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EVALUATION REPORT

International Eye Foundation

MALAWI

AID Matching Grant Program in
Blindness Prevention and Treatment

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ABBREVIATIONS

AID	Agency for International Development, Washington, D.C.
BPP	Blindness Prevention Program of the Ministry of Health of the Government of Malawi
CDSS	Country Development Strategy Statement, USAID, Malawi
CMO	Chief Medical Officer of MOH
GOM	Government of Malawi
IEF	International Eye Foundation
Kwacha	Malawi currency, equaled \$.75 (2/84)
MOH	Ministry of Health of GOM
MSH	Management Sciences for Health
OMA	Ophthalmic Medical Assistant of MOH
PHC	Primary Health Care Program of MOH
PHCW	Primary Health Care Worker of MOH
QECH	Queen Elizabeth Central Hospital, Blantyre
RCSB	Royal Commonwealth Society for the Blind, U.K.
TSSR	Training, Support, Supervision, Referral chain of eye care
USAID	AID Mission in Lilongue, Malawi

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This report was prepared by Nicholas Danforth, MIA, EdM, Project Manager, PVO Evaluation Project of Management Sciences for Health, and James Sprague, MD, Chief of Ophthalmology at Denver General Hospital Colorado, who has been a consultant in public health ophthalmology in South Asia for PVOs and for WHO. They were assisted by Jack Swartwood, MPH, Teffera Tizazu, MD, and Larry Schwab, MD, of the International Eye Foundation. Comments or questions are welcome and should be addressed to Nicholas Danforth at MSH, Suite 700, 1655 N. Fort Myer Drive, Arlington, VA 22209 (703/841-0723).

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I. EXECUTIVE SUMMARY

From mid-1981 to mid-1984 the International Eye Foundation (IEF) received a Matching Grant from AID to assist in the prevention and cure of blindness by implementing primary eye care delivery and training programs in seven of the poorest countries in the Third World. Two of these programs have been evaluated by teams from Management Sciences for Health as part of a series of evaluations for AID of PVOs in the health sector. The evaluation reported here of the IEF program in Malawi is based on a two-week visit to central and southern Malawi in February 1984.

Eye disease is a well-recognized health problem in rural Malawi. For a decade the Government of Malawi (GOM), with expatriate assistance, has supported an eye care program utilizing non-physician Ophthalmic Medical Assistants (OMAs) throughout the country. Before the IEF program began, the country had only one missionary ophthalmologist and two Malawian ophthalmologists for a population of over six million. Few OMAs were being trained, and GOM support for new or existing OMAs was weak. In addition, GOM funding for health was not increasing with the growing demand for services. Primary health care was beginning to be tested in only three districts. The prevalence of curable blindness in the elderly due to cataract and preventable blindness among children from trachoma and Vitamin A deficiency was apparently increasing.

IEF provided the MOH with two experienced ophthalmologists who worked on secondary and tertiary care in the central and district hospitals. This was necessary to provide credibility for the overall program of referral and clinical care and to train more OMAs for extended secondary care. IEF also organized an ocular survey of the Lower Shire Valley in Southern Malawi.

The IEF program raises questions about which strategies are most effective in institutionalizing a primary eye care program. IEF argues convincingly that secondary and tertiary eye care programs must function effectively before primary eye care can be introduced. Moreover, with practically no primary health care program in Malawi into which primary eye care can be integrated, a primary eye care program is premature. With their heavy surgical workload, the two ophthalmologists had limited time to test community level eye care innovations using village health workers. And without administrative or support staff, they had no one to whom they could delegate such nonmedical tasks as the collection and analysis of data or preparation of an OMA training manual. Throughout the program, the two field staff have been largely on their own, with little technical support from the home office.

The IEF/Malawi program has laid the groundwork for a national eye care program, but it is only a beginning. Unfortunately, Malawi is still largely dependent on expatriates for much eye surgery and eye surgical training. The first three year program should be seen as a start-up phase, laying the basis for future development of an effective nationwide blindness prevention program which could serve as a model for replication in many countries. This development could take a decade or more.

Several key steps must be taken by the MOH and IEF before this national program will be effective. First and most important, a detailed, realistic, comprehensive blindness prevention plan must be approved. There are at present no clear short or long term plans for future MOH or IEF activity in this regard. Second, more OMAs must be trained to do basic eye surgery including removing cataracts; after three years of IEF presence, the MOH still depends largely on expatriate ophthalmologists. Third, the MOH and IEF should begin testing approaches to integrating primary eye care into the emerging primary health care system while that system is still in a pilot stage. Fourth, the MOH should increase the involvement of the non-government sector (including private doctors, missions, pharmacists, traditional healers and midwives) in its national eye care plan. Fifth, improved data collection and analysis are vital to program planning and monitoring.

The IEF/Malawi program illustrates the need for AID staff to play a role in PVO country program planning and monitoring. Matching grant proposals to AID should contain country-specific objectives, outputs, strategies and schedules. If they cannot be prepared before the MG program begins, they should be produced during the early months of the grant period. AID program officers in Washington or in missions should monitor programs as appropriate. Guidelines could be prepared to help them do so efficiently.

The Malawi program also shows that three years is too short a period in which to develop and institutionalize a health program that can sustain itself after the program ends. Development of a viable, effective blindness prevention program in Malawi has barely begun in the first phase of IEF work to date. At least three more years are required to institutionalize the program; after that, more time should be available to replicate IEF's model throughout Malawi and in other countries.

II. BACKGROUND

A. Description of This Evaluation

The MSH evaluation team was briefed in Washington, D.C., by Jack Swartwood, MPH, the IEF Administrative Director. In Malawi in February, 1984, the team spent nine days in Lilongwe and five days in Blantyre and southern Malawi (see itinerary, Appendix A.) In Lilongwe, the team worked with Teffera Tizazu, M.D., the IEF Project Director, and met with officials from the Malawi Ministry of Health, members of the staff at Kamuzu General Hospital, and representatives of both international and private sector health organizations. (The names and locations of all those contacted during the field visit are listed in Appendix B). In Blantyre they worked with IEF's Assistant Project Director, Larry Schwab, MD, and interviewed many eye care workers trained in the Malawi Blindness Prevention Program. They made several visits to the Queen Elizabeth II Central Hospital in Blantyre and visited the Chikwawa District Hospital. For two days they interviewed eye-care workers and Ophthalmic Medical Assistants (OMAs) at the community health posts in the Southern region of Malawi (including the Lower Shire River Valley). The team was unable to visit as many health posts as planned in the Shire Valley because of heavy rains and muddy roads. They did meet with many OMAs, Registered and Ophthalmic Nurses, and other support staff who had assisted in the IEF Shire survey.

B. The International Eye Foundation

The International Eye Foundation (IEF) is a private, non-profit, humanitarian assistance organization which supports the prevention and cure of blindness throughout the world. The IEF was incorporated in the District of Columbia in 1969 as a tax-exempt organization and is headquartered in Bethesda, Maryland. All activities are centralized for policy formulation, program development, financial management, fund raising and publicity, identifying and placing volunteers, and collaborating with other organizations and agencies. All field staff are responsible (and report directly) to IEF headquarters, including those IEF programs fully integrated into the Ministry of Health program in a given country.

IEF began 20 years ago placing volunteer ophthalmologists in host countries to do corneal transplants. Its role expanded with the development of the Kenya Rural Blindness Project (1974-1983) and projects in Grenada, Honduras, Egypt, and Saudi Arabia. IEF usually provides short-term support to ophthalmologists who provide surgical and medical training at the tertiary and secondary levels. Except in Kenya, IEF has not employed either interdisciplinary or administrative staff overseas; it maintains a minimum of bureaucratic infrastructure between central and field personnel.

Other activities of the IEF have taken the form of country and region specific blindness prevention and treatment programs linked closely to teaching and training of host-country national health workers--including primary health care workers, paramedical per-

sonnel such as dressers and clinical officers, community and public health nurses, general physicians, and ophthalmologists. Recipient countries have been assisted to develop and implement eye health care interventions which have been integrated into the general health care delivery systems of the host governments. Curricula, training manuals, and health education aids have been developed and distributed by IEF.

C. The IEF Matching Grant

In February 1981, AID approved a matching grant (MG) to IEF to implement Primary Eye Care Delivery and Training Programs in Honduras, Haiti, Guinea, Malawi, and Egypt, all of which have an annual per capita income of less than \$250. The rate of blindness estimated by WHO in these areas averages 1.5%. AID committed \$300,000 over a 3-year period to match the IEF contribution of \$300,000. In addition to the five country programs, regional training centers were planned in Puerto Rico for the Central America/Caribbean region in the Ivory Coast for the West African region, and in Malawi for Africa's southern region.

The overall goal of the IEF program, which began in July 1981, was to reduce curable and preventable blindness. Its purpose was to "establish an institutionalized capability for prevention and treatment of blindness and eye disease in selected LDCs." Specific IEF programs vary from country to country.¹ However, the matching grant proposal stresses four functional areas of activity: (1) planning surveys and programs, (2) training primary, secondary, and tertiary eye care personnel, (3) training trainers of primary health care personnel, and (4) design of physical infrastructure for primary eye care.

The Matching Grant's logical framework contained the following outputs and output indicators for the five country programs and the two regional training centers:

OUTPUTS	OUTPUT INDICATORS
1. Low-cost blindness prevention and primary eye care programs planned and designed.	1. Low-cost programs planned and designed with Ministries of Health in three LDCs.*
2. Assessments of availability of resources completed.	2. Availability of resources assessed in three LDCs.*
3. Skills of personnel delivering primary eye care as well as providers of care on secondary and tertiary level upgraded.	3. Skills of primary eye care providers as well as health personnel in secondary and tertiary levels upgraded in five LDCs.*
4. Advanced training for supervisory and referral personnel.	4. 15 Training Fellowships provided per year for supervisory and referral skills for personnel.

OUTPUTS (Con't)

5. Blindness prevention and health education materials developed, adapted, and distributed.
6. Trainers of primary health care workers trained to deliver courses in primary eye health care.
7. Primary eye care infrastructures designed or developed to which primary health care may be added.
8. Patients provided preventive, curative, and educational eye care services.

OUTPUT INDICATORS (Con't)

5. Six countries provided primary eye health care and educational materials in appropriate form and language.*
6. Trainers of primary health care workers trained in six countries to deliver courses in primary eye health care.*
7. Two primary eye care infrastructures designed in two countries to which primary health care may be added.*
8. Approximately 162,000 outpatients provided eye care services and sight-saving operations.*

* Includes Malawi

D. IEF Program in Malawi

IEF plans for Malawi evolved after the program was established. In its 1981 MG proposal, IEF's original plan for Malawi was to provide one ophthalmologist to do three main activities cited in the log frame:

- Work with MOH, mobile teams, and clinical officers;
- Develop and adapt educational materials for local village use;
- Work with MOH on prevention of blindness plan.

The beneficiaries of the program would be 162,000 patients of the Clinical Officers trained by IEF and 500 patients whose sight was saved. The proposal suggested that four questions should be asked to evaluate the success of the program:

- Did IEF assist the MOH in upgrading the primary eye care (PEC) skills of 12 Clinical Officers?
- Did IEF train primary health care instructors in PEC?
- Did IEF develop education materials?
- Did IEF formulate a blindness prevention plan for MOH?

A year later, when a second IEF ophthalmologist had been sent to Malawi, eye disease surveys were added to the list of IEF activities.

In 1983, IEF's annual report stated that the Malawi program had three main purposes: 2

- provide eye health care delivery and training in the central hospitals;
- train OMAs to provide preventive and curative services in the rural areas;
- supervise activities of eye care workers at all levels throughout the country.

IEF's 1981 agreement with the Government of Malawi (GOM) specified that it would assist the Ministry of Health in implementing a country-wide program to decrease the high incidence and prevalence of blindness with five key strategies. IEF would:

- second to the GOM a full-time ophthalmologist for three years (later expanded to two ophthalmologists) to be paid by IEF;
- supply administrative, technical, and professional support to the project... including on-site consultation and assistance on a regular basis;
- assist in obtaining diagnostic and therapeutic equipment and supplies;
- assist in long-range planning for further blindness prevention and treatment...emphasizing preventive activities...through village health worker training, support, and supervision;
- establish an intra-country ophthalmic training center for the health care workers (in southern Africa).³

E. Relevant AID/USAID Policies

AID's health sector strategy is to assist developing countries to use primary health care to reduce mortality among infants and children under five years of age, and reduce disease and disability in infants and children, women of reproductive age, and other members of the labor force. The rationale for this strategy is to help those groups identified epidemiologically as at high risk and to enhance productivity and overall economic development. AID PVO policy is to support PVOs "of recognized standing with discreet programs in high-priority sectors" and to give such PVOs independence and flexibility in project design.

USAID in Malawi is not heavily involved in health, but recently it has begun to emphasize family planning in its plans. The CDSS for FY '85 anticipates a "combined health and population project" emphasizing the "training of medical and paramedical

personnel in improved primary health care techniques and in the use of contraceptive devices." It also mentions a possible pharmaceutical project. There is no other reference to health, and no mention of blindness prevention.

F. Program Environment in Malawi

1. Physical Setting

Malawi is a landlocked country in south-east Africa with an estimated population of about seven million people. It is a relatively long and narrow country (900 km by 80-160 km) divided into three ecological zones: Lakeshore, Lower Shire, and the rest of the country (see Map, Appendix C). Altitude ranges from 500 meters above sea level in the Shire Valley to 3,000 meters in Mulanje Mountain, resulting in a wide variety of climatic, vegetation and ecological conditions. A fifth of Malawi's 46,000 square mile area is taken up by Lake Malawi and other lakes. Malawi is bordered by Tanzania, Mozambique, and Zambia. It has heavy rainfall from December to March (which restricted the movements of the IEF staff and this evaluation team) and a dry season May to October, both seasons arriving later in the north than the south. Temperatures are highest where the altitude is lowest--particularly in the Lower Shire Valley.

2. Political, Economic and Cultural Profile⁴

Since its independence from Britain in 1964, the Republic of Malawi (formerly Nyasaland) has had a stable, highly centralized parliamentary government under the control of the Life President, Dr. Hastings Kamuzu Banda. The Malawi Congress Party, the sole political party in Malawi, has a dynamic structure from the national to the grass-roots level. At the village level, party officials participate in development committees that present the collective desires of villages to GOM officials. USAID reports that corruption among politicians and civil servants has traditionally been rare. Malawi is one of Africa's most market-oriented capitalist countries.

Malawi is a least developed country: per capita income is between \$180 and \$230. Only 35% of school age children attend school, and adult literacy (25%) is lower than the average for developing countries. It has a predominately agrarian economy, with a favorable climate and moderately fertile soils. It exports coffee, tobacco and tea, most of which is grown on private estates. Malawi's export economy performed relatively well compared to most African countries until the late 1970's. Recent declines in sugar prices and U.S. sugar purchases, poor rainfall, and major transport problems through Mozambique have adversely affected Malawi's economy.

Nevertheless, in February 1984 the GOM was discussing exporting grain to both Mozambique and South Africa, while much of western and southern Africa suffered severe drought and food shortages. Since 1970, Malawi has failed to be self sufficient in food only three years (because of drought). Currently, however, there are areas within Malawi suffering from drought, food and water shortages and malnutrition.

However, Malawi faces fewer social problems than most southern African countries. There are nine major language groups, although most people speak Chichewa. While ethnic and regional differences do exist, they have not been disruptive factors within the society. Malawi's tribes are sufficiently alike in culture and social organization to permit relatively easy interaction, including intermarriage, mixing in agricultural settlements and mixed groupings for political purposes. The population includes Christians (75%) and Moslems (20%), and is 90% rural.

3. Demographic and Epidemiological Profile⁴

The largest obstacle to development in Malawi, and an important issue in health services planning, is the continued rapid expansion of population.⁵ Malawi's annual population growth rate (variously estimated between 2.6% and 3.3%) ranks among the highest in the world and its population density (176 persons per square mile in 1982) is one of the highest in Africa. The fertility rate in Malawi averages seven births per woman.

Infant mortality is higher in Malawi than any other country in Eastern or Southern Africa. The leading causes of mortality among hospital patients are respiratory infections, measles, diarrheal disease, and malaria. Demands for outpatient therapy for malaria, measles, complications of pregnancy and birth, respiratory infections and eye disease are consistently high.

Preventable and curable blindness is an important public health problem in Malawi.⁶ National prevalence estimates of the blind range from 0.7% to 1.0%, about 50,000 people. Approximately 44% is attributed to cataract, 16-17% to infection and trachoma, and 14% to glaucoma. Degenerative disease ranks low, as does onchocerciasis (under 1%). Many cases are treated with traditional medicines prior to presentation. While xerophthalmia has not been directly identified as a major cause of blindness among children, corneal lesions in childhood have been observed to closely resemble keratomalacia, usually occurring among malnourished children after measles. Measles-related blindness has been documented in Africa,⁷ but its association with Vitamin A deficiency has only begun to be explored.

4. GOM Health Policies and Programs

Health services organized under the Fifteen Year Health Plan (1973-1988) centered on the construction of basic facilities, including primary health centers and health sub-centers to supplement district and other hospitals. The Health Plan designated 24 health districts, with a hospital complemented by various peripheral rural units. (The anticipated health infrastructural scheme is shown in

Appendix D.) The Health Plan emphasizes preventive medicine focused on the rural majority through increased promotive and preventive activity and early referral or treatment at the village level through the development and expansion of Primary Health Care through Primary Health Care Worker (PHCW) training. (For a description of the development of PHC in Malawi, see Appendix E.)

President Banda is a US-trained physician who takes some pride in government hospitals. He has donated money to Malawi's two central hospitals, one of which is named after him, and he visits the eye ward at QECH annually. His government has shown little interest, however, in increasing annual health budgets despite the growing needs of the rapidly expanding population. MOH expenditures, according to GOM reports, are declining "while the number of people using health services is increasing."⁸ About 63% of the MOH budget is spent on hospitals.⁹

The low level of GOM funding for health, and inflexible ceilings on government salaries for health workers have created a major economic disincentive to qualified Malawians who are considering health careers in Malawi. Salary scales far lower than those to be earned abroad have discouraged medical graduates from returning to Malawi. Not one Malawian ophthalmologist has returned from training overseas since the mid-1970s, and only two have returned since independence in 1964.

5. National Blindness Prevention Program (BPP)¹⁰

From 1964 to 1970, successive Israeli ophthalmologists were posted to the QECH in Blantyre. They developed a hospital-based eye service, started mobile clinics, and trained Ophthalmic Medical Assistants (OMAs). In 1970, a Malawian physician completed ophthalmologic training in Israel and returned to Blantyre. In 1974, a second physician completed training in Australia. Several OMAs were trained annually in the 70s, and by 1981, 27 had completed training in out-patient ophthalmology. Two were qualified to perform cataract surgery in the central hospitals.

In 1979, the Malawi Council for the Handicapped and the MOH founded the Prevention of Blindness Committee to coordinate all blindness treatment and prevention activities. The BPP Committee is presently chaired by M.C. Chirambo, M.D., Chief Medical Officer in the MOH. It includes J. Bello, the other Malawian ophthalmologist; Drs. Tizazu and Schwab, IEF ophthalmologists; and Dr. C. Quarcoopone, WHO Advisor in Blindness Prevention. The program is implementing improvement in outpatient eye care and cataract surgery, onchocerciasis and xerophthalmia prevention. There are inpatient and outpatient services at the two referral hospitals in Lilongwe and Blantyre. In addition, there are OMAs stationed at district hospitals throughout the country.

Public awareness of the importance of blindness is high: opinion surveys indicate that eye diseases rank third or fourth as a health concern (with malaria, measles, and diarrhea). Public opinion has been largely accepting of a range of non-physicians

providing health care, including surgery. Moreover, the appointment in 1982 of the ophthalmologist who had played a central role in building the eye care program as Chief Medical Officer in the MOH has proven to be a great asset to blindness prevention.

OMAs posted to district hospitals have provided a range of curative services, accompanying other outreach teams on visits to peripheral health stations, treating patients, and giving practical on-the-spot training to health workers. Enrolled Nurses and Maternal and Child Health Assistants currently promote some preventive care including eye prophylaxis at birth, promotion of breast feeding and proper weaning habits, hygiene, immunization against measles, and early self-referral for eye disorders.

Despite having one of the most organized blindness prevention programs in eastern and southern Africa (second to Kenya), Malawi faced serious obstacles in building eye care services. Before the arrival of the two IEF ophthalmologists, there were only two government ophthalmologists plus one other at a mission hospital. One government ophthalmologist, Dr. Chirambo, was unable to provide eye care because of his other duties. The other, Dr. Bello, at the Kamazu Central Hospital, Lilongwe, was involved in many international conferences and a private optical business, and was unable to devote full time to providing specialist services needed at the hospital or to conducting training courses in eye health care. Moreover, he was not trained in public health ophthalmology.

Although the OMA system is central to ophthalmic work in Malawi, it has had major problems in training and administration. Before 1982, The OMA supervision system was weak, inservice training was poor, no new OMAs were being trained, and morale was low. Before the latest OMA training program by IEF in 1983, most OMAs had been trained before 1972. Only five had been trained between 1972 and 1977, and this training had been done without a consistent curriculum.¹¹

Ophthalmic Medical Assistants serving at peripheral health stations work under severe restrictions--inadequate supplies of drugs and equipment, lack of transport for outreach activities, and poor facilities.¹² Before IEF began its program, OMAs complained about a serious lack of direction in their priorities and activities, and a lack of regularly scheduled clinics and surgery with their supervising ophthalmologist present to provide refresher training and quality assurance. A recurrent concern of OMAs and other health workers before 1981 was the large number of patients presenting with loss of vision due to cataracts.¹³ At that time no intraocular surgery was performed outside the two central hospitals and Nkhoma Mission Hospital by Dr. Blignaut, the missionary ophthalmologist.

G. Development of the IEF Program

IEF's program in Malawi grew in part from its Kenya Project (1972 to 1983) and in part from the Prevention of Blindness seminars held in Mali and Malawi in 1980 (co-sponsored by WHO and IEF). A WHO sponsored 1981 study of Malawi's program by Dr. Robert Meaders, IEF Medical Director, also contributed to IEF's program development. This report found that "current eye health care resources are inadequate to provide curative services for the backlog of curable blind, afford speciality care for new cases of blinding eye disease, and mount a meaningful effort in the prevention and treatment of eye disease and blindness at all levels." The major reason for these shortcomings, in Dr. Meader's view, was the lack of proper training and management of eye care specialists, particularly OMA's.¹⁴

After submitting his report to WHO, Dr. Meaders recruited Dr. Teferra Tizazu, a Swedish ophthalmologist born in Ethiopia with experience in Sudan and Ethiopia, to work in Malawi for three years. Meeting in Kenya, they discussed the need for expatriate assistance and the general plans for the blindness prevention program in Malawi.

III. PROGRAM ACTIVITIES AND RESULTS

A. Summary of Activities

Dr. Tizazu accepted the position of Project Director and arrived in Blantyre in October 1981. When additional MG funds (from Haiti) became available to the Malawi program in 1982, a second IEF ophthalmologist, Dr. Schwab, who had worked for four years with IEF in Kenya, and two years with IEF in Ethiopia, arrived in Blantyre in January, 1983. Dr. Tizazu was transferred to Lilongwe in April 1983. IEF activities in Malawi fell under three headings: (1) delivery of tertiary, secondary, and primary eye care, (2) training new and existing OMA's, and (3) the lower Lower Shire Valley survey.

B. Inputs

IEF did not specify either the inputs or outputs planned for the Malawi MG program. The host government agreement states that IEF would "approach various sources for funding...recruit, orient, and assign the project ophthalmologists...supply administrative, technical, and professional support from the Foundation headquarters to the project, including on-site consultation, and assistance on a regular basis; assist in obtaining diagnostic and therapeutic equipment and supplies...assist in long-range planning...and provide transportation expenses." The MOH agreed to provide housing, office space, support personnel, and local travel expenses for the IEF ophthalmologists. Actual expenditures in US Dollars for each fiscal year, excluding GOM and in-kind contributions, are estimated as follows (see Appendix F for detailed expenditures):

<u>FY</u>	<u>AID</u>	<u>IEF</u>	<u>Total</u>
1981-82	21,656	25,461	47,117
1982-83	85,840	94,972	180,812
1983-84 (1/2)	51,418	53,988	<u>105,406</u>

Total Expenditures: \$333,335

In addition, IEF's Shire Valley survey received a grant of \$15,000 from WHO in 1983, and headquarters expenses for Malawi (over 1/7 of total headquarters expenses) are at least \$15,000 per year. The total cost of the Malawi program, therefore, was approximately \$363,335.

The two full-time IEF ophthalmologists were seconded to the GOM, one from November 1981, the other from January 1983. Dr. Meaders visited Malawi twice before the MG program; Mr. Swartwood made two visits, staying for three months in 1983 to manage the Shire survey. Support for the program (one of seven country programs funded by the MG), is provided at IEF's home office.

IEF also provided inputs of material and technological resources. A variety of ophthalmologic supplies and equipment, particularly surgical kits worth a total of \$69,462, have been donated.

C. Interagency Relations

1. Public Sector

The IEF/Malawi staff have become the backbone of Malawi's BPP; without them the government's training and eye care activity would revert back to its earlier disorganized state. IEF's essential role is understood and appreciated by the GOM, including the President of Malawi, the Minister of Health, the Chief Medical Officer, and most senior MOH officials. Both IEF ophthalmologists are active members of the BPP Committee which is strongly supported by the MOH, and are active in other GOM organizations and activities.

2. Private Sector

The many contributions to the IEF program by private organizations since 1981 are an indication of the widespread support for the program in the private sector.¹⁵

D. Outputs by Component

In just over two years of activity in Malawi, the two IEF ophthalmologists have achieved three major types of outputs: (1) They reorganized, supervised, and strengthened hospital eye care services; (2) they provided inservice training to eye care workers, and trained twelve new OMAs from Malawi and ten eye care specialists from other countries; and (3) they surveyed 7,000 people in the Shire Valley. These outputs are summarized in this section.

1. Improved Eye Care Services

The case load of ophthalmic surgical procedures performed at Queen Elizabeth Central Hospital (QECH) had declined about 50% between the early '70s (when Israeli ophthalmologists provided training and surgery) and 1981 (see Appendix H) before Dr. Tizazu's arrival. In 1982, Dr. Tizazu organized the eye ward, eye care staff, duty schedules, drug equipment and inventory and record systems, and began to strengthen the referral chain from the rural to central services.

During 1982, while Dr. Tizazu was reorganizing the QECH system, the annual surgical caseload declined to less than 800. However, in the following year, Drs. Schwab and Tizazu worked together for three months before Dr. Tizazu moved to Lilongwe; surgical output increased by almost 30% to over 1000 operations in 1983. This increased output appeared to reflect Dr. Tizazu's and Dr. Schwab's effectiveness in reorganizing the QECH services. Similar data on the number of operations performed in Kamuzu Central Hospital in 1981 and 1983 were unavailable, but it was evident that Dr. Tizazu's support had brought a definite improvement in hospital productivity since his arrival there one year earlier.¹⁶

In addition to improving eye ward operations, the IEF staff has improved eye care in other hospital wards. The new system provides eye care consultant services in general medicine, pediatrics, measles, leprosy, burn, and other wards. While initially concentrating on reorganizing the two central hospitals, IEF staff was also concerned with improving the five district hospitals in the Central Region and the six hospitals in the Southern Region.¹⁷

2. OMA Training and Support

IEF's reorganization of the eye care system in 1982 in Blantyre, and in 1983 in Lilongwe, involved increasing the supervision and support of 35 OMAs based in the Central and Southern District hospitals and at several health centers.¹⁸ Improving the quality of the referral chain (from rural health posts or sub-centers to health centers to the eleven district hospitals to the two central hospitals) was essential to increasing the quantity of services provided at all levels. The first step in this process was to improve the capabilities of OMAs.

IEF also provided eye health lecture and clinical training for general medical assistants (not to become OMAs) and nurses. All classes of both cadres at the two central hospitals receive a basic ten lecture course, and all rotate for in-service training for two weeks in the eye ward.

3. International Ophthalmic Assistant Training Course

Another major IEF output of the past two years was the nine month course for 22 eye care workers held in Lilongwe and Blantyre from April to December 1983. Participants came from Malawi (12), Botswana (2), Lesotho (2), Swaziland (2), Zambia (2), and Zimbabwe (2). Four of the ten foreign trainees and seven of the 12 Malawians were male. The course was organized under MOH auspices, held primarily at the Lilongwe School for Health Sciences. It included clinical training of all trainees at both central hospitals and field work by several trainees in the Shire Valley survey.¹⁹

The course was led by Dr. Tizazu and his staff at Kamuzu Central Hospital, who found it very difficult to carry the normal, continuing heavy clinical schedule while training.²⁰

Other difficulties of the 1983 course were these:

- the Lilongwe hospital is understaffed; qualified ward or theatre (OR) nurses were unavailable for training;
- there were too few patients in Lilongwe for observation;
- poor morale among trainees because of poor food and lodging in Lilongwe;
- the program lacked any library, reference (or personal) books, ophthalmic equipment (ophthalmic diagnostic kits

were not distributed to trainees until after the end of the course);

- planning and priorities were unclear (why two sites, why regional, why were those subjects selected, etc.?)
- no one in IEF or involved in the course will be involved in follow-up (a UN advisor who had nothing to do with it will do a follow-up study in the region in mid-1984.)
- the course book and trainer's manual, which would help in future courses, have not yet been published.

Nonetheless, a very dedicated staff (especially at QECH) is committed to improving training courses in future, and a curriculum has been developed.

4. Shire Valley Survey

A major output of the program has been the ophthalmic survey of the Lower Shire Valley which IEF initiated and led in late 1983. Plans for the survey were drawn up by Mr. Swartwood, both in Malawi and at IEF headquarters and by the two IEF/Malawi staff members, with assistance from Johns Hopkins University's Wilmer Center for Preventive Ophthalmology and Helen Keller International. This survey was in addition and an appropriate complement to the original IEF agreement with the GOM. The logistical details, including sending Mr. Swartwood for three months to direct the field operations, were worked out by telephone.

The goals of the survey were to do "an intensive, intervention-oriented assessment of blindness in the region which identifies the major causes of blindness by age, determines the importance of infection...nutrition...environmental and cultural factors ... and identifies community resources" for blindness prevention in the region. The data, among the most recent and important studies of its kind in Africa, has been analyzed at Johns Hopkins in Baltimore.²¹

5. Program Impact

The long term goal of the IEF/Malawi Matching Grant program and BPP is reduction of the prevalence of preventable and curable blindness. The impact of this program has not been documented, but it can eventually be documented by longitudinal prevalence surveys which record blindness like the Shire Valley survey.²²

The 12 new OMAS in Malawi have not had any impact on blindness prevalence because they are not yet posted to their jobs. In short, current impact measures are not available, and no system is yet in place to measure future impact.²³

IV. ANALYSIS OF RESULTS

A. Summary of Results

The IEF program has improved eye care services in thirteen central and district hospitals by improving in-service training and support of nearly 30 OMAs in the Central and Southern Regions of Malawi. In addition, IEF participated in the new international OMA training program and the Shire survey. These activities should eventually improve the quality of eye care as well as increase the number of patients seen, treated and referred by the system. But since the IEF program has been fully operative for only 18 months, the improved referral system has not yet shown an increase in the number of eye patients. The IEF logical framework for its Matching Grant contains eight outputs, all of which apply to the Malawi program, and all of which were to be verified by an independent evaluation. This evaluation found that most of those outputs had been accomplished, as follows:

Output Indicators (Malawi)

1. Low-cost programs planned and designed with MOH
2. Availability of resources assessed.
3. Skills of primary eye care providers as well as health personnel in secondary and tertiary levels upgraded.
4. Training Fellowships provided.
5. Primary eye health care and educational materials in appropriate form and language.

Results

1. Blindness prevention program has been improved by IEF, but had already been designed before IEF program started.
2. Completed.
3. Many MOH health personnel in central and southern districts have been upgraded; few in north. Some TBAs in south upgraded. Two OMAs trained to do intra-ocular surgery.
4. Eight of 22 trainees in international course provided training, equipment, and course materials. Two OMAs studying preventive ophthalmology in London (RCSB).
5. Radio programs and newspaper articles produced by IEF. (No other educational materials yet produced in local languages by IEF.)

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| <p>6. Trainers of PHC workers trained to deliver courses in primary eye care.</p> <p>7. Primary eye care infrastructures designed to which PHC can be added.</p> <p>8. 162,000 out-patients seen and 500 sight-saving operations performed by OMAs directly supervised by IEF staff at 2 central hospitals in 3 years.</p> | <p>6. Not attempted because PHC program very small and just beginning, did not want eye component yet.</p> <p>7. Design process is under way (but infrastructure will eventually be integrated into PHC, not the reverse).</p> <p>8. Over 180,000 out-patients seen and 3,000 operations estimated at the two central hospitals in 3 years.²⁴</p> |
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In fact the total number of eye operations performed was probably much higher but was not recorded accurately. Dr. Schwab estimates that over 3,000 operations were done in the southern region alone in the three years. The number of sight-saving and sight-restoring operations is recorded in IEF logs but could not be obtained by the evaluators and are not reported by IEF to AID.

B. Planning and Design

IEF planning in Malawi was based partially on the organization's experience in Kenya and on Dr. Meader's brief study of Malawi for WHO in 1981. No short-term or long-term program plans were drawn up. No baseline data (such as tabulations of previous surgical or OMA activity levels) were collected to help staff prioritize and schedule their activities. No written job descriptions for IEF field staff were provided or requested by the home office, although they were required by the GOM. IEF apparently assumed on the basis of previous experiences in other countries that it could best assist Malawi in a three year program by concentrating on improving eye care services from top down, first at the central and district hospital level, and second by training more OMAs.

This approach allowed efficient use of clinicians recruited to the program and gave the program credibility. It could be considered the first phase of a plan to develop secondary and primary eye care to a capacity well beyond what had been done before. However, no detailed planning was done to implement a long range approach. Instead the planning of the principal IEF program outputs was done on an ad hoc basis. It depended on the interests, experience and abilities of the IEF ophthalmologists in the field, both of whom were primarily clinicians, not planners. The following planning activities, many of which required GOM action but could have been suggested by IEF, were apparently not pursued prior to this evaluation:

- written schedules for producing program outputs;
- projections of manpower needs for future training programs;

- plans for covering recurrent costs of new OMAs;
- planning for replacement or contract renewal for Drs. Tizazu and Schwab;
- selection of non-medical program administrators;
- budget formulation and review with field staff;
- selection of Malawian counterparts to understudy IEF staff.

C. Program Management and Staffing

1. Field Offices

Both IEF ophthalmologists are competent, experienced, and dedicated. They have good relationships with top government officials, co-workers, patients, and importantly, with each other. IEF's selection of Dr. Tizazu and Dr. Schwab is commendable; they will be difficult to replace when they leave Malawi.

The management problems they each face in their positions have to do with the difficulties inherent in the GOM health system (see "Host Government Role" below), not with their own competence. For example, problems were encountered in training the 22 OMAs in Lilongwe (while simultaneously managing eye care programs throughout all the central and southern districts), but these could not have been prevented by IEF given current manpower shortages and intractable policy problems within the MOH. The IEF field staff are also concerned about the program's lack of direction. But they are so immersed in their heavy daily workload that longer term planning is difficult.

IEF did not hire an administrative assistant in Malawi. The two IEF ophthalmologists, in addition to their clinical schedules, were required to do a variety of non-medical tasks which could and should have been done by administrative staff. These tasks ranged from the more important and difficult, such as designing improvements in the BPP reporting system and analysing monthly data, to the mundane (picking up shipments at the airport.) Having no one to whom they could delegate any non-medical responsibilities, Dr. Tizazu and Dr. Schwab faced even greater difficulty in finding the time for activities outside the central hospitals.

2. Home Office

The IEF home office was largely responsible for the program's lack of specific objectives, priorities, plans, outputs, and job descriptions. It made few attempts to share financial information or staffing plans with field staff, who should play an equal if not primary role in program budgeting and planning.

Insufficient home office support was also evident in the lack of in-depth visits by home staff to the field. About one visit was paid each year, lasting a week at most. Little was done at the home office to coordinate program activities with other international donors. Quarterly reports to AID were generally superficial and repetitious.

3. Host Government Role

The GOM is unusual in Africa in that the MOH has supported ophthalmic care extenders since the late 1960s when Israeli ophthalmologists, posted at QECH, trained OMAs. The appointment of Dr. Chirambo as CMO has guaranteed continued interest in the BPP in the MOH. Regular BPP Committee meetings are under his competent and enthusiastic leadership at the MOH. Eye infections are continually included among the MOH's (and the people's) perceived needs for medical care. Simple eye care is included in nascent PHC plans. Malawi has successfully supported a training program for OMAs from Swaziland, Zambia, Botswana, Lesotho and Zimbabwe. No other country in Southern or Central Africa has an eye care system which is as developed or which could serve as a regional model. Nonetheless, the GOM has occasionally failed to coordinate all eye care related activities with the IEF staff as it should.²⁵

4. AID/USAID Relations

IEF headquarters staff have met at least annually with the AID mission Director in Lilongwe and have kept him informed about the program. Written reports to IEF headquarters from IEF/Malawi forwarded to AID/Washington, however, have been superficial, lacking data on outputs and plans. USAID/Malawi has little interest in IEF activities, plans or documents, and no formal contact with IEF field staff. Both USAID and IEF prefer that mutual independence.

USAID insists that it cannot spend time to monitor centrally-funded MG programs. (USAID's Congressional Presentation for Malawi mentions PVO programs with AID funding for the first time in FY '85),

5. Monitoring and Evaluation

The IEF program is monitored externally primarily by telephone with the IEF headquarters staff. The IEF Administrative Director visited the project twice in the three years; the IEF Medical Director did not visit since project inception. A "Project Reporting Format" (Appendix I) was provided to IEF field staff, but it has not produced information which can be used by IEF headquarters to measure outputs, costs and benefits, or to plan manage, and evaluate the Malawi program, or compare its costs and benefits to IEF programs in other countries. The result has been that IEF's reports to AID, both quarterly and annually, have very little specific information about the program's activities, outputs, constraints, impact or plans.

The BPP program Committee, in which IEF plays an important but not leading role, has regular meetings chaired by Dr. Chirambo. The minutes of this group provide a minimal longitudinal review of

program developments. The committee has not conducted any evaluations. Monthly reports of patients seen, operated, admitted and referred by OMAs are submitted by each OMA to his District Medical Office with copies of the MOH. These reports are not reviewed by the Committee for accuracy, completeness, consistency or performance. However, the IEF doctors discuss the reports with the OMAs with whom they work.

Monitoring the BPP is the responsibility of the MOH, not IEF. However, IEF staff have been concerned about the inaccuracy of BPP records. IEF's presence in Malawi since 1982 has resulted in some improvements in the scheduling of OMA work in the districts; the OMAs in the central and southern districts were being monitored and supervised by the IEF ophthalmologists in early 1984. Unfortunately, this monitoring appeared to be largely dependent on the personal involvement of those two expatriates; in their absence, no Malawians were likely to take over monitoring responsibilities.

Even with IEF's assistance, the Malawi BPP did not utilize what limited data it collected to monitor program activities, outputs, or inputs, or to plan program improvements.

D. Environmental Constraints

A number of problems limit the progress of the IEF program toward its goal of preventing and curing blindness; many of them are beyond IEF's influence, given its small staff, limited funding, and dependence on the MOH. Some of these problems have already been mentioned: national economic and political difficulties, limited progress in the PHC program, etc. All these have helped to slow down IEF's effort to improve surgical services in the central hospitals while grafting a viable preventive eye care program into national PHC activities.

Some MOH policies which slow IEF's progress, however, are not entirely outside IEF's influence, and may offer opportunities for IEF action in future. These include the MOH's reluctance to give IEF staff a major policy and planning role in the BPP, and to provide Malawian counterparts, both medical (OMAs) and non-medical (administrators, data analysts, etc.) to work with IEF staff and learn their skills.

E. Financial Constraints

Given the priorities identified and activities undertaken by IEF/Malawi in the last two years, the program appears to have been funded adequately. By not undertaking any new program initiatives or innovations unforeseen in the original Matching Grant funding, IEF has been able to cover all program costs (salaries and benefits adequate to retain two highly qualified ophthalmologists, vehicles, etc.) The statement of expenditures from July 1, 1981 to Dec. 31, 1983 (Appendix F) shows total program costs of \$333,335. IEF

contributed about \$100,000 (plus donated medical supplies), while AID's contribution totalled \$170,616.

Despite purchases and donations of medical supplies, the IEF program is hampered by inadequate supplies of some drugs in some district hospitals with OMAs. IEF staff have made heroic efforts to obtain drugs from many sources, including nearly outdated or free samples of drugs donated from the USA, and IEF would like to receive additional funding for drugs and equipment in future.

A Mobile Eye Unit (MEU) which had operated in the Lower Shire using a Land Rover was closed in 1982 because costs had increased considerably for fuel and maintenance. Now several OMAs use motorcycles and incur far less expense. Additional motorcycles would improve the effectiveness and efficiency of other OMAs as well.

V. FINDINGS AND RECOMMENDATIONS

A. General Findings

Since 1981 the two IEF physicians have provided most of the eye care delivery and training at the central hospital level. They developed a new OMA training course and trained 12 new Malawian OMAs, provided in-service training to 25 other OMAs, and trained ten OMA equivalent personnel from other African countries. IEF also organized and ran Malawi's first major eye survey which will provide important baseline information for planning future interventions.

The work done by IEF in Malawi has been done well. It has been primarily curative: providing eye care and training others to provide eye care. The accomplishments of the IEF team fulfilled most of the output indicators in the overall Matching Grant proposal and nearly all the terms of reference set out in the IEF agreement with the GOM. The IEF program provided skilled clinical and training services within the context of MOH policy and ongoing BPP activities. IEF's contributions helped thousands of people in Malawi and other African countries.

Unfortunately, IEF was not involved in comprehensive long-term planning and policymaking for the BPP. Without such planning, and an MOH commitment to fund an expanded BPP, the BPP will require continued expatriate support for an indefinite period. No specific, long term plan exists for training ophthalmologists to work in Malawi, for training and supporting new OMAs, or for integrating primary eye care into PHC. The MOH has not clarified the steps which it, PHAM, AID, and other donors must take to increase support for OMAs, who are the key to blindness prevention and cure. Plans and strategies for improving the BPP are lacking, and a process for developing and implementing them is urgently needed despite three years of IEF assistance.

B. Special Issues

1. Spread Effects and Benefit Distribution

IEF and AID both seek to build health care services which will reach unserved and needy groups. Direct beneficiaries of the Malawi program are several thousand patients operated on annually and over 100,000 others in areas not served by the health system who benefit from eye care services. In several respects the IEF physicians are improving the quality and distribution of eye care services throughout the southern half of the country. IEF has increased by almost 50% the numbers of OMAs, and trained many OMAs to provide more and better care (although this improvement has not been measured yet.) The IEF ophthalmologists have provided clinical care themselves and trained eye care workers at all levels in managerial and technical skills. (At the same time IEF has strengthened eye care services in five other southern African nations with its international training course.)

In the long run, however, the current strategy of the BPP will not reach the majority of blind in Malawi. While many of the 30,000 curable blind (mostly with cataracts) are cured each year, the number not cured increases by an estimated 3% to 5% (900 to 1,500) annually. GOM has not tested new initiatives which might improve this output (education and screening for school children, mobile "cataract camps" as in Asia, mass media campaigns, etc.).

2. Institutionalization, Sustainability, and Replicability

Both IEF and AID attempt to build local institutions so that they can be sustained, expanded, and replicated with local resources and become less dependent on foreign aid. The Malawi BPP has been institutionalized into the MOH for ten years with expatriate assistance. If necessary, the GOM could sustain the BPP on a limited basis without foreign aid. OMAs could continue to provide eye care services at all three levels, including some surgery. The BPP has been well institutionalized because:

- it has strong support at the MOH;
- there is a functioning Blindness Prevention Program Committee;
- the Committee is chaired by a dynamic, respected ophthalmologist, Dr. Chirambo, the CMO, who is committed to supporting the BPP;
- eye problems are routinely listed by respondents to be one of the most common health problems after diarrhea, malaria, or respiratory disease;
- basic eye care is included in the MOH's primary health care programs;²⁶
- eye care by OMAs, including cataract surgery, is wanted and accepted by the populace.

However, continued expatriate support is important in the future. Without expatriate ophthalmologist supervision, OMAs will work without review of their outpatient work, without continued in-service training, and with little chance that more of them will be trained in intraocular surgery. Although an eye care program was institutionalized in Malawi before IEF's involvement, and could be sustained without IEF assistance, it is unlikely to maintain itself at its current level or grow without continued expatriate support.

The IEF program in Malawi is potentially expandable within Malawi and replicable in neighboring countries.²⁷ Inside Malawi the IEF staff have improved management of inpatient and outpatient clinical services at the two central hospitals; similar systems could be introduced at district and PHAM hospitals. Mobile outreach activities of OMAs have been developed in Southern and Central Malawi; these could be replicated in the north. The nine month OMA training program developed last year, and the continuing in-service training

of OMAs under IEF auspices could also be repeated in future in other parts of the country and in other countries.

3. Cost Effectiveness

The IEF/Malawi program raises the difficult question of how to cost-effectively concentrate limited eye care resources in Malawi. Dr. Meaders estimated that about 40% of blindness in Malawi is curable and about 30% is preventable (see Appendix J). It is generally agreed that some balance of curative and preventive services must be struck in the government's national program of eye care. There is little agreement, however, on whether it is more cost effective for IEF and AID funds to be used principally to test and promote primary eye care to prevent or treat eye problems before they progress, or to promote more costly inpatient care.

In Malawi IEF has initially devoted most of its resources to inpatient, curative care. The two IEF physicians were heavily scheduled to do eye surgery. The IEF staff did not record their time or expenses by type of activity, but it was evident that at least half of their time was spent in clinical or surgical work. Besides providing high quality curative care to thousands of people who have no other hope of regaining sight, this activity has the added benefit of in-service training for the two Malawian eye surgery teams (totalling about 12 professionals) at the two central hospitals. On the other hand, this strategy means that IEF staff did not have much time left to train OMAs in the districts to test village-based preventive programs. IEF staff also had little time to assist MOH officials in policy-making to improve the long-term prospects for the BPP.

It is difficult to quantify either the costs, the benefits or the cost effectiveness of the IEF approach in Malawi.²⁸ But it does appear that IEF staff might use their time more effectively in future by emphasizing managerial improvements in the BPP (better training, support, supervision, and referral) than by spending so much time doing surgery in the central hospitals. Perhaps additional non-physician staff, such as eye care trainers, health educators, or health planners, could play an important, cost effective role in the next program phase by performing many of these non-surgical tasks.

C. Recommendations

1. To IEF Field Staff

(a) Policy and Planning

During the next Matching Grant period, the IEF program should help the MOH to consolidate and institutionalize the BPP. Specifically, the BPP must:

- establish realistic, measurable, long-term objectives and action plans;

- develop the GOM's commitment (including financial support) to maintaining the BPP;
- develop long-term plans for eye care manpower development (training and budgetary support for Malawian ophthalmologists, OMAs, information specialists, and administrators);
- collaborate with the private sector by training missionary and other private doctors and paramedical staff in eye care;
- collaborate with the growing PHC program to ensure the future integration of eye care as the program develops;
- provide primary eye care education in schools and in the media;
- supervise hospital and OMA data collection for accuracy and completeness;
- develop a feedback system to support current OMAs based on their reports;
- plan to decrease its dependence on expatriate ophthalmologists;
- develop and evaluate mobile eye units (OMAs using motorbikes);
- provide eye care instructions to a greater number of nurses, MCH workers, TBAs and other paramedics;
- develop and evaluate the support system for OMAs in place;
- develop plans to utilize the Shire Valley survey data;
- evaluate the quality of care provided by OMAs at central, district, and mission hospital level;
- collating and printing teaching materials for OMA training.

Many of these outputs could be produced by IEF physicians working closely with Malawian counterparts, and could lead to a model program that could be used widely in Southern Africa. IEF and AID should require the MOH to make these counterparts available as a condition of their assistance.

To avoid a role of supplying surgical staff for the indefinite future, IEF should seek assurances from the GOM that it be allowed to manage the BPP, and that the GOM is committed to the financial support of OMAs. If such agreements cannot be made, IEF should carefully examine its priorities before continuing a program in Malawi. If such agreements can be made, there is an urgent need

for an experienced planner who can work closely with the BPP to develop medium range and long-range plans, using IEF's experiences to date as a pilot study.

This BPP Coordinator should devote full time to planning, managing, directing, and evaluating the BPP, and should also:

- develop ministry policies and financial support to strengthen the BPP;
- coordinate training in eye care at all levels, including overseas and in-country training of Malawian physicians, introductory and inservice training of OMAs, and training for non-eye health workers (see Training recommendations below);
- promote expansion of the BPP into the private sector by developing PHAM eye services, and training rural physicians and other health workers in eye care;
- improve the BPP information system and utilize data for planning and management;
- improve the drug acquisition and distribution system.

Either of the two current ophthalmologists might be capable of filling this BPP coordinator role provided he works closely with the MOH and is not sidetracked too often into clinical or purely administrative work. In addition or instead, a nonmedical public health administrator could be appointed to assist with administrative tasks such as data collection and analysis.

The long-term answer to the manpower and drug shortages in the MOH cannot be solved by IEF or AID donations which have the effect of masking the government's internal financial constraints. IEF's greatest contribution to solving shortages in the Malawi BPP would be to assist the program and the MOH in redefining its priorities, in developing new cost recovery methods, and improving both drug and manpower distribution in the districts. Increasing IEF donations of funds or drugs, without any inducement to the MOH to make needed reforms, will serve only to increase MOH dependence on AID.

(b) Policy and Planning Conference

To ensure GOM support, the Coordinator should organize a long-term planning conference of the BPP committee with appropriate officials from IEF, AID, the MOH, PHAM, and representative OMAs and other health workers. After reviewing the accomplishments and constraints of the BPP to date, they should review and revise the draft BPP plans and agree on such issues as measurable objectives; job descriptions; work schedules; manpower development plans; and human, financial, and technical resources to be provided by both the public and private sector in Malawi, IEF, AID, and other external donors.

BPP planning in some areas should be based on the results of the Shire Survey and an analysis of monthly reports from OMAs and hospitals. Of particular importance is development of private sector involvement in a nationwide BPP: private and mission hospital staff, private doctors, pharmacists, even midwives and traditional practitioners have been omitted from most BPP activity.

(c) Administrative Improvements

IEF should work with the MOH to encourage both short and long term changes in administrative procedures or activities which have for years been serious obstacles to improved eye care. These procedures include:

- ° low MOH support for non-hospital health services;
- ° opposition to charging fees for service;
- ° no provision of ophthalmologist counterparts to understudy the IEF staff and replace them after the program;
- ° transferring highly specialized and experienced eye care nurses to other wards;
- ° discouraging use of lower-cost, safer, and quicker local anesthesia in favor of total anesthesia;
- ° inadequate pay, supplies, and equipment for current health workers (and no plans to increase them for the growing OMA staff);
- ° lack of non-medical administrative and support staff for record-keeping and program monitoring (records are incomplete and not collated);
- ° lack of pay bonus, promotions, or other incentives to OMAs to reward hard work or increased responsibility.

(d) OMA Training

If a policy and planning role cannot be negotiated with the GOM, and if IEF wishes to continue its Malawi program, it could concentrate solely on training.

IEF has established a method for inservice training of OMAs and has inaugurated a promising international course as well. Both types of training need to grow in quality and quantity: more curriculum development is required, more students should be trained, and more training materials need to be developed and disseminated. WHO's evaluation of the nine month international OMA course indicated the need for major improvements. Future international training courses should be held in one location (preferably at QECH) in Blantyre where facilities and staff are better to avoid travel costs and delays. Smaller groups of five to eight carefully selected trainees (with higher academic standards and motivation levels)

would learn more than larger groups, given the nature of clinical eye care training. More hands-on clinical practice is needed with less lecturing and less theory. (Some trainees complained the course was dull.)

(e) OMA Course Administration

In future, IEF should be designated by the MOH to manage the OMA course and do the training. A senior health officer or administrator, not an ophthalmologist, should be designated as course administrator. Special training courses are urgently needed for OMAs to learn cataract extraction; this is now more feasible because of the posting of the twelve new OMAs in April 1984. The course lectures and written teaching aids should be compiled into a training manual which OMAs can use in training co-workers, to increase program replicability, sustainability, and spread effects.

(f) Designate Malawian Counterparts

As a part of inservice training, specific Malawian health workers should be designated as counterparts to understudy all IEF staff and replace them in the MOH and the hospitals as early as possible. Pressures should be brought to bear by IEF on the GOM to provide these counterparts--and to support overseas training opportunities for Malawian ophthalmologists to remedy the current shortage.

(g) Increased Collaboration

More communication and collaboration is needed between IEF and other health groups. There is no eye care representative on the important PHC Core Group which is monitoring the careful development of the new PHC program. Even at this early stage, IEF can work more closely with such MOH planners. Mass media programs (currently there is only occasional mention of eye care on the radio) could be tested, as recommended by Dr. Meaders in 1981. The BPP could test interventions with private doctors, pharmacists, even traditional healers (whose "medicines" cause prevalent eye problems) just as IEF has begun to experiment with TBAs.

The BPP's relationships with the private sector are minimal, even though PHAM provides 40% of the nation's health services. IEF should work as closely with PHAM as it does with MOH institutions; there appears to be no restriction in IEF's agreement limiting private sector activities.

(h) Improved Information System

Record keeping and data collection are unsatisfactory. The record keeping system should show clearly and regularly the utilization of the ophthalmic care facilities. It should show the effects of the increased number of OMAs and mobile eye services. In addition, tracking the numbers of completed referrals, estimates of cost effectiveness of surgery performed in district hospitals, and comparisons of OMA productivity (now widely varied) should be studied. Some data is so inconsistently reported that it should be restruc-

tured or dropped (e.g. numbers of blind, glasses distributed, numbers referred or admitted).²⁹

2. To IEF Headquarters

(a) Long-term Planning

IEF has successfully sought to economize by maintaining a small management staff at headquarters and no administrative staff in the field. However, primary responsibility lies with IEF headquarters for the lack of clear program direction in Malawi, including lack of measurable objectives and outputs, strategies, budgets, schedules, and job descriptions. Responsibility for planning the program, and monitoring and reporting its progress, could have been assigned to the field staff, but ultimately it was the responsibility of the home office management to see that it was done. IEF headquarters should begin the second three year MG by doing precise planning with IEF field staff and the MOH in Malawi, starting with the draft plans and the planning conference recommended above. This BPP planning process, involving all those who have a stake in implementing such a plan, could become a model for IEF programs elsewhere.

During this process IEF should develop realistic strategies and priorities for achieving its long-term objectives. IEF headquarters must decide many of the planning issues raised in this evaluation, for example:

- whether its ophthalmologists should continue to spend a large portion of time doing eye surgery;
- whether ministry level policy and planning, and BPP coordination, should become an IEF responsibility;
- whether IEF field staff should include non-medical public health planners or trainers;
- whether field staff should have administrative support to relieve them of non-medical tasks which can be delegated;
- whether field staff can effectively plan field operations without more back-up from headquarters.

Having decided such policy questions as these, IEF will be in a better position to design an effective strategy for the period 1985 to 1988 to help Malawi sustain its own BPP with less dependence on foreign manpower.

(b) Improved Management Information System

Once IEF has agreed on definite priorities expressed as scheduled outputs, it should report to USAID or to AID/FVA on these outputs every quarter. Careful data collection from OMAs, hospitals, the private sector, the PHC program, and other sectors affecting the progress of the BPP should be monitored by IEF in the field and reported to AID by IEF headquarters.

3. To AID

(a) Increased Support

IEF's program in Malawi has cost very little, and it has taught some important lessons. The program has just begun during its first MG period to lay the groundwork for building a self-reliant, sustainable BPP in Malawi. The program needs to be continued and expanded, particularly along some of the lines suggested in this report. Increased AID support for the program is important to reap the benefits of AID's initial investment and is strongly recommended.

(b) Planning and Design Requirements

The IEF program in Malawi would be more effective now, and should be more effective in the next three year phase, were AID to require country-specific plans for the Matching Grant program. Basic questions (should be asked of any PVO applying for a Matching Grant), and IEF is no exception.

The first question which IEF should have answered before undertaking the Malawi program relates to its goals and objectives. For example, had a major goal of IEF in Malawi been to improve the BPP, it should have devoted more staff time to policy-making in the MOH and less time to surgery. If the next phase of the program (1985-88) increases the emphasis on policy-making, who will take over the surgical load now carried by IEF? Has the MOH approved IEF plans? Will the MOH give IEF the authority to improve the BPP?

Similarly AID should have asked IEF questions related to the program's institutionalization and sustainability. A standard checklist of issues to be considered in design should be developed. For example, what will IEF do to train surgeons to take over after the program ends? What will the MOH do to support the increasing numbers of OMAs being trained by the IEF? Who will manage OMA training, OMA monthly records, integration of eye care into the PHC program, etc.? Will Malawian counterparts be selected to understudy IEF staff? Thinking out these answers will help in designing a program with lasting effects.

It is unfair for AID to require PVOs to submit detailed Matching Grant proposals for each country, particularly when the PVO, like IEF, has a very small staff at headquarters and no administrative field staff. IEF would not have been able to develop a detailed plan for Malawi until its first long term staff member had settled in, met with the MOH, and looked at MOH reports of eye care activity. AID should require that the first three or six months of the program be spent developing a detailed action plan, to be approved by AID before work continues.

(c) Monitoring Requirements

Once plans have been made which satisfy AID's design requirements and the program begins, someone within AID should monitor the program.³⁰ In Malawi, no USAID officer has visited any component of the IEF project to date. Changes in plans are inevitable, but it is important for an AID program officer to keep abreast of those changes, and to ask why the PVO is not doing what it had planned to do. As in the design and approval process, monitoring should be done with the aid of a checklist to remind the program officer of important issues.

Checklists for AID program design and monitoring will not require special health skills. They can be designed to take into account AID health, nutrition, and family planning policy as well as policies on PVOs, institutionalization, sustainability, community participation, etc. The monitoring process, moreover, does not need to be complex or lengthy. It would consist primarily of checking the quarterly reports from the PVO to see whether outputs are shown and are on schedule; if not, the program officer needs to find out why. Annually this monitoring would be summed up for the PVO's annual review.

In summary, the IEF program in Malawi, like other PVO country programs which are centrally funded by AID, could have had a more specific action plan and more informative quarterly and annual reports if AID had been able to pay closer attention to the program. Guidelines or checklists are needed which will help AID staff in design approval and report monitoring, and which do not require specialized technical skills or much time to implement.

NOTES

1 The IEF Primary Health Care Delivery and Training Program was not designed to implement the same actions in each target country. Nor was it anticipated to implement a complete range of blindness prevention, curative services, planning, surveys, educational, and promotional actions in each of the target countries. There were four basic reasons for varying the country programs:

- The target countries are at varying stages of development in their blindness prevention programs and therefore have need for, and requested of the IEF, only certain limited inputs;
- A specific target country may have a nearly complete range of blindness prevention activities except for the services requested of the IEF;
- The IEF may be providing a vital service to a regional training effort, such as the Southern African Ophthalmic Training Center in Malawi, which provides trained personnel for specific countries;
- The size of the financial inputs necessitates targeting those countries where the complete range of blindness prevention activities will be implemented but not all will be funded by the IEF Matching Grant Program.

2 IEF Matching Grant Annual Report, 1983.

3 Agreement between GOM and IEF, Maryland, Dec. 1981.

4 Data taken from various sources listed in Bibliography, Appendix K.

5 The population of Nyasaland in 1960 was 2.5 million. The current population of Malawi may be over 7 million. Given a constant fertility level, the age/sex structure of the population, and the projected continued high infant mortality, Malawi's population could grow to 12 million by the year 2000 and to 18 million by 2010. Uncultivated arable land is nearly exhausted, irrigation water is limited, and deforestation is spreading.

The significance of population growth in planning health services is an increasing concern of the GOM; during the past year there has been some movement toward official acceptance of "child spacing." However, the GOM has thus far refrained from developing a program to control the growth of population. Pressures toward large families remain great. Marriages occur early, and large numbers of children are desired

as a source of agricultural labor and assistance in old-age. Since infant and child mortality rates are high, high fertility rates are necessary to assure the desired level of surviving children. (See AID, Malawi CDSS, 1983.)

6 Statistics on blindness and its causes are taken from various IEF and GOM reports listed in bibliography, Appendix K.

7 Sauter, J.J., "Measles and Keratomalacia in Kenya."

8 MOH, "Report on 1982 Health Financing Survey," June 1983, and World Bank, "Malawi: Second Structural Adjustment Project, Report and Recommendation of the President of the International Development Association," Nov. 30, 1983. Social services like health programs are considered by the GOM to be less productive than infrastructural development such as road building intended to increase industrial and agricultural outputs. Consequently, social programs either have not grown in recent years or have actually been cut back. A 1983 World Bank report explains Malawi's economic priorities:

"The Government has deliberately restrained those forces which would raise wages above market-determined levels (e.g. trade unions, excessive, decreased wage increases.) The Government's decision to emphasize directly productive sectors and related economic infrastructure has resulted in relatively slower development of the social services such as health and education." (See World Bank, Economic Report, Government of Malawi, 1981.)

The GOM provides about 60% of the country's health care (21 district hospitals and two central hospitals). Private hospitals --organized into the Private Hospital Association of Malawi (PHAM) --provide the remaining 40% (20 hospitals nationwide) at lower unit costs. About 5,000 or 6,000 beds are under the GOM--over 4,000 are under PHAM while the rest are under the local agencies. The total number of beds is 11,376 (4,122 maternity and 7,254 general). There are approximately 6,000 practicing health personnel.

9 The MOH Health Financing Survey report indicates that GOM health services have high unit costs compared with private services. The GOM report compares the recurrent costs (in Kwacha, rounded) between GOM (public) and PHAM (private) institutions in 1983, as follows:

	<u>GOM</u>	<u>PHAM</u>	<u>Difference</u>
District Hospital	167,000	92,000	55%
Primary Health Center	25,000	12,000	48%
Dispensary with Maternity	19,000	14,000	74%
Dispensary only	12,000	3,000	25%
Maternity only	5,000	3,000	60%

From these figures it appears that private health facilities incur about half the recurrent costs of GOM facilities. This major difference, and the fact that most GOM funds are spent on the two central hospitals, has sparked discussion of ways to build preventive outreach programs and strengthen the private health sector. The MOH report advocates "further efforts aiming at changes in the utilization pattern of the health system." These efforts have important implications for the IEF program.

- 10 Information about eye care in Malawi prior to 1981 is largely taken from Robert Meaders, M.D., "Malawi Country Report: Blindness Prevention and Treatment Program." WHO, Lilongwe, 1981.
- 11 Training leading to a designation as Ophthalmic Medical Assistant was better than that provided in most African countries but limited in scope and depth. Minimum entry requirements included at least Medical Assistant training, three to five years' experience in general medicine, Junior Certificate, and recommendations from the applicant's superiors. Training included an extensive series of didactic lectures covering anatomy, physiology, pathology, vision and refraction, diagnosis, and treatment.
- Early training given to OMAs failed to teach the theory and practice of primary health care and the concept of primary eye care as an integral component. Also lacking were lessons in teaching methodologies and techniques and discussions related to motivating communities to participate in their own eye health care. Public health and preventive ophthalmology, as well as prevention of blindness program management, while touched upon, needed to be expanded.
- 12 Before 1982 the morale of the OMAs had been worsening; even today OMAs are paid less than K60 (S46) a month, and some have had no increase in pay for years despite superior work performance and inflation. Only a few OMAs had occasional use of three Land Rovers once used for Mobile Eye Clinics, and none had motorbikes. Most of the OMAs in 1980 were considered to be underpaid, without incentives for bonuses or advancement. At least three had left the government service to join either the mission hospitals, private industry (the tea estates), or set up a private practice. One had died.
- 13 Despite the OMAs efforts, the large and growing numbers of patients presenting to the district eye clinics for diagnosis and treatment have far exceeded clinic capacity. Little time is available for the two Malawian ophthalmologists to participate in the didactic and practical training of paramedicals, adversely affecting the quantity and quality of training and recognition, diagnosis, treatment, and/or

referral of patients with eye disorders at all levels. Prior to the arrival of the first IEF ophthalmologist in 1981, regular, scheduled supervision and refresher training visits by the Malawian ophthalmologists to OMAs posted to district hospitals was seldom accomplished.

14

Robert Meaders, MD, op. cit. To improve the BPP, Dr. Meaders recommended that the GOM:

- expand and mobilize the Prevention of Blindness Committee to greater activity and responsibility;
- provide public education in blindness prevention via the media, speakers for social and political gatherings, etc;
- publicize blindness prevention services;
- produce posters and handouts for schools;
- assist the needy in obtaining spectacles, particularly after cataract surgery;
- coordinate all BPP activity;
- appoint a prominent community leader to be Chairman of the Committee; and
- conduct four carefully controlled ocular status surveys throughout Malawi.

He also recommended recruiting one public health ophthalmologist to deal with the major policy and planning issues which impeded the progress of the BPP. This MD would coordinate all preventive ophthalmology, manage the BPP, supervise OMA training and posting. In addition, Dr. Meaders proposed recruiting two other ophthalmologists to staff the central hospitals. He recommended job descriptions for all three ophthalmologists.

The most important long-term solution to the nationwide shortage of eye services was OMA training. Dr. Meaders recommended expanded OMA training to develop 60 OMAs by 1986 (ten OMAs per year for five years, and five per year thereafter). He suggested training a dozen trainees, including both Clinical Officers and Medical Assistants, in cataract and intraocular surgery (for three months), standard extra-ocular surgery (nine months), BPP management, prevention, public health ophthalmology, and primary eye care as an integral part of PHC. He encouraged both pay incentives for superior OMA performance (to improve applicant quality and increase retention), and regularly scheduled supervision of OMAs by an ophthalmologist. He also suggested that OMAs paid by the GOM working in private hospitals work part-time in nearby MOH facilities, that other health and development workers receive increased eye care training, and that the inter-country training be established in Lilongwe.

15

Private sector contributions include:

- Blantyre Rotary Club: six motorcycles worth over \$2,000 for the OMAs in the Shire Valley; from the American Lions Clubs: spectacles for the spectacle bank; from the Blantyre Lions Club: \$3,750 for frames and lenses;
- Cristoffel Blinden Mission (Germany): a spectacle lens-edging machine and training in its use;
- American companies: Ethicon sutures; Alcon, and Allergan-medications;
- the Royal Commonwealth Society for the Blind (RCSB): two Land Cruisers for IEF Mobile Eye Units;
- RCSB and the Malawi Society for the Handicapped: training courses in London for two nurses and two administrators of schools for the blind; and
- Kaiser Permanente: volunteer labor (and payment of expenses other than travel) in Lower Shire Valley survey of Dr. Bill Harris.

16

Data on outpatient and surgical patient loads since 1980 at both district and central hospitals is incomplete. To illustrate, Appendix G summarizes the number of outpatients seen and surgery performed from the centers reporting. The data is most complete from Queen Elizabeth Central Hospital in Blantyre and from the district and subdistrict centers in the southern region of the country. (Prior to establishing an eye service at Kamuzu Central Hospital in Lilongwe, the QECH was the only referral hospital in the country.)

Although OMAs were stationed in most districts in 1983, data is available for only 11 districts (See Appendix G). Because they are used for many tasks other than eye care, because of their vacations, and because they were used in the Shire Valley survey, the OMAs did not work full time. Many OMAs do not report to the MOH at all: for example, OMAs work at five mission hospitals, but only one reports. Four OMAs work in the private sector or the military, but none of these report. Consequently the reported number of patients seen by OMAs is low.

Several comments on the data are appropriate:

- comparison of data between centers or between years is difficult because of the data collection process. Some OMAs have reported cases seen at their hospital better than those seen at their mobile unit station. Others report in a different format than the majority. Several report even numbers, suggesting that they estimate.

- longitudinal comparisons are not possible for the district centers because of incomplete data and because of the manpower drain of the Shire Valley survey (1983 visits are lower at some centers than in 1981);
- evaluation of the mobile units is done only quarterly and is primarily helpful for the number of kilometers covered;
- there are large differences in numbers of patients seen and operated among the stations, reflecting a need for better planning and management of manpower.

17

During the reorganization of the central hospital eye services, the entire ophthalmology staffs in the two central hospitals have received intensive inservice training under the two IEF doctors, with weekly grand rounds, slide lectures, and individual counselling. Particularly important training at QECH focused on improving the productivity of the surgical ward; this involved the Chief Clinical Officer and another Clinical Officer (both OMAs), six Ward Nurses, a Duty Nurse, a Theatre Nurse, a Senior Medical Assistant, three General Medical Assistants, two Enrolled Nurses, and two Student Nurses. In addition, a variety of other short-term in-service training activities was carried out by the IEF ophthalmologists. For example, they organized a two-day national conference for OMAs at Mzuzu in the northern region and participated in lectures and seminars with medical and nursing associations, teachers and administrators of blind schools and others.

Among other improvements, the IEF ophthalmologists have worked to improve the OMAs'

- diagnostic and treatment skills by supervising and advising them during regular visits to every OMA in the two regions;
- training skills by teaching OMAs to train non-eye care health workers at hospitals and health centers to recognize and treat or refer eye patients. These include other Medical Assistants, Nurses, Clinical Officers, MCH Aides, Community Health Assistants, and Traditional Birth Attendants;
- mobility by procuring and maintaining six motorbikes (Lion Club) and six vehicles (two each from IEF, WHO, and RCSB);
- equipment and supplies by regularly supplying Tetracycline ointment, Vitamin A capsules, and other medications; and by supplying loupes, pocket lights, refraction kits, ophthalmoscopes and other equipment; and

- records by improving the monthly reporting format, collecting and checking monthly reports, and assisting the MOH in collating data.

Some IEF activity extends to the private sector: for example, IEF was requested by the Malawi Medical Association to alert its members to the risks of misusing topical steroids. Several private doctors are now in touch with the MOH eye care program and refer several paying patients to the Central Hospital every week.

IEF has also been able to expand and improve a spectacle bank and lens production facility at QECH, equipped with an edging machine (donated by the Lions Club), by training staff and providing post-operative glasses to cataract patients.

18

15 Locations of 35 OMAs*

<u>Southern</u> (13)	<u>Central</u> (13)	<u>Northern</u> (4)	<u>Missions</u> (5)
Blantyre (5)	Deeza	Chitipa	Embangweni
Chikwawa	Dona	Karonga	Machinga
Mangochi	Kasungu	Mzimba	Mzuzu
Nhabu	Lilongwe (6)	Rumphi	Nkhoma
Nsanje (2)	Wangouchi		Salima
Thyolo	Mchinji		
Zomba (2)	Ncheu		
	Nikota-Kota		

* Twelve of these OMAs, trained in the IEF-led course in 1982, were not to begin working until April 1984 because funds could not be made available to pay them until then.

19

Although IEF's original goal was to assist participating governments in decreasing blindness in Southern Africa by developing specific programs in blindness prevention and treatment and primary eye care, the actual objectives of the MOH curriculum adopted in 1983 were much more concrete, practical, and limited. Five lectures per week focused on eye disease diagnosis, treatment, follow-up, basic surgical procedures, community health promotion, and mobile eye unit administration. A section on prevention of blindness and rural ophthalmology focused on training the participants to train primary health workers and non-medical workers in eye care and community participation. One topic specifically covered the management of an eye unit (reporting, personnel, material and supplies, communication, and training).

20

After the lectures, half the trainees observed patient demonstrations at one central hospital, half at the other. Dr. Chirambo and Dr. Schwab participated often, despite their heavy schedules and Dr. Schwab's eight hour commute from Blantyre. Mr. Mkandawere, Chief Clinical Officer at

Kamuzu Central and one of only four OMAs trained to do intraocular surgery played a major and very helpful role in training, but he and other key trainers strongly oppose continuing the training without increasing the number of trainers or lowering their nontraining work schedule.

- 21 A total of 7,000 participants, including 5,400 children under age six and 1,600 others over age six were examined by three field teams of ten people each in eight weeks in October and November 1983. The Lower Shire River Valley area containing 74 villages in two districts, Chikwawa and Nsanje, was selected for the survey because research since the 1960s and ophthalmic data collected since 1970 consistently indicated it as an impoverished area with high rates of blindness and eye diseases, particularly among children. Previous studies in the valley had suggested that measles were important in the etiology of childhood blindness, and that Vitamin A deficiency (xerophthalmia) was prevalent because of low production and consumption of carotene-rich dark green leafy vegetables.
- 22 Such surveys may also show changes in prevalence of predisposing conditions such as xerosis, acute trachoma, or filarial infestation. "Softer" impact data includes anecdotal reporting of changes in the pattern of disease, or percentage of coverage of a target population by a program. Neither survey data nor anecdotal data is now available to assess impact on Malawi.
- 23 However, if longitudinal data from the Shire survey and/or improved OMA reporting systems can be collected for several years, and if program outputs (such as OMAs trained, surgery performed, and outpatients treated) continue, impact on the prevalence of blindness may be measurable in time.
- 24 Although over 3,000 eye operations are done annually, about 50,000 cases of preventable or curable blindness remain in Malawi. At least 1,500 new cases are added annually--even without considering rapid population growth and aging of the population. Unoperated cataracts account for about 30,000 cases. Therefore, at current output levels it could take at least a half century for the MOH to eliminate preventable and curable blindness in Malawi. The current program, thus falls far short of meeting the Matching Grant goal of reducing the prevalence of blindness.
- 25 Two examples: a large mobile cataract extraction project run by Operation Eyesight was planned in district hospitals; and discussions were undertaken between the GOM and Helen Keller International about follow-up activity in the Shire Valley--both without the knowledge of IEF.

- 26 Tetracycline eye ointment is one of three drugs provided to primary health care workers. (The others are chloroquine and oral rehydration salts.) Treatment for malaria, ORT, and eye care are included in the Malawian basic health scheme.
- 27 There is no apparent reason why similar systems for managing clinical and outreach services could not be adopted to neighboring countries as well. Training eye care specialists from the central/southern African region using IEF methods was pilot tested in the 1983 course. A follow-up evaluation to be done in mid-1984 by the WHO Intercountry Advisor in Blindness Prevention (Dr. Quarcoopone) will indicate not only whether the training should be replicated in other countries but also whether the training led to improvements in other nations' eye care programs.
- 28 The evaluators were unable to establish the total costs or benefits of providing either outpatient or surgical care from BPP records. Much of the outpatient and inpatient work carried out by the 30 OMAs paid by the MOH is not reported accurately, if at all, to the BPP (See Appendices G and H). It is clear, however, that in IEF staff salaries alone, it cost IEF nearly \$1,400 to provide formal training to each of 22 OMAs in the international course in 1983, assuming that the IEF ophthalmologists worked 3/4 time on training for nine months. Thus, about 25 OMAs can be trained for nine months, or 70 OMAs can be supported for one year, at less cost than supporting one expatriate ophthalmologist for one year.
- 29 The following changes should be considered:
- ° monitor the current tabulation system for accuracy;
 - ° separate the MOH data from that generated at fixed centers;
 - ° discontinue or standardize listings of blindness, glasses given, referrals and admissions;
 - ° verify and analyze the utilization of OMAs with very different census figures;
 - ° study the number of referrals made to central hospitals and determine the number completed;
 - ° evaluate the number of post operative patients seen in follow-up and the number given glasses;
 - ° require that mission hospital OMAs report to MOH;
 - ° collate, analyze, and disseminate outputs regularly;
 - ° use such data to continuously test, reorganize, and improve the BPP.

30

There is concern in AID/Washington (FVA) and in USAID/Malawi about which offices and which staff members should be responsible for monitoring PVOs, including IEF. USAID mission staff argue they are too busy to monitor centrally-funded Matching Grant programs, while FVA staff, usually unable to travel to the field, are too far from these programs to monitor them effectively. This is an internal problem for AID to resolve; in any case, monitoring need not be very time consuming nor require special health training.

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APPENDIX A

IEF/Malawi Evaluation Itinerary (February 3-18, 1984)

February

- 2 NCIH seminar on PVOs and Blindness Prevention, Washington, D.C.
- 3-4 Travel to Malawi; briefings by Dr. Tizazu (IEF), Lilongwe
- 5 Rounds of eye wards, Kamuzu Central Hospital, Lilongwe
- 6-7 Meetings with AID and MOH officials, Lilongwe
- 8 Travel to Blantyre; briefings by Dr. Larry Schwab (IEF);
rounds of eye wards, Queen Elizabeth Central Hospital, Blantyre
- 9-10 Field trip to Lower Shire Valley including Ngabu, Saopa, other
villages; returned to Blantyre
- 11 Interviewed staff and continued rounds, Queen Elizabeth
Central Hospital, Blantyre
- 12 Debriefing with Dr. Schwab, travel to Lilongwe
- 13 Attend regular meeting of National Blindness Prevention
Program; continued discussion with IEF and MOH officials
- 14 Write outline of draft report; submit copies of outline
and discuss with IEF staff and AID Program Officer
- 15-16 Continue writing outline; finish debriefings with MOH,
AID, and IEF; Dr. Tizazu and Dr. Sprague continue debriefings
in Nairobi en route
- 17-18 Travel to USA

APPENDIX B

List of Persons Interviewed

Ministry of Health, Lilongwe

Dr. Moses Chirambo	Chief Medical Officer; Principal Ophthalmologist, MOH
Dr. John Bello	Ophthalmologist
Dr. Alice R. Msachi	Assistant Medical Officer; Member, PHC Core Group
Dr. Anthony Klauda (UK)	PHC Advisor; Member, PHC Core Group (Oxfam)
Dr. Rangaratnam (India/US)	Health Planning Advisor (MSH)

Kamuzu Central Hospital, Lilongwe

Dr. Teferra Tizazu	IEF Project Director, Chief of Ophthalmology
Mr. G.R. Mkandawere	Senior Ophthalmic Clinical Officer
Ms. R.G. Chinyama	Public Health Nurse
Miss L. Kadzamira	Principal Nursing Officer
Mrs. N. Mlovundula	Tutor, Medical Auxiliary Training School

Queen Elizabeth Central Hospital, Blantyre

(Surgery and Outpatient)	
Dr. Larry Schwab	IEF, Chief of Ophthalmology
Mr. W. Chagona	OMA, Chief Clinical Officer
Miss C. Gandwe	OMA, Enrolled Nurse
Mrs. Chipeta	Registered Nurse in Charge of In-patient Eye Ward
Mr. K.W. Khonje	OMA, Clinical Officer
Mr. A. Maluwa	OMA
Mr. Chiluzi	OMA
Mr. H. Ndalama	Optician
Mr. L. Kainga (Spectacle Bank)	OMA, Senior Medical Assistant
Mrs. Ngela	Nurse, Eye Ward
Miss Chipendo	Nurse, Eye Ward

Private Hospitals Associates of Malawi

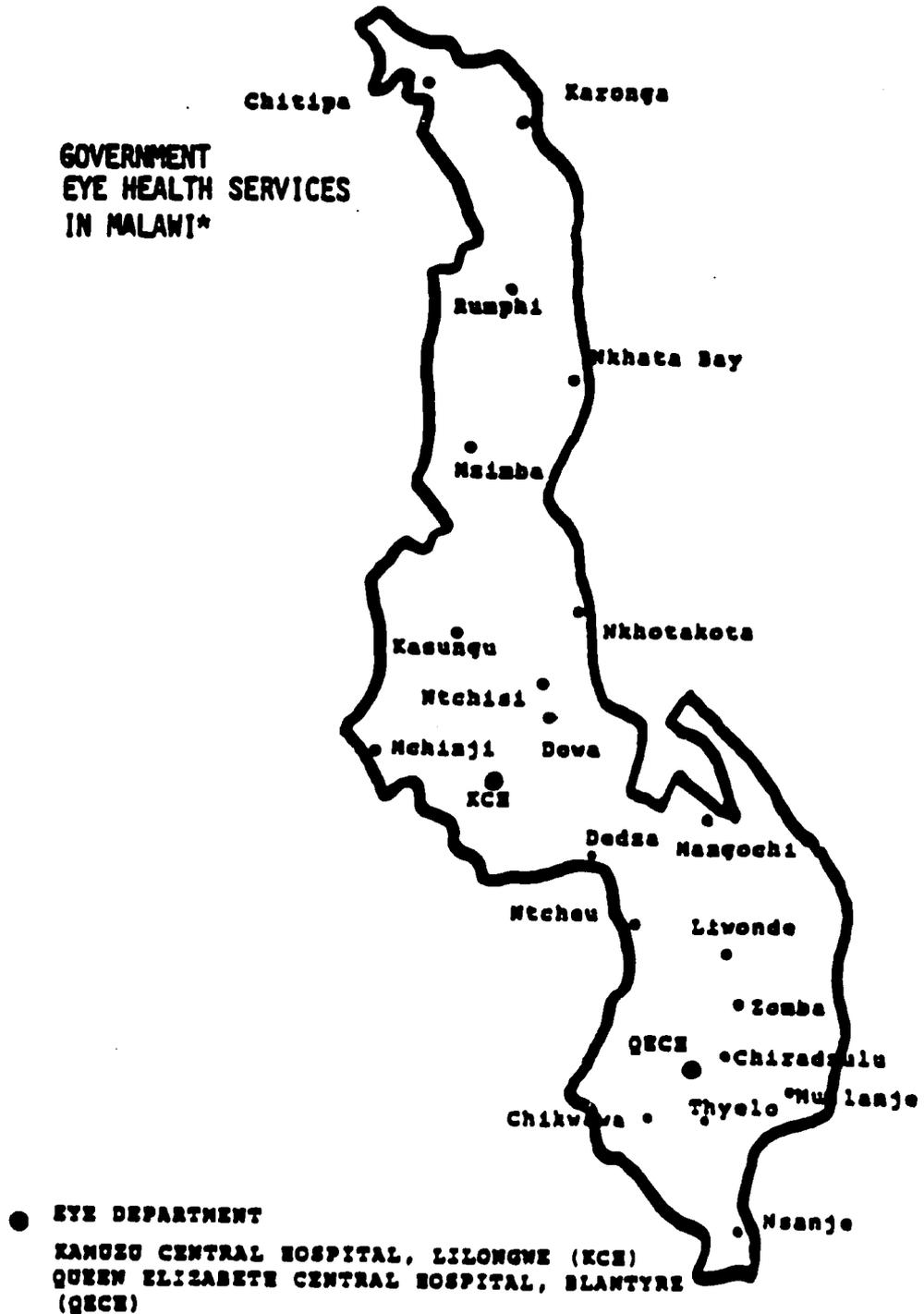
Mr. Patrick Nzgambo	Coordinator
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Not Available

Dr. C. O. Quarcoopone (Ghana)	WHO Inter-country Advisor, Blindness Prevention
Dr. C.J. Blignout	Ophthalmologist/Medical Superintendent Nkoma Mission Hospital
Mr. Bangula	PHC Coordinator
Mr. Mwale	OMA, Nsanje area
Mr. Kalaya	OMA, Nsanje area

APPENDIX C

**GOVERNMENT
EYE HEALTH SERVICES
IN MALAWI***



- **EYE DEPARTMENT**
KANUSU CENTRAL HOSPITAL, LILONGWE (KCH)
QUEEN ELIZABETH CENTRAL HOSPITAL, BLANTYRE (QECH)

- District hospitals with eye clinic

*From Malawi Epidemiological Quarterly, April 1954

APPENDIX D: Rural Health Facilities, 1981 and 1988 (Expected)

<u>Rural Health Facility</u>	<u>Population Served</u>	<u>Functioning 1981</u>	<u>Expected 1988</u>	<u>Staff</u>
Village	Village	30	-	Primary Health Worker
Health Post	2,000	41	2,080	MCH Assistant
Health Sub-Centre	10,000	385	520	Medical Assistant, Health Assistant, Midwife, Community Nurse
Primary Health Center	50,000	49	130	Clinical Officer SRN, Health Inspector, Community Nurse

APPENDIX E

Primary Health Care Program

The original 1978 Primary Health Care program of the MOH utilized paid PHC workers. They were to be trained in nine subjects: the PHC concept (that people can be taught how to improve their own health); the care of under-fives; proper nutrition; antenatal, maternal, and postnatal care; control of common diseases; sanitation; first aid; oral health; and rural development. Primary eye care was not considered as a separate topic. From 1980 to 1982, about 30 PHC workers were trained and tested by the MOH in several districts.

