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**AFRICAN MEDICAL AND RESEARCH FOUNDATION**

**PROJECT YEAR 2 ANNUAL REPORT**  
**1st August 1980 - 31st July 1981**

**Kibwezi Rural Health Scheme and Other AMREF**  
**Training and Rural Health Programmes**

**I/AMREF USAID OPG PROJECT NO. 615 -0179**

**AMREF**  
**P. O. Box 30125**  
**NAIROBI, Kenya**

**August 1981**

## **AMREF**

The African Medical and Research Foundation (AMREF) is an independent non-profit organisation which has been working for more than 20 years to improve the health of people in Eastern Africa, mostly in Kenya, Tanzania, Southern Sudan and Uganda. AMREF runs a wide variety of innovative projects with an emphasis on appropriate low-cost health care for people in rural areas. Project funds come from government and non-government aid agencies in Africa, Europe and North America as well as from private donors. AMREF is in official relations with the World Health Organisation.

AMREF's current programme includes:

- Primary health care and the training of community health workers
- Training of rural health staff through continuing education, teacher training and correspondence courses
- Development, printing and distribution of training manuals, medical journals and health education materials
- Application of behavioural and social sciences to health improvement
- Airborne support for remote health facilities including surgical, medical and public health services
- Ground mobile health services for nomadic pastoralists
- Medical radio communication with more than 100 two-way radios
- Medical research into the control of hydatid disease
- Maintenance and repair of medical equipment
- Health project development, planning and evaluation
- Consultancy services in programme areas mentioned above

For further information, please contact AMREF headquarters at Wilson Airport Nairobi.

Postal Address: AMREF, P.O. Box 30125, Nairobi, Kenya  
Telephone: Nairobi 501301  
Telegram: Afrifoun, Nairobi  
Telex: AMREF c/o 22117 Norel, Kenya

## TABLE OF CONTENTS

	<u>Page No.</u>
A. Purpose	1
B. Methods	1
C. Summary	1
1. Kibwezi Rural Health Scheme	2
a. Purpose	2
b. Background	2
c. Methods of Implementation	3
d. Buildings	3
e. Baseline Surveys	4
f. Summary of Survey Findings	5
g. Training	8
h. Operation of Kibwezi Health Centre	11
i. Project Management	12
2. Training Manuals, AFYA Health Journal and DEFENDER Health Education Magazine	
3. AMREF Rural Health Service & Training Programme	15
ANNEX 1 - Status of Implementation Steps as of 31 July 1981	20
ANNEX 2 - Review of AMREF Manuals "Therapeutic Guidelines" "Communicable Diseases"	27

#### A. Purpose

The purpose of the project (USAID Project No. 615-0179) is to strengthen the capability of the International/African Medical and Research Foundation (IAMREF) to plan, manage and evaluate its rural health care services and training programmes in Kenya.

#### B. Methods

The International Medical and Research Foundation (IMREF), through the African Medical and Research Foundation (AMREF's field headquarters in Nairobi) is assisting the Government of Kenya, Ministry of Health (GOK/MOH) develop an integrated and comprehensive rural health service system for the Makindu Division of Kenya at Kibwezi.

The Kibwezi Health Centre serves as the base of operations and the health service system utilizes staff at the health centre as well as community health workers at the village level to meet the health needs of the population of this target area.

IAMREF is also assisting the MOH in expanding the development and production of teaching materials and learning resources for all its rural health workers, and in the development and execution of training and refresher courses for MOH personnel, especially those involved with the Kibwezi Rural Health Scheme.

#### C. Summary

Project implementation continued largely according to plan. The construction of the Kibwezi Health Centre, although several months behind schedule, was completed in December 1980 and opened for outpatients on 27th January 1981, and for inpatients a few weeks later. The MCH/FP programme has also been commenced, and in May 1981 the mobile health programme was started. The health centre is now in full operation with over 3,000 outpatient visits and about 40 inpatient admissions per month. The total number of staff is 19, all of which are Ministry of Health staff except the AMREF Clinical Officer.

Refresher training of staff at existing health facilities in the area continued as planned, the most recent one was held on 10th June 1981. There are 42 CHWs undergoing training in Mangelete and Muthingini sublocations. The continuing training of Community Health Workers at Kaunguni and Syengoni, who have already completed their basic training, continued on a monthly basis but with poor attendance at Syengoni and with fair attendance at Kaunguni.

During the second project year two manuals, Community Health and Surgery manuals have been in the production stage and are nearly complete. During this period five issues of AMREF's health journal AFYA were produced. Three issues of DEFENDER, AMREF's health education magazine were also produced.

AMREF's senior staff have been involved in developing and assessing AMREF's rural health services and training programmes in order to improve their impact with the objective of reaching more rural people at reasonable cost per service activity.

One of the activities during the reporting period was completion of an evaluation exercise for AMREF's Medical Radio Communications System.

1. Kibwezi Rural Health Scheme\*

a. Purpose

The purpose of the Kibwezi Rural Health Scheme is to develop and implement a comprehensive rural health service system for Makindu Division, Machakos District, Kenya. The project is centred around a new health centre in Kibwezi and will involve some 120 community health workers, a new category of village health workers with a few weeks training. It will also include development and utilization of various kinds of teaching material for rural health personnel, complementary training of staff at existing health facilities in the area, all with the purpose of developing a model rural health care system for a comparatively sparsely populated and rural poor area.

b. Background

The Kibwezi Rural Health Scheme aims at creating a model for rural health care systems with special emphasis on community participation and maximum health service coverage within the resources available for the area. Felt health needs as expressed by community members greatly influence project design.

During 1978 a plan of action was worked out for the project, including the drawings for the Kibwezi Health Centre. Construction of the health centre started in September 1978 and was scheduled for completion by December 1979. For various reasons construction was delayed and was completed in December 1980.

AMREF's Health Behaviour and Education Department<sup>+</sup> has carried out baseline surveys during 1978 and early 1979 and has developed a working relationship with various village leaders and local development committees. Local authorities and leaders have been briefed on project objectives and are continually briefed on project progress and are given opportunities to influence project design, especially regarding the community health worker component of the project.

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\* also supported by NCA, Foundation of Swiss Civil Servants for Leprosy Relief, and CIDA.

<sup>+</sup> sponsored through grants from SIDA and Brot für die Welt.

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c. Methods of Implementation

The major methods of implementation and design strategy employed by AMREF for the project include:

- 1) baseline surveys and special studies carried out by AMREF's Health Behaviour and Education Department staff assisted by senior staff, the AMREF Project Co-ordinator at Kibwezi, local health workers, CHW's and interviewers recruited locally. Meetings and discussions held with local community representatives and leaders to describe the project;
- 2) construction of a health centre in Kibwezi as the referral and technical supervisory base facility, and provision of supplementary equipment for Makindu Hospital;
- 3) refresher training for staff at existing rural health facilities in the area including briefing on the Kibwezi Rural Health Scheme and its implications for health workers in Makindu Division, especially regarding relationship to community health workers;
- 4) training initially of some 120 community health workers (CHWs), a new category selected by the community and given a few weeks basic training in close cooperation with the local community to be served, to provide primary health care at villoge level;
- 5) efforts made to provide CHWs with continuous post-basic training, supervision and support;
- 6) teaching materials of various kinds developed and produced at AMREF headquarters;
- 7) regular periodic evaluations carried out to assess project progress and to make necessary changes in project design if required;
- 8) detailed cost accounting records maintained as part of evaluation process and to determine replication value of the project.

d. Buildings

Kibwezi Health Centre construction was completed in December 1980 and the Centre opened on 27th January 1981. Minor adjustments are being carried out by a local contractor.

A prefabricated 3-bedroom staff house has been constructed on a plot one kilometre from the health centre in Kibwezi town. It is being used by the Project Co-ordinator and occasionally by visiting AMREF staff. Some complementary work was carried out in January 1981 to put the house and compound in satisfactory condition.

### Baseline Surveys

#### 1) Introduction

One of the initial implementation steps for the project was the baseline survey organised and carried out by the AMREF's Health Behaviour and Education Department (HBED). To introduce the baseline survey community meetings (barazas) had to be held throughout the area. These barazas involved careful discussion of the meaning of primary health care for Makindu-Kibwezi. They provided valuable learning experiences for HBED staff and especially for Lucas Owuor-Omondi who was put in charge of the survey. His thoughts on the implications of this series of community discussions appear in his paper "The Training of Community Health Workers" published by AMREF's HBED, January 1979. AMREF was learning that a bona fide community health programme necessitates, firstly, listening to and, secondly, discussion with community people about their health needs, their fears, their day-to-day problems and the gaps in their knowledge.

With the continuing discussions an interesting relationship emerged linking demands made by the community with their willingness not simply to participate but to initiate programmes.

The long interviews required by the baseline survey schedule frequently led to even longer discussions. Often further community meetings were requested. When it was decided that more information was wanted meaning a second round of interviewing, the response was both pleasant and welcoming. That AMREF staff had returned for a second visit confirmed for Kibwezi people that we were seriously committed to the project.

A summary of findings of the baseline survey appeared in "Project Year 1 Annual Report, August 1979 - July 1980".

Some further work by the Health Behaviour and Education Department was carried out in Muthingini and Mangelote during the project period. This work studied the various aspects of community organisation, especially the local social structures and economic organisation and the process of decision-making. This study is relevant since the whole of Kibwezi programme is community based with local communities planning and implementing most of the programmes and AMREF staff acting as resource personnel and advisers.

f. Summary of findings of a survey on community organisation in Muthingiini and Mangelete sublocations

1) Background

Muthingiini and Mangelete are two of the five sublocations in Ngwata Location. Muthingiini lies east of the Chyulu hills and Mangelete extends from the Chyulu hills to the S. W. to the Athi River in the S. E.

During the 16 years since independence, the present inhabitants have migrated from other parts of Machakos District into these sublocations. The area was formerly crown-land and a game reserve. Lack of land prompted this movement. During most of the year rain is deficient and there are frequently crop failures. In Mangelete lack of water is the main problem, so it is very sparsely populated.

Muthingiini by contrast, lying below the Chyulu hills, is more productive and the level of agriculture is high, though even there in the past year rain failure has led to acute shortage of water and crop failure. When conditions are good in both areas crops grown include maize, beans, sunflower and cotton. Both areas are far from existing health facilities.

Community barazas were held in November and December 1980 to discuss the health programme and the selection of Community Health Workers. Selection was made in January 1981.

2) Community organisation

The two sublocations have been divided into villages for purposes of administration. There are 22 villages in these sublocations each headed by a "Village Manager" who chairs the Village Development Committee. He is usually democratically elected by the villagers and is in charge of administrative responsibilities in the village. The tenure of office is usually unlimited unless he has been incapacitated or totally lost the confidence of the people.

Self-help groups

These are under the village manager and have been formed by the initiative of the people to deal with problems regarded as of high priority in the community and spearhead economic development in the sublocation. The self-help groups (SHGs) work on projects that require wide cooperation e.g. building schools roads, water schemes, etc.

These groups raise funds in various ways to finance their projects - membership contributions, sale of cash crops, etc. Every household father or mother is usually compelled to become a member of the SHG.

There is usually a Sublocation Development Committee which co-ordinates on the sublocational level all the activities of the self-help groups and recommends projects to them.

The SHGs usually have to register with government through the Department of Community Development which monitors activities of SHGs to make sure they fit within the government development plans.

### 3) Selection of Community Health Workers

The village development committees in Muthinglani and Manglele provided the appropriate structures and health became a new responsibility. These committees, therefore, selected the Community Health Workers - 22 from each sublocation - who met the necessary criteria set by the communities. Several meetings with the village opinion leaders had been held initially.

It was also made clear to the communities and to the CHWs that there would be no remuneration to CHW, unless the communities decided to reward them. It was also stressed that the CHWs should be mature, preferably over 28, married and established members of the community.

Comparison of Ages of Selected CHWs in Kai, Muthinglani and Manglele

YEARS	Kai		Muthinglani		Manglele	
	No	%	No	%	No	%
18 - 22	10	31	4	18	3	14
23 - 27	5	16	5	23	2	9
28 - 32	7	22	9	41	5	23
33 - 37	4	12	4	18	9	41
38 - 42	5	16	-	-	2	9
43 -	1	3	-	-	1	4
Total	32	100	22	100	22	100
Average Age	28.7		28.0		31.8	

7

The villages were found to be a better basis for selection of CHWs than self-help groups. Unlike the self-help groups, villages are not closed economic organisations but rather administrative units and so everybody has a right to membership. Therefore, CHWs selected by all members of the village can be supported fully by the village and are under an obligation to serve everyone without discrimination.

Even though education was not considered important in selection of CHWs, those selected in Muthingini and Mangelete have had formal education beyond primary 4. Whether this 100% literacy rate will lead to better performance remains to be seen.

Comparison of Education level of Selected CHWs in Kai, Muthingini and Mangelete

EDUCATION	Kai		Muthingini		Mangelete	
	No	%	No	%	No	%
None	4	12.5				
Std 2	1	3				
Std 4	4	12.5	2	9	1	5
Std 5					1	5
Std 6	6	16	3	13		
Std 7	12	38	9	40	12	53
Std 8	1	3	5	23	2	9
Form I	3	9	1	5	2	9
Form II	2	6	1	5	1	5
Form III			1	5	1	9
Form IV					2	9
Total	32	100	22	100	22	100

In general the appropriateness of the activities so far carried out by CHWs in Kibwezi will only be gradually discovered. Over the past two years, however, experience in Kai sublocation has shown that CHWs there have a solid commitment and work well.

The survey team made some recommendations that could be incorporated into the project. These were as follows:

- 1) the opening of the health centre makes possible further steps in collaboration between AMREF clinical staff and (a) traditional practitioners and (b) traditional birth attendants. We recommend:

Extension of the Rural Health Scheme to involve traditional medical and maternity workers.

\* AMREF's Health Behaviour and Education Department

2. To determine the progressive stages in the impact of the programme certain villages should be selected and studied as "Index" villages. We recommend:

Selection of certain villages within the Health Scheme area to be studied to indicate the health change effectiveness of the Scheme.

3. The schools, both teachers and pupils, have important roles to play in health development in Kibwezi. We recommend:

A programme in selected schools based upon collaboration between teachers and CHWs, with Health Centre Staff reinforcement, to improve both health awareness and, especially, health behaviour.

4. To encourage increasingly active participation by Kibwezi people in the improvement of their health more community education can play a part. We recommend:

Community health improvement activities should be planned for the dry season. These should be both practical and educational in aim.

A complete report of survey findings is available on request.

#### a. Training

##### 1) Refresher courses

The continuing education programme for staff at existing health facilities in the area was started in June 1979 by AMREF's Training Department, in the form of one day seminar for 15 participants at Kibwezi. Another similar seminar in September 1979 was attended by 39 participants, some of them non-medical, e.g. chiefs, assistant chiefs, etc. Another one day seminar for medical workers was held on 28th June 1980, attended by 18 participants. The programme has focused on health problems, considered important by health workers in the Division, such as water supply, sanitation, tuberculosis, leprosy, malaria and bilharzia. In December 1980, another seminar, attended by 24 participants was held.

Two more refresher courses were carried out in January and June 1981. The one in January included project staff and focused on teaching methods; it was conducted by Dr. Bhochu from AMREF Headquarters. The one in June was for all health personnel in the Division plus the Clinical Officer in charge of Ikutha Health Centre (Kitui District). It dealt with clinical diagnosis and was conducted by Dr. J. Kagimba from AMREF's Training Department. It was attended by 14 participants.

## 2) Community Health Workers

### a) Selection

Training of the Community Health Workers was planned and prepared for during the last half of 1979. Criteria for selection of trainees were discussed and agreed upon with representatives of the local communities where training was planned to start. Several meetings were arranged in the villages to explain the objectives of the project and the role of community health workers. This activity was also an objective of the baseline survey.

In addition to the 37 Community Health Workers already trained from Kaunguni and Syengoni areas in Kai sublocation more CHWs were selected for training from Muthingini and Mangelete sublocations. This was preceded by several community meetings (barazas) in late 1980 under supervision of Health Behaviour and Education Department staff and Project Co-ordinator at Kibwezi. The communities in these sublocations were better prepared and very careful in selecting their CHWs trainees, possibly because of detailed explanations during community meetings preceding the selection.

Muthingini selected 22 CHW trainees (21 men; 1 woman) and Mangelete selected 22 (16 men; 6 women). The average age of trainees from Muthingini is 28 and of those from Mangelete 32 years.

### b) Training

The CHW cadre are an important feature of the AMREF Kibwezi project. It is through their lives that the health centre will become a 'community health' institution. By definition the CHW should be a respected mature person with some credentials as a participant in community development activities, at the same time the CHW's own life should be fairly representative of that community. Thus it is expected that most CHWs will have domestic responsibilities in the form of children and gardens. These responsibilities preclude any extended absence from home for training. Therefore it was decided that the training should be held as close to home as possible and for as short periods as possible. The training of the Muthingini and Mangelete CHWs started with 3 days orientation at Kibwezi Health Centre: Muthingini trainees from 15th March to 18th March 1981, and Mangelete trainees from 22nd March to 15th March 1981.

After this they went back to their villages to continue weekly one-day sessions at a centrally located village. This has been going on since 31st March 1981 and they are about to complete the first initial training after 4 months, having had a total of about 20 days training.

The method used was mainly psychosocial which encourages a free exchange of ideas between trainer and trainees. Also role play was applied. The CHWs will continue attending monthly one-day sessions as a form of continuing education. A preliminary evaluation for this group of CHWs will be held within the next couple of months.

Topics covered so far at Muthingini and Mangelete

1) Simple common drugs	(11) Meningitis
2) Diarrhoea	(12) Cut wounds (ulcers)
3) Delivery	(13) Antenatal
4) Measles	(14) Whooping cough
5) Malaria	(15) Headache
6) Wells and good water	(16) Conjunctivitis
7) Scabies	(17) Bilharzia
8) Pneumonia	(18) Nutrition
9) First aid shocks	(19) Pulmonary Tuberculosis
10) Leprosy	

c) Continuing CHW Training in Kai Sublocation

Training of CHWs in Kai Sublocation continued on a monthly basis but with poor attendance at Syengoni and fair attendance at Kaunguni. This is partly due to a very difficult food situation in the area forcing some CHWs to concentrate on securing food for their families rather than continuing unpaid voluntary health work in their communities. It is also obvious, however, that several CHWs have failed to get the necessary support from their fellow villagers and that they are discouraged by this fact. Also, some of the CHWs feel they should have a few basic drugs to distribute to selected patients and they are frustrated by not being able to provide this service when needed.

These two important issues remain to be solved. We expect the community, as agreed during early barazas, to come forward with a method for compensation to CHWs for the time they spend on the job. Unfortunately there is no established way of rewarding such individuals working part-time for the benefit of the community, and traditional community barazas are one-time efforts to collect funds for a specific short-term goal, such as construction of a building for common use. A kind of regular "salary" in cash or in kind, to be paid by the community is a new concept, difficult to handle within the existing system. Fee for service is a more acceptable form of remuneration and well established among traditional healers and midwives. Villagers are also used to buying drugs from the local shops.

AMREF has listed all drugs available in the local shops and is encouraging the CHWs to advise sick villagers to buy the recommended drugs from local shops in appropriate amounts. CHWs can advise on the dosage. AMREF is also trying to get the shopkeepers' views on this. Where there are no local shops, other solutions need to be found, such as co-operative village pharmacies.

Of course any sick person can go to the nearest government health centre for drugs, if available, e.g. to Kibwezi Health Centre or its mobile unit. However, a local "village pharmacy" could be established on a co-operative basis the basic drugs could be available closer to the patient's home at a reasonable price.

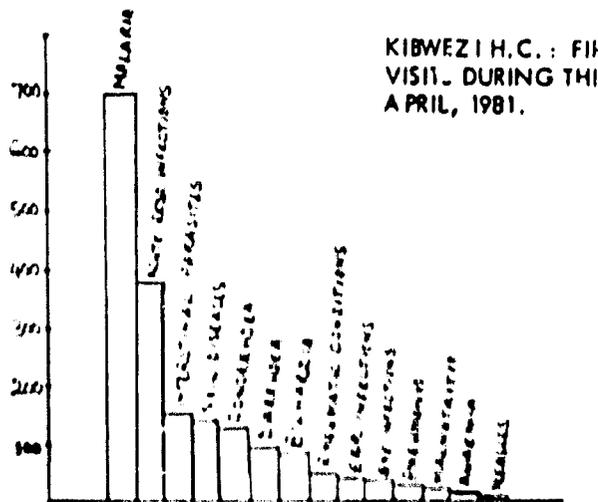
h. Operation of Kibwezi Health Centre

Kibwezi Health Centre was handed over to AMREF in May 1980. Apart from the Clinical Officer in charge, Mr. Killian, the staff is directly employed by AMREF, the Health Centre staff is assigned to the centre by the Ministry of Health according to an agreement between the Ministry and AMREF. The reason for this arrangement is that AMREF is to take over the running of the health centre at the end of the year. Something that will be greatly facilitated by having Ministry of Health running the health centre from the start. The number of staff is as follows:

1	Clinical Officer	4	General Practitioner
3	Community Nurses	1	Dr. Killian
1	Public Health Technician	2	Community Health Workers
4	Patient Attendants	2	Ward Attendants
1	Enrolled Nurse		

Over 3000 outpatients are seen and about 40 consultations take place every month. The present staff is inadequate for the work. A community nurse and another 2 - 3 attendants may be required. A laboratory technologist and a statistical clerk has been requested but not yet received.

The health centre staff is increasingly involved in a continuing education training programme and is now also, since May 1981, running a mobile unit one day per week. The mobile programme is focusing on the rural areas where trained CHWs are present, and tries to make use of their skills to facilitate the programme.



i. Mobile Unit

Kibwezi Health Centre mobile unit started operating on 24th May 1981 and will operate on a weekly basis. It is the intention of the project for CHWs to play an active role in the mobile health programme operated from Kibwezi Health Centre and to help plan and facilitate the activities of the mobile unit when visiting their area.

It is obvious that the workload has increased considerably with a limited staff running a very busy Health Centre Outpatient Department, Inpatient Department and MCH/FP Programme and in addition doing most of the CHW training in the villages and now also running the mobile health work in parts of the Division.

ii. Project Management

The Project Coordinator who is a senior Kenyan Clinical Officer, speaking the local Kikamba language, has operational responsibility and is living in AMREF's staff house in Kibwezi. AMREF's Medical Director has overall technical responsibility for the project. Kibwezi Rural Health Scheme is considered an important priority project and consequently several senior AMREF staff are involved in the project planning and implementation. Mr. Killian Mwaloi, R.C.O., is in charge of the health centre and is living within the health centre compound.

In addition to these direct project management and supervisory activities, AMREF senior staff have been involved in committees established for the project:

- i) Steering Committee : consists of two representatives from the Ministry of Health, two representatives from AMREF, one each from Norwegian Church Aid, the Embassy of Switzerland, CIDA, USAID and the Project Coordinator. The Committee has met once during the period covered by this report. Last meeting was on 24th April 1981.
- ii) Kibwezi Working Committee : consists of AMREF's Medical Director, Project Coordinator, R.C.O. at Kibwezi Health Centre and other AMREF Headquarters staff. It had three meetings during the period covered by this report.
- iii) Kibwezi Local Project Committee : was formed and met for the first time on 15th May 1981. It consists of Project Coordinator (Chairman), R.C.O. in charge, Kibwezi Health Centre, two representatives from Makindu Hospital, D.O. Kibwezi Division, Community Development Assistant, Assistant District Economist, Public Health Technician, Kibwezi Health Centre.

- (iv) Kibwezi Divisional Development Committee : is kept informed on project development. AMREF is represented by Project Coordinator.

2. Training Manuals, AFYA Health Journal and DEFENDER Health Education Magazine

The availability of appropriate books, training manuals and journals for health auxiliaries is very limited. With the expansion of many training programmes throughout Africa, the tremendous need for locally relevant teaching materials has grown steadily. While some textbooks for professional cadres may be interchangeable internationally, those required for lower cadres need to be much more specific to the region. Both the suitability and the high cost of imported books demand the production of more local books and teaching materials. AMREF is attempting to address this problem through production of its Rural Health Series Manuals and its health magazines AFYA and DEFENDER.

Up to July 1981 AMREF had produced 11 training manuals as part of its Rural Health Series:

Child Health  
 Diagnostic Pathways in Clinical Medicine  
 Health Education  
 Communicable Diseases  
 Obstetric Emergencies  
 Pharmacology and Therapeutics  
 Management Schedules for Dispensaries  
 Mental Health  
 Epidemiology in Community Health  
 Occupational Health  
 Emergency Hand Surgery

Other manuals produced by AMREF concerning rural health development were Design for Medical Buildings and Immunology Simplified.

All of these manuals were either directly authored by health specialists working in Eastern Africa or by authors with considerable African rural health experience. This also holds true for other manuals now being developed:

Community Health  
 Obstetric & Gynaecology  
 Health Centre Surgery

AMREF distributes 1,000 free copies of each new manual to rural health training schools in Tanzania, Kenya, Uganda and Sudan. All the manuals produced to date have been reprinted to meet demand. They are distributed at near cost by the Mvizi Bookshop and Kenya Textbook Centre.

Table - Reprints of AMREF Training Manuals, June 1980 - July 1981

<u>Manual</u>	<u>No. of Reprints</u>
Occupational Health	2000
Pharmacology & Therapeutics	2085
Obstetric Emergencies	3000
Health Education	2000
Mental Health	2000
Epidemiology in Community Health (+ Handbook)	5000
Child Health	6000
	22885

The project provides funds for workshop expenses, printing and distribution costs for 4 manuals per annum and translation of one existing manual in Kiswahili. DANIDA provides the technical assistance support for developing the manuals. The four manuals that were identified for Project Year 1 1979/80 were:

Community Health  
Surgery  
Therapeutic Guidelines  
Epidemiology in Community Health

Therapeutic Guidelines and Epidemiology in Community Health have already been produced and copies distributed to various rural health training schools in Eastern Africa. Therapeutic Guidelines is not, technically, considered as part of the Rural Health Series but it is an invaluable manual to assist health workers in the rational purchase and production of drugs. Community Health and Surgery manuals are in the final production process and are nearly complete. The Kenya Ministry of Health has selected the Southern Sudan Community Health Manual for translation into Swahili. The English version is due for production by October 1981.

Manuals that have been identified for funding during Project Year 2 are:

Gynaecology & Obstetrics  
Sudan Primary Health Care Manual  
Rural Health Practice Manual - Kenya  
Child Health - Swahili version

15

Work on these is still going on.

During Project Year 2 5 issues of AMREF's health journal AFYA were produced and 3 issues of DEFENDER, AMREF's health education magazine. AFYA's circulation has increased to 6,000 per issue. The principal subscribers are clinical officers, medical assistants, community nurses and health technicians working in Eastern and Central Africa. AFYA is printed 6 times yearly at a nominal subscription fee of Kenya Shillings 10/= per annum (\$1.30). Actual production and distribution cost is KSh. 25/= (\$3.30). The project provides the funds for subsidizing these production and distribution costs. In order to economize on distribution costs, the number of issues has been reduced from 6 to 4 as from 1981. However, the number of pages remains the same.

The DEFENDER is circulated free and has increased to 10,000 recipients, mostly school teachers in the rural areas who use the articles for teaching purposes. During Project Year 2 3 issues were produced.

### 3. AMREF Rural Health Service and Training Programmes

#### a. Airborne Medical Services

Besides the technical support required in planning, directing, monitoring and evaluating the Kibwezi Rural Health Scheme, AMREF senior staff are also actively involved in developing and assessing AMREF's rural health services and training programmes in order to strengthen them and improve their impact with the objective of reaching more rural poor at reasonable costs per service activity. Another major objective is to determine the replication value of AMREF's rural health services and training programmes. Particular attention has been paid to AMREF's mobile airborne medical services, including medical specialist outreach programmes by light aircraft, with supervisory trips being undertaken to assess programme performance. A workshop is planned for 1981 on mobile airborne medical services.

#### b. Medical Radio Communications

One AMREF programme that has received an in-depth analysis is AMREF's medical radio communications system which is one of the largest systems in Africa linking up over 90 rural health institutions in Eastern Africa. AMREF engaged consultant Katarina Janovsky in January 1980 to carry out an extensive review and evaluation of the radio network. The objectives of the evaluation study were to make recommendations for improving the effectiveness of the system and to present a report that can serve as a basis for replication of the AMREF system in other countries. During the first six months of 1980 Dr. Janovsky visited 26 institutions in Kenya and Tanzania with AMREF radios. In addition, a number of remote institutions presently without radio communications were visited to assess their communications needs and to consider the potential uses of two-way radios at such stations.

An analysis of the present functions and uses of the system, and of the factors influencing use made of the radio, was carried out. A report to AMREF management also included sections on the selection of network participants and coverage on issues of equipment and maintenance; personnel and training; management of airtime; critical linkages and support services, such as flying doctor services; and on recording and reporting.

During the second half of 1980, a comprehensive report on the AMREF system was produced and made available to the interested public. A seminar on radio communication was organised as a project activity toward the end of the year. The seminar served as a forum for government as well as private organisations from several countries to meet and discuss communications needs in the health sector in general, and to present experiences in the field of radio communications. Following is a summary of the seminar proceedings.

#### Summary of proceedings from seminar on Medical Radio Communications

##### a) Introduction

General interest in two-way radio communications has been growing in recent years. Telephone systems in most of Africa are slow, unreliable and only gradually expanding into rural areas. It will take a long time before remote health facilities, such as dispensaries, can be equipped with telephones. Until such time, two way radios remain an effective means of communication, linking remote health facilities to their referral centres, and this is increasingly recognized by governments as well as non-governmental organisations.

AMREF's medical radio communications system consists of nearly 100 radio stations in Eastern Africa; some of these stations use AMREF's Foundation Headquarters as their base station, others function more independently as separate sub-systems with their own sub-base stations.

Since few organisations have AMREF's experience in operating large medical radio networks, it was felt that a workshop on medical radio communications with participation from AMREF, ministries of health in Eastern Africa, and other knowledgeable and interested parties would be informative and useful. The purpose of the workshop was to share experiences and information, and to discuss the future of two-way radio communication in the health sector in this part of Africa.

