation of receiving an assured government job upon its completion. Although they were immediately dropped from the class as a result, given the need to limit class sizes and the fact that 2-3 weeks had passed, two

other qualified candidates effectively had been precluded the opportunity to upgrade their skills.

The second EMW course currently underway at Tellewoyan Hospital represents a significantly modified curriculum from that presented in 1976, and reflects substantial input from the IHS PHN advisor and her Liberian nurse-midwife counterpart. It is based on a most innovative and promising approach to upgrading skills of these traditional practitioners. EMWs are recruited from those women who are already practicing deliveries but without any formal training. The majority come from remote areas 20 to 30 minutes in the bush and often necessitating a six hour walk to the closest health facility. As a result, their intervention is often the determining factor in a birth outcome. Each is enrolled in a four month course in Voinjama. No reimbursement is paid to the midwives during the four-month training period; each is responsible for financing her own stay in Voinjama. A minimum charge of \$1.75 is collected to cover the costs of scissors. The teaching team uses internally developed flip charts as the primary instructional tool. Because the vast majority of midwives attending neither read nor write, all instruction and examinations are oral. All other materials used in the training course focus only on those locally produced and readily available in the communities from which the midwives come. The curriculum focuses on early recognition of delivery complications and warning signals for referral (in which case the midwife is to accompany the patient to the closest facility); simple delivery techniques without modern equipment. Recognizing that the midwife cannot do a sterile delivery in the typical rural setting, instruction concentrates on methods to ensure a septic one, boiling all materials prior to use, including washing a white cloth in clorox and hanging it in sunlight prior to the delivery.

Despite the emphasis on traditional methods, the program director has noted considerable interest among the EMWs in more modern equipment. A conscious effort is underway to discourage this trend, since such a programmatic focus tends to create dependencies on materials not easily or cheaply available, and thus methods which are quickly abandoned.

Most women in rural Liberia see the local midwife for the entire nine months of pregnancy and for at least the first few weeks immediately following delivery. Because of the potentially valuable role the midwife can play in improving maternal and

infant nutrition given her early contact with pregnant women, a nutrition segment has been added since the 1st class to the EMW curriculum. Instruction is focused on identification of locally available nutritious foods, especially concentrating on early diagnosis and treatment for mothers whose "blood is too low." Mothers at high risk are referred to health facilities, with severe anemic conditions treated on the average for one week at the county hospital during which nutrition education counseling is held.

For EMWs from highly remote areas, a special teaching segment is added on the care of premature infants, particularly demonstrating methods using local materials for incubation during the rainy season when referrals to health facilities, even if more desirable are simply not feasible.

For those few midwives who do read the nurses keep them for a few days beyond the normal training period to instruct them in vital signs with a view toward their accompanying mobile teams in community visits. All EMWs trained in this program are expected to provide support to the health system and the mobile team efforts in the following areas: 1) mobilizing the women in the community to receive tetanus toxoid; 2) ensuring that all recently delivered mothers with infants more than six weeks old bring them to the mobile team site for BCG; 3) reporting all births on a monthly basis to the nearest health facility. In turn the mobile teams are actively encouraging communities to cooperate with these midwives.

Upon completion of the course, the midwife will be recommended for a certificate of training, highly valued in the community as a means to verify requests for higher delivery fees. Those who do not pass the final oral exam are not certified.

Overall the revised course has proven to be mutually beneficial to teachers and students. Importantly, the graduate nursing staff directing the program have noted much new, extremely useful insights on delivery which they have learned directly from these traditional midwives. It is such an exchange, rather than one-way flow of information, which augers well for this excellent program over the long-term.

An interesting trend throughout LC is for women to utilize the rural health facilities for pre- and post-natal care but still deliver by the local midwife. To the extent that the

majority of births are still locally attended, the importance of upgrading traditional midwives skills is essential to improving maternal and neonatal mortality rates.

Recommendations:

However, given the limited capabilities of EMWs to assume the health care functions routinely performed by CMWs, they are not cost-effective staff members for the health posts. Rather than the Government's hiring of them as permanent MOH employees it appears more valuable to systematically "train", that is upgrade the skills of, traditional midwives and permit them to return to their own communities where incentives already exist for those with enhanced quality care skills. The large enrollments in the EMW course at Tellewoyan with candidates exceeding class positions, even though no financial support is provided to maintain the MWs in Voinjama during the four months training attests to the demand for training which will provide them with the coveted certificate. A MW completing the course can charge up to \$10 - \$15 per delivery with as contrasted to \$3 - \$4 without the Government MW certificate, thus, substantially increasing her income.

With regard to EMW training, the current student imbalance with trainees largely from Kolahun and Voinjama Districts should be redressed in any future program. All County district health centers should be notified of new EMW classes and requested to recruit qualified midwives from their local area, perhaps on a geographic quota basis with priority to women from unserved population groups vis-a-vis the formal health system, to ensure a broad dispersion of upgraded midwives throughout the county. More equitable distribution of training opportunities is essential if these EMWs are to be expected to have any impact on excessive maternal and infant mortality rates particularly in the most remote communities where the current death toll is the highest.

III.A.3. Certified Midwives

The existing cadre of CMWs has been a true asset to LCRH project operations. Two training programs supply the majority of CMWs working in the county -- Curran School of Midwifery and Practical Nursing (Curran Lutheran Hospital, Zorzos) and the School of Midwifery (Phebe Hospital, Bong County). The course is two years in duration upon the completion of which graduates are

eligible for examination and licensing by the Liberian Board for Nursing and Midwifery.

Applicants must have completed at least 10 years of education and pass a pre-entrance examination. Stipends are awarded to defray the costs of food, lodging, books, uniforms, and personal needs. In return, students must sign a formal contract with the Government to "work for the Ministry of Health and Social Welfare of the Republic of Liberia in my professional capacity as midwife wherever I am needed and sent for the period not less than five (5) years." Any failure to abide by the contract requires full refund of all training expenses incurred by the Government.

The evaluation team was impressed continually by the highly skilled and dedicated CMWs assigned to LC health posts. In addition to their capability in maternal/child health and pre- and post-natal care and deliveries, CMWs interviewed demonstrated an extensive knowledge of communicable, parasitic and chronic illness diagnosis and treatment which made them valuable members of the health post staff. Additionally, they were conscientious in completing the daily record forms.

The small midwife classes with annual production of approximately 10 in each of these schools limits the adequate expansion of this cadre to meet needs. Consideration should be given to accelerating this productive capacity through provision of additional financial support. In interviews with the Curran School Director, expanding the program is constrained only by money, not facility or staff capability or enthusiasm.

III.A.4. In-service training

In-service training has not yet achieved the important role envisaged in the project proposal. As of the team visit, no formalized in-service training program was underway. A training program for upgrading the skills of traditional MWs which provides "in-service" training to those already working is described in Part III.A.2.

The original plan for in-service training of PAs was to tap them on a rotating basis for one month's closely supervised work in the outpatient clinic of the country's government or mission hospital. In actuality the system has not worked in Lofa County. Plans exist to commence in-service training at the health posts

in mid-1978 but several constraints to successful implementation of this component have already been identified by project staff:

- 1) it is extremely difficult to influence the PAs who are in charge of posts, particularly since the Liberian MCH/FP counterpart under the project who is to direct the training is a "consultant" rather than supervisor and, thus, does not have sufficient authority to motivate them adequately.
- 2) in-service training plans have been constantly interrupted over the project's duration by lack of transportation due to both excessive vehicle repairs and the absence of a US advisor to authorize and accept responsibility for vehicle use. US regulations preclude Liberians being insured while driving the project's advisors-assigned vehicles, without this protection the national nurse-midwife has not been willing to assume direct responsibility for the vehicle, either during the approximately one-year gap between IHS, however, MCH/FP advisors and/or in the absence of an advisor on leave or consultation trips in Monrovia.
- 3) with the road conditions prevalent throughout the vast majority of the county, facilities are rendered virtually inaccessible for the long rainy season; in-service training dependent on outreach is thus precluded; and
- 4) despite the improved drug supply system, many facilities still lack essential supplies because of failure to submit timely and accurate requisitions; as a result the "training" team must expend a considerable amount of time reserved for training simply distributing and recording requests for needed supplies.

The sole ongoing operational mechanism for exchange of information, and upgrading health knowledge and skills is the monthly district meeting. Attended by all personnel from the distinct levels of care (except for an emergency contingency) the sessions review organizational functions and administrative procedures as well as discuss in detail a health issue selected by the group at the previous meeting. This expanded "training" on key health problems, diseases, etc. is led by the IHS teacher-trainer advisor. It is the one place that, as one team member

was told, "we can carry our problems in our pockets to share with others."

Recommendations:

The district monthly meeting should be expanded to a full day session to develop a monthly plan-of-action for the district based on a review of the previous months' activity reports which will serve to identify key problem areas including service utilization, major epidemics and diseases prevalent in the communities, etc. This forum would provide an ideal opportunity for the PA supervisors to take the lead in instituting a local planning capability, a function which they have identified as an area of both interest and in need of strengthening.

III.A.5. Foreign Training

The record of the LCRH project is excellent in terms of placing and retaining trainees in the health system as highlighted in Table III-4. The fact that 100 percent of those who received training to date under the project are currently in Ministry of Health jobs where the acquired skills either are or potentially can be utilized, and that the employees remain motivated indicates an outstanding candidate selection process. Several constraints, however, exist to ensuring these trainee's maximum effectiveness in their assignments. First, the two people trained to form the core of a rural health service unit in the MOH have not been given the recognition, responsibility, or financial remuneration commensurate with the purpose of their long-term training.* Second, the failure to date to activate the family planning component of the project has largely precluded staff from utilizing their specialized fp training. And third, the work of the cadre of county hospital administrators trained at the IHS Center is seriously hampered by the delivery system's continuing organizational and administrative weaknesses as outlined in Part IV.

III.B. Supplies and Equipment

III.B.1. Commodities:

The poor project inputs noted in the June 1977 end of tour report of the first COP -- "The wastage of commodity money is

* See IHS "Counterpart" Section, Part II.

TABLE III-4

FOREIGN TRAINING

LOFA COUNTRY RURAL HEALTH
PROJECT 669-11-540-125

<u>No.</u>	<u>Type of Training</u>	<u>Duration</u>	<u>Place of Training</u>	<u>Position Upon Departure</u>	<u>Position Upon Return</u>
1	Joseph K. Sackie Family Planning	3 months	Training & Research Center, PPA/Chicago	Asst. Clinic Supv. Kolahun	DA Supervisor, Kolahun Health Center
1	Augustine K. Samuka Family Planning	3 months	Training & Research Center, PPA/Chicago	District Clinic Supv., Kolahun	DA Supervisor, Kolahun Health Center
1	Henry Salifu Health Services Admin.	19 months	University of Hawaii	Admin. Assistant MOH	Assistant to Deputy Project Coordinator, MOH
1	Celsus Ebba Health Services Admin.	18 months	University of Hawaii	Admin. Assistant MOH	Deputy Project Coordinator, MOH
3	Anna Bombo Elizabeth Kamara Geneva Stevens Public Health IUD Insertion	3 months ea.	Downtown State Medical	Midwives	CMW, Kolahun Health Center CMW, Konia Health Center CMW, Davey-McKay Post
8 ^{1/}	Health Services Admin.	12 months ea.	Dessert Willow	Health Administrators	County Health/Hospital Administrators

1/ Funded under PASA; only six completed training.

4/13/78
Training Office
USAID/Liberia

The poor project inputs noted in the June 1977 end of tour report of the first COP -- "The wastage of commodity money is related to both U.S. and GOL procedures and attitudes and is not insignificant"¹ -- have represented a permanent deterrent to project achievement.

The majority of posts do not have the basic supplies listed in the original proposal as essential for them to adequately perform their specified functions including blood pressure machines, stethoscopes, and microscopes. This both wastes human resource capabilities since a significant amount of time was expended in training key post personnel -- PAs and CMWs -- to use this equipment and negates quality MCH and primary care; and since much of this equipment is essential for registering vital signs and monitoring such endemic disease problems of hypertension.

The generators selected for the IHS two up-country team member's houses were old Army surplus field gasoline-operated generators not designed for prolonged use. With no local maintenance capability continual breakdowns have been inevitable. Further, constant gasoline outages also limited their usefulness since the small generator at the FP/G house alone requires 25 gallons of fuel per week. The generator has, thus, become much of a luxury item, with the FP/G limiting use to a few hours in the morning and late evening. Without an operational generator, not only have IHS advisors had to face several large refrigerated food losses from spoilage, but also have no running water since the water pump is also dependent on the generator. They must depend on oil barrels to collect rain water for such exigencies.

The limited commodities available at most health posts preclude the full utilization of PAs. Although all PAs have training in minor surgery and laboratory analysis, the virtual absence of even simple technology equipment necessitates referrals to higher levels of care than would otherwise be necessary, thus exerting a negative impact on holding down health system costs.

III.B.2. Vehicles

Of 20 vehicles originally purchased for the LCRH project only one was assigned to LC. Seven of the eight initial vehicles

¹ W. Hurlburt, End-of-Tour Report, p. 6.

were received in non-operative condition by AID. Three purchased with GOL project funds were immediately distributed to other uses than LCRH. Of the balance, two were assigned to TNMA, four to the IHS/PASA team, one to the Deputy Minister and one to the JFK Depot.

Periodic outages of gasoline render the vehicles inoperative for varying lengths of time. Since the project has become highly dependent on the personal accessibility of vehicles to conduct the vital outreach activities, non-availability of vehicles temporarily halts the core of the project.

There is little if any pooling of project vehicles among the various cadre of rural health workers. Rather each type of personnel has generated a demand for, and dependence on, his or her own vehicle. Several attempts by the county medical director to coordinate staff trips among those traveling to the same area have been visibly unsuccessful. One such effort was the posting of the FP/G, nurse-midwife weekly itinerary by proposed daily faculty site visits in the hopes that other outreach workers, e.g., CHIs, would plan their work schedule to coincide with the MCH team. To date, however, there have been absolutely no requests to share this vehicle.

Selection of vehicles inappropriate for LCRH project use -- to the extent that they were important inputs - have seriously hampered project performance. There was much evidence from other projects in Liberia to suggest that U.S. produced vehicles, particularly those with automatic transmissions, were not well suited for rural work. Nevertheless, this experience was not taken into account by the AID/W procurement specialist who assisted in compiling the original project supply order; further, due to the oversight of the Director of Medical Services, inappropriate supplies pervaded the project design, often standing in stark contrast to those recommended by the first CDP on his initial TDY prior to project initiation.

As a result, vehicles with automatic transmissions and missing the tools necessary to adjust them, arrived in the port of Liberia and could not be used for several months after the project began. There is also some indication that US companies "dumped" inferior quality vehicles on the project, e.g., Ford Broncos. Breakdowns are constant and lengthy, exacerbated not only by the lack of a vehicle maintenance capability in the field

but importantly dire shortage of US spare parts. The vehicle problem has been compounded by the fact that some of these selected were not only inappropriate but dangerous when used as planned. The pickup trucks selected to serve as project ambulances carried a manufacturer's warning not to transport passengers in the rear section because of possibility of inhalation of exhaust fumes. Nevertheless, in the absence of other potential ambulances, the vehicles were converted. Recently, they are being phased out of ambulance use, transferred to the well-digging component of LCRH, and replaced with foreign vehicles better suited for the project.

But this changeover is late, and the original purchases grossly wasteful of scarce project resources. Further, from an accounting standpoint the switch to non-US vehicles required funding source switches so that US dollars were used to purchase more of other kinds of commodities and Liberian monies expended on vehicles.

Additionally, even with new, more appropriate vehicles purchased for ambulances, the lack of a radio communications system to link facilities and notify of the need for emergency transport of a patient, coupled with the noted use of at least one major project ambulance as the personal vehicle of the Center Director brings their effective use into services question.

The lack of a preventive maintenance program is a serious gap in the present project design. Even under the best of programs, the average vehicle life in rural Liberia is estimated to be about two years. With no attention to maintenance, the usable life of these costly project inputs is considerably shortened, with an estimated 10,000-13,000 miles maximum. The present dependence on the MOH garage in Monrovia for all but the most minor maintenance is highly inefficient for several reasons: 1) constant pilferage of parts between Voinjama and Monrovia while in transit for repair, 2) long turn-around time with two-three months not uncommon impeding project activities; 3) pilferage while at the depot, with several notices of final repair of the problem for which the vehicle was sent to Monrovia, only to find that other parts such as tires have been stolen or substituted with older, more worn ones.

An attempt was made to develop a "trip ticket" system in Voinjama under the management of the county hospital/health administrator. The system was to record mileage in and out, any

noticeable problems while being driven, and thereby pull vehicles for maintenance, as necessary. But the system was quickly abandoned. Because of an inability to effect the repairs and a poor preventive maintenance program due to the lack of local capability, and the critical shortages of needed spare parts, and with waiting periods of 5-7 months common, the program was forced to continue using vehicles until they absolutely stopped working.

Recommendations:

A preventive maintenance capability must be developed immediately at the county level. One possibility would be for the US engineering advisors to start training of local counterparts. Alternatively, the project could consider purchasing a maintenance capability through the existing operative system at Voinjama set up by the Lofa County Agricultural Development Project.

The LCRH project has also been hampered by excessive vehicle abuse by both the US advisors and the Liberians. Allegations of use of assigned vehicles for non-project purposes were levied on both sides. The team was particularly sensitive to several Liberians charges of the existence of a double standard for vehicle operation with seemingly tacit approval of the use of vehicles by the IHS advisors without a full accounting such as that being demanded of their Liberian counterparts. In the short field trip up-country as well as in the Monrovia area, misuse of project vehicles particularly in non-working hours was consistently noted by the team. At one unplanned site visit up-country one of the key LCRH vehicles was spotted carrying about 20 persons to market during duty hours. Of particular note was the complete destruction of a \$5,000 project vehicle in an accident while being driven by a Liberian in the evening during a totally unauthorized trip for personal purposes. Despite this blatant abuse of vehicle privileges which resulted in a severe financial loss to the project since the truck was not insured, the subject employee was not officially reprimanded nor fined for this derelict of duty. At the same time, a check of the Comptroller's Office files revealed not a single reimbursement to the Government personal vehicle use by the US advisors over the length of project. These inconsistencies serve to create friction in the working relationships of the project staff.

No abuse of vehicle privileges can be tolerated; it is clear that the US advisors must set an example rather than countermand

operating procedures. Immediate action should be taken to institute a vehicle control system to ensure full accountability of all mileage.

A critical question is whether such intensive use of, and consequent dependence on expensive, sophisticated vehicles, especially in light of the numerable constraints to their effective use, as outlined above, is appropriate for a low-cost health delivery system. It is an issue which demands serious attention in the design of the national project, particularly in view of the alternative modes of transportation which can not yet be dismissed as program options. These include: 1) increased utilization of the existing transportation system through institution of a reimbursement scheme for health workers. An extensive public transportation network already exists throughout much of the active project area, with numerous trips daily between the major districts. Health personnel should be encouraged to utilize this network to the extent possible, in a reimbursable basis rather than create dependencies on the already proven not-too-dependable project vehicles. Such a system could have two important indirect benefits: a) it could be tied to a field trip report to justify payment of transportation costs, thus adding a much needed monitoring mechanism to the outreach program; and b) it could generate local income by supporting the private transporter's business. Experience in the Cape Mt. County project indicates that the private sector will respond to public sector stimulus. In Tahn, for instance, a small businessman has formed a full-time operation running his own taxi between an old mining town and the new health post set up to serve its population. There is no viable reason not to more fully exploit this extensive transportation resource. 2) greater coordination of personnel field trips through posting of scheduled visits one month in advance and expanded composition of the mobile teams to include CHIs, FP/E, etc.; 3) use of alternative, cheaper transportation such as motorcycles rather than jeeps and vans for supervisory personnel, especially PA supervisors.

While there have been serious problems with certain kinds of motorcycles in rural Liberia due to the poor road system coupled with the tendency for personnel to ride them at excessive speeds, a few have been successfully field-tested and are working satisfactorily. The Lofa County Agricultural Development Project's motorcycle experience should be used as a basis for planning. Additionally, the WHO leprosy program in Sierra Leone

has adopted a successful model for motorcycle usage. Taxed with the high cost of financing constant breakdowns and abuse of project motorcycles in its early years, the program moved to purchasing motorcycles for which the employees would be delegated full responsibility for maintenance and repair. The incentive for keeping the motorcycles in excellent working condition was that at the end of two year's the employee could sell the motorcycle and pocket the money. Thus, with the program now absorbing only the original motorcycle cost plus fuel charges on a pro-rata basis for project-related mileage, it is estimated that on an average expenditure of \$800 every two years, the employee's transportation is completely covered. The feasibility of such a design for the national program should be carefully explored. Additionally, penalties for vehicle abuse and misuse should be an integral part of the policy and procedures manual.

III.C. Facilities Construction and Renovation

The facilities construction and renovation component of the LCRH project under CARE management is proceeding on schedule overall after an initial delay of six months in starting due to the shortage of essential commodities including cement and wood. It is planned that all currently proposed construction for accessible areas in Upper and Lower Lofa will be completed by December 1978. Funding for the facilities phase is jointly financed by the GOL through the Trust Fund and CARE which maintains its own financial pool. CARE develops the annual operating budget and submits it to the GOL for approval and subsequent forwarding to AID for disbursement.

Average construction time from the ground up is approximately three to four months. The construction/renovation efforts have continued to have to adjust to several systematic constraints, however, which have reduced the efficiency, if not effectiveness, of output. First, continual supply shortages have confronted the program since its outset. Dependent largely on local cement because of its significantly reduced price, CARE has had to work with backlogs of orders for several months at a time. Additionally, although CARE did establish some local warehousing capacity, local cement lasts only a maximum of one month before it hardens so that stockpiling potential is limited.

The supply problem has been exacerbated by the heavy infrastructure construction underway in Lofa County under the guise of several development projects including a German-financed

water system and a World Bank-funded technical school, both of which are larger than LCRH and had, thus, more leverage in competing for scarce local supplies. The case of crushed rock is a striking example of how one large project such as the water system can effectively command all the local resources. Thus, CARE had to expend a considerable amount of unexpected time trucking in supplies of crushed rock from other areas. Wood, a crucial commodity for health facility construction, is in exceptionally short supply nationwide and inadequacies of stock led to additional inevitable schedule setbacks.

Second, although a plan of action had been established to develop or renovate facilities in a logical predetermined geographic sequence, the system soon broke down as new health ministers modified the original site listing; and unresolved political issues, such as the fate of Bolahum health post,* held up renovation on that facility alone for more than one year. The project design called for a rationalization of the process of facility and personnel location by the MOH. In fact the original sites have increasingly been bypassed or supplemented on political grounds.

Third, at the new Minister's request, several district health posts are being upgraded to centers as well a Kolahun Center assuming the role of a small hospital. These unplanned changes, which are occurring outside the administrative control of LCRH project, are placing significant stress on already scarce health sector resources. A serious deterrent to establishment of an efficient rural health system is the pervasive problem of uncontrolled growth of health posts. Although sites for post and center construction and renovation were carefully defined at the project's outset, additional sites have been set-up largely through community self-help efforts generated by the local chief. Not only has the staffing and equipping of these additional, unplanned facilities presented a major financial burden to the MOH, but they negate the operation of a rational resource allocation model. The facilities tend to be built in locations which cannot justify or support the resource inputs essential for their daily operation; as a result, staff are often seriously underutilized; the problem is compounded by the fact that the

* See Administration

President has traveled up-country to dedicate these self-help facilities in alleged support of greater community participation in the health system. While sound in theory, in actuality these dedications have encouraged other chiefs to commence construction of similar self-help clinics throughout the county, to bring prestige and honor to their own villages. As a result, there are indications that unless erious actions are instituted immediately the uncontrolled growth of health posts is only at "takeoff" with regard to its ultimate level.

During the up-country assessment phase of the evaluation the team visited two such self-help sites, Popalahun and Wasonga posts. Wasonga, built by the Federation of Liberian Youth, including resources from several donor agencies, is situated in a community of 12 houses and within six miles or approximately one-half hour walk from the existing post at Foya Kamara which is better located to serve the health needs of the surrounding population group. Nevertheless, in anticipation of a formal Presidential dedication, a significant number of county health personnel were diverted from normal work assignments to ensure that the facility was properly equipped with new supplies and commodities suitable for the opening ceremonies. Popalahun, a Moslem community, proudly showed the team the post built by the local villagers themselves which again remains in close proximity to older facilities.

A fourth problem is that local chiefs are not brought into the selection process. It is crucial that the local chiefs be brought into the site selection process immediately. One mechanism already successfully tested in the county was the World Bank/AID-funded agricultural development project's local project consultative committee. The committee comprised of the county administrator and village chiefs assisted in determining the placement of the project's agricultural extension agents. Since the project could not place such agents in each village, sites were effectively negotiated at the committee level. The use of this existing mechanism for planning the local health project holds much promise and should be incorporated in the revised implementation plan for testing over the last year of LCRH.

Fifth, some sites proposed for early construction or renovation were inaccessible to the CARE team and had to be postponed pending completion of roads. The rainy season has also proved to be a major impediment to timely inputs. Since no

supplies can be trucked in at this time, even if a road exists, all commodities shipments must be planned to ensure that they are on site prior to the rainy season's commencement. CARE, therefore, had to continually adjust the project time table.

Sixth, although the project assumed a considerable self-help component to the construction phase, it has not been successful universally. There has been more cooperation in the smaller villages where people appear to attach a higher value to having a local health post and thus are willing to clear the site and dig the foundation. On main roads, communities tend to expect the Government to bear the burden. Additionally, it appears that the village chiefs, critical in mobilizing local resources, have less control over larger towns where population mobility is high.

At the same time, CARE has not been anxious to push the self-help component too actively asserting that to the extent that it lengthens construction/renovation time and material wastage, it exerts a financial burden on the project. Therefore, it has taken more of a compromise position, attempting to train local counterparts when available, but with predominant dependence on CARE-employed masons and carpenters. As a result, there is a serious question of the ability of local communities to assume responsibility for facilities once "delivered" by the LCRH project. Despite the significant level of renovation which has already occurred, there is evidence that such efforts are quickly dissipated by the lack of a preventive maintenance program. At Veizala Health Post, for instance, one of the earliest facility renovations, the team found ceiling leaks and broken screens.

Seventh, timeliness of AID financial disbursements have been viewed by CARE staff as a continuing bottleneck to efficient operations. From CARE's viewpoint, despite the fact that the 1978 construction activities were advancing far ahead of schedule, the AID budgeting process resulted in no real incentive to handle the program efficiently. Of a 1978 budget of \$200,000 including \$150,000 GOL contribution and \$50,000 from CARE directly, the program field manager claimed they only received \$42,000 in disbursements. In order to finance moving into the building scheduled for FY 1979, CARE had to transfer funds from other development projects in which it was participating to cover the cost, with reimbursement expected to be soon forthcoming. Ultimately such delays could result in construction slowdowns, thus increasing costs.

From AID's perspective, as long as it is administering the Trust Fund, it must demand full accountability for all funds disbursed. Therefore, complete receipts including a site by site breakdown of costs are necessary to conform with US Government accounting procedures under which the Trust Fund is administered. CARE's constraint is that it finds it difficult to disaggregate costs between sites when, for instance, due to economies of scale it is more efficient to use one truck to deliver materials to several sites concurrently. After several months delay while AID refused to accept the original cost statement and CARE attempted to comply with the more detailed data requirements of the Comptroller's Office, CARE did receive \$108,000 purchase order which was being sent to Paris for payment as of the end of April. Despite the continuing problems, the overall success is highly visible. The old and new health facilities at Foya Tangia stand as striking evidence of the positive impact of the facilities construction component of LCRH. The old post site was the private home of the local EMW who performed all deliveries on a straw mat in her bedroom. The long, dark, narrow room used for patient treatment was devoid of a modicum of even the most essential supplies and equipment; an old refrigerator in the corner had not been working for more than two years. The new facility under construction was a simple, modern, four room complex to be completely equipped and supplied.

Recommendations:

The facilities/construction activities would benefit from several actions including:

- 1) more comprehensive planning to ensure that the operating plan follows a logical geographic pattern and that all building at a given facility occurs at one time period,
- 2) a simplification of the cost documentation requirements which currently consume an enormous amount of the field manager's time; and
- 3) most importantly, in terms of leaving a useful product behind after the LCRH ends, is the urgent need to develop a local preventive maintenance program for health facilities. Historically, it has been a weak spot in the MOH's total administration because allocation of funds for maintenance and repair was one of the budget categories most likely to be cut by the

Ministry of Finance. Nevertheless, review of health facilities in Lofa County by the evaluation team highlight the negative result over the long-term if no periodic maintenance program is set in operation. One possibility would be to link it to a total maintenance workshop headquartered in Voinjama with responsibility for upkeep of all the county health system's facilities, vehicles and equipment.

III.D. Development of an Adequate Records System

Goal: "...a major task will be designing an adequate uniform medical records system and developing and making available all the forms required by the system. It is expected that the system will be completed and in use within 18 months of project initiation.

One of the most visible successes of the LCRH project is the data system now operational in 11 health facilities or 25 percent of the total in Lofa County. Although the final product was instituted largely through the HPM contract, it draws heavily on the preliminary system developed by the LCRH team. The current data collection system encompassing both the broad facility reporting and patient record card systems holds great potential for organizing and monitoring the health system. Assuming a reasonable level of accuracy and turn-around time in processing the information, the system can be expected over the last year of the LCRH project to develop a much needed base for:

- 1) a resource allocation model. Through the utilization data including patient flow and detailed patient characteristics information it provides, need for personnel, supplies and equipment, and facilities can be more realistically measured than previously.
- 2) a disease surveillance system. The information will provide a mechanism to track the seasonal distribution of diseases and to rapidly identify epidemics, or threat of outbreak of diseases so that communicable disease control activities can be effectively instituted.

* Prop, p. 34.

- 3) some indication of the health status of the population including major causes of morbidity and mortality, at least among those attending the national health facilities, since both public and private facilities have mandatory reporting requirements.
- 4) a monitor for trends in disease incidence and prevalence over a period of years. Such information is crucial for ensuring health manpower curriculum's relevance to the needs of the population groups to be served as well as in improving the diagnosis of certain categories of diseases such as schistosomiasis.
- 5) establishment of national child growth and development norms for Liberia. The patient record cards, if properly completed, will provide a means to determine nationwide for varying geographic, socioeconomic, tribal groups average growth and development in the under five years of age population. In so doing, it will also provide a gauge of nutritional status among this prime target group.
- 6) an assessment of work performance and quality of care. Review of the patient record card is a particularly valuable means to gauge employee's work through analysis of symptoms, vital sign measurement, diagnosis and treatment. In such a way misuse of drugs type or dosage can be quickly ascertained and changed through personnel consultations.
- 7) a monitor to check system abuse. The consistency of number of patients seen, facility revenues, drug supplies disbursed can all be carefully measured for the first time in Liberia.

To date, however, the Government of Liberia has not been entirely receptive to maximizing the data system's usefulness as a management information and decisionmaking tool. Resource continue to be allocated largely from Monrovia with little if any attention to the local county or district level's information base generated by the data system. There has been no major move toward establishment of a civil service system which will hold health personnel accountable nor is the Government launching a straight forward attack on health system corruption and abuse. Employees found to be derelict in duties commonly are neither

officially reprimanded by fines nor discharged but rather tend to be relocated to another facility.

The system also faces several constraints which unless rapidly ameliorated threaten its overall effectiveness. These include:

- 1) the enormous work burden the reporting system places on facilities, many of which are already short-staffed. The reporting forms were field-tested in Cape Mt. County where average facility daily patient loads of 10-20 persons are common. Thus, the completion of the form on a daily basis, and then in monthly aggregates, did not appear to present a formidable task for employees. But once instituted in Lofa County, particularly among the facilities in high population density areas and with average patient loads of often 30-40+ daily, completion of the required forms has often resulted in the critical trade-off of patient time for data collection time. During the field visits numerous cases were reported of highly qualified staff having to spend up to a few hours daily -- hours normally spent in patient consultations -- completing the forms, or of having to expend several hours each evening of their personal time filing the report.
- 2) lack of correlation to date between noting of patient diagnoses on the individual patient record cards and the listing of diseases as causes of consultation on the facility report form. The reporting problem is compounded by the fact that often patient records include only symptoms and treatment information; when diagnosis is indicated it commonly does not "match" any category on the facility form. As a result, the more unskilled health workers at the facility, if selected to complete the form, must constantly consult with the PA or RN to obtain a "translation" of the patient record card so that the appropriate facility record column can be checked. Further, with several facilities complementary staff including personnel only at the EMW

* See section on administration.

or dresser level -- both of whom tend to be illiterate -
- full responsibility for the data system must often, of
necessity, fall solely on the PA or RN.

Given the excessive burden which the new reporting system is placing upon facilities with high average daily patient loads such as Foya Mission with approximately 400-500 outpatient visits daily, the Government should move to provide a record clerk to assist in meeting the documentation requirements. The addition of a Government-funded employee to the staff complement of this Church facility could have the added advantage of catalyzing its integration into the rural health delivery system, thus, serving to bridge the current gap between church and Government health facilities.

- 3) the demand for excessive detail on the reporting form beyond that needed for decisionmaking. Listing of patients names as well as their patient numbers is a time-consuming task which purpose is unclear. There appears to be no valid reason that such level of disaggregation of data for the county is necessary. In an interview with one consultant of the HAM contract, a team member was told that it was expected that once working, the daily report form would eliminate the need for individual patient records; that on a return visit of a patient, staff would refer to the sheet for his last visit. Clearly if this is true, it indicates a serious misunderstanding of the essentiality of individual patient records and a naivete as to the accessibility of medical history information if limited staff were to have to search through all faculty daily records about the time of the patients last visit. Similarly, at least as currently being utilized, the column "drugs dispensed" is checked virtually 100 percent of the time and thus adds no valuable information for planning purposes. It, therefore, is recommended that at a minimum completion of both these information columns be dropped.
- 4) lack of standardization of diagnoses for reporting purposes, and a tendency toward overreporting of certain illnesses which place the data's reliability under serious question. The team noted, for instance, a

substantial variation in reporting deaths which primary cause was measles -- a major cause of child morbidity and mortality in Liberia -- ranging from its listing as measles and/or post-measles to entering only pneumonia or respiratory complications, thus, seriously underreporting measles contribution to excessive child mortality rates. On the other hand, there appeared to be a prevalent tendency to overreport malaria, with virtually everyone appearing at a health post with a fever receiving at a minimum a diagnosis of malaria.

- 5) inadequate information, as the system is presently designed, for determining the project's actual population coverage. In contrast to the proposed coverage level of 4000-6000 people per facility it is currently estimated that the average number of potential clients within the coverage area is closer to 2500-3500. In actuality both the "numerator" and "denominator" data base are at question. First, with regard to the patients actually receiving care at rural health facilities -- the so-called numerator -- possibility of double-counting negates the accuracy of the number of persons the "visits" actually represent. Each individual patient is assigned a discrete number at a given facility which is used throughout his/her medical care at that facility with visits reported as initial and revisit, thereby, unduplicating patients intra-facility. But importantly, there is no check to avoid, double-counting total health system patient load on an inter-facility basis. Each facility assigns its own numbers and many patients attend more than one facility. Thus, summing up over a given period all the facilities patients, even if unduplicated by patient number, does not represent that precise number of patients actually utilizing the system but rather a somewhat higher level than actual, usage with how much higher unknown. (Table III-5)

One possible way to approach this problem would be to assign all people a registration number for consistent use at whatever facility they attend. The "number" could be given free by the county registrar or in areas in which he was not easily accessible, by the facility itself, each of which would be assigned a distinct block of numbers. Mothers could be encouraged to register births prior to the first checkup as a means

TABLE III-5
TOTAL PATIENT VISITS BY SEX AND AGE
FOR SELECTED HEALTH FACILITIES, UPPER LOFA COUNTY
JANUARY - MARCH 1978*

Age Group Sex Group	0-1		1-4		5-14		15-44		45-64		65+		TOTAL VISITS	
	M	F	M	F	M	F	M	F	M	F	M	F		
Tellewoyan OPD (2 mo.)*	345	395	128	105	215	161	661	1035	182	107	41	20	3395	21.3
Kolahun H.C. (3 mo.)	615	585	339	275	192	235	305	1910	125	211	45	108	4951	30.0
Konia H.C. (2½ mo.)	249	226	241	210	107	131	173	773	55	35	3		2203	13.6
Voinjama BCH (2 mo.)	194	174	8	5		1	4	457					843	5.3
Shelloe H.P. (2½ mo.)	163	173	324	322	176	182	293	350	174	138	63	41	2399	15.0
Bobolu H.C. (1 mo.)	43	41	63	65	30	33	74	212	38	12	19	8	638	4.0
Foya Tengia H.C. (3 wks)	36	23	33	37	27	33	39	23	17	15	7	15	305	1.9
Vazela H.P. (2 wks)	33	18	46	36	22	60	14	67	5	8	8	10	327	2.0
Nyandamoillahun H.P. (2 wks)	10	18	8	9	5	10	11	15	23	2	3		113	0.7
Lavalazu H.P. (3 wks)	67	37	50	55	50	69	33	134	3	11	4	8	521	3.3
Salayea H.P. (2 wks)	15	22	28	14	20	26	42	58	26	14	2	9	276	1.7
TOTAL	1770	1712	1268	1132	844	941	1649	5040	648	553	195	219	15971	29.9
%	11.1	10.7	7.9	7.1	5.3	5.9	10.3	31.6	4.0	3.5	1.2	1.4	100%	
AGE GROUP TOTAL	3482		2400		1785		6689		1201		414			
%	21.8		15.0		11.2		41.9		7.5		2.6			

*See Narrative-Reporting Period

Lofa County Rural Health Project, Ministry of Health Care, Monrovia

to both obtain a health facility registration card and concomitantly to ensure medical care for the infant. Such a system would have the added indirect benefit of providing a more accurate reporting of the actual level of births and potential family planning acceptors. The concept of a registration card should be discussed among several key ministries with the view toward developing a system which would be beneficial for several purposes: e.g., planning need for educational facilities, agricultural extension programs, etc.

No reliable information currently exists for determining the denominator or total population in a given area served by a health facility. The 1974 census data which is commonly used by project staff for assessing coverage was not based on a house-to-house reenumeration process. Rather village chiefs were commonly asked to report the number of houses in their area which were then multiplied by an average family size of 5-6 persons. Further, it has been suggested that a substantial level of underreporting of households may have actually occurred because of local leaders fears that this information would be used for tax assessments or similar government interventions. Thus, if coverage is to be calculated, and thereby "unmet need" determined for resource commitment purposes, the rural health system needs a far more accurate population count. A seemingly viable option would be to have the CHIs conduct a house-to-house census, covering on a systematic, planned basis the entire project area over it last year of operation. A check of all houses in a given community is already an assigned, recognized function of the CHI, although in actuality as noted earlier, performance has been limited. Activation of this role would have the advantage, therefore, of a) tapping an existing resource with no additional cost outlay; b) serving as a check on the CHIs outreach activities by ensuring that at a minimum, every home for which he was responsible was inspected, and c) increasing the acceptance of surveyor and thus indirectly accuracy of information since the CHI is

* See CHI subsection of report.

already familiar to most villagers and would not likely be viewed as a tax assessor or other official collecting information for hidden purposes. With 15-16 CHIs detailed county-wide, such a population survey seems possible within the specified time frame.

- 6) the absence of a system to ensure rapid analysis and feedback of data for decisionmaking at the higher county level and facility management throughout the levels of care. Both PAs and PA supervisor noted their inadequate training in statistics as a primary constraint to using the information now being collected; and the only tabulation of data in Lofa County to date shared with the team were the preliminary hand tabulations of the U.S. advisor FP/G based on incomplete reporting of several facilities over a three to seven month period. The problem is compounded by the dire shortage of trained statisticians throughout the MOH. If the new data system is to play the vital role envisioned, therefore, increased attention will have to be placed on upgrading the statistical skills of existing rural health workers, particularly PAs and RNs heading local posts, and/or the development of a cadre of health statisticians for distribution throughout the system.

III.E. Policy and Procedures Manual

Goal: ... a manual will be developed outlining in detail supervisory policies and procedures which will provide the basis for the supervisory system.

The initial implementation plan developed August 21-29, 1975 called for the design and writing of the supervisory policy and procedures manual to be completed by July 1976, and its printing, approval, and adoption and ongoing use in the health system to occur not later than January 1977. Primary responsibility for its development was delegated jointly to the Director of Medical Services, MOH; the COP, IHS team; and the County Medical Director, LC.

* Prop, p. 32.

As of April 1978, no policy and procedures manual exists. Failure to produce it can be directly attributed to several interrelated factors:

- 1) Lack of assignment of high priority to this component by the MOH at the project's outset. The IHS team assumed that for such a document to be operationally viable, it should be generated by the MOH itself, not the US advisors. Only if it were a Liberian document would it carry the official stamp necessary for it to become an integral part of the nation's health delivery system. But a slow startup by the first MOH project coordinator, coupled with his departure in July 1976, resulted in the manual formulation lacking even a preliminary plan of action. Subsequently assigned to Dr. Boayue, as part of his functions as the new project coordinator, his responsibilities as Director of Medical Services demanded almost his full-time attention so that the project and its policy and procedures manual was relegated to lower than optimum position.
- 2) In late 1976, just as the IHS team had assigned top priority to catalyzing the manual formulation, by writing a first draft to serve as a working, discussion document, the AID health officer transferred full responsibility for the manual development to the other AID contract team for strengthening Health Planning and Management (HPM) in the MOH. The IHS team's hands, therefore, were tied in terms of meeting this operational responsibility which the project had originally assigned them.
- 3) By removing the manual from the very groups who could make the most significant contributions to its development since they were directly involved in the health delivery system it was to guide, to a new contractor who already had a full agenda of priority activities to undertake, the manual suffered further, inevitable setbacks. As of April 1978, the HPM contractor had not touched the manual issue nor, importantly, did HPM feel competent to even begin to address it alone, without significant inputs from the IHS team active in rural health.

In the interim, the IHS teacher-trainer attempted to fill the procedural gap, and thus strengthen

operations, through the preparation of five distinct documents covering broad areas of PA responsibility at the local level. These guidelines are currently in place in all Lofa County health facilities:

- a) chronic care module,
- b) 7-page pamphlet on treatment of parasitic illness,
- c) 12-page pamphlet on emergency care,
- d) 19-page general guide for outpatient care by post personnel, a basically "how to handle cases as they appear at the treatment table," and
- e) a series of symptom complex cards outlining symptoms, diagnosis and treatment of the most common illnesses in the rural areas.

In their totality they should provide a valuable base for the policy and procedures manual.

A comprehensive policy and procedures manual is absolutely essential in any health system but of particularly vital importance to LCRH where inadequate supervision and control remains the chief weakness of the existing system.

The manual was to develop the extensive administrative and technical guidelines crucial to project performance. These included detailed job descriptions for all personnel, performance standards, and administrative procedures for monitoring and assessing them, as well as clinically-based standard operating procedures.

Recommendations:

That primary responsibility for the manual be immediately returned to the LCRH project, with specific authority designated and immediate attention given to the COP and MOH employees. Mr. Ebba and Salifu of the MOH developing a working draft for dissemination and comment not later than September 1978 for adoption, field-testing, and revision, as necessary, over the last year of the LCRH project.

III.F. Establishment of Radio Communications System

Goal: In order to improve the level of services provided under the proposed system, ie., through improved supervision, appropriate handling of emergencies, and improved drug and medical supply distribution, an adequate communication network is essential....Installation and maintenance of the system has been arranged through a local private firm....

The project had planned for radios to be installed in each health center to ensure communication access to the county hospital to which each was administratively responsible. The scheme was significantly impeded by failure of the radios to arrive in port as planned, and, ultimately, delay in installation of the radios until one year after their arrival in-country.

Further, as radios broke down and were returned to Monrovia for repair at the MOH maintenance center, several were diverted to use in other counties and never returned to the project. At the same time, since the County Hospital radio was out-of-service and being repaired, the radio at Kolahun Center was transferred to the hospital; this action rendered the center, and its outlying posts, virtually isolated communication-wise from the rest of the system except by message delivery via project vehicles. At the time of the team visit, Kolahun had been without a radio for several months.

The continued isolation of a vast portion of the health system continues to be a primary constraint to institution of an effective rural health delivery system in Lofa County. The failure to operationalize the communication network between the levels of care as outlined in the original PROP has had several serious repercussions:

- 1) referrals, particularly for emergency cases, cannot be effected, and lives are consequently often needlessly lost, in light of the absence of a rapid, dependable means to notify the appropriate higher level of care of the need for technical advice, supplies and/or an ambulance to transport a critically ill patient to the hospital;

* Prop, p. 33.

- 2) PAs, as the most highly trained health worker at the primary and most commonly at the secondary care level, remain professionally isolated both from colleagues and, importantly, the physician upon whom they are dependent for backup. Such isolation has an obvious detrimental effect on PA motivation and dedication to service; and
- 3) patient knowledge of the absence of a mechanism to provide linkages between facilities, encourages this bypassing of lower levels of care in favor of the county hospitals where all illnesses can be treated, and referral is not necessary.

Even when radios were placed as planned, continual problems of keeping batteries properly charged, and of pilferage precluded their potential contribution to linking the widely dispersed facilities of the health system.

Given the isolation of many of Lofa County's health posts, radio linkages between them and higher levels of care are not only promising but mandatory. The IHS supply and logistics specialist was to have explored what types of radios are appropriate for use at the primary care posts prior to his pending short-term consultancy to follow-up the supply foundation he laid during his long-term advisory position. One alternative would be handpedaled radios which are not dependent on batteries or costly maintenance. The field testing of appropriate models for rural facilities would be an important contribution which LCRH could make to the IHDS design.

IV. PROJECT OPERATIONS

IV.A. The Three-Tiered Rural Health Delivery System

IV.A.1. Health Posts:

The end-of-project status expected that 32 health posts would be operational. As of April 1978, 30 posts were staffed and equipped with all but one in the project area headed by a RN or PA. As the primary care focus and thus initial point of entry into the system, the posts initial staffing pattern which was to include two PAs at each post with rotating facility-based and community-outreach responsibilities has been significantly altered. The actual common staff mix of one PA and one MW (either CMW or EMW) appears to provide a better balance of skills needed at the community level particularly given the need for a permanent female provider. Further, the strictly outpatient role perceived for the post has been modified to include deliveries and accompanying inpatient care varying, as indicated, from a few hours to a few days. While these changes can be assessed as positive with regard to maximizing resource use for curative care, they have nevertheless left an, as yet unfilled, void in addressing the preventive, community-based components of the project. Only at one post visited was there any indication that the PA spent part of his time traveling by foot to the outlying villages the post~~s~~ is to serve to conduct health education and screening.

The problem of lack of preventive focus is compounded by the fact that the CHIs who already have assigned preventive health care functions, were never formally brought into the project design. And their administrative independence, reporting to the Director of Preventive Services in the MOH rather than the

* See Role of Women section.

** The outreach activities of this PA were confirmed by the CHI responsible for the environmental sanitation of these villages.

Director of Medical Services and Project Coordinator, has with few exceptions negated their integration into the LCRH project.

The standard health post hours are 8 a.m. to 4 p.m. Monday - Friday. Few facilities maintain that regime, however. On numerous occasions during the team's field site visit posts were closed after noon with neither health staff or keys available to open the clinic and to assess its condition. Translated into patient terms that represents inaccessibility of care for a significant portion of the day. Frequently health professionals absence was attributed to the harvesting period. Given the fact that most health workers families as well as the potential patients are engaged in agriculture and there will be predicted seasonal demands on their time alternative, more flexible, clinic hours should be explored.

Recommendations:

One alternative approach being field-tested in Cape Mt. County under the UNFPA/WHO pilot program is opening the health post for morning hours, closing during the afternoon and reopening during the early evening. The feasibility of this schedule and impact on patient utilization rates should be carefully studied for possible replication in Lofa County.

IV.A.2. Health Centers

Established as the supervisory point for the outlying posts as well as to provide essential secondary level of care, three of the five originally planned health centers are currently operational - Bolahun, Konia and Bopolu. Bolahun was upgraded to a center when the facility was turned over to the Government by the Episcopal Church but was returned to post status when serious, still unresolved problems arose over its management and administration. Given the virtual isolation of Belle Yallah

* At the time of the team visit, negotiations of the MOH with the Church were still in abeyance, pending internal MOH discussions on the alleged pilferage of substantial quantities of drugs allotted to the post, as revealed by the newly instituted LCRH drug supply control system.

from its surrounding posts, its development into a center has been postponed indefinitely.

The centers generally provide 24-hour service outpatient and emergency care, and short-term inpatient care including minor surgery and deliveries. Typically they are headed by a PA supervisor who has administrative responsibility not only for the given center's staff but also its post's PAs, and the work of the mobile team. With the detailing by the MOH of a physician to head Kolahun Health Center, the Center has become increasingly involved in the performance of more serious surgery cases than the typical center caseload; although it does not have the laboratory capacity to back it up.

Both Kolahun and Konia laboratory capabilities are limited to the basic tests of blood: hemoglobin, white blood count, blood typing, urine and stool specimens; and skin snips. The laboratory technicians have been trained to do more tests but are seriously constrained in their work by the lack of materials. At Konia, for instance, the technician had rigged a complex mirror-flashlight set up in order to use the center's assigned microscope which was an electric one although there is no generator. The resolution was so poor it is remarkable that any exams can be done with existing equipment. There are no table lights, nor such essential items as lens and slide cleaner. At Kolahun, no white blood counting was being done during the Evaluation visit due to the lack of distilled water, unavailable from central supply. Given the limitations, the volume of work is impressive. Konia's lab did 232 stool specimens in March 1978 alone.

Further, it is apparent that Kolahun Health Center is highly resource-intensive compared to other Centers with similar functions. The presence of two PA supervisors in addition to a full-time MD does not represent the most efficient personnel distribution pattern for this District. At the same time, the pattern of rotating the PA supervisors duties between facility management and supervision of Kolahun's 14 health posts has not been effective from a management standpoint. Given the large distances between these posts, continuous, timely supervision is seriously precluded with just one PA to cover them.

Recommendation:

Supervisory responsibility for Lofa County's 14 posts should be split between two PA supervisors with one geographically located at Kolahun Center and one permanently assigned in the vicinity of Bolahun to cover the posts over that widely dispersed area.

IV.A.3. County Hospitals

The LCRH proposal called for two county hospitals operating as tertiary care centers by the end-of-project. As of April 1978 both were actively serving upper Lofa County's districts although with significantly different capabilities.

The LCRH project's focus on "rural health" served as a rationale for concentrating resource inputs on the health posts and centers to the exclusion of the "urban" based county hospitals at Voinjama and Zorzor. This third tier of the health system hierarchy was viewed as the direct responsibility of the Government and/or church authorities.

The semi-autonomous status of Curran Lutheran Hospital in Zorzor District has placed it at a distinct advantage over the strictly government-controlled Tellewoyan Hospital in Voinjama District. Its capacity to hire and fire staff directly gives it a critical control mechanism over employee performance. Further while Government subsidies are significant, they nevertheless represent just one-third of the total operating budget and permit broader discretionary authority by the hospital administrator to purchase commodities than his counterpart at Tellewoyan. Its board of directors includes representation from both church and Government and has been instrumental in its efficient operations. Its medical director is a church-supported expatriate physician. In striking contrast to Tellewoyan Hospital, Zorzor had a fully stocked supply room, its own in-house capability to produce IVs, a small, but modernly equipped operating room, its own constantly operating generator, its own equipment vehicle maintenance staff to support both the hospital inpatient and outpatient services and its outreach, mobile team component.

Without project support, however, Tellewoyan Hospital, the closest referral site for the majority of posts and centers in Kolahun, Voinjama and Konia Districts has not received even the minimum level of physical resources -- supplies and equipment --

essential for its life-saving mission. While the cadre of staff assigned to the hospital are well-trained and apparently extremely well-motivated, their effectiveness is severely circumscribed by the lack of such basic supplies as intravenous solutions, sterile gowns, and catheters which are needed daily in a facility with major surgical responsibilities. At the time of the team visit, the hospital, as Voinjama itself, had been without electricity for almost two months. The emergency generator was run just a few hours each evening but notably not during the regular staff shift during which sterilization of gowns, equipment, etc. would normally occur. In case of an accident or need for emergency operations, essential staff have to be rounded up in the community and returned to the hospital, often wasting precious minutes in a patient's life. In the absence of a blood bank or an organized blood donor pool, emergency blood requirements must be met by gathering potential donors together at the hospital, typing them, and drawing blood as appropriate. Food supplies were inappropriate to meet daily needs. During the visit of one team member the District of Nursing was attempting to arrange the trade with local merchants of in-stock large cans of sardines for smaller ones which could be used to fill a given meal's requirements; since, in the absence of refrigeration this was the only means to avoid excessive food spoilage and thus, wastage.

Recommendations:

In interviews with key Tellewoyan Hospital staff it was evident that with the exception of the main role of the county medical director and the teaching of the EMW course, they have had little direct involvement with the LCRH project. The vast majority of illnesses in Liberia can be treated at the local level, and there is no question that the improved posts and centers are already having a direct impact on the quality of life of at least upper Lofa County residents. But the hospital remains the highest referral point in the system and it is here that many life and death outcomes will be determined, e.g., critically ill patients, advanced stage of diseases, complicated deliveries, etc. Thus, the county hospital must be fully integrated into the project's operations, including allocation of resources to bring it to the level at which it will serve as an effective tertiary care center.

IV.A.4. The Theoretical Fourth Tier -- JFK National Medical Center

The project design designated JFK Medical Center as the fourth tier of the proposed rural health delivery scheme. Specified linkages to the county's three levels of care were to be: 1) monthly visits by JFK's specialized medical staff to advise on problem cases, and provide in-service training to upgrade local health staff skills; and 2) referral and transfer of critically ill patients for advanced care. In operation, this linkage is virtually non-existent. The advisor visits terminated after the first few months of LCRH operation and have never been reactivated. In fact, given the disparity between the county facilities and the National Medical Center's capabilities, particularly with regard to differences in supplies and equipment, there was some question among Lofa County health staff of the actual value of such specialist visits on a periodic basis, were they to be reinstated. While the lack of valid records precludes a documented response to the question of the actual level of referrals to the Medical Center from the county's two hospitals, interviews with numerous staff of Tellewoyan Hospital indicated that in 1977 only three patients had been air-evacuated to the Medical Center. Clearly, therefore, JFK Medical Center cannot be viewed as a fourth tier, but rather as an autonomous health care provider. And while it does play a vitally needed role on the national level providing highly specialized care which would not otherwise be available, from the perspective of the typical Lofa County rural villager, it has made no impact on either the quantity or quality of health care available to him since the LCRH project began. This fact serves to underscore the urgent need to upgrade services at the tertiary care level where the majority of life and death outcomes are determined within the county.

IV.A.5. Mobile Teams

The static site facilities' work is complemented by that of the mobile teams assigned to the county hospital or center level. The typical team comprised of a RN/public health nurse and a few dressers, generally spends four days in the field and one day record-keeping each week. In a few districts, CHIs periodically accompany the team although not on a formalized basis. The

mobile teams work under the direct supervision of a PA supervisor.

To date mobile teams have not been effectively utilized. during the team visit a primary constraint to greater mobile team impact was that the agricultural season tends to divert many patients. Not only do many women work in the fields themselves but others take meals to the field for husbands and relatives, thus, missing the team visit. Although a fixed monthly schedule exists and communities are to receive 3-4 days advance notification of mobile team visits, the actual conduct of mobile team visits still demands much supervisory attention.

Immunization teams have been particularly lax in carrying out their assigned functions. A key constraint to expanded immunization coverage is the untimeliness of mobile team visits to the communities. It is not unusual for the team to arrive as late as 10:30 - 11:00 am - long after the vast majority of mothers have left for the farms. Commonly, therefore, teams do not have the "critical mass" needed to justify opening a vaccine vial.

A survey is currently underway in Kolahun District to identify communities with large numbers of small children for concentrating the resources of the mass immunization teams.

If there is a large population group found, the team will recommend that a kerosene refrigerator be placed at the closest health post. In areas without health posts, there has been some discussion of establishing static vaccination sites from which mobile teams could conduct community outreach activities.

IV.A.6. Village Health Committees (VHCs)

The success of VHCs has been variable and still must be carefully tested as a preventive health model. Currently, these committees exist in 75% of the villages in Kolahun, one village in Voinjama, several villages in Konia, a few in Zorzor and none in Gbargna or Bopolu Districts. Further, of those currently operational, the majority existed before the project began. But of those, the ones which have been most active in promoting improved community environmental conditions have all had one thing in common: the apparently critical factor for their

success is the presence of a highly motivated community health inspector.

While the organization and composition of VHCs varies significantly between communities, discussions with CHIs active in their work have indicated a definite plan of action for mobilizing these community resources. Depending on the size of the town to be served, the CHI requests that the local chief select at least two men, three women (including one traditional midwife) and the local bone setter or zowo (healer) to comprise a village health committee with the following specified responsibilities:

- 1) the two men are to oversee latrine construction; the brushing of roads between villages; well and water source control, ensuring that they are properly used and kept clean; refuse control; report any diseased animals in the community so that they can be removed prior to endangering lives; are responsible for correcting housing and cook house deficiencies which would preclude proper food sanitation; and must report all non-compliance to the sanitation laws to local authorities;
- 2) the women are charged with reporting communicable diseases immediately to clinic personnel (this role is often specified for the midwife); in communities where only women are permitted to go to the water source, they assume responsibility for its cleanliness and protection; referrals of sick residents, especially mothers and children, to the closest clinic; and,
- 3) the bonesetters and/or zowo must refer persons needing wound treatment to the clinic although they can take care of fractures themselves.

Strengthening the CHI cadre, and giving explicit attention to their mobilizing VHCs in many more villages over the last year of LCRH is essential to adequately judge the viability of this resource as an alternative to the training and hiring of a full-time village health worker.

Recommendations:

One alternative would be for the team to sleep in the villages overnight; between 6:30 and 8:00 p.m. full coverage of

the given village's eligible children could be expected with the added benefit that the team could be mobile in the early morning to reach a nearby community before the parents disperse for the farms.

To assess the feasibility of setting up immunization teams at public places where a large number of the target population naturally gathers, such as markets, larger farms, field-test should be conducted over the last year of LCRH project.

Given the current limitations of mobile teams, in the immediate term increased emphasis should be given to stationary vaccination sites.

IV.B. Administration

The administrative linkage between the central and county health level is significantly better than the service one. Daily radio communications between the county hospitals and the Ministry of Health keep the county medical director informed of Ministry issues and decisions and provide a means to activate needed support, e.g., supply shortages.

Yet despite a move toward decentralization of the system with the county medical director assuming more authority over local health operations, the resource allocation decisions to support the delivery of services still are dictated largely at the central level. Personnel are hired and given basic job descriptions in Monrovia and assigned to a specific county even to the extent sometimes of having pre-determined facility designations. Thus, while the county medical director can shift personnel between facilities, as patient need and administrative considerations dictate, he cannot control the total amount of human resources available to carry out his official responsibilities. Likewise he remains dependent on the central authorities to ensure a constant flow of essential supplies and equipment, although once received at the Lofa County depot, he does have discretionary authority over their disbursement between facilities, intra-county.

The newly instituted facility reporting system is viewed by the Lofa County Medical Director as potentially one of the most important management tools accessible to him. Information available for the first time on differential facility utilization rates have been instrumental in determining in a rational manner

appropriate levels of resource inputs to a given post or center from the county's total resource pool. At the same time the drug supply control system initiated under the LCRH project provides a means by which requisitions can be checked against actual patient distribution via a medical records review, so that all supplies can be accounted for and/or unexplained losses and pilferage rapidly brought to management's attention. Further analysis of patient visit records, disaggregated by initial and revisit and type of service, permit for the first time, in the Liberian health system, a fairly accurate estimation of the amount of revenues a given facility should be turning over to finance each month.

The continuing and most serious administrative bottleneck facing county health leadership is in holding personnel accountable for any discrepancies found as a result of this information system. In the absence of a defined civil service system and/or a policy and procedures manual to guide personnel actions, no formal or widely recognized penalties exist for staff abuse or misconduct, and disincentives for countering the system are virtually non-existent. The situation is exacerbated by the fact that the Lofa County medical director has been extremely reluctant to reprimand health workers even in the face of documented evidence of miscarriage of duties, e.g., non-presence at post during official duty hours, pilferage of drugs and patient fees, etc. It is of note that two other counties visited which were headed by both Liberian and one expatriate medical director have taken a much more militant stance against system corruption such as docking employee's pay for unauthorized leave of absence from facility and requiring reimbursement of costs for pilfered commodities. Importantly, these county medical directors have received strong support in these actions from the central MOH officials, indicating that systematic change can be made in the short-term despite the absence of a structured civil service system. At the same time the results in terms of improved staff performance appear impressive.

Whatever the underlying reason to date for the failure to launch a concerted attack on the existing pervasive deficiencies, and to commence a much needed administrative reform of the county health system, it cannot continue as the modus operandi of the LCRH model. The lack of accountability remains extremely detrimental to achievement of project goals and must be identified as a priority area for the project's revised implementation plan and strongly redressed if the model is to be given a fair test.

IV.C. Supervision

Goal: A supervisory system is needed to ... provide advice and support to health post staff, both in the provision of clinical services and in the public health education and preventive aspects of their work ... important that visits of supervisory staff ... whenever possible ... accompanied by the Health Center Sanitarian.....on important function of the supervisors will be to provide a feedback mechanism to facilitate ongoing adjustment of the total program....

...a systematic supervisory system* will be established and in operation within 18 months.

Extension of the supervisory system has also been impeded by the lack of a critical mass of PAs and, thus, candidates for PA supervisors to adequately cover the numerous health facilities. Although plans called for training of five supervisors annually, as with the PAs themselves, it was not politically feasible to detail all such trainees to LC. Thus, of five trained in 1975 the first year of the program, three were assigned to LC. The absence of candidates to run the supervisory training program set the program back significantly. In the 1977-78 academic year five were being trained of which three came from LC.

Current PA supervisory training includes a 9 month curriculum at TNIMA encompassing the broad areas of supervisory skills and techniques; communicable diseases; maternal/child health/family planning, statistics, and a short session on environmental sanitation. In addition, the two PA Supervisors in Kolahun District participated in a three-month family planning management training course in Chicago under IHS sponsorship.

The methodology for evaluating health posts commonly includes the following steps:

* Prop, p. 32.

- 1) prior to visiting a specific health post, the PA supervisor usually visits the local village interviewing the town chief and people on their views of health post service delivery, continuing problems, etc. to be discussed with the staff during the facility inspection phase.
- 2) site visit in which facility supplies and work performance are both indirectly (records review) and directly (personal observation) assessed. Supervisors generally spend the entire day at one post with the latter afternoon used to review his evaluation with the staff.
- 3) some PA supervisors maintain records of specific problems encountered at a given facility for review and reappraisal on the next supervisory. There were until very recently, however, no mandatory reporting requirements.

If a given PA is found to be not performing at a level acceptable to the PA supervisor and/or the local communities he serves, the community health physician is notified. He, in turn, notifies the county medical director of all personnel recommendations with authority for personnel deployment resting with the latter.

In the absence of adequate statistical records for the length of the project, changes in quality of care over the past three years are as difficult to ascertain as the generally more accessible quantity of care indicators, e.g., numbers of patients seen per facility, age-sex distribution, etc. There have been several procedural mechanisms instituted over the past year, however, to assist in supervision and by which documentation to determine the project's impact on quality of care can be assessed by the end of the project for at least the 1978 to 1979 period.

A "Health Facility Quality Care Monthly Report Card" developed by the IHS advisors was instituted in March 1978 to guide the PA supervisors in evaluating each of the health posts. (See Table IV-1). Structured as a score card for seven principal categories of activities for which each post is responsible, the "report" will follow a given facility over a 12-month period, thus, facilitating the tracing of performance trends over the project's last year.

TABLE IV-1

ACTIVITY EVALUATED		POINTS	MONTH													
			J	F	M	A	M	J	J	A	S	O	N	D		
I. COMMUNITY HEALTH (15 points total)																
A.	Are Health Education lessons taught at least once a week?	Yes=5 No= 0														
B.	Are at least 10 such lessons with visual illustrations already prepared?	1pt/2 0---5														
C.	Are all towns within 6 miles staffed by village health committees or village health workers and supervised weekly?	0---5														
II. RECORDS (10 points)																
A.	Are clinic record cards in use and all filed correctly in order?	Yes=5 NO =0														
B.	Are record books all kept well & are all monthly reports complete & filed in order?	Yes=5 No =0														
III. UNDER-FIVES CLINIC (20 points total)																
A.	Is this clinic held at least weekly?	0 or 5														
B.	Are weight graphs & plastic envelopes in stock & given to all mothers to carry?	Yes=5 NO =0														
C.	Are these vaccines given at least monthly? BCG? DPT? Polio? Measles? Smallpox?	Each 1 point														
D.	Review 5 cards. Is wt. recorded on each?	0 or 1														
	Is complaint & time recorded on each?	0 or 1														
	Is diagnosis recorded on each card?	0 or 1														
	Is treatment recorded on each card?	0 or 1														
	Is malarial suppression on each under 2?	0 or 1														
IV. PRENATAL CLINICS (20 points total)																
A.	Is this clinic held at least weekly?	0 or 5														
B.	Examine 5 cards--do ALL have recorded:															
	Urine Albumin (1st visit)?	0 or 1														
	History of all past pregnancies?	0 or 2														
	Physical examination on 1st visit?	0 or 2														
	Weight on each visit?	0 or 1														
	Edema on each visit?(0 to 4+)	0 or 1														
	Blood Pressure on each visit?	0 or 1														
	Fundal Height on each visit?	0 or 1														
	Meds. given on each visit?	0 or 1														
D.	Is Tetanus Toxoid given to all?	0 or 5														
V. FAMILY PLANNING--Are pills & condoms available & are yellow cards filled in?		Yes=5 No =0														
VI. Is INTEGRATED CARE available? Give 1 point for each day of week it is given.		0 to 5														
VII. Are KEY DRUGS & SUPPLIES available?(1 pt each)																
	Penicillin Triple Sulfa Thiazina	0 to 3														
	Chloroquine Iron tabs. Paregoric	0 to 3														
	Cough Syrup Piperazine Tetrachlorethylene	0 to 3														
	Aspirin Whitfield's Benz. Benzoate	0 to 3														
	Tape Alcohol Gauze or bandage	0 to 3														
	Microscope Stethoscope B.P. cuff	0 to 3														
	2 Thermometers 6 Syringes 18 Needles	0 to 3														
	Adult scale Baby scale	0 to 2														
	Sterilizer Stove	0 to 2														
Add all for TOTAL MONTHLY SCORE		0-100														

Additionally, the FP/G and nurse-midwife did a sample survey of MCH patient record cards in several facilities in Voinjama, Kolahun and Konia Districts to ascertain the extent to which the vital signs which should be taken were actually entered. Based on the identified weaknesses in meeting basic quality care requirements, they plan to hold in-service training sessions during the current rainy season to upgrade staff knowledge, performance, and recording of vital signs. A follow-up sample survey of the same facilities is planned for late 1978 to assess changes in quality of care as judged by increases in vital signs entries as a result of this in-service training.

Despite their advanced training, PA supervisors interviewed in upper Lofa County noted continuing weaknesses in their specialized curriculum which impeded their optimum work performance. Additional skills felt to be strongly needed included:

- 1) administration - personnel and facility management including definition of criteria by which performance could be judged. Formulation of a policy and procedures manual was viewed as a positive aid to their assigned roles.
- 2) statistics - improved capability to analyze data being generated by the health system to determine needs and concomitantly for program planning purposes.
- 3) budgeting - knowledge of costing out resources and new programs with a view toward preparing local budgetary needs projections.
- 4) planning - overall guidance in planning methodologies so that PAs supervisors could play a direct role in the development of local operating plans and programmatic design activities. Of note is that these personnel perceived their roles as planners rather than merely as service-providers and, therefore, feel their skills must be significantly upgraded to fill the local planning void.

The supervisory system is complemented by the direct field work of the community health physician who both has direct supervisory responsibility for the PA supervisors as well as indirectly through them the entire rural health cadre. A monthly

plan is established for health post visits but is flexible with priority attention to those facilities facing particular problems with regard to staff, equipment, supplies, etc. as identified by the PA supervisors. Since the community health physician was out of the country on home leave at the time of the evaluation team visit, however, no interview or direct assessment of his role was possible.

IV.D. Salaries

If the government's commitment to rural health is to be credible, the current imbalance in salaries of health workers in rural and urban areas must be changed. Only when salaries are commensurate with job challenge, particularly in the rural areas, given the tremendous constraints to achievement of an optimum working environment, will sufficient financial incentive exist for rural service.

Current salaries, outlined in Table IV-2 highlight disparities between training and salary levels. The differences between RN and PA monthly salaries are the result of political rather than rational resource use decisions. Although both categories of personnel have three years of training beyond high school, and perform essentially the same functions at the rural facility, a continuing battle between the Director of Nursing, MOH, and the Director of the PA School at TNIMA, is based on the former's assertion that nurses must be a superior cadre to PAs since they can diagnose and treat and PAs are to work under the direct supervision of physicians. In fact, the realities of rural health manpower dictate that both personnel types assume the same independent role.

The move toward rationalization of the rural health manpower resource base, merging all senior paraprofessional cadres into one "medex" or physician assistant group, with a single salary level based on task analysis staffing the proposed national integrated health delivery project is a much needed one. But given the fact that the existing cadres have significantly different training, and specialized expertise, a key unanswered question is the ultimate impact on the country's graduate nurse cadre, already a serious shortage area, if, as planned, they are tapped for the PA/Medex program?

Table IV-2

Comparative Salary Scale of
Rural Health Workers, Liberia*

<u>Category</u>	<u>Average Monthly Salary (in US\$)</u>
Registered Nurse (RN)	250
Physician Assistant (PA)**	200
Practical Nurse (PN)	200
Certified Midwife (CMW)	200
Nurse Aide	100
Dresser	100
Empirical Midwife (EMW)	75
Senior Health Inspector	252
Community Health Inspector	177
Family Health Educator***	75

* as outlined in the current budget

** PAs in Lofa County receive considerably more than those in the rest of the country with PAs typically earning \$3000/year and PA supervisors \$3600/year.

*** a new cadre of personnel for a WHO/UNFPA funded pilot project in Cape Mt. County.

Source: MOH

IV.E. The Trust Fund

The Trust Fund was established at the LCRH initiation at the express request of the MOH to facilitate the handling of the Liberian financial contribution to the project. Since the Governmental budgeting process which is highly centralized through the Ministry of Finance was viewed as a potential impediment to the timely appropriation and disbursement of needed funds, this fund was viewed as a useful mechanism to expedite financial transactions. As structured, the Ministry of Finance makes quarterly appropriations to the "U.S." account managed by the Comptrollers Office at the USAID Mission. The Fund represents all Liberian money with a U.S. overseer. As agreed at its inception the fund was to be jointly administered upon mutual

agreement of the U.S. and Liberia, "for the good of the project." In actuality, the MOH has viewed it as their funds and have continually demanded complete discretionary authority over its disbursement. Ultimately, rather than a mechanism of convenience, it has become a constant source of friction in the project for several reasons.

As long as the U.S. is administering the account, it must be governed by U.S. regulations requiring full accountability and determinations on the appropriateness of given expenditures in light of the project objectives. These U.S. regulations often are counter to Liberian regulations and inevitably disbursement disagreements arise. When the GOL sought to give honorariums to TNIMA faculty, for instance, an expenditure not permissible under U.S. law which forbids additional payment for work-related responsibilities to Government employees, the Comptrollers Office resolved the issue by returning the amount of money in question directly from the Trust Fund to the GOL which then made the desired payment. Conflict also arose over several purchase orders submitted which the U.S. interpreted as broadening the scope of permissible expenditures beyond the actual parameters of the LCRH project, e.g., vehicles to be used outside of Lofa County; training of PAs including purchase of textbooks for students who were to be detailed to countries other than Lofa. The Comptroller's Office was influenced significantly to support this strict interpretation of the LCRH project which holds that nothing in the project agreement states that funds can be used nationwide by the AID health officer; therefore, the US maintains that it will not approve any such vague "rural health delivery system" expenditures unless the project paper is so amended.

In the case of the GOL's desire to buy more technologically appropriate, non-U.S. vehicles for the project, a compromise was reached in which the U.S. agreed to buy \$45,000 of commodities to offset the GOL vehicle purchase which originally was to be part of the U.S. contribution but tied to U.S. products only.

Of note is that with regard to fulfillment of Liberian obligations to the fund, there have been no problems with adequate appropriations to the Trust account to meet obligations. Although payments from the Ministry of Finance have not always been precisely as scheduled, no purchase order has not been processed due to lack of monies.

In an attempt to strengthen Trust Fund operations, the IHS teacher-trainer and two MOH project employees -- Ebba and Salifu -- developed a detailed budget for FY 1978. (See Annex I). Previously budgets were targetly undersigned by programmatic component, with all money held in reserve as needed.

In turn, the AID Comptroller's Office has improved accounting procedures substantially effective FY 78 and agreed to supply detailed expenditure accounts to the project on a quarterly basis. To facilitate their reporting, the Office has set up a separate ledger for project #125-LCRH -- to ensure that specific categories of project expenditures stay within the proposed ceilings outlined in the new budget.* As mutually agreed, the Comptroller will permit flexibility on actual type of expenditure within a broad budget category, e.g. construction, transportation but if there is variance on the total level of expenditure in that category, a new obligation order will be required to ensure that overall project funds remain in balance.

A continuing problem is that although the COP was designated the Trust Fund monitor with full clearance authority, his detail to Voinjama and, thus, long absences from Monrovia, have made it impossible for him to fulfill this important function. Thus, he has been forced de facto to relinquish financial control of the project to the D/COP and T/T.

Table IV-3 outlines obligations and expenditures of the U.S. contribution to Lofa County (non-trust fund) as of 9/30/77. Two facts are highlighted: 1) actual expenditures have been significantly less than obligations; and 2) three-fourths of obligations have been to two program components -- U.S. advisory personnel (46%) and U.S. commodities (28%). This pattern of obligations, although typical of AID project funding, has been the cause of considerable discussion among several Liberian officials who allege, per discussions with the evaluation team, that the major portion of U.S. assistance to LCRH has been self-serving.

* Previously all AID project finances were aggregated and tailed in one large account although project #125 was the single largest category.

TABLE IV-3

TRUST FUND ACCOUNT

LOFA COUNTY RURAL HEALTH PROJECT

	CUMULATIVE		Through 3/31/78 CURRENT YEAR					
	A		B				A + B	
	As of 09/30/77		(1) Funding Source				(2) Funding Source Cumulative	
	Obligations	Expenditures	Obligations	Expenditures	Obligations	Expenditures		
	Amount % (in \$000)	Amount % (in \$000)	Amount % (in \$000)	Amount % (in \$000)	Amount % (in \$000)	Amount % (in \$000)		
Total	2109 100.0	1351 100.0	615 100.0	220 100.0	2724 100.0	1571 100.0		
Components:								
01 US Personnel	952 45.1	605 44.8	297 48.3	177 80.4	1249 45.9	782 49.8		
03 Participants	94 4.5	49 3.6	0 -	5 2.3	94 3.5	54 3.4		
04 Commodities	750 35.6	610 45.2	0 -	2 0.9	750 27.5	612 39.0		
05 Other Costs	140 6.6	87 6.4	46 7.5	36 16.4	186 6.8	123 7.8		
30 Uncommitted	173 8.2	0 0	272 44.2	- -	445 16.3	- -		

IV.F. Health Sector Financing

IV.F.1. Fee-for-Service

A schedule of fixed fees for health services has been established, although only unevenly administered, as outlined below:

<u>Adults</u>	<u>Children</u>
\$0.50 initial visit	\$0.25 registration fee
	followed by - -
\$0.25 followup visit, and	\$0.10 each subsequent visit
	for children over 2 yrs.
	of age, and
\$5.00 pregnancy care	free for children under 2
including delivery	yrs. of age

Despite limited incomes, these fees are both reasonable and render care accessible to a population accustomed to paying substantially higher fees for services of traditional practitioners. While zowos receive \$0.50-\$1.00 per consultation and untrained midwives average \$3 - 4 per delivery, it is not uncommon for bonesetters to charge as much as \$40-\$50 per fracture. In light of the long tradition of fee-for-service in rural Liberia, it is essential that some aspect of self-financing of local health care be maintained in the extension of MOH services to the villages.

As currently structured, facilities may retain part of the monies received as patient fees to pay for locally recruited sweepers and cleaners. In addition, several have hired dressers to assist in daily patient care. The balance of revenues are required to be submitted to the Finance Ministry. In fact, significantly more funds are absorbed at the facility-level than submitted as described in the administrative section. Use of patient-derived revenues to purchase kerosene, drugs, automobile repairs both related and non-related to the LCRH are common although the exact level of expenditure on these items is not known.

The current widespread abuse of the patient fees collected at the facility level has serious implications for sector financing. Evidence from review of records of church-operated hospitals with strict financial receipt controls indicates that patient contributions can cover approximately one-third of recurrent operating costs. Given the limited resources available to the sector, the GOL should at least be cognizant of the significant potential contribution these revenues can make to sector financing, and the implications, therefore, of not strictly controlling facility patient revenue receipts and disbursements to the Ministry of Finance.

IV.F.2. Sector Financing

Goal: Notwithstanding increased GOL expenditures in the health sector and given the goal of replicability, it is essential that the estimated incremental recurrent cost of the health services proposed for LC, when projected for the country as a whole, not be in excess of planned GOL allocations. However, the present centralized accounting system commingles all recurrent operational costs...a new or modified accounting system identifying project costs on a historical basis may be required... one of the major tasks of the advisory team's initial period will be to work closely with their Liberian counterparts to develop reliable data...

The IHS financial consultant to the LCRH project attempted in three separate field visits -- September 1975, February 1976 and May 1977 -- to identify the cost components of the Lofa County Rural Health project and concomitantly develop a system to record costs over the project duration so that the financial implications of this model could be documented carefully. His work has been frustrated by numerous factors including the absence of a GOL accounting system disaggregated to the project level.

* Prop, p. 36.

Complete accurate and current reports on obligations and expenditures of funds under the LC Trust Fund Account and the U.S. financial contribution are available through the AID Comptroller's Office. No reliable data exist to document Liberian expenditures to date, for recurrent costs of operating the LCRH system. Constraints to determining actual project costs include: 1) the cost of personal services provided by MOH employees assigned to LC cannot be ascertained since the centralized Ministry of Finance (MOF) payroll information has eliminated information on geographic location of employee from its data bank. Thus, it is impossible to identify the portion of total MOH salaries and wages expended in this project's facilities; 2) no basis exists to determine the maintenance and repair costs of LC buildings, despite the fact that such information is urgently needed to justify an anticipated need for a budgetary increase to cover this operating cost, and extend the coverage to include medical and other equipment not currently included; and 3) one of the two county hospitals - Tellewoyan in Voinjama - had its subsistence budget moved from direct MOH control to the centralized MOF. This action impedes effective and efficient hospital management since the administrator has no means to trace actual outlays against budgeted expenditures and, thus, rapidly identify and redress problem areas for cost control.

Given the data limitations, the following distribution of the MOH financial expenditures on LCRH by category are at least illustrative of major cost categories:

<u>Item</u>	<u>Percent</u>
Personal Services	57
Drugs and Medical Supplies	24
Curran Lutheran Hospital	6
Maintenance and Repair of Automotive Eqpt. (including gasoline and oil)	5
Training	2
Other	6
	<u>100</u>

In spite of the high proportion of funds expended on salaries, the FC has estimated that there is a substantial unused personal services budget. The Calendar Year actual PS expenditures of \$22,921 represented just 91 percent of that amount budgeted and available or an approximate loss of 17 man-

years of personal services. Further, he estimated that LCRH would lose 23 man-years of manpower input in FY 1977 due to unfilled vacancies. It is evident that this manpower could have been used effectively to support project activities. Even if it were unnecessary, however, this funding could have been transferred to cover costs of other seriously short-supply project inputs such as equipment and supplies.

In his most recent report, the FC identified several steps that must be instituted if an accurate assessment of LCRH project costs is to be made and its replicability, thereby, determined. These include:

- 1) institution of a quarterly report on costs of drugs and supplies utilized by the system;
- 2) maintenance of accurate medical records at each facility so that patient treatment costs can be estimated;
- 3) completion of maintenance, repair, and operating costs records for each vehicle used in the project;
- 4) establishment of a defined, standard per diem reimbursement schedule for employees required to travel for LCRH work;
- 5) establishment of a buildings and medical equipment maintenance system including records to ascertain costs;
- 6) development of a record system to track expenditures on material -- stationery, blankets, linen -- being used;
- 7) institution of a legal, formal system to record collection of patient fees and monitor expenditures from this fund. To assist in the control of widespread system abuse, approved patient fees should be publicized country-wide and visibly posted in each facility;
- 8) development of a facility-based accounting system used on a) each employee be individually identified by location of present work assignment; b) all employees at one location be grouped so that total facility payrolls can be computed easily by the MOF computer; and c) rapid notification of employee transfers so that the MOF can update its records; and

- 9) documentation of other project-related costs essential if the true financial implications of the LCRH model are to be determined. These include: a) a portion of the expenditures of Phebe Hospital in Bong County. Although not a formal part of the LCRH design, Phebe renders a significant amount of care to LC residents with an estimated 10 percent of its patient load attributed to LC. The FC estimates therefore that about \$100,000 of annual Phebe unreimbursed input to LC must be included in the total LCRH cost figure; b) an undetermined proportion of the operating costs of mission and concession facilities also extensively used by LC population; c) Peace Corp's contribution in the form of conduct of home economic and health education classes, although minimal in cost; and d) the World Bank's Schistosomiasis Research Unit input.

Without these changes the data will remain inadequate and future planned trips of the FC worthless. Overall, it is concluded that unless the MOH fully supports the administrative necessities inherent to a viable financial accounting system, "full benefit of the funds put into the project will not be realized."

* See Ralph Lauxman Report of May 26, 1977.

V. KEY PROJECT GAPS

V.A. Introduction

Goal: Recognizing the critical need for preventive medicine and the tendency for the demand for curative services to absorb all the available health resources, the proposed delivery system contains "a unique plan for assuring that health prevention receives an equal share of attention." Two distinct sets of functions are contemplated at the periphery: 1) intensive village-based education to encourage better health practices such as good nutrition, drinking safe water, safe disposal of excreta, care of children, immunization and child spacing. The other focus would be on provision of curative services at the health posts. Each assistant would be trained to perform both functions with the two PAs envisaged* to staff each health post rotating roles periodically.

In fact, while the curative care part of the project is a visible success as contrasted to ongoing medical programs in other counties, the preventive medicine program component of the LCRH has been a striking failure. Numerous gaps exist in the present system which preclude significant improvement in health status, as outlined below.

V.B. The Well Program

A clean water supply was consistently noted among Liberian health staff interviewed as the most critical gap in the existing project design and an imperative for improved health status throughout the project area. As of the team visit, no facilities in lower Lofa County and only two facilities in upper Lofa Country -- Kolahun Health Center and Shelloe post -- had wells with ready access to uncontaminated water.

* Prop, p. 27.

Recognizing the crucial missing link between ongoing project activities and project impact, LCRH has placed renewed emphasis on the activation of a well program.

The impetus for a well program component of the LCRH project initially came from consultations by the project's supply and logistics specialist with UNICEF and local government. As a result of these discussions, a collaborative work plan was proposed and AID ordered a well rig in mid-1977 for its participation.

A formal organization with joint decision-making authority has been established to conduct the well program comprised of AID, the Ministry of Health and the Ministry of Local Government, each of which will supply one rig. The area of Zorzor District was selected for program focus over the next year, because of the good accessibility provided by the existing road network and availability of adequate logistical support. The site is enhanced by the presence of Peace Corps volunteers experienced in wells, who will form the core of the local training program, an integral component of the well construction effort.

To date the organization has drilled two test wells at Kolahun --one at the health center and one in the nearby village. In addition, one was drilled at Gbobiu at the express request of the President and the Minister of Health, utilizing MOH funds and rig.

Full launching of the program has been delayed significantly, however, because of the failure to clear the new AID rig through customs. Although it arrived in port December 19, 1977, as of the evaluation visit in April 1978, formal processing had still not been completed, and the MOH, General Services Administration (GSA) and port authorities had still not made necessary arrangements for a "lowboy" to transport it to the field. Even when cleared of customs, additional delays are anticipated before the AID-supplied rig can be fully operationalized.

The decision on the type of rig ordered was based on existing methodology being used at that time in rural Liberia but importantly soon afterwards found to be inappropriate for needs. As a result, rig modifications are necessary to permit a larger

hole drilling capability. And it is not certain that all equipment needed to adapt the basic rig has arrived in country.

The delays in receipt of the AID rig resulted in the lack of coordination of inputs between teams prepared to drill and actual program commencement. With the training of the initial teams already complete, they were forced to stand idle while the rigs were field-placed.

Organizationally, the well program is structured so that each employee is to be paid by his parent agency. Authority has been delegated from the MOH to hire additional people, as needed, with financing from the LCRH trust fund.

Operationally for the next two years the Ministry of Local Government will supply the program's key foreman and well driller with a view toward training local persons to take their place over the next several years. The Peace Corps is supplying the field superintendent who will be in Zorzor for one more year.

Actual well sites will be selected by a panel comprised of representatives of the three member organizations, utilizing the following criteria: 1) site must be within 5 miles of a main road; 2) priority will be given to health posts and schools; 3) the site must be public property; and 4) population density of the area. As proposed, the program would coordinate activities with the World Bank's hand dug well activities in Lofa County as well as the MOH's ongoing hand dug well component. The rigs would focus on larger communities; the hand dug wells more appropriately targeted on small villages and remote areas with more limited water needs. Additionally, there are plans to utilize CHIs to conduct extensive community health education focused on appropriate personal hygiene and sanitation prior to well construction in a given village as well as mobilize villagers to build latrines.

Even in the absence of the full operationalization of the program to date, several problems or potential issues already are surfacing: 1) there is some question whether this triumvirate of power will be viable, an issue which remains largely dependent on achievement of mutual respect and evenness of participation. During April 1978, the Minister of Health was considering seriously temporarily withdrawing the MOH's Dando rig from Zorzor for priority attention to well construction in Monrovia. Such a pullout, albeit temporary, could jeopardize the success of this

collaborative inter-ministerial venture; 2) related to 1) is a general tendency by Government officials to switch designated work plans and site selections on political grounds;* if extended to this well program it would, at best, fall far behind schedule; 3) although there are no problems yet, the fact that local government personnel earn more than MOH employees could cause friction among staff performing essentially the same functions but at widely varying remuneration; 4) related to 3), is the identified need to standardize per diem rates paid to all field employees, regardless of organizational affiliation. Currently the MOH reimburses at the rate of \$3.50/yr in sharp contrast to the local government's rate of \$40 per 90 day period. It is planned to attempt to achieve consensus on an equitable fee and then fund all per diem out of the LCRH Trust Fund to avoid otherwise inevitable conflicts among the integrated well program personnel; 5) the existence of many broken hand pumps in Lofa County has resulted in a significant loss of credibility in the local Government's capability to meet this need; as a result the new well program will have to regain community confidence and support if it is to succeed; and 6) from an environmental standpoint, the dry season is a continuing constraint to effectively meeting water needs since it tends to render existing wells inoperative for months at a time; and even in the wetter season it is not uncommon for wells in largely populated areas to "dry up" by 11 a.m. until the following morning. The program will have to select carefully appropriate technology to address these recognized problems.

V.C. Community Health Inspectors (CHIs):

The CHIs are the most underutilized and potentially among the most important members of the rural health delivery team. CHI training, as that of PAs, is concentrated to Tubman National Institute of Medical Arts in Monrovia. The curriculum is two years in duration and open to high school graduates. Several courses are taken in concert with the PAs.

Theoretically the CHI is to serve as the principal motivator for environmental sanitation at the community level. His village work encompasses a broad spectrum of specific tasks, which he is responsible for performing periodically in all assigned communities:

* See Facilities Construction and Renovation section.

- 1) conducting a community census (generally done by asking the village chief for number of houses and then multiplying the figure by 5) including reporting births and deaths;
- 2) mobilizing residents to build latrines;
- 3) checking local water sources including springs and wells, when present, and assisting villagers to clean and protect water sites;
- 4) ensuring that an adequate system exists for collecting and disposing of refuse;
- 5) assessing general community hygiene/environmental sanitation on a house-to-house basis such as control of weeds and grass, and mandating corrections as necessary; and
- 6) if a school exists in the village inspects its water supply and latrines and teach basic health education to the students

In the failure of motivation, the CHI must use his enforcement authority to ensure compliance with the community sanitation regulations the Division of Preventive Health of the MOH has developed. Upon identifying a violation during a village inspection tour, the CHI is charged with issuing warnings to the responsible parties to be followed up on the next village visit. If there is still a violation upon the return visit, depending on the nature of the problem, an additional warning with specified length of time for compliance is issued. If ultimately noncompliance continues and the town chief cannot obtain cooperation from the villagers to redress the grievance, the case goes to county court.

Each community is notified in advance of the CHIs visit through a formal letter to the town chief or chairman of the village health committee, when such exists. Each CHI subsequently is accompanied on his village inspection tour on a house to house basis by the chief or chairman.

The typical weekly schedule of the CHI (as outlined below) in Kolahun district whom the evaluation team accompanied for a

day while up-country highlights the full and most positive workload of a young, highly motivated CHI.

Monday - public market inspections
Tuesday
Wednesday - joins mobile teams
Thursday
Friday - house inspections in Kolahun

His coverage area is enormous spanning five distinct tribal clans in a total of 82 separate villages for which he is responsible. Due to its large size, Kolahun has been divided into three zones, with visits once every third week in a set pattern.

The positive contributions of a dedicated CHI to the health system were reaffirmed during the site visit with the inspector assigned to Konia health center in inspecting the newly cleared area for a village well in one area, and the extensive latrine construction and spring water protection by a local health committee in another village. Of particular note is the barely tapped potential inherent in mobilizing village health committees.*

Despite the visible successes of these CHIs in advancing community health, numerous constraints exist to their individual, and the CHI cadre as a whole's, optimum utilization. First, and most importantly, the generally negative image of CHIs among rural Liberians is a primary impediment at least in the short-run to their effective service as a much-needed preventive and promotive health complement to the system's presently basically facility, curative-oriented focus. The long history of unscrupulous health inspectors who utilized their job's authority to extract large bribes in both barter and money from villagers in exchange for not levying fines for unspecified "violations" has led to a pervasive attitude that all CHIs are not to be trusted, and community support remains largely minimal at best. While the transition to a respected health cadre, therefore, will inherently be a slow process of gaining villagers confidence and direct support, the few young dedicated CHIs in LC have

* See section on Village Health Committees in Section IV. Project Operations.

demonstrated that a high level of community self-help in collaboration with the CHI can be both activated and maintained. The challenge remains for the newly emerging classes of CHIs to engender this faith in the sincerity and dedication of their cadre to enhancing community rather than self-status.

At the same time, the effectiveness of community inputs is limited by two related factors: 1) the lack of aides to assist CHIs in teaching villagers to hand-dig wells and latrines to the proper depth, coupled with, 2) the excessive number and widely geographically dispersed villages for which the CHI is usually responsible; as a result, little continuity in village activities is possible. The typical pattern is a maximum of two to three village visits annually given the extended time required to fully inspect each village consistent with the reporting requirements, the time needed to travel between villages and competing responsibilities, e.g., public markets, food shop and restaurant inspections. The listing of activities upon which he must report bimonthly underscores the important preventive health role he is to fill (See Table V-1 at the end of this section).

Fourth, as evidenced in Lofa County, CHIs work fairly autonomously, developing their own work schedules with minimal direction from either the local county medical director or the Central Division of Preventive Services. Although submission of monthly activity reports to their local supervisor is required in Lofa County, the validity of the reports and the community work performed are verified by the supervisor only irregularly at best. In interviews with the supervisory CHI in Voinjama it was ascertained that he had no work plan to identify where the CHIs for which he was responsible would be working on a given day, thus, significantly circumscribing his ability to observe CHIs in action at the community level. He identified the lack of transportation as the primary constraint to the effective performance of his job, noting that all other key project staff had their own vehicles.

Excessive demands on health post staff to meet curative care needs have limited seriously the availability of personnel time to work closely with the local CHI in sharing information and suggesting critical health problems, e.g., epidemics, gastroenteritis outbreaks, etc. upon which he should focus his efforts. Thus, the desired close interaction of the facility and outreach activities precluded. Sixth, although courses at TNIMA have trained the CHIs to identify children with specific illnesses or

at high risk, e.g., severely malnourished, their efforts to provide a monitor and quick referral mechanism to the formal health system are often thwarted by the lack of a clinic in the immediate area of their villages. Without any means of transportation or rapid communication to the district centers to which they are assigned, they are continually frustrated in this referral role. Seventh, although responsible for community health education, they are faced with a virtual void in health education materials from the MOH to assist their teaching activities. Self-developed materials reviewed were suitable but extremely time-consuming and clearly only available where local inspectors were among the more motivated CHIs -- still a limited number, as noted earlier. Additionally, in the absence of MOH supplied reporting forms, and with extremely limited, if any, access to photocopying equipment, the CHIs in Lofa County have to purchase their own paper, locate a functioning typewriter and develop their own forms each time they are to submit a formal report. This time-consuming activity, like that of health education material development, detracts from hours available for actual community activities.

The original LCRH prop specified only that one CHI would be assigned to each health center to supervise the preventive activities of its surrounding health posts. In defining such a limited, ambiguous role for the CHI in the rural health system, the project seriously overlooked one of the potentially most valuable resources in rural Liberia. CHIs have a distinct advantage over other health cadre in advancing the preventive health goals of the project -- they have no drugs or medical supplies. Rather, their primary focus is on educating and monitoring the environmental sanitation condition of the community -- a key gap in existing project activities. Particularly since the second, community-oriented PA has dropped from the health post staff design originally conceived for LCRH, mobilization of alternative resources to fulfill this vital preventive health role is imperative.

At the same time, the failure to integrate them fully into the county health operations represents an enormous waste of resources. At an average annual salary of US\$2100, the 15 CHIs assigned to Lofa County alone plus their supervisor amount to an expenditure of approximately US\$321,000 annually. In a country with limited funds to finance the health needs of its population, all expenditures must be cost-effective. If CHIs cannot be more effectively utilized and held accountable for their specified

tasks, there is no justification for continuing this large, costly cadre of personnel.

Recommendation

Large numbers of CHIs are employed by the MOH while new classes of TNIMA graduates constantly enter the pool. Given the largely unfilled potential of the CHIs nationwide and specifically in the LC pilot project, and the promising accomplishments of the few motivated ones, it is recommended that priority attention be given to fully integrating this cadre into the revised implementation plan and testing the feasibility of strengthening its role and concomitantly image. It is recommended that CHIs' actual workloads in terms of the generally broad geographic dispersion of their assigned activities be significantly modified to permit concentration of efforts including development of cohesive VHCs in 10-15 villages over the next year. With such a focused approach there is evidence to suggest that CHIs can be an effective component of the health system.

Table V-1

Field Activities of Community Health Inspectors
Statistical Reports
Division of Environmental Health
Kolahun Health Center

Reporting Period:

<u>Item</u>
Housing
Population
Restaurants inspection
Shops inspected
Pit latrines
Wells
Drainages
Schools
Public Markets
Garages
Bakery
Refuse
Public Nuisances
Court Prosecutions
Fines Imposed
Births Reported
Deaths Reported
Unsanitary Vacant Lots
Rodent Infestations
Other Inspections Made

V.D. Immunization

The critical factors for a successful communicable disease program which need immediate attention if LCRH is to be a viable model for national replication is extension and improvement of the limited ongoing immunization program through the following steps:

1. Assessment and strengthening, as needed, of the existing cold chain. The high incidence of measles in the project area during the team visit, coupled with the fact that the medical records of several of these children indicated that they had been vaccinated, places the viability of the cold chain under serious question.
2. Enhancement of supervision, particularly with regard to ensuring that the mobile teams are operative in an efficient and effective manner.
3. Development of a formalized mechanism to provide communities advance notice of a team's visit so that the critical mass of children needed to make the visit worthwhile can be assembled. One possible channel of communication which has not been adequately tapped to date is the CHI. Already responsible for visiting each village on a periodic basis, the mobile immunization team's visits could be planned to follow the route of the local CHIs by a few days.
4. Formulation of a systematic implementation plan to cover the entire county on an area or district by district basis over a specified time frame. Current efforts are fragmented and much evidence exists that the teams have covered only the more accessible target population, often double vaccinating the same children while others "at risk" have not been reached.

V.E. Nutrition

The LCRH project has attached absolutely no priority to improving nutritional status although evidence exists that malnutrition and nutrition-related illnesses are a serious health problem in the county. A key constraint to even beginning to address nutritional concerns through the LCRH project is the attitude pervading AID that Liberia does not have a nutritional status problem. Unfortunately, and erroneously, this conclusion has been drawn from a nutritional survey conducted by UCLA which was repeatedly held up as documentation for decision-making by the AID health officer. The validity of the survey findings must be challenged, however, on several grounds. First, it was conducted during the agricultural season when the population faces the best food situation during the entire year. To be truly representative, the survey should at least have been conducted over varying time frames of a given year to more

honestly reflect food availability, and thus, nutritional status. Second, although the data system has not been fully operational for one year, preliminary analysis of causes of admission and deaths at the two county hospitals -- the facilities for which long-term information was most accessible -- indicate that malnutrition is among the major causes of morbidity and mortality. It can be assumed that it also, therefore, represents a significant proportion of reasons for outpatient visits. Third, the excessive number of deaths from measles and post-measles witnessed during the team visit could largely be at least indirectly attributed to poor nutritional status among the infants and young children affected.

V.F. Health Education

Community health education has been given inadequate attention throughout the LCRH project. A key constraint is the absence of a clear-cut delineation of responsibility for this vital project input among the diverse health cadres comprising the rural health team. In the amending the project design to exclude the community-based PA originally to have led health education efforts, no effective substitutes was added. In theory such responsibilities should fall under the job description of the CHIs. But given the serious limitations of their current performance, and their official status largely outside the LCRH project, their effectiveness in this role is significantly limited.

The problem is compounded by the lack of material support for formal health education program. Materials for health education are scarce in all facilities visited and virtually no efforts have been made toward staff development of their own posters, bulletins, etc. Of note were the very effective handwritten posters on environmental sanitation and nutrition created by the PA at Korwohun health post, which unfortunately appeared as the exception rather than the rule.

A potential health education vehicle which has not been adequately tapped in rural Liberia to date is the radio. A church sponsored radio network with good transmitters and

* See Section on CHIs.

excellent reach and listening record of the target population is already in place and operating programs in all of the key regional dialects. In Monrovia, church sponsored radio health education programs already have been successfully tested focusing on self-diagnosis and advise on self-treatment. Medical staff at JFK Hospital consistently noted increased utilization of the outpatient clinic according to the disease syndrome topic of the week, with many patients actually referring to the program as the impetus for seeking health care. Given the wide availability of radios in the villages noted during the team visit, the feasibility of incorporating health education as an integral component of the churches' radio transmissions to Lofa County should be studied. The most appropriate listening times according to village lifestyles should be defined. This mass media health education effort could be coordinated with, and backed up by, CHI village visits to discuss in detail the specific health topic and answer related questions. Health education programs in several countries have highlighted this personal follow-up to mass media campaigns as a most effective health education tool.

Motor vehicle accidents constitute a serious health problem throughout Lofa County. While no data exist on the total number of such accidents annually, in-patient statistics from Tellewoyan Hospital for 1977 indicate a total of 59 admissions due to motor vehicle accidents or 3 percent of all admissions that year. Given the estimated average length of stay of between seven and eight days per admission, these accidents took up approximately 450 bed-days, a significant cost to a health system with limited resources. Vehicle safety would be an excellent topic for a health education campaign.

V.G. Family Planning

V.G.1. The Setting

Family planning is not an alien concept in Liberia. A long tradition of child-spacing already exists closely tied to predominant tribal customs which encourage women to return to their parents' village after birth for a period of two to three years during which children are breast-fed.

Tribal marriage is legal and can be multiple. In actuality the senior, and, thus, head wife often encourages the taking of additional wives to assist in the workload. Supported by

religious traditions which encourage polygamy, men often will take another wife during the extended absence of the one who has just given birth. The pattern largely continues today. While no firm statistics exist on the extent of polygamy, Liberian health professionals interviewed including the project's nurse-midwife and several CMWs estimate that as high as 75 percent of rural Liberian males have more than one wife and three to four are common. Thus what commonly emerges particularly in rural areas is the phenomenon of "perennial fathers" as wives sequentially become pregnant and return to their family homes.

The "take-off" of a Liberian family planning program has been precluded, however, by several critical factors:

- 1) Importantly, there is a lack of commitment to, and support of, family planning at the national level without which political base no real local efforts to promote family planning can succeed. There is an urgent need to create awareness of the adverse impact of high population growth rates on the development process among key Governmental officials if this key support is to emerge.
- 2) related to 1) above is the absence of staff understanding of, and advocacy for, family planning at the local level. The male-dominated health system with PAs heading an increasing number of rural health posts compounds the problem since many of these workers have more than one wife themselves and do not personally support the concept of family planning.
- 3) The problem of LCRH personnel resistance is exacerbated by the related shortage of family planning supplies at almost all facilities visited. Since adequate stocks of all types of family planning supplies exist in the warehouses, including the Voinjama subdepot, these outages appear to be conscious attempts of facility staff, particularly male PA directors, to limit family planning availability. On several occasions during site visits when lack of supplies was found, it was also noted that facilities had not listed these supplies on any of their requisition forms for periodic dissemination by the project's drug supply disbursement system.

- 4) general resistance of Liberian males to family planning, allegedly related to fears of unfaithfulness and more importantly believed to be linked to the concern for female control over male sexuality, as measured by the number of children fathered, which family planning affords.
- 5) women's resistance to family planning related to threats of losing their husbands to other women. Numerous cases have been reported of new acceptors returning their birth control pills or requesting removal of their IUD soon after insertion at their husband's direction.
- 6) encouragement of large families by mothers and grandparents who have a significant influence over family-size decisionmaking in this country. Further as urbanization increases, a breakdown in traditional child spacing is occurring. As soon as a women stops breast-feeding, which average length of time is beginning to decline, her mother is likely to encourage her to find another man to support her if she cannot return immediately to her first husband because he has taken another wife. Thus, she reenters the "high risk" of pregnancy population.
- 7) some problem of infertility among the population, although the exact extent is not known, which results in a demand for family planning information often motivated to ensure rather than limit births.

V.G.2. The LCRH Project and Family Planning

Goal: Family planning programs be operational in all units of the LCRH. Comprehensive fp services, emphasizing child-spacing for improved mother and child health, will be available at the NMC and Lofa County Hospitals; family planning services, exclusive of surgical services, will be available at health centers and posts.

* Prop, p. 9.

Initial and refresher training of paramedical workers at TNIMA . . . will include curative techniques, preventive medicine and public health, and family planning education and methodology.*

The family planning acceptor rates set as project targets for the LCRH project, as outlined below, would have been deemed unrealistic even in the best of all possible situations for initiating a successful program. Given the numerous constraints facing family planning use, particularly in rural Liberia, they were merely mythological figures representing an unquestionably unattainable level of family planning acceptance in an African country in the specified time frame.

<u>LCRH anticipated family planning acceptors rates</u>	<u>level of Acceptors</u>
<u>Time frame</u>	<u>(as % of women in reproductive</u>
<u>(in mos. from project</u>	<u>age group)</u>
<u>initiation</u>	
6	5% in facilities where program started
12	10
24	15
36	20

Noting that the original targets were too optimistic, the revised implementation plan of August 1976 reduced the family planning goal to the more manageable level of reaching two percent of women at risk. The need for family planning is evident with births accounting for a large proportion of patient load at all levels of care in the country. Foya Mission in Kolahun District alone handles more than 1000 deliveries annually and the number is continually increasing. Even with a more realistic acceptor rate, however, the family planning program only slowly gained enough momentum to even give it a valid test because of several, often unexpected, circumstances which arose early in LCRH project implementation, including:

- 1) the strongly expressed and totally unexpected bias of the county medical director toward family planning put an immediate damper on the program's takeoff. The first

* Prop, p. 26.

FP/G and her counterpart had, therefore, to move cautiously in activating the family planning component of LCRH.

- 2) the unexpected resignation of the FP/G at the end of the first of a four year's assignment seriously broke the project momentum and continuity. Since up-country work with Mary Kamara, the nurse-midwife counterpart, had not begun until December 1975, the July 1976 departure resulted in only a total of six months of effort in family planning -- too short to have expected any major achievement.
- 3) related to 2) above, the almost one-year gap between the resignation of the first FP/G and the arrival and placement of her PHN successor up-country placed an enormous void in the program and served to effectively destroy the initial program base so that, in fact, the family planning effort had to begin anew. The gap in advisors had a more adverse effect than normal because it virtually incapacitated the Liberian counterpart's work due to a) the lack of transportation available to her to perform essential outreach activities. Since the vehicle was assigned to the FP/G, and was not insured for Mrs. Kamara's driving, she refused to assume responsibility for the jeep, thus seriously circumscribing her ability to work; and b) given the short-time frame of "training" by the initial IHS advisor prior to her departure, the counterpart felt inexperienced and unable to continue alone many of the promising first steps made toward a family planning program such as the male community-based discussion groups on family planning; and
- 4) the much more conservative approach of the new PHN advisor to LC, who has chosen to concentrate efforts on improving maternal-child health throughout the county and, thus, indirectly encourage family planning acceptance, rather than actively promoting family planning per se.

Nevertheless, the project did have some positive accomplishments during its early years, including:

- 1) launching of a community family planning information campaign. Recognized by the 1st FP/G as the most rewarding component of her assignment, the community-based discussions focused on males created a new awareness of family planning as a vehicle for maternal/child health well-being and prevention.
- 2) emphasis on MWs assigned to the health posts given their potentially important role as advocates for family planning, particularly since counseling by the male PAs on reproductive matters tends to alienate many women. Thus, the family planning team encouraged the MOH to place MWs at the primary care level.

Statistics on current family planning acceptance, and continuation rates in Lofa County, as with vital statistics in general, are strikingly absent. A small sample study of patient records at random facilities in Voinjama and Kolahun Districts in early 1978, based on incomplete reporting indicated that 2.3 percent of visits of females 15-44 years of age were for family planning. If prenatal visits are excluded from the calculations, family planning visits represented 4.1% of all females (15-44 yrs.) visits to reporting facilities. There is no means presently by which one can assess, however, what percentage of women "at risk" in Lofa County this number represents, e.g., coverage. Male family planning visits were the cause of visit in 0.2% of patient visits by males 15-44.

	<u>Total Visits to Reporting Facilities Pages 15-44</u>	<u>Total FP visits</u>	<u>FP visits as % of total for this age group</u>
Male	1649	4	0.2
Female	2471	102	4.1

These figures importantly do not include the number of females who attended family planning clinics for sub-fertility counseling which many health workers stated was the largest proportion of

* See discussion elsewhere on problems of use of EMWs, rather than CMWs.

"users." In an attempt to verify this hypothesis, the record system, as of April 1978, will note daily visits for subfertility problems in a log for compilation by project staff by the next reporting period.

There is strong evidence to suggest that much attendance at family planning sessions is to receive information on the rhythm method for becoming pregnant rather than spacing births. In an analysis by the project's PHN of 116 family planning visits conducted by Zorzor District's mobile team, 40 consultations were for primary subfertility, 60 for secondary subfertility, and just 16 for family planning per se.

While no data currently exist on characteristics of acceptors, the new patient record system should provide valuable insights for family planning programming on the types of women requesting family planning as well as those not using a fp method but "at risk" of pregnancy. Indicators to be collected on the ob/prenatal cards include: 1) type of family planning method used, if any, e.g., traditional, pill, IUD, depoprovera; 2) gravity and parity; 3) birth intervals from medical history including child's sex, present age, length of labor, type of delivery, complications; and 4) indirectly at least, some measure of child mortality.

V.G.3. Programmatic Issues

Although male resistance to family planning is pervasive and a primary programmatic constraint, notably little attention has been given recently to a male-focused family planning campaign; rather resources are targeted, where any effort has been made at all, largely on women. The LCRH project's early attempts to redress male resistance have been dropped, and direct encouragement of family planning relegated to lower priority as efforts have focused on upgrading overall maternal/child health as a catalyst for raising family planning acceptance among the population.

While generating such demand will have the most significant affect on family planning acceptor and concomitantly birth rates over the long term, there are several indications that a certain level of demand already exists which is not being met. One is that many women are already "family planning" in the sense that, as highlighted by a review of facility family planning cards, numerous women throughout the county were requesting several

cycles of pills to cover long trips during which they did not feel they would have access to fp supplies.

Another sign which augers well for the program over the long-term is the high demand for contraceptives (both pills and condoms) among the student population. In all posts which were in close proximity to a secondary school, students constituted the largest percentage of both initial and continuing users of contraceptives. This trend toward family planning in rural areas corroborates findings of recent preliminary studies on desired family size and use of contraceptives among student groups in Monrovia. Further, indications are that in multiple wife situations, the secondary wives with several children whom they must support themselves are interested in family planning.

From experience gained in an ongoing family planning project in another county it is apparent that once the infrastructure is in place, the real family planning issue is one of pace, not acceptance. To date, there have been encouraging signs although continually disappointing results. The high initial interest in family planning information and supplies indicates significant potential for a Liberian family planning program; but encouragement to continue is grossly inadequate and drop-out excessively high. One key factor in the low continuation rates is widely felt to be lack of followup which, in turn, is exacerbated by the generally poor family planning record system. In such a setting, independence from a largely facility-based system and moves toward community level programming on a personal basis are critical and form the base of the local family health educator model in Cape Mt. County.

The question is not, therefore, whether the current fp approach is an appropriate one for Liberia but rather one of how to catalyze the project staff to give family planning a fair test. Staff has already been trained. Significantly more effort can, and should, be placed on family planning than heretofore afforded this critical project component. As a first step,

* See W. Penn Handwerker's study on Monrovia.

** To be extended to Bong County in 1978.

*** See Foreign training section Part III.

resources must be concentrated on the information and educational aspects of the program with activities directed toward two key groups, in the following sequence: 1) existing LCRH staff at all facility levels; and 2) the community, particularly men. Until LC health staff utilize and serve as advocates for family planning themselves, the project will have little impact on overall family planning acceptor rates among the population as a whole. As long as the system remains dominated at the local level by male PAs who are largely opposed to the concept of family planning, any progress toward meeting existing demand for information and supplies will remain unsatisfactory, and generating new demand an impossible task. Given the strong evidence to suggest that family size decisions in Liberia are significantly influenced, if not dictated, by males, reactivation of the male discussion sessions at the community level which were begun in 1975-76 but then dropped in the advisory staff changeover is urgently needed.

V.H. Project Advocacy

It was noted in the first COP end-of-tour report that the relocation of the COP to Voinjama would give the project a more service-oriented approach to the detriment of the potential inputs of LCRH at the official Government level; this forewarning proved valid. In fact, without a strong advocate at the central level, sharing information on its accomplishments and promising steps toward a rural health model as well as its problems with a view toward encouraging their joint resolution, the LCRH project was largely deemed a "failure" by many key MOH officials as well as other donors testing alternative models. In such a setting it was inevitable that there was no attempt to build on the LCRH experience in the original efforts to design the national integrated rural health delivery system project. Rather the national project design activities to date have occurred largely in isolation of, and with absolutely no formal interchange with, the IHS PASA team implementing LCRH, the purported pilot for the national project. In fact, IHS advisors input has been limited reportedly to the opportunity for an approximately 30 minutes review of one of the preliminary drafts of the project paper.

The lack of integration between these two AID activities was compounded by the fact that the two Liberians who received long-term training to staff the rural health office of the MOH returned from academic study to find themselves identified with an "unsuccessful" pilot rather than as key internal advisors on

an appropriate nation-wide rural health program in general. Further, the senior staff person -- Celsus Ebba -- did not regularly participate in the MOH IHDS design committee, as requested, thus seriously precluding relevant input from LCRH to the design effort.

The lack of a strong advocacy group for the LCRH project was abetted by the failure of the project team to share information on its successes and constraints openly with other donors field-testing alternative rural health models. AID was the only major donor which did not widely disseminate its internal reviews and project evaluations with other organizations, preferring rather to retain their "internal" status, although it received periodic reports from all other ongoing donor programs. This was particularly detrimental to the project since few donors knew of any LCRH "successes." To the extent that many of these programs faced similar problems such as inordinate delays of commodities passing through customs, this lack of exchange precluded the positive benefit of sharing information or, importantly, the opportunity to pool donor community resources to exert joint pressure the GOL to redress these pressing problems. If an effective informal forum cannot be mobilized immediately, it is strongly urged that AID press for the GOL's establishment of a formal mechanism for exchanging donor program information on a regularized basis. Only in this way can a truly appropriate national rural health model be developed which can build on the diverse pilot projects' experiences, incorporating those individual components which have proven to be workable approaches in the rural Liberian setting.

VI. THE ROLE OF WOMEN

"The LCRH provides to women the normal patient benefits which accrue from health programs which emphasize family planning, as well as non-patient opportunities for career development, both within and without the direct scope of the project."*

Women have been primary users of the upgraded health care system in upper Lofa County as highlighted by the recent utilization sample study.** In the area of career opportunities, the project's assumption that much of the demand for increased numbers of skilled paramedical personnel will be met by women proved invalid. In fact, the project has had some adverse effect on women and has, at times consciously, limited their job status and potential.

The exclusion of women from the physician assistant (PA) program has been both arbitrary and detrimental to achievement of the project's overall goals. Women have been denied admission to Tubman National Institute of Medical Arts' PA course since the second year of the program because of the erroneous assumption that women do not make good candidates for either urban training or rural service. The facts of rural health in Liberia sharply contradict this allegation. First, raising a family is not perceived as a constraint to educational attainment; a long tradition exists within the midwifery and nursing fields for rural women to leave their children with their family and attend long-term training in Monrovia or at one of the urban county hospitals. Further, many women with children actually attend extension courses after work to complete their high school certification. Thus, there is no legitimate reason to exclude women from a PA program on the grounds that they are more likely to drop out of training before completion.

*Prop Lofa County Rural Health Project, October 23, 1974, Exhibit O.

** See section on system utilization.

Second, there is evidence to suggest low turnover rates among women selected from rural communities who return to work in those communities. The vast majority of the midwives trained at Curran Lutheran Hospital, for instance, are still working in their villages. Theoretically PAs are to be "postable" nationwide, required to serve where needed, regardless of local community ties. In fact, the PA program has noted much dissatisfaction among the males when transferred out of their own tribal areas. It is evident that PAs in general, regardless of sex, prefer assignments in their own villages or within close proximity to it to maintain family ties.

Third, and importantly, it is evident that Liberian women prefer, if not demand, receipt of child care and delivery by another woman. Traditionally young children or those who have not delivered cannot witness deliveries. Midwives are married women with at least one child who have great influence and prestige in the community on matters of childbirth and care, thus young male PAs cannot duplicate this trust established over long years of service. Further, among the Moslem communities predominant in upper Lofa County, strict religious rules preclude male attendance at births except in extreme emergencies. Thus, when traditional female MWs were replaced by male PAs, health post utilization rates dropped dramatically. In the health posts at Shello, Foya, and Foya Tengia, patients switched to other posts staffed by females or to traditional MWs in adherence to Kissi tribe mandated female attendance at births.

The acceptance of male PAs in these traditionally female roles has been aggravated by two factors: 1) The PA curriculum, as noted by the graduates themselves, is exceptionally weak in the areas of MCH/OB-GYN. The underlying premise was that this health need would be addressed by the complementary skills of the MW at the post. But many posts have only an EMW (not a CMW) with little, if any, training in this crucial area. Consequently, several PAs have been faced alone with difficult deliveries which they feel completely inadequate to handle; and 2) there have been a few documented cases of rape of local women by the post-assigned PA who claimed he had to "exam" them. Such instances, where the only punishment was transferring of the guilty PA to

* See training section

another post, have understandably engendered distrust in the new system and reinforcement of use of traditional untrained MWs.

The male PA system has also met considerable resistance from female nurses and midwives who were effectively handling the caseload at a given health post but were displaced in command by newly graduated PAs without extensive experience but with the system determined "credentials." In the one case in which the female midwife who had been in charge of the post for several years was given supervisory responsibility over the new PA, the PA soon requested a transfer.

The friction between male PA and largely female RN cadre is compounded by salary differentials as much as by delegation of responsibility. In a continuing battle between their advocates, graduate nurses and PAs performing essentially the same functions at a health facility receive substantially different remuneration as highlighted in "Salaries."

As of the team visit, the Lofa County Assistant Director of Nursing was considering institution of a female nurse aide program for Tellewoyan Hospital in the face of continuing problems with male aides treating female patients. Traditional beliefs still prevalent among many tribes restrict the provision of female patient nursing services including changing dressings, etc., to women. At the present time, there are no female aides in the county with the exception of a few volunteers who constantly turnover as soon as they realize that the MOH is not going to hire them directly. Because aides must be able to take blood pressure and other technical skills, a minimum of 7th - 10th grade education is necessary, which inherently limits the pool of candidates since many at this level of educational attainment work part-time and complete high school to qualify for certified midwife training.

Recommendations:

An all-male PA system is not rational nor justifiable and should be replaced immediately by an open, competitive recruitment process. It is recognized that some areas in need of PAs may not have qualified candidates. In recruiting for, and assigning PAs to the community, health officials should be sensitive to local religious and tribal practices and attempt, to

the extent possible, to match PAs with posts by community sociocultural factors critical to their successful fulfillment of the role, e.g., language, sex, tribal affiliation.

VII. PROJECT IMPACT

VII.A. Introduction

A major project goal was the creation of an evaluation system to assess this pilot effort to develop a low-cost rural health delivery system in one county with a view toward the desirability of its replication in other counties.

Within the context, the PROP noted the interdependence of the evaluation effort and the initial baseline data collection upon which it would build. Once the critical baseline was established, a four-pronged systematic evaluation was envisaged including:

- 1) Ongoing evaluation-periodic meetings among key project staff to discuss progress to date and redirect the program, as necessary;
- 2) Annual evaluations - based on updated baseline information, and feedback from health staff, to guide major program adjustments;
- 3) End-of-project evaluation - to be directed by outside consultants, assessment of overall program and individual component's progress in meeting specified objectives as an indicator of replicability; and
- 4) Long-term evaluation - GOL implemented and supported data collection and analysis over the ensuing 10-20 years after project termination as a vehicle for "impact analysis."

Assessment of actual project performance is seriously impeded by the lack of any baseline statistics on the health profile of LC prior to project commencement. An APHA contract was let to ascertain baseline data requirements and develop the data set. The evaluation protocol and methodology suggested, at a cost of \$1.5 million, was deemed excessively expensive and significantly out of line with total project costs and, thus, rejected by AID. In its abandonment, no alternative was proposed.

In the absence of baseline statistics on the health profile and delivery system utilization pattern of the Lofa County population, and with the reporting system only recently operationalized, assessment of the project's impact to date must necessarily be purely anecdotal or based on the opinion of health professionals who were working in the county prior to 1975 -- the project's initiation date.

No statistics currently exist to verify these broadly held conclusions. Nevertheless, the general feeling is that the project has had a positive impact on utilization patterns and rates. These tentative "results" include: 1) The rates of people going directly to Curran Lutheran Hospital in Zorzor and Phebe Hospital in Bong County have diminished as patient loads at local lower levels of care have increased. Health workers consistently attribute these changes to (a) placement of better trained staff at the posts and centers; and (b) increased availability of supplies at these facilities with which to treat patients; 2) A decreasing dependence on country medicine including traditional untrained midwives with the one important exception of continued high usage of practitioners among that population on the farms. In several facilities visited by the team, children awaiting medical attention wore amulets and markings of having been treated by local practitioners but, nevertheless, were presenting themselves for "modern" care as well. Further, in queries of several mothers of these children, it appears that the modern care followed immediately on the traditional care; i.e., less than 24 hours between these visits; 3) Since a physician was placed at Kolahun health center it is absorbing many of the patients who were previously referred to Tellewoyan Hospital in Voinjama; 4) The patient mix at Tellewoyan Hospital appears to be changing with more surgical cases and less chronic and non-severe illness, as would be expected if lower levels of care are adequately responding to these health care needs; and 5) Tellewoyan Hospital staff have noted an increase in the numbers of patients arriving with notes from lower level facilities, especially posts, particularly in the area of OB/GYN. Further, the preliminary diagnoses on these slips indicate that the staff are making basically accurate assessments of patients' conditions and the need for referral, and, in the aggregate, highlight improved quality of care.

There are, however, several indications of key weaknesses in the LCHR operations:

- 1) Despite the significantly improved curative care, preventive health has not been adequately addressed as evidenced by the fact that the vast majority of deaths in infants and children under five years of age continue to be from preventable diseases.
- 2) Communicable diseases are still rampant and causing excessive morbidity and mortality. An epidemic of measles occurred during the evaluation visit with a high percentage of deaths among cases despite the fact that the infrastructure currently exists to redress this situation. In such a setting, one cannot help but conclude that the immunization program component has largely failed.
- 3) System supervision is weak and accountability nonexistent.
- 4) A sample study of the level of vital sign recording on patient records conducted by the PHN advisor and her counterpart revealed that health workers often neglect to take these health status indicators; thus, despite improvements, quality of care still must be improved significantly.
- 5) The critical programmatic areas of family planning, health education and nutrition have been largely neglected.
- 6) With limited exceptions, the potential for community participation in the health system has not been appropriately tapped; and
- 7) Large areas of Lofa County, notably lower Lofa, have not been affected by the LCRH project, although the model was to have been operational countrywide.

VII.B. Health Indicators

Given the statistical limitations noted earlier which preclude development of a complete health profile of the LCRH project's population, nevertheless examination of the report of pediatric admissions and deaths of Curran Lutheran Hospital covering the period October 1976 - September 1977 provides some indication of the major causes of morbidity and mortality in a

special subgroup which represents a significant proportion of the project's target population -- children under five years of age.

Table VII-1

<u>Cause</u>	<u>Leading Causes of Admission</u>		<u>Deaths</u>	
	<u>Total</u>	<u>As % of total Pediatric Admissions</u>	<u>Total</u>	<u>As % of Admissions for this Disease</u>
1. Pneumonia	243	19.2	21	8.6
2. Measles	138	10.9	17	12.3
3. Anemia	134	10.6	10	7.5
4. Malaria	124	9.8	5	4.0
5. Diarrhea & Dehydration	103	8.1	10	9.7
6. Kwashiorkor	88	7.0	21	23.9
7. Meningitis (all kinds)	75	5.9	16	21.3
8. Diarrhea & Vomiting	72	5.7	12	16.7
9. Parasites	58	4.6	4	6.9
10. Dysentery (all kinds)	56	<u>4.4</u>	7	12.9
		86.2 (cumulative total)		

The ten major causes listed account for approximately nine out of ten admissions in this vulnerable age-group. Of note is that about one out of five children with meningitis and one out of four with kwashiorkor will die, and that the diseases in their totality represent illnesses and deaths which are largely preventable or could be significantly reduced with moderate improvements in community environmental sanitation, health education, and/or early treatment before the disease has reached an advanced stage.

Tables VII-2 and VII-3 analyze and contrast data from the hospital records of Curran Lutheran and Tellewoyan Hospitals, the two county tertiary care centers. Of note is the significantly better reporting system at Curran Lutheran than Tellewoyan, with the compiled 12 month summary of the former representing a major, rapid source of information for the evaluation. In contrast, Tellewoyan monthly reports were incomplete, often miscalculated and necessitated several hours of careful study to draw up the preliminary findings which follow.

Examining data from incomplete reports of 25 percent of LC facilities compiled over the January - March period, Table VII-4 highlights the frequency of diagnosis by disease-specific categories. The outstanding number of diagnoses for malaria, while reflecting an unarguable major health problem in rural Liberia, may, nevertheless, be more representative of gross overreporting of this disease with virtually everyone appearing at a facility with fever diagnosed as "malaria" than actual incidence levels. Of note is the high reported caseload for intestinal worms, upper respiratory infections and diarrhea enteritis which alone account for almost half (46.2 percent) of the balance after malaria and "all other" causes are deducted.

VII.C. Accessibility

Despite project team's estimates that due to facility expansion under LCRH health care is accessible within 5-10 Kms. of the upper Lofa County's population, this estimate must be carefully qualified as representative of just a small portion of the project's projected coverage area. The majority of the county remains geographically isolated and the health system fragmented and inaccessible. (See following map).

As of the team visit, lower Lofa had been virtually neglected over the project life with Bopolu only recently upgraded from a health post to a center with the placement of a full-time PA. As a supervisory point in the system for the outlying posts, however, Bopolu faces an almost impossible task. In the absence of a road network, and with limited alternative means of access to these posts, the critical primary care level has witnessed little change under the project.

TABLE VII-2

Oct 1976 - September 1977

Indicators	Tellewoyan Hospital Voinjama	Curran Lutheran Hospital Zorzor	
Admissions	2,234	4,120	
Deaths	190*	179	
Maternal	n.d.	<u>Total</u> (5)	<u>As %</u> 0.3 of Deliveries
Pediatric	n.d.	(122)	10.6 of Admissions
Medical-Surgical	n.d.	(52)	4.5 of Admissions
Total Deaths as % of Admissions	8.5%	4.3%	
Major Operations	233**	108	
Minor Operations	168	317	
Outpatient visits	n.d.	46,155***	

* estimated 12 mo; 174 reported for 11 mos.

** estimated 12 mo; 214 reported for 11 months.

*** includes mobile clinic and TB control program

TABLE VII-3

Tellewoyan Hospital 1977

Month	Occupancy Rate (in %)	Average Length of Stay (in days)
J	57	6.8
F	46	6.0
M	17	1.6
A	49	6.5
M	52	6.1
J	60	7.3
J	60	9.9
A	50	7.4
S	47	6.7
O	52	7.4
N	69	8.8
D	79	9.0

Note: Based on 81 beds, calculated from Hospital monthly report.

TABLE VII-4

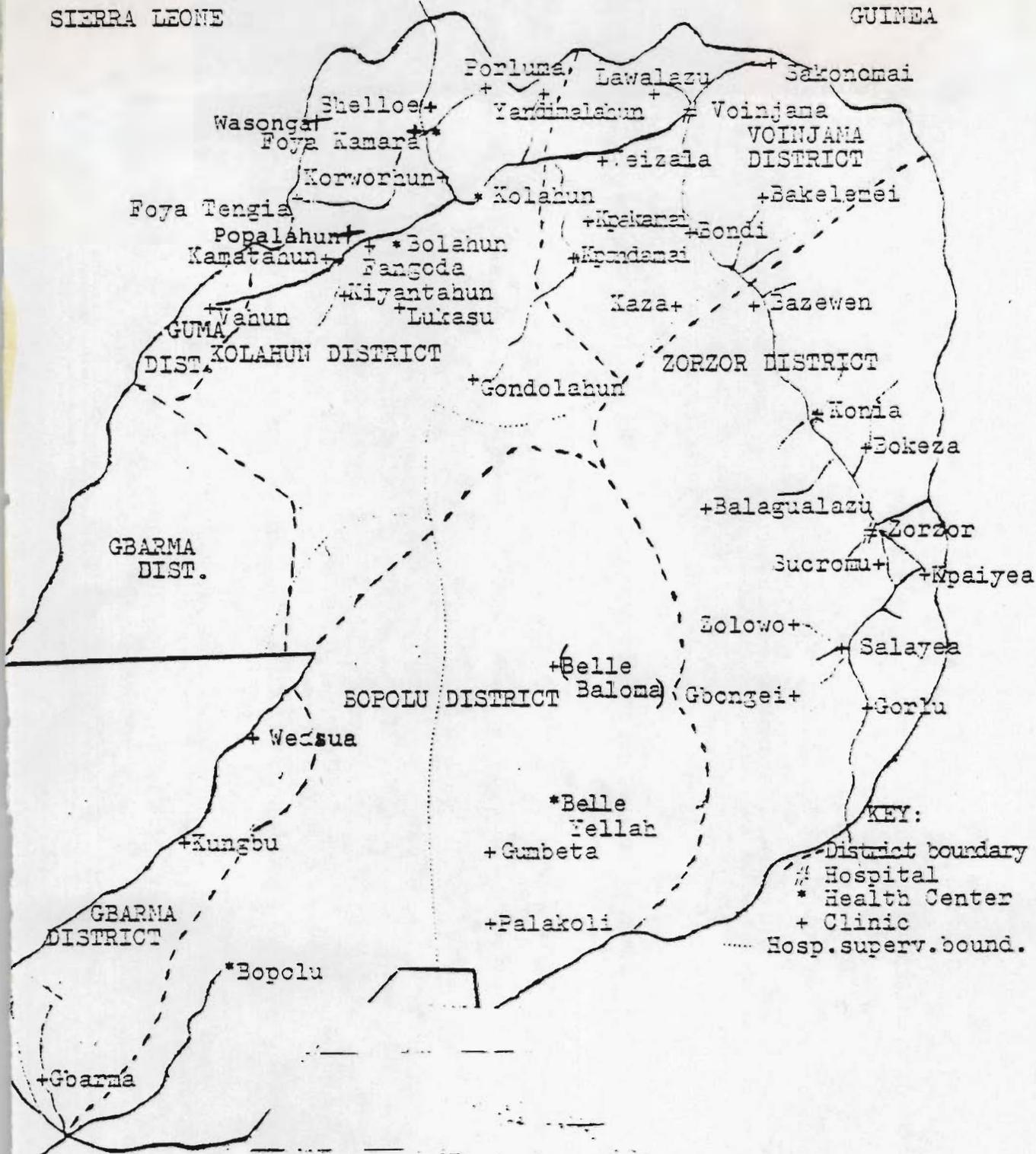
MORBIDITY

<u>Diagnosis</u>	<u>Initial Visit For Episode</u>	<u>%</u>	<u>Revisits</u>	<u>%</u>
Malaria	3936	27.1	402	26.1
Intestinal Worms	1384	9.6	135	8.8
Cnchocerciasis	300	2.1	77	5.0
Shistosomiasis	124	0.9	14	0.9
Upper Respiratory Infection	999	7.1	75	4.9
Pneumonia	271	1.9	45	2.9
Whooping Cough	30	0.2	2	0.1
Tuberculosis	32	0.2	200	12.9
Diarrhea/Enteritis	639	5.2	48	3.1
Dysentery	333	2.4	34	2.2
Peptic Ulcer	9	.00	3	0.2
Jaundice	3	.00	2	0.1
Anemia	494	3.5	41	2.7
Sickle Cell	8	.05	4	0.3
Hypertension	110	0.8	32	2.1
Toothache	50	0.4	7	0.5
Eye Infection	165	1.3	12	0.8
Ear Infection	71	0.5	36	2.3
Gonorrhea	119	0.8	38	2.5
Urinary Tract Infection	256	1.8	26	1.7
Scabies	430	3.0	62	4.1
Abscess/Ulcer	539	3.8	120	8.4
Chicken pox	47	0.3	17	1.1
Measles	216	1.5	31	2.0
Burns	27	0.2	7	0.5
Lacerations	79	0.6	47	3.0
Leprosy	3	.02	2	0.1
Meningitis	3	.02	2	0.1
Neonatal Tetanus	10	.07		
Mental Disorders	1	.00	2	0.1
Rwashiarkor	2	.01	7	0.5
All others	3347	23.6		
TOTAL	14156	100.	1539	99.9

LOFA COUNTY HEALTH FACILITIES

SIERRA LEONE

GUINEA



- NOTE: 1) Belle Baloma is proposed but not built.
 2) Wasonga and Popalahun have been added politically since the started.
 3) Belahun has been redesignated a health post.
 4) Belle Yellah has never been organized as a health center - - operates as a post.

Weasua, the closest post, necessitates a long drive followed by a three-hour walk. To reach Belle Yellah, with no roads whatsoever, one must walk one and one-half days, eight hours daily. Gumbeta is identified as an essential "fly-in" while Palakoli can only be reached by walking two hours after flying into Gumbeta. Supervision can only be cursory, at best, in the face of such access difficulties and amidst budgetary limitations constraining the number of flights, each of which costs \$25/hour for the airplane and pilot fee.

In such a setting, it is not surprising that these interior areas cannot be identified as part of the LCRH experiment nor is the three-tiered referral system a workable model. At the same time, the distances between the posts themselves, and the post and Bopolu, appear insignificant in contrast to all of their isolation from the county seat at Voinjama. With absolutely no road linking the County north to south, county health directors must travel east, south, then west toward Monrovia, and finally north to reach this middle section of the county health system.

The projected construction of a road traversing the county north to south which would cut in half the current distance between Voinjama and the central part of the county can be expected to have a profound impact on the health system. In the interim, alternatives means of linking this periphery to the rest of the county must be explored.

Given the accessibility problems of lower Lofa county from Voinjama, the LCRH project had recognized the potential value of, and local representatives had actually requested, supervision and logistical backstopping from Monrovia rather than Voinjama. Additionally a local concession (mine) hospital had offered to supervise Bopolu. But the County Superintendent strongly resisted relinquishing his authority over this area to Monrovia, and the existing administrative structure continued, ultimately to the detriment of the population of lower Lofa which has been touched only marginally, at best, by the LCRH project's health system improvements.

VII.D. Coverage and Utilization

A February 1976 report compiled by LCRH project evaluator Michael Fuchs and MOH research assistant Henry Salifu attempts to define actual population being served by the project. Information is highlighted in Table VII-5. Of note is the wide variation in estimated "coverage" by district ranging from Zorzor

TABLE VII-5

	Total Pop.	SEX		0-14	AGE	
		Male	Fem.		15-34	35+
<u>Zorzor district</u>	47,248	21,409	25,839	19,668	13,743	13,837
Zorzor - Curran's Hosp.	12,922	5,861	7,061	5,389	3,856	3,677
Gorlu	3,480	1,639	1,841	1,398	1,164	918
Gbongie	959	449	510	420	303	236
Salayea	4,288	2,047	2,241	1,809	1,177	1,302
Zolowo	4,186	1,893	2,293	1,654	1,198	1,334
Sucrune	1,803	800	1,003	783	610	411
Kpaiyee	2,269	1,031	1,238	956	562	751
*Balagwalazu	2,792	1,233	1,559	1,157	672	963
Borkasa	3,655	1,629	2,026	1,521	1,123	1,011
Konia	3,579	1,597	1,982	1,542	1,070	967
Barziwen	1,676	775	901	711	482	483
Pop. served Zorzor district	41,609	18,954	22,655	17,340	12,216	12,053
Pop. unserved Zorzor district (12%)	5,639	2,455	3,184	2,328	1,527	1,784
*Service is expanded to 10 mile radius						
<u>Voinjama district</u>	35,634	16,755	18,879	14,294	11,440	9,900
Voinjama - Tellewoyan Hosp.	10,153	4,850	5,303	4,194	3,369	2,590
Kaza	846	379	467	329	249	268
Barkiemai	4,725	2,224	2,501	1,977	1,584	1,164
Bondi	1,374	626	748	515	403	456
Kpakamai	2,029	868	1,161	806	560	663
Lawalazu	4,246	1,858	2,388	1,703	1,209	1,334
Sarkonemai	2,125	1,025	1,100	810	809	506
Vezala	3,450	1,645	1,805	1,384	1,085	981
Kpandemai	1,746	783	963	628	454	664
*Mbaloma (Gondolahun)	1,811	795	1,016	788	412	611
*Pop. served Voinjama district	30,694	14,258	16,436	12,346	9,722	8,626
*Pop. unserved Voinjama district (14%)	4,940	2,497	2,443	1,948	1,718	1,274
*Gondolahun is in Kolahun district but is supervised by Voinjama. Pop. data is added to Kolahun district, next page.						

Table VII-5 (Cont'd)

	Total Pop.	SEX		AGE		
		Male	Fem.	0-14	15-34	35+
<u>Kolahun district</u>	56,369	26,476	29,893	22,744	17,545	16,080
Kolahun	7,001	3,302	3,699	2,709	2,098	2,194
Nyandemiolahun	1,966	934	1,032	752	657	557
Korworhun	2,751	1,182	1,569	1,029	813	909
Foya Kamara	5,577	2,737	2,840	2,331	1,961	1,285
Shelloe	5,185	2,510	2,675	2,198	1,599	1,388
Porluma	3,861	1,996	1,865	1,447	1,310	1,104
Foya Tangia	4,458	2,098	2,360	1,708	1,455	1,295
Bolahun	4,000	1,849	2,151	1,824	1,181	995
Fandogen	1,335	605	730	600	371	364
Kiantahun	1,292	608	684	584	422	286
Lukasu	1,418	627	791	591	416	411
Kamatahun	1,945	904	1,041	731	613	601
*Vahun	1,566	751	815	612	471	483
*Total pop. served Kolahun dist.	42,600	20,147	22,453	17,292	13,308	12,000
*Total pop. unserved Kolahun dist.	13,769 (24%)	6,329	7,440	5,452	4,237	4,080
*Vahun in Guma dist. supervised by Bolahun. Pop. data for Vahun in Guma dist. Pop. for Gondalahun in Kolahun data.						
<u>Guma district</u>	1,566	751	815	612	471	483
Pop. served (Vahun)	1,566	751	815	612	471	483
Pop. unserved	-0-	-0-	-0-	-0-	-0-	-0-
<u>Gbarma district</u>	17,450	10,488	6,962	5,167	7,187	5,096
*Weazue	1,394	890	504	417	562	415
*Gbarma	?	?	?	?	?	?
*Kungbu (Sowie Camp)	2,826	1,760	1,066	681	1,354	791
Pop. served Gbarma	4,220 (?) (24%)					
Pop. unserved Gbarma	(76% unserved) ?					
*All Gbarma health facilities supervised by Bopolu.						

Table VII-5 (Cont'd)

	Total Pop.	SEX		AGE		
		Male	Fem.	0-14	15-34	35+
<u>Bopolu district</u>	22,471	10,614	11,857	9,115	6,664	6,692
Bopolu	2,586	1,327	1,259	995	861	730
Belle Yella	1,388	367	1,021	843	315	230
Pala Kole	3,058	1,449	1,609	1,309	895	854
Gumbeta (Bokumu)	2,167	1,009	1,158	895	591	681
Pop. served Bopolu dist.	9,199	4,152	5,047	4,042	2,662	2,495
Pop. unserved Bopolu dist. (59%)	13,272	6,462	6,810	5,073	4,002	4,197

District with an approximate 12 percent of its population outside a five-mile radius of existing formal medical care, to Kolahun with 24 percent and Bopolu in lower Lofa County with only 40 percent of its population presently being served by the health delivery system.

The data in Table VII-5 must be interpreted cautiously, however, because it is based on first, unreliable total population figures from the 1974 Census and second, on a hypothetical five-mile radius to measure accessibility. In fact, as outlined in the previous section, geographic, climatic, and road network conditions significantly alter potential "access" of a given community's residents to the health system. Using these criteria, project staff estimated that health services are available currently to approximately 70 percent of Lofa County people. Actual utilization of posts, centers, and hospitals is perceived to be significantly lower, although in the absence of firm statistics, the precise number of people presently using public health facilities in the County is not known.

The best information on present facility utilization patterns is that compiled by the PHN advisor in early 1978. The data are limited in their usefulness, because they include reports from only 25 percent of Lofa County facilities, represent visits and not individual patients so that actual coverage cannot be ascertained, and are based on substantial varying facility reporting periods ranging from a few weeks to a few months. These statistics, nevertheless, can be viewed as illustrative of present age, sex, and type of visit trends in the County. As highlighted in Table VII-6, more than one half (52.9 percent) of all visits were for under five's; 11.2 percent were for children five to 14 years of age, an 41.9 percent were for persons in the 15-44 year age bracket. The pattern noted is consistent with existing county demographic data highlighting just three percent of the population 64 years of age and older. At the same time, the records indicate a high utilization rate by children under five years of age (at least in some subgroups of the population) which indicates that the system is working well in attracting high risk patients.

Examining the sex distribution, 39.9 percent of patient visits were by males and 68.1 percent by females. These figures are skewed substantially by the high level of prenatal visits. Adjusting the figures to exclude prenatal visits, for almost 50

percent more patient visits than males -- 15.5 percent females versus 10.3 percent males in the 15-44 year age group.

Distribution of patient visits in the period January - March 1978 by type is as follows:

<u>Type</u>	<u>Number</u>	<u>%</u>
Prenatal	2569	16.1
Well Baby	1199	7.5
All other groups under five years	4683	29.3
Family Planning	106	0.7
All other visits	7414	46.4
TOTAL	15971	100.0

VIII. COMPLEMENTARY AND COMPETING ACTIVITIES

VIII.A. The Traditional Practitioners

With the notable exception of "black baggers" traditional healers can be largely viewed as complementary rather than competitive health resources at the present time in Lofa County. It is common to see young children at posts and centers who are wearing amulets and other treatment evidence of having seen local healers. But the important fact is that most were seen within the immediate twenty-four hour period prior to health post utilization and appear to be more a means of providing "double insurance" for the child's well-being than an alternative form of care.

Of note is that villagers have identified a whole set of diseases and conditions for which traditional healers are felt to be more appropriate than modern medicine including: leprosy, epilepsy, mental disorders, abscesses, and bone-setting. In the latter case it is common for the patient to seek diagnosis from the hospital, e.g., X-ray with wound treatment as required, but the actual fracture set by the community bone-setter.

VIII. B. Church Groups

The relationship between the church and government health facilities is still not fully resolved and often remains one of competition, if not open conflict. The impact of these competing church facilities, particularly at the local community level, can be best illustrated by a few direct examples of ways in which resources are duplicative and non-coordinated.

The Southern Baptist Mission has a RN living in Voinjama who runs well-baby clinics at three sites once per month in conjunction with local preaching stations at Kpadema, Dezebak and Moloremia. While only one site served, that at Kpadema, has a health post, none of her work is done in collaboration with local health authorities. She justified her autonomy during a field interview on the grounds that her focus is preventive health - an area she alleges is not covered by the government's health facilities. Conversely, government health workers argue that their activities in immunization, prenatal care and under fives clinics are preventive-health focused, even if they represent just a small portion of the workload.

The Catholic Mission at Voinjama operates an under fives sick baby clinic four days a week. Strictly curative in focus, the clinic sends children to Tellewoyan Hospital for needed immunizations, but otherwise competes directly with the hospital's outpatient department. Despite its fee of \$0.50 per visit, or double that of the government facilities, its success is unquestionable, with an average daily patient load of 100+.

Foya Mission run by the Swedish-Pentecostal Church and staffed by only three RN-midwives and aides, with no physician backup, still manages to attract the largest proportion of patients in its surrounding area. Although two health posts are in fairly close proximity, it carries an average daily patient load of 400-500 visits -- more than all the health posts in its district combined.

VIII.C. The World Bank

The Lofa County Agricultural Development Project managed by the World Bank, its primary funding source, is complementing if not directly collaborating with the LCRH project in four areas:

- 1) Schistosomiasis Research: In an attempt to identify if the agricultural project will have an adverse impact on schistosomiasis rates in the country, a Schistosomiasis Study Unit has been established adjacent to the Tellewoyan Hospital site. Staffed by 12 laboratory technicians under the direction of Dr. Dennis, head of the Liberian Institute of Medical Research, the lab is in continuous operation accepting and studying stool samples. Although to date little schistosomiasis has been found, the lab has significantly upgraded the county's capacity to rapidly identify, and, thus, initiate treatment of parasites. Stool specimens found to have parasites are referred to the local area's health posts for patient followup. It is expected that this excellent laboratory resource will be turned over directly to the MOH upon the agricultural project's termination.
- 2) Water Pump Installation and Spring Protection: As an integral part of the rural development program, this component focuses on digging wells in typically small villages. It thus provides a potentially valuable complement to AID's well program which will concentrate

on larger towns. The latter's rigs cannot reach the small outlying areas targeted for the Bank's activity. The pumps selected have proven to be most suitable for use at the small village level since they are low-cost, although not long-lasting, and tend to dry up by 11 a.m. for the rest of the day if placed in high population density areas. At an average cost of \$70 each as compared to the Abijan pump selected by the LCRH project for its program costing \$300-400 each, it is assumed that the community can afford to replace them itself and thus reduce dependencies on Governmental support. As of April 1978, a well-maintenance training program soon was to be initiated to teach two to three people in each immediate area of the project's wells how to provide essential care to ensure maximum performance and usable life.

- 3) Road Building: The extensive road network being built to link agricultural areas also can be expected to have a positive impact on increasing health care access for Lofa County residents.
- 4) Latrine Program: Although not initially included in the agricultural project design, the Government has requested that a latrine program be incorporated in the rural development program. Presently two types of units are being field-tested, although with only limited success, since the project philosophy is that such a component should be largely self-help and there is apparently still little interest among the population to "do it yourself." Efforts are now under way to obtain the cooperation of the county's CHI to support the latrine construction effort with community-based health education on water and sanitation. This activity appears to be an ideal opportunity for direct collaborative work with the LCRH project.

ANNEX I
TRUST FUND ACCOUNT
LCRE TRUST FUND - FY 1978
BUDGET SUMMARY

<u>CATEGORY</u>	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
I. CONSTRUCTION	20,000	156,000	176,000
II. TRANSPORTATION	2,000	24,500	26,500
III. VEHICLE SUPPORT	22,332	77,068	99,400
IV. EQUIPMENT, DRUGS, & SUPPLIES	19,000	77,935	96,935
V. TEMPORARY LABOR	6,000	-0-	6,000
VI. PREVENTIVE MAINTENANCE	-0-	9,000	9,000
VII. TRAINING	-0-	70,090	70,090
VIII. WELL DRILLING & SAFE WATER SUPPLY	-0-	35,000	35,000
IX. SALARIES	4,163	5,835	10,000
X. RETURNED TO HOESW	-0-	<u>12,000</u>	<u>12,000</u>
 TOTAL BUDGET	 73,497	 467,428	 540,925

LOFA COUNTY RURAL HEALTH PROJECT
TRUST FUND ALLOCATION (SUMMARY)
FY 1978

<u>BUDGET CATEGORY</u>	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
I. <u>CONSTRUCTION</u>	<u>20,000</u>	<u>156,000</u>	<u>176,000</u>
A. New	20,000	78,000	
B. Renovation	-0-	23,400	
C. Warehouse	-0-	12,000	
D. Clinic Water	-0-	12,000	
E. Clinic Security System	-0-	6,000	
F. Miscellaneous	-0-	24,600	
II. <u>TRANSPORTATION</u>	<u>2,000</u>	<u>24,500</u>	<u>26,500</u>
A. International Travel	1,000	9,500	
B. Local Tvl & Per Diem	1,000	15,000	
III. <u>VEHICLE SUPPORT</u>	<u>22,332</u>	<u>77,068</u>	<u>99,400</u>
A. Maintenance & Repair	1,000	14,000	
B. Gas & Oil	1,332	26,068	
C. Replacement	20,000	37,000	
IV. <u>EQUIPMENT & SUPPLIES</u>	<u>19,000</u>	<u>77,935</u>	<u>96,935</u>
A. Equip. for Medical Facilities	-0-	47,935	
B. Record Materials	-0-	8,000	
C. Drugs	-0-	15,000	
D. Locally Constructed Equip.	-0-	6,000	
E. Miscellaneous	-0-	1,000	
F. Contingency	19,000	-0-	

TRUST FUND ALLOCATION (SUMMARY)

	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
V. <u>TEMPORARY LABOR</u>	6,000	-0-	6,000
VI. <u>PREVENTIVE MAINTENANCE</u>	-0-	9,000	9,000
A. Supplies & Materials	-0-	6,000	
B. Contracts & Personnel	-0-	3,000	
VII. <u>TRAINING</u>	-0-	70,090	70,090
A. Student Stipends		6,780	
B. Student Transportation & Per Diem		10,240	
C. Lofa Co. Student Housing		1,820	
D. Student Textbooks		18,000	
E. Teaching Materials & Equip.		22,000	
F. Audio-Visual Materials		1,600	
G. Office Supplies & Equip.		2,000	
H. Diagnostic Sets for Students		2,400	
I. Printing & Mimeographing		3,000	
J. Miscellaneous		2,250	
VIII. <u>WELL DRILLING & SAFE WATER SUPPLY</u>	-0-	35,000	35,000
A. Equipment		5,000	
B. Materials & Supplies		10,000	
C. Well Materials		15,000	
D. Miscellaneous		5,000	
IX. <u>SALARIES</u>	4,165	5,835	10,000
X. <u>RETURNED TO NONSW</u>		12,000	12,000
			<u>540,925</u>

LOFA COUNTY RURAL HEALTH PROJECT
TRUST FUND ALLOCATION (BREAKDOWN)
FY 1978

<u>BUDGET CATEGORY</u>	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
I. <u>CONSTRUCTION</u>	<u>20,000</u>	<u>156,000</u>	<u>176,000</u>
A. <u>New</u>	<u>20,000</u>	<u>78,000</u>	
1. Kpakienai		<u>13,000</u>	
2. Porluma		<u>13,000</u>	
3. Luhasu		<u>13,000</u>	
4. Nyandamolahun		<u>13,000</u>	
5. Kpayea		<u>13,000</u>	
6. Konia (extension)		<u>13,000</u>	
B. <u>Renovation</u>		<u>23,400</u>	
1. Bolahun		<u>2,000</u>	
2. Bopolu		<u>5,000</u>	
3. Salayea (extension)		<u>5,400</u>	
4. Sucurumu		<u>5,000</u>	
5. Barziwen		<u>1,000</u>	
6. Popolahun		<u>2,000</u>	
7. Gorlu		<u>3,000</u>	
C. <u>Warehouse</u>		<u>12,000</u>	
D. <u>Clinic Water Systems</u>		<u>12,000</u>	
E. <u>Clinic Security Systems</u>		<u>6,000</u>	
F. <u>Miscellaneous</u> (Includes transportation and unpaid costs from GY 76 & 77)		<u>24,600</u>	

TRUST FUND ALLOCATION (BREAKDOWN) - 2

<u>BUDGET CATEGORY</u>	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
II. <u>TRANSPORTATION</u>	<u>2,000</u>	<u>24,500</u>	<u>26,500</u>
A. <u>International Travel</u>	<u>1,000</u>	<u>9,500</u>	
1. Minister visit-INS		<u>4,500</u>	
2. Coordinator visit-INS and trip to HMDS		<u>5,000</u>	
B. <u>Local Travel & Per Diem</u>	<u>1,000</u>	<u>15,000</u>	
1. COP & Deputy		<u>1,250</u>	
2. Coordinator & Deputy		<u>1,250</u>	
3. FPG & Counterpart		<u>1,250</u>	
4. Evaluator & Counterpart		<u>1,250</u>	
5. Health Inspectors		<u>3,360</u>	
6. Immunization Team		<u>1,140</u>	
7. Supervisory Travel		<u>400</u>	
8. MCH Team		<u>600</u>	
9. Local Contingency Trl		<u>500</u>	
10. Others		<u>4,000</u>	
III. <u>VEHICLE SUPPORT</u>	<u>22,332</u>	<u>77,068</u>	<u>99,400</u>
A. <u>Maintenance & Repair</u>	<u>1,000</u>	<u>14,000</u>	
B. <u>Gas & Oil</u>	<u>1,332</u>	<u>26,068</u>	
1. Volvo 4-door Sedan		<u>1,292</u>	
2. " " "		<u>1,292</u>	
3. Toyota Land Cruiser		<u>1,292</u>	
4. Toyota Land Cruiser -Stationwagon		<u>1,292</u>	
5. " " "		<u>1,292</u>	
6. Peugeot 504 Stationwagon		<u>1,292</u>	
7. VW Kombi Bus		<u>1,292</u>	
8. Toyota Pickup		<u>1,292</u>	

TRUST FUND ALLOCATION (BREAKDOWN) - 3

<u>BUDGET CATEGORY</u>	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
III. <u>VEHICLE SUPPORT (continued)</u>			
B. <u>Gas & Oil (cont.)</u>			
9. Ford Pickup (Ambulance)		1,292	
10. " " "		1,292	
11. Ford Truck (heavy duty)		4,288	
12. Ford Bronco Wagon		1,292	
13. " " "		1,292	
14. " " "		1,292	
15. " " "		1,292	
16. " " "		1,292	
17. Six new vehicles		2,400	
C. <u>Replacement</u>	<u>20,000</u>	<u>37,000</u>	
1. Toyota Pickup		5,000	
2. Two VW Buses		10,000	
3. Two Toyota Land-cruisers (short model)		14,000	
4. Peugeot 504 stationwagon (Coordinator)		8,000	
5. Contingency	20,000	-0-	
IV. <u>EQUIPMENT & SUPPLIES</u>	<u>19,000</u>	<u>77,935</u>	<u>96,935</u>
A. <u>Equipment for medical facilities</u>			
1. Microscopes 28 x 1000		28,000	
2. Blood Pressure Machine (Aneroid) 30 x 30		900	
3. Infant scales 30 x 75		2,250	
4. Adult scales (bathroom) 30 x 25		750	
5. Stethoscope 23 x 10		230	
6. Otoscope 40 x 40		1,600	

TRUST FUND ALLOCATION (BREAKDOWN) - 4

	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
IV. <u>EQUIPMENT & SUPPLIES</u> (continued)			
A. <u>Equipment for medical facilities</u> (cont.)			
7. Upright adult scales 4 x 150		600	
8. Hand Centrifuge 40 x 50		2,000	
9. Lamp "Gas" 40 x 30		1,200	
10. Burner, kerosene		1,000	
11. Pressure cookers		1,200	
12. Sahli hemoglobinometers		1,200	
13. Thermometers		300	
14. Forceps		400	
15. Bandage scissors		240	
16. Health Education posters		3,000	
17. Emeses basin (plastic)		125	
18. Wash basin		250	
19. Lamp, alcohol		250	
20. Basic suture sets		1,400	
21. Cord clamps		800	
22. Episiototomy scissors		240	
B. <u>Record Materials</u>		<u>8,000</u>	
C. <u>Drugs</u>		<u>15,000</u>	
D. <u>Locally constructed equip.</u>		<u>6,000</u>	
1. Wooden delivery tables		1,500	
2. Mattresses, plastic covered		1,000	
3. Benches, chairs, tables & cord boxes		3,500	
E. <u>Miscellaneous</u>		<u>1,000</u>	
F. <u>Contingency</u>	<u>19,000</u>		

TRUST FUND ALLOCATION (BREAKDOWN) - 5

	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
V. <u>TEMPORARY LABOR</u>	<u>6,000</u>	<u>-0-</u>	<u>6,000</u>
VI. <u>PREVENTIVE MAINTENANCE</u>	<u>-0-</u>	<u>9,000</u>	<u>9,000</u>
A. Supplies & Equip.		6,000	
B. Contracts & Personnel		3,000	
VII. <u>TRAINING</u>	<u>-0-</u>	<u>70,090</u>	<u>70,090</u>
A. <u>Student stipends</u>		<u>6,780</u>	
1. 1st year PAs - 11 students x \$35/mo x 6 mo		2,310	
2. 2nd year PAs - 6 students x \$35/mo x 12 mo		2,520	
3. Former CMW students 5 students x \$65/mo x 6 mo		1,950	
B. <u>Student transportation & per diem</u>		<u>10,240</u>	
1. <u>Student living cost, Lofa Co. rural experience 21 students x 60 days x \$4/day</u>		5,040	
2. Student plane transportation, preceptorship (10 students, 1 round trip each to Harper at \$100)		1,000	
3. Continuing Education, per diem/transportation, 40 students x \$5/day x 21 days		4,200	

TRUST FUND ALLOCATION (BREAKDOWN) - 6

	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
VII. <u>TRAINING</u> (continued)			
C. <u>Lofa Co. Student Housing</u>		<u>1,820</u>	
1. Rent, Kolahun student house		500	
2. Beds, Lofa Co. student quarters, 6 bunk beds x \$220 each		1,320	
D. <u>Student Textbooks</u> (overseas cost & shipping)		<u>18,000</u>	
E. <u>Teaching Materials & Equip.</u>		<u>22,000</u>	
1. Microscopes, 20 at \$950 each		19,000	
2. Anatomy models, 3		2,500	
a. Skeleton with tendon attachments			
b. Arterio venous system			
c. Internal organs, removable			
3. Charts & Illustrations		500	
F. <u>Audio-Visual Materials</u>		<u>1,600</u>	
1. Overhead projector		300	
2. 8 mm super-8 movie camera & projector		400	
3. Slide projector, 35 mm		250	
4. Camera, 35mm		148	
5. Film		200	
6. Storage units, 35 mm slides		100	
7. Slide trays & carousels		150	
8. Other		52	
G. <u>Office Supplies & Equipment</u>		<u>2,000</u>	
1. One manual 18" typewriter		475	
2. One metal storage cabinet		350	
3. One dehumidifier		300	
4. Six bulletin boards		300	
5. Photostatic paper		317	
6. Other		258	

TRUST FUND ALLOCATION (BREAKDOWN) - 7

	<u>UNDESIGNATED</u>	<u>DESIGNATED</u>	<u>TOTAL</u>
VII. TRAINING (continued)			
<u>H. Diagnostic SETs for Students</u> 24 sets at approx. \$100/set		<u>2,400</u>	
<u>I. Printing & Mimeographing</u> (Books and teaching materials)		<u>3,000</u>	
1. Diagnostic card system		180	
2. Skills Proficiency Booklets		750	
3. Rural Health-Worker's Handbook		1,250	
4. Anatomy Module and Chronic Disease Module		500	
5. Stencils, Ink, etc.		200	
6. Other		120	
<u>J. Miscellaneous Expenses</u> (such as student uniforms, recruitment costs, etc.)		<u>2,250</u>	
VIII. <u>WELL DRILLING & SAFE WATER SUPPLY</u>	<u>-0-</u>	<u>35,000</u>	<u>35,000</u>
<u>A. Equipment</u>		<u>5,000</u>	
<u>B. Materials & Supplies</u>		<u>10,000</u>	
<u>C. Well Materials</u>		<u>15,000</u>	
<u>D. Miscellaneous</u>		<u>5,000</u>	
IX. <u>SALARIES</u>	<u>4,165</u>	<u>5,835</u>	<u>10,000</u>
<u>A. Henry T. Salifu</u>		<u>2,334</u>	
<u>B. Celsus I. Ebba</u>		<u>3,501</u>	
X. <u>RETURNED TO MOHSW</u>	<u>12,000</u>		<u>12,000</u>

ANNEX II

Persons Interviewed

Ministry of Health (MOH)

Mrs. Abeodu B. Jones, Minister of Health
Dr. Wilfred Sei Boayue, Chief Medical Officer and LCRH Project Coordinator
Mr. Henry Salifu, LCRH, Project Research and Evaluation Coordinator
Mr. Celsus Ebba, LCRH, Deputy Project Coordinator
Dr. Swamy, Director, Division of Preventive Services
Ms. Agnes Dagbe, Director, Physician Assistants Program, TNIMA
Mr. Herbert, Chief, Field Operations, Division of Preventive Services

WHO

Dr. W. Holder, WHO Country Representative
Dr. Kigondu, Advisor, WHO/UNFAP Cape Mt. Country project
Father Serra, WHO Leprosy Control Program, Sierra Leone

Lofa County

Mr. Alfred Fromoyan, Assistant Superintendent of Lofa County for Planning and Development
Dr. N. Ramamoorthy, County Medical Director
Mrs. Bala, RN, Gorlu clinic
Mr. Martin Sumo, Drug supply and procurement officer
Mr. Nicholas Kormah, PA, Vezala clinic
Mr. Sackie, PA Supervisor, Kolahun HC.
Dr. Grant, Medical director, " " "
Mr. Tuland, Dresser, Kolahun health center
Mr. Janga, RN, " " "
Ms. Charlotte Bobo, CMW, " " "
Ms. Anna Bombo, CMW, " " "
Mr. Samuka, PA Supervisor, Kolahun District
Mr. Boimale, RN " "
Mr. Johnson, PA, Korworhun health post
Mr. James Momoh, County hospital administrator
Ms. Ora Tolbert, Assistant Director of Nurses, Tellewoyan
Mrs. Mary Kamara, MCH/FP Consultant
Mrs. Louise Mulbah, Public Health Coordinator, Lofa County
Mrs. Barbara Fromoyan, Director of Nursing, Tellewoyan Hospital

IHS Team

Dr. George Berg, Chief of Party, LCRH
Dr. Paul Mertens, Teacher-trainer, LCRH
Mr. Perry Tennison, Engineer, LCRH
Mr. Fred Brown, " "
Mrs. Joyce Maddy, Secretary, Admin/Assistant, LCRH
Ms. Gilda deLuca, Public Health Nurse Advisor, LCRH
(AID direct hire)
Dr. Ward Hurlburt, 1st Chief of Party, now with IHS Alaska
Dr. Michael Fuchs, Evaluator, LCRH
Mr. Hal Thompson, Project Officer, IHS, Rockville, Maryland

Embassy

Ambassador Beverly Carter
Mr. Robert Horan, DCM

USAID

Mr. Harvey Gutman, Acting Mission Director
Mr. E. Anderson, Deputy Mission Director
Mr. Noel Marsh, Program Officer
Mr. John Sperling, Assistant Program Officer
Mrs. Nancy Tumavic, Program Evaluator
Mr. Fred Hagel, Development Officer
Mr. Robert Rogers, Comptroller
Mr. Gene Westlake, Comptroller's Office

ANNEX III

Health Facilities Visited

Lofa County

Posts: Gorlu
Salayea
Sucromo
Lawalazu
Veala
Korworhun
Warsonga
Shelloe
Foya Tengia
Bolahun
Popalahun
Barziwein (Davey-McKay)
Bondi

Centers: Kolahun
Konia
Foya Mission (Swedish Pentecostal)

Hospitals: Tellewoyan, Voinjama
Curran Lutheran, Zorzor

Other: Lutheran Training Institute