Presently the PHC program is being reorganized and new approaches attempted because the first three years of pilot testing revealed several obstacles: ¹

- the community was not adequately prepared and did not understand PHC;
- PHC workers (PHCWs), specially trained, paid, and equipped, were seen (and saw themselves) as "government employees" and were not accepted or understood by the community;
- people expected PHCWs to treat the sick because they were so far from health facilities;
- PHCWs were overwhelmed by the work load and patients' expectations;
- PHC was not integrated with other ministries than the MOH;
- planning was highly centralized; districts and communities had little if any role;
- adequate time for reporting was not allowed.

The current PHC program of the MOH has taken a different approach: with a far smaller pilot area (only four districts in 1984) covered by fewer PHCWs, the MOH is now devoting much more time to building community awareness, support, and control for PHC. It is this new "bottom-up" emphasis to which primary eye care programs must adapt.

¹ Dr. B. Khosa, "Initial Stages in the Introduction of PCH in a Pilot District in Malawi," Journal of Medical Association, Malawi, Jan. 1984.

STATEMENT OF EXPENDITURES FOR MALAWI ICF/AID

DESCRIPTION	FY 1981-1982 (07/01/1981 To 06/30/82)		FY 1982-1983 (07/01/1982 To 06/30/83)		FY 1983-1984 (07/01/1983 To 12/31/83)	
	ICF	AID	ICF	AID	ICF	AID
Salaries & Fringes	18,502.00	14,323.00	5,641.51	69,303.65	26,337.62	22,597.50
Travel	-----	3,903.44	3,212.50	10,351.61	-----	6,759.00
Shipment/Storage	1,370.20	3,133.00	-----	13,331.73	1,561.57	272.70
Postage	41.79	-----	116.51	112.06	4.03	-----
Vehicles	8,546.49	-----	8,756.13	-----	-----	-----
Supplies	-----	149.55	131.06	43.40	-----	-----
Telephone	-----	89.34	195.06	330.75	15.05	-----
Education Materials	-----	8.40	-----	-----	-----	-----
Medical Supplies	-----	-----	832.23	991.27	-----	24,350.60
Professional Charges	-----	-----	72.00	390.00	-----	-----
Local Fund Raising/Expenses	-----	-----	6,000.00	-----	23,500.00	-----
Donated Medical Supplies	-----	-----	62,740.09	-----	-----	-----
Miscellaneous	-----	40.77	641.64	10.15	-----	-----
Total Expenditures	25,460.82	21,656.36	85,040.41	74,971.60	51,410.27	53,907.00

Total ICF Expenditures: \$162,719
 Total AID Expenditures: \$170,616
 Total Expenditures to 12/83: \$333,335

Appendix G

Selected Numbers of Outpatients Seen and Operations Performed,
Malawi 1981 and 1983¹

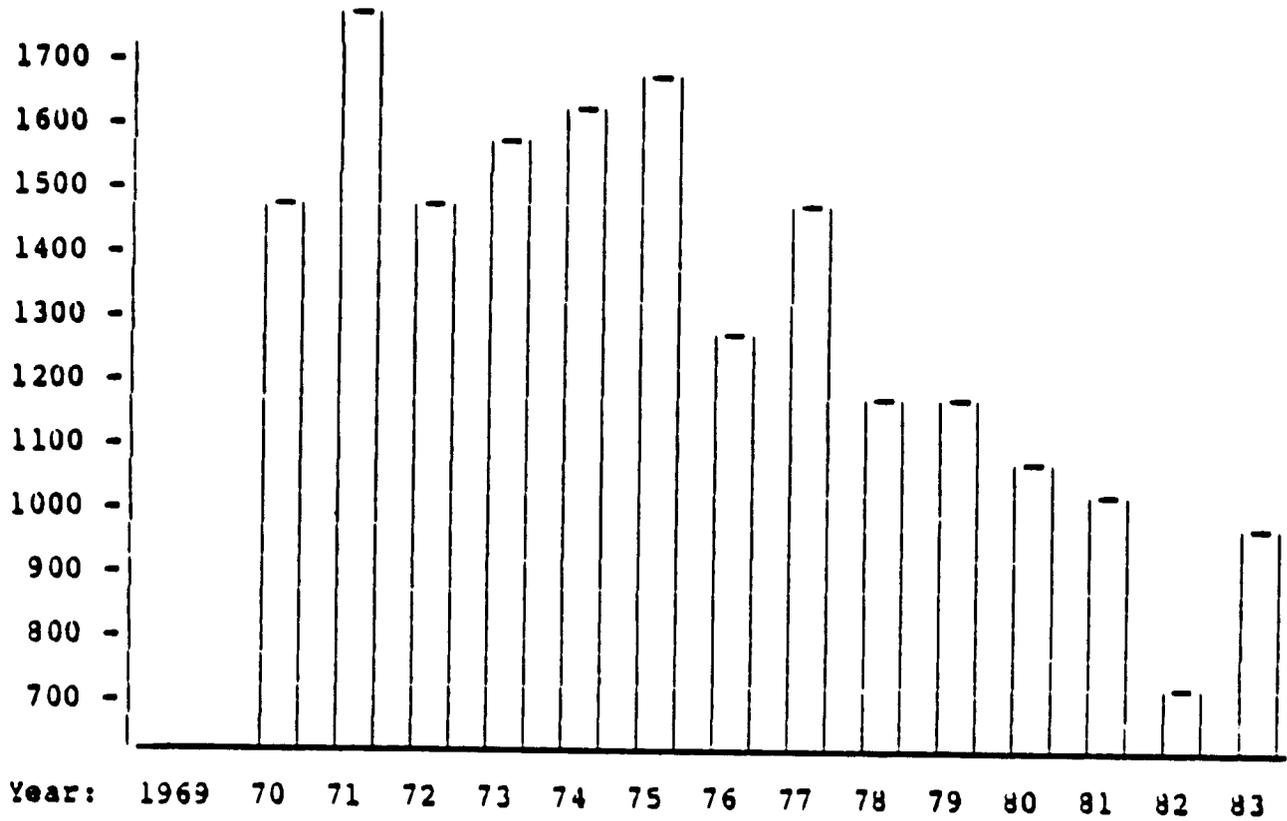
<u>District Hospital²</u>	<u>Total Outpatients Seen</u>		<u>Total Operations Performed</u>	
	1981	1983	1981	1983
(Northern & Central)				
Chitipa	5590	5218	42	35
Dedza	-	5092	89	25
Kasungu	10,200	12,578	-	135
Nkhata Bay		2,516	-	10
St. John's	<u>2287</u>	<u>1,620</u>	<u>1</u>	<u>8</u>
	1983 Subtotals:	27,024		213
(Southern)				
Mangochi	-	5665	91	58
Mulanje	-	6252	-	-
Ngabu	-	14009	-	164
Nsanje (2 OMAs)	2942	5649	-	30
Thyolo	-	5317	46	58
Zomba (2 OMAs)	27620	26519	-	137
Blantyre (5 OMAs)	<u>28618</u>	<u>33180</u>	<u>1107</u>	<u>1006</u>
	1983 Subtotals:	<u>96,591</u>		<u>1453</u>
TOTAL REPORTING FOR 1983		125,615 Outpatients		1,666 Operations
ESTIMATED TOTAL IF		247,230 Outpatients		3,332 Operations
ALL HOSPITALS REPORTED³				

Notes to Appendix G

- 1 This data was selected and calculated by the evaluators from OMA monthly reports for eleven of the 22 districts with OMAs. Many reports were missing, others were obviously inaccurate. Figures are presented here only as very rough estimates to give a general idea of the levels of activity in the districts. Eye patient data reported in recent years by the eleven district hospitals under IEF supervision is largely unavailable; the few reports which could be tabulated revealed omissions and inconsistencies (see Appendix G). However, it appears that between 1981 (the last year before the IEF program began) and 1983 (the most recent data available), surgical activity declined in three of the four hospitals reporting both years. In 1983, the Central District hospitals reported an average of 18 operations per month, compared with 39 operations per month in the Southern District hospitals. (The declines are primarily due to the drain of the OMAs required in the Shire Valley survey.)
- 2 One OMA at each hospital unless stated. No mission hospitals are included in these estimates.
- 3 Twice the reported total from 11 districts plus the central hospital in Blantyre; this assumes that the central hospital in Lilongwe has the same level of activity at Blantyre.

APPENDIX H
OPHTHALMIC SURGERY PERFORMED, 1970 to 1983
QUEEN ELIZABETH II CENTRAL HOSPITAL
Blantyre, Malawi

Operations



APPENDIX I
PROJECT REPORTING FORMAT

1. Project Status

- A. Major activities undertaken during the past month**
 - 1. Patients seen (new, repeat & follow-up)
 - 2. Surgery performed (major & minor)
 - 3. Teaching
 - 4. Training
 - 5. Technical assistance

- B. Comments on Implementation**
 - 1. Assessment of progress towards achievement of project objectives
 - 2. Personnel changes
 - 3. Consultants utilized

- C. Problems and Delays in Implementation**
 - 1. Personnel
 - 2. Procurement problems
 - 3. Shipping delays
 - 4. Maintenance problems

- D. Major Activities Expected next Month**
 - 1. Teaching
 - 2. Training
 - 3. Consultants expected
 - 4. Commodity procurement
 - 5. Evaluations planned
 - 6. etc.

APPENDIX J

Prevalence and Etiology of Eye Disease and Blindness in Malawi*

<u>Causes of Blindness</u>	<u>% of Total</u>	<u>Estimated Number of Cases</u>	<u>% of Total Blind</u>		<u>Predominant Geographic Distribution</u>	<u>Predominant Age Group</u>	<u>Comments</u>
			<u>Preven- table</u>	<u>Curable</u>			
Cataract	40%	25,000	-	40%	Countrywide	Elderly	curable with surgery and glasses
Trachoma	15%	6,000	15%	-	Lower Shire Valley; Lakeshore	Children (adult blindness)	Preventable with hygiene;
Corneal blindness Vitamin A/Measles	15%	6,000	15%	-	Lower Shire Valley; Countrywide	Mostly Children	Preventable with proper diet. Curable with Vitamin A
Degenerative, Inflammatory, congenital	15%	6,000	-	-	Countrywide	Elderly (degenerative) or newborns (congenital)	Not preventable in elderly. Difficult to cure
Glaucoma	8%	4,000	-	-	Countrywide	Elderly	Difficult to cure
Trauma	4%	2,000	2%	2%	Countrywide	All ages	Some trauma preventable
Onchocerciasis	2%	1,000	20%	-	Thyolo District	All ages	Preventable (avoid flies.) Delayed cure difficult.
<u>Other</u>	<u>1%</u>	<u>10</u>					
TOTAL	100%	50,000	34%	42%			

* This table projecting national estimates in 1981 represents the cumulative results of surveys undertaken in Malawi prior to 1981. Interpolations from surveys reported in a country with similar patterns of diseases and demography (Kenya) were also considered. The table is adopted from Robert Meaders, MD, "Malawi Country Report: Blindness Prevention and Treatment Program," WHO, Lilongwe, 1981.

APPENDIX K

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