Participants came from the ministries of health of Kenya, Malawi, Ethiopia, Tanzania, the Southern Sudan and from non-governmental organisations and mission organisations.

b) Report of SubCommittee on Equipment, Maintenance and Repair

Equipment

This Committee agreed that medical radio communications systems in Eastern Africa should be based on High Frequency (HF) and Very High Frequency (VHF) radio equipment since HF has an advantage over a very long range while VHF has even better reception quality except that it requires line-of-sight between stations.

It was noted that the orientation of an antenna determines the signal polarization so that stations in the same system should have their antennae either all horizontal or all vertical. This would ensure better reception.

The use of a battery as a source of electric power for the radio and recharging it by shifting it to a vehicle was recommended. Solar panels were recommended for areas where there are no vehicles.

Maintenance and Repair

It was generally felt that radio equipment should be standardised as much as possible within a network so as to reduce the problems of maintenance and repair and that a competent electronics technician should be employed within the health services rather than to rely on outside service for the maintenance and repair of radio equipment. It may also be worthwhile keeping some spare radio sets at the district level to temporarily send to stations whose equipment needs to go to the central workshop for repairs.

Radio operators should know how to examine their equipment in order to determine what is wrong when it stops working. A manual on 'corrective actions' will be provided. Rural health workers who are likely to be called upon to use radio equipment during their career should receive training in radio operation and maintenance as part of their basic training.

c) Report from SubCommittee on Management of Airtime, Reporting and Recording and Training Operators

Management Responsibility and Training

Management responsibility for a radio at a health facility should be that of the senior officer in charge of that facility and the medical radio system should be recognised as important and have the same status as any other service unit within the institution.

Training of radio operators and other key staff should be carried out locally and on-the-job when supervisory staff, including AMREF staff, visit the health facility.

Initial training should be the responsibility of the radio engineer, however, the base or control station should also be involved in the training process. New operators will be trained by outgoing operators.

The major difficulty when learning how to operate the radio is developing an 'ear' for the radio. It usually takes 2 - 3 weeks time to achieve this skill. However, emphasis during training should be on technical aspects, the use of various controls and accessories, overall purpose of the radio system, record keeping, reporting and evaluation.

#### Reporting and Recording

The forms developed by AMREF for reporting and recording were recommended for trial in North-Eastern Province and in Turkana District, Kenya. This is considered essential for evaluation purposes.

#### Airtime

In regard to airtime it was recommended that messages be written down and be edited before transmission thus achieving two objectives - recording and clarity of the message to be transmitted.

It was agreed a second language should be agreed for those who are not conversant in the official language, which is usually English. Local vernaculars, however, should be avoided since they are difficult to monitor regarding private conversations and misuse of airtime.

- d) Report from the SubCommittee on major functions and uses, and on selection of network participants

The committee agreed that the most important means of communication of a health centre or dispensary without telephone or radio, are a vehicle, police radio or post office. Many dispensaries have no vehicles and even where these are available roads are impassable during certain times of the year. No discussion of medical cases is possible on police radio and messages are usually distorted. The post office is slow and unreliable.

A medical radio communication system is the most effective alternative and it can be used for the following purposes in order of priority: medical advice for referrals, consultations and training; drugs and supplies; laboratory test results, and administrative matters.

Failure to use the radio was attributed to various factors:

1. Basic timidity of people untrained to use the radio.
2. Little encouragement and patience from control stations.
3. Some foreign missionaries do not speak English well and are reluctant to use the radio.

In choosing which facilities should have a radio, remoteness, speed and reliability of alternative means of communication should be the criteria. Priority in times of scarcity should be given to dispensaries since these are more 'helpless' in comparison to health centres which usually have transport and more qualified staff.

e) Concluding Remarks

In general, the Conference found two-way radio communication important for rural health facilities even though radios are hardly recognised as necessary or important parts of the equipment of remote rural health institutions.

Transmission quality is sometimes low and there remain a number of factors which make some operators uncomfortable and reluctant to use the radio. However, MOH staff in remote health facilities really appreciate the radio since it is usually the only means of contact with the outside world.

The Conference considered that with increasing costs of running cars and particularly four wheel drive vehicles, the use of radios for communication may be even more important in the future.

The most common constraints in establishing and running medical radio networks appear to be:

1. Inadequate recurrent funds for maintenance and repair of the equipment once installed, not just for a year or two, but longterm.
2. Insufficient briefing and training of those who are operating the radios, and those who have to take over operation when the ordinary operator is on leave or is transferred.
3. Lack of coordination between existing radio networks.

A complete report of the proceedings from the Conference is available from AMREF-Nairobi on request.

STATUS OF IMPLEMENTATION STEPS as of 31st July 1981

IMPLEMENTATION STEPS	Proposed Project Month	Month Action Taken	Status
First Year - PY1 (8/79-7/80)	00-12		
1. PP submitted/approved	01-8/79	01-8/79	
2. Construction begins and completed on Kibwezi Health Centre and Project Coordinator's house. Equipment/vehicle/furniture ordered and received.	01-09 8/79-4/80	9/78-12/80	Construction and equipping of Kibwezi Health Centre is not an AID input. Construction completed December 1980.
3. Project team personnel recruited and engaged on project (4 consultants, 5 Kenyan nationals) Kibwezi H/C staff taken on three months before opening of Kibwezi H/C (17 Kenyan nationals)	01-06 8/79-1/80	8/79-12/80	All project staff have been engaged. Kibwezi H/C staff have been assigned and the H/C is operational.
4. Commodity items ordered and received	01-04 8/79-11/79	8/79-12/80	IBM composer, two IBM typewriters and a calculator have been purchased.
5. Preparation and production of 4 training manuals	01-12 8/79-7/80	8/79-7/81	Epidemiology and Therapeutic Guidelines have been produced. Community Health and Surgery nearly ready.

IMPLEMENTATION STEPS	Proposed Project Month	Month Action Taken	Status
6. MOH selects which existing manuals it prefers to be translated into Swahili. Translation and production of 1 training manual	01 - 12 8/79 - 7/80	5/80	MOH has selected the Southern Sudan CHW Manual being prepared by A MREF for translation into Kiswahili. That manual is in the final stages of preparation for the English version.
7. Assessment and evaluation of needs of Kibwezi/Makindu Division population for curative, preventive, and health promotive services	02 - 12 9/77 - 7/80	9/78 - 7/80	Community baseline survey carried out in 9/78 - 3/79 in four selected areas by A MREF's Health Behaviour and Education Department. Complementary study on utilization of health services also carried out. Data coded and processed by computer. Report findings appear in Project Year 1 Annual Report.
8. Epidemiological investigations by sample house-to-house enquiries	02 - 12 8/79 - 7/80	9/78 - 12/79	Included as part of baseline survey.
9. Studies commence of people's knowledge and misconceptions, their beliefs, fears, customs,; taboos in health related matters and of assistance given by untrained traditional birth attendants, herbal specialists, etc.	02 - 12 8/79 - 7/80	9/78 - 12/79	Included as part of baseline survey.
10. Effectiveness of present provision of health services ascertained:			
a. examination of medical records at Makindu Hospital and mission clinic at Kibwezi;	02 - 12 8/79 - 7/80	11/78	Medical records at both institutions found to be very incomplete and therefore of little value.

22

IMPLEMENTATION STEPS	Proposed Project Month	Month Action Taken	Status
10.			
b. sample family health surveys of immediate area of these two facilities;	02 - 12 8/79 - 7/80	9/78 - 12/79	Immediate area around Makindu included in baseline survey.
c. enquiries to determine experience of people and their responses to health emergencies, and less acute, health problems;	02 - 12 8/79 - 7/80	9/78 - 12/79	Included as part of baseline survey and complementary survey - utilization of health facilities.
d. enquiries to estimate effectiveness and levels of community satisfaction with traditional practitioners and training such practitioners might benefit from and the roles they can play.	02 - 12 8/79 - 7/80	9/78 - 12/79	Included as part of baseline survey.
11. Project Coordinator/AMREF staff consult communities at control villages to describe Kibwezi Project and assist in mobilizing communities to select CHWs.	02 - 08 8/79 - 3/80	9/78 - 7/81	Continuous on-going activity. CHWs selected by villagers during January 1980.
12. Plans formulated to provide low cost health posts and their equipment.	02 - 08 8/79 - 3/80	8/79 - 7/81	CHWs will work from their homes which is acceptable to village development committees. If not feasible based on operational experience option of health posts will be discussed with the VDC's.
13. Plans for systematic health improvement prepared, firstly, for those communities which have urgent unmet needs and which are prepared to participate energetically. These communities would thus, be self-selected, and would serve as examples to encourage participation by other villagers.	06/1/80	8/79 - 7/81	Training of CHWs represents first step for systematic health improvement.

23

IMPLEMENTATION STEPS	Proposed Project Month	Month Action Taken	Status
14. Assistance to Makindu Hospital health personnel generally to enable them to improve diagnostic skills through better laboratory back-up and better instruments.	03-12 10/79-7/80	8/79-7/80	AMREF's mobile surgical team made a one-day visit to Makindu Hospital and gave instruction on simple surgical techniques, especially regarding emergency cases.
15. Provision of additional equipment to enable Makindu Hospital staff to perform simple operations.	06/1/80	8/79-7/80	Assessment study was done on equipment needs and list prepared. No action taken until issue of self-help hospital expansion project clarified.
16. Refresher training of existing Kibwezi area health personnel and retraining based upon need to be met (4, 3-day refresher courses).	03-13 10/79-7/80	6/79-6/80	3, one-day seminars carried out for 72 rural health and development staff and local officials.
17. Determination of the use and effectiveness of the existing AMREF training manuals already distributed.	01-12 8/79-7/80	3-11/79	Extensive evaluation carried out on AMREF's Child Health Manual. Reported in Progress Report 1.
18. Cost-accounting systems developed for Kibwezi Rural Health Scheme and other replicable AMREF rural health services.	01-06 8/79-1/80	8/79-7/80	Cost-accounting systems established including for Kibwezi H/C baseline survey and CHW training.
19. Evaluation studies carried out on present AMREF rural health services and training programmes to determine cost-effectiveness and replication value.	01-12 8/79-7/80	8/79-7/80	Extensive evaluation on AMREF's Medical Radio Communication System began in January 1980.
20. Two workshops held for MOH and PVO staff to discuss AMREF methods of rural health delivery services based on evaluation results.	08-12 3-7/80		Workshop on above evaluation in December 1980.
21. Publication of 2 reports on AMREF rural health and training programme methods based on evaluation studies.	06-12 1-7/80	12/80	Evaluation study report on medical radio communication system prepared in December 1980.

IMPLEMENTATION STEPS	Proposed Project Month	Month Action Taken	
22. Publication of 4 issues of DEFENDER and 6 issues of AFYA	02 - 12 9/79 - 7/80	8/79 - 7/80	3 issues of DEFENDER and 6 issues of AFYA published during 8/79 - 7/80.
23. System of continuous supervision developed and project monitoring system established including diary keeping, report filing to encourage initiative, maintain momentum and measure and evaluate the progress made.	01 - 12 8/79 - 7/80	8/79 - 7/80	Project working committees established for major projects - trip reports standard procedure as are semi-monthly progress reports.
24. Kibwezi Project Steering Committee meets quarterly to monitor and plan overall strategy. Members include representatives from MCH, Mochales DMC, AMREF staff, and donor agencies if they desire to attend.	04 - 12 11/79 - 7/80	17/79 - 7/80	Steering Committee meetings held on site of Kibwezi Health Centre.
25. Kibwezi Project progress reported regularly to Makindu Development Committee.	01 - 12 8/79 - 7/80		Committee has not been convened by its chairman, the District Officer.

IMPLEMENTATION STEPS	Proposed Project Month	Month Action Taken	Status
Second Year - (FY2: E 80-7/81)			
26. Preparation and production of 4 training manuals and translation and production of one manual	13-8/81	8/80-7/81	Work is currently going on on three manuals: Gynaecology and Obstetrics, Sudan Primary Health Care manual, Rural Health Practice manual and a Swahili version of Child Health is planned for.
27. Analysis of E. Swesi Epidemiological investigation and health behaviour data and surveys determining type of health services desired by rural people and effectiveness of present health services. Information utilized accordingly.	13-12/80	1/80-7/81	Data already analysed from baseline survey and findings have been incorporated into the project - e.g. Training of CHWs.
28. 4, 3-day for 12-15 trainees refresher training courses with correspondence courses carried out according to need. Development of teaching materials.	13-8/81	6/79-7/81	3, one-day seminars carried out for rural health and development staff and local officials, One seminar in December 1980 and two in January and June 1981 respectively.

IMPLEMENTATION STEPS		Proposed Project Month	Month Action Taken	Status
31.	Training Programme for 10 CHWs begins at Kibwezi Health Centre.	16-8/81	6/79-7/81	See point 29.
32.	Construction of Health Posts for 10 CHWs.	16-8/81	8/80-7/81	CHWs are to operate from their homes which is acceptable to Village Development Committees (VDCs). So far operational experience seems to indicate that this is functioning reasonably well.
33.	AMREF Management carries out cost-benefit and evaluation studies for its rural health services and training programmes including the Kibwezi project.	13-8/81	8/80-7/81	Evaluation of AMREF rural health services is currently going on for airborne services to rural areas. Comprehensive evaluation on AMREF's Medical Radio Communication System completed.
34.	Determination of the use and effectiveness of the 4 training manuals and one translated manual produced in the first year.	13-8/81	8/80-7/81	Extensive evaluation carried out on AMREF's Child Health manual, the findings of which are being used in the development of new manuals.
35.	Two workshops held for MOH and PVO staff to discuss AMREF methods of rural health delivery services based on evaluation studies.	15-5/81	12/80-8/81	A workshop on AMREF radio communication system carried out in December 1980. Another workshop on AMREF's airborne services to rural areas is planned for December 1981.
36.	Publication of 4 issues of DEFENDER and 6 issues of AFYA.	14-8/81	8/80-7/81	3 issues of DEFENDER and 5 issues of AFYA published during 8/80-7/81.

IMPLEMENTATION STEPS	Proposed Project Month	Month Action Taken	Status
37. Kibwezi Project information, output statistics and reports analysed and appropriate steps taken by AMREF Management if necessary.	13-8/81	8/80-7/81	Baseline survey data analysed. Kibwezi Health Centre started operations in January 1981 and data is being analysed. Preliminary report expected October 1981.
38. Kibwezi Project Steering Committee meets quarterly to review project progress which is also presented to Makindu Development Committee.			Steering Committee meetings are held quarterly on the site of Kibwezi Health Centre.
39. Two year project evaluation is carried out by IMRF/AMREF/USAID.	23-8/81	8/80-7/81	Two year Project evaluation is scheduled for October/ November 1981.

UPUNDA, G., YUDKIN, J. & BROWN, G. (1980) *Therapeutic guidelines: a manual to assist in the rational purchase and prescription of drugs*, pp. vii + 167. African Medical & Research Foundation, 11/12 Dover Street London W1 (£1.50)

This manual, published and subsidized by the African Medical Research Foundation is specifically designed as a quick reference guide to drug therapy for the use of doctors in Tanzania. However, the manual has a far wider relevance throughout the developing world and deserves a more extensive distribution. The range of drugs dealt with is restricted to conform to those available in Tanzania at the time of writing, but most of the drugs mentioned are older, generally available preparations and it is unlikely that these will vary significantly from country to country. Generic names are mostly used, although the text is inconsistent in this respect; drugs on the WHO list of essential drugs are given the emphasis of bold italic type.

Specific recommendations for usage are given with short notes on side-effects, contra-indications and other relevant information. These recommendations reflect a well balanced, common-sense judgement, not only of the comparative efficacy of various drugs, but also of the necessity of treatment in various clinical situations.

The authors' approach is refreshingly pragmatic, with one eye always on the cost of therapy, particularly the relative cost of preparations which have similar indications. This is clearly of paramount importance in countries with severely restricted resources for health care. Cost comparisons (in Tanzanian shillings) are prominently displayed in histograms throughout the text. A minor criticism of the book is that the histograms take up rather too much space—with a little more attention to layout, these could have been reduced in size and incorporated into the many blank areas of the text with a considerable saving of space.

So many differences of opinion exist about appropriate and optimal drug therapy that any book offering specific treatment recommendations is going to contain contentious statements and this manual is no exception. The authors have, however, undoubtedly succeeded in their aim of producing an authoritative guide to rational drug prescribing which, if adhered to, will lead to a more economic use of resources without detriment to the patients interest.

David Greenwood

From "Tropical Diseases Bulletin" August 1981

Communicable diseases. A manual for rural health workers, by Jan Ehius and Peter Manachot. AMREP (1978), 352 pp. Kenyan Sh. 25.00.

This is an outstanding book. The authors have cut through all jargon, stripped away all complicated theories and have written down just what a worker in the rural field should know about infectious diseases: how to recognise them, how to treat a patient and what to do about other people in the village. Everything is presented clearly, with simple tables, and clear pictures and diagrams. In reading the book one can almost feel one is in a health post in some far rural village wondering what on earth is wrong with a patient and what to do about it. Is there anything about this in the book? Of course there is, and one is told what to do – to give some simple treatment or to send for help.

What should one do about this child with probable malaria? On pages 59 to 67 there are diagrams of how the parasite attacks the body and pictures of the bottle of tablets needed for treatment. Even the prices are given, although those in the table and in the text do not seem to match. How should one treat this infant with obvious dehydration? There are pictures of hands and fingers measuring the correct amounts of sugar and salt to add to the water being boiled in a pan over a fire. Perhaps one cannot agree with the statement that dysentery means diarrhoea with blood, for many patients do not pass blood, nor with the statement that typhoid is almost exclusively a water-borne disease – there have been serious food-borne and milk-borne outbreaks, but let that pass.

The picture on page 79 gives 1 g gammaxane to 40 litres of water, but the text gives 1 kg, correctly, and there may be other minor errors. But the whole book is alive with vital facts about the hazards of life in the village, with vectors, worms and microbes all seeking a place in the community.

The book is written for rural health workers. I strongly recommend it for doctors everywhere. It could teach them how to communicate. And I would be surprised if they did not learn something new about communicable diseases.

A. B. CHRISTIE