PD-ACI-778

INTERNATIONAL EYE FOUNDATION

CHILD SURVIVAL GRANT PDC-0501-A-00-5107-00

1985-1988

END OF PROJECT EVALUATION

Place of Evaluation:

Lilongwe, Blantyre, and Lower Shire Valley, Malawi
Bethesda, Maryland

Date of Evaluation:

3 - 14 October, 1988
15 November - 6 December, 1988

Consultants:

D.C.E. Ferguson, Ph.D., M.P.H.

S.K. Stansfield, M.D.

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ABBREVIATIONS

ADRA	Adventist Development and Relief Agency
ARI	acute respiratory infection(s)
BCG	Bacille Calmette-Guerin (tuberculosis vaccine)
CCCD	Control of Childhood Communicable Diseases project
CDD	Diarrheal Disease Control Program
CHS	Community Health Supervisor
CHW	Community Health Worker
CS	Child Survival
DIP	detailed implementation plan
DTP	diphtheria, tetanus and pertussis
EPI	Expanded Program on Immunization
EOPE	end of project evaluation
GOM	Government of Malawi
HEALTHCOM	Health Communications for Child Survival Project
HIS	health information system
HSA	Health Surveillance Assistant
IEF	International Eye Foundation
LSV	Lower Shire Valley
MAP	Malawi Against Polio
MCH	Maternal and Child Health
MCP	Malawi Congress Party
MK	Malawi Kwacha
MOH	Ministry of Health
MOW	Ministry of Works
NGO	non-governmental organization
OMA	Ophthalmic Medical Assistant
ORS	oral rehydration salts
ORT	oral rehydration therapy
PEC	primary eye care
PCV	Peace Corps Volunteer
PHAM	Private Hospital Association of Malawi
PHC	primary health care
PVO	private voluntary organization
QEH	Queen Elizabeth Hospital
SCF	Save the Children Federation
SSS	sugar and salt solution
STC	short term consultant
TA	technical assistance
TALRES	Tuberculosis and Leprosy Research
TBA	traditional birth attendant
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
USD	United States Dollars
VHC	village health committee
VHW	village health worker
WHO	World Health Organization

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I. EXECUTIVE SUMMARY

This report outlines the methodology and findings of the final evaluation for the IEF/Malawi Child Survival Project and recommendations based on those findings.

A two member external team conducted an end of project evaluation (EOPE), reviewing project accomplishments to assess whether the project had met its objectives based upon activities and indicators outlined in the project's detailed implementation plan (DIP). In view of the findings of that evaluation, the team assembled the "lessons learned" from this project and resultant recommendations for consideration in any future IEF Child Survival (CS) activities in Malawi.

The overall objectives identified in the DIP for the IEF/Malawi Child Survival Project include:

1) reduce and prevent curable blindness in underserved rural areas;
2) assist in development of a community based primary health care system serving children and lactating mothers;
3) assist in planning a rational, affordable, primary eye care delivery system within primary health care; and,
4) publish the results of lessons learned so as to benefit others undertaking similar or related activities.

Toward these objectives, four major health problems were identified as targets for IEF CS project interventions: 1) vitamin A deficiency, 2) diarrhea, 3) trachoma, and 4) measles. Although reduction of the prevalence of blindness is listed as the overall objective for these interventions, reduction of infant and child mortality is specified among the intervention-specific objectives outlined for diarrheal disease and measles.

Findings of the evaluation team concerning the project's achievements/strengths and its problems/constraints are summarised and recommendations presented. Although the project has experienced recent setbacks, the evaluation findings document that IEF has been effective in promoting the delivery of CS interventions in Malawi, and that the potential now exists to consolidate those gains and achieve improved coverage among this needy population.

II. BACKGROUND

The Republic of Malawi, a small and densely populated country in southeastern Africa, has one of the highest infant mortality rates in the world at 151 per thousand live births. Leading causes of deaths among children under five, who

represent approximately 20% of the population, are pneumonia, diarrhea, measles, and malaria. A 1983 nutritionel survey in the project area demonstrated a 22.3% prevalence of moderate to severe stunting (< 90% helght for age), and that 2.8% of under 6's had moderate to severe wasting (<80% weight for height).

National figures for immunization coverage among the estimated 364,000 children under five are 66% for DTP 3, 55% for polio 3, 66% for measles and 79% for BCG. By comparison, the generally underserved project area had a measles coverage of 39% at the beginning of this project in 1985. WHO reports 23% of the population of Malawi has access to ORT, while ORT use rates are only 10%. National contraceptive prevalence is estimated to be approximately 1-3%.

The project's target area, the Lower Shire Valley (LSV), includes the southern tip of Malawi, where it is bordered by Mozambique. The two districts which comprise the project area, Chikwawa and Nsanje, are among the least developed districts in the country. The area is mostly semi-arid, plagued by frequent drought and poor crops, and has recently been further burdened by a huge influx of refugees from neighboring Mozambique. The majority of the 1500 boreholes provide no water, since pumps are mostly non-functional, and travel on other than the single paved road is difficult, particularly during the rainy season.

The most recent census in 1987 documented a population of 521,092 for the two districts. The population growth rate is estimated at 5.4% per year, however it is difficult to assess the size of recent influxes of Mozambicans into the two districts. Although many settle in camps where they can be enumerated and will receive separate services, it is estimated that rural populations have more than doubled in the past two to three years as probably two thirds of the refugees settle in new or established villages in the LSV. The GOM policy has been to provide health and other services for these populations through the same mechanisms as for the Malawians.

Health care resources operated by the MOH in the LSV prior to project initiation included 3 hospitals (2 district level with physician care available, and 1 "rural" in Ngabu with paramedical providers), 19 health centers, and 4 health posts. In addition, there are two privately operated or mission hospitals and 4 such dispensaries or health centers in the LSV. These private facilities work in conjunction with the MOH through the Private Hospital Association of Malawi (PHAM). The GOM's community-based PHC program had not yet been broadly introduced into the LSV at the time of the initiation of IEF's CS project.

Health Surveillance Assistants (HSAs) are the primary outreach workers in health centers and health posts. They have been responsible for providing health education and limited curative services, and are paid by the MOH (MK 35 per month). Other categories of health workers at the community level include an unknown number (estimated approximately one per village) of traditional birth attendants (TBAs) and community health workers (CHWs), as well as a few homecraft workers. Only the HSAs receive regular pay for their work. As the project began, each of the 3 MOH hospitals had an eye clinic staffed by an Ophthalmic Medical Assistant (OMA). Several of the HSA's had been trained in primary eye care (PEC) prior to the initiation of the CS project.

The IEF began working in Malawi in 1980, and in 1983 were instrumental in promoting and conducting a survey of ocular and nutritional disease in the LSV. The survey was conducted in collaboration with the Government of Malawi (GOM), the World Health Organization (WHO), Helen Keller International (HKI), the Royal Commonwealth Society for the Blind (RCSB), and the Johns Hopkins University Center for Epidemiologic and Preventive Ophthalmology (ICEPO). The study was conducted in 71 villages in October and November 1983 and included 5,436 children under six and 1,664 persons over six years of age.

The survey showed a high prevalence of diseases causing blindness not only in adults, but also among young children. The leading cause of blindness among adults was unoperated cataracts, accounting for 40% of bilateral blindness. Corneal disease, including xerophthalmia (due primarily to vitamin A deficiency), measles, secondary infections and trachoma, accounts for the majority of the remaining blindness (30%). These preventable causes of blindness were highly prevalent among the children of the Lower Shire Valley, with 4% of children under 6 demonstrating signs of active vitamin A deficiency (ranging from night blindness to corneal ulceration), while 39% in that age group had inflammatory trachoma. History of associated measles was more frequent among children with corneal scarring.

The results of the survey suggested that a strategy to prevent childhood eye disease and blindness should provide immunization, nutritional interventions (including those designed to improve vitamin A status), and improve water supply and sanitation. To improve the availability of preventive services selected to reduce the prevalence of blindness in the Lower Shire Valley, IEF proposed a child survival project, which was funded in September of 1985.

III. INTRODUCTION

This report outlines the methodology and findings of the scheduled end of project evaluation (EOPE) of the CS-I Malawi Child Survival Project and the recommendations based on those findings. Project and other documents referred to in the text are listed in Appendix A.

Team Composition

The evaluation team was composed of two external consultants who worked with IEF headquarters and field staff, USAID and MOH personnel. The external evaluators included Sally K. Stansfield, public health physician and epidemiologist who served as team leader, and Donald C.E. Ferguson, a health delivery systems and health manpower development specialist, who is also Professor and Acting Director of the Division of Health Services Administration in the Department of Preventive Medicine of the Uniformed Services University School of Medicine.

Principal Contacts

Strong support for the evaluation was provided by both IEF headquarters staff in Bethesda and by all project staff in the field. Special acknowledgement is made of the assistance provided by Jack Blanks, Pat Chiancone, Uriel Sachs, and Craig T. Reeves of the IEF. Without their input and active logistical support the EOPE could not have been carried out in the time scheduled. These and other principal

contacts providing information and other support which were vital to the evaluation are listed in Appendix B.

Methodology

The project design, reflected in the Detailed Implementation Plan, provided the EOPE team with an evaluation framework based on activities and indicators of project achievements which had been selected by IEF. To the extent appropriate, the format for EOPE data collection and for this report are consistent with the CSI Final Evaluation Guidelines recently developed by FVA/PVA (AID, 1988). The evaluation team placed special additional emphasis on issues which were of concern to IEF field office and headquarters.

In reviewing the project's DIP, the team identified specific data needs to assess project progress relative to the 1) objectives, 2) inputs and outputs, and 3) indicators outlined for each of the project interventions. Data needs were then listed by appropriate source, so that record reviews and interviews could be structured accordingly. Project records in the field office which were reviewed included limited records on project supplies and accounts (most of which are managed in Bethesda), and routine records of project activities (such as numbers of villages visited, reports received, etc.).

Visits to health facilities (all MOH hospitals and a selection of health centers and posts) in the LSV were conducted and health personnel observed and/or interviewed. The perspectives of those served by the project, and those serving were explored through interviewing convenience samples of community members and health workers during visits to the project area.

Debriefings, including presentation of preliminary findings and recommendations, were conducted prior to departure from Malawi with project field staff, a representative of GOM/MOH, and USAID. A draft of the evaluation report was also reviewed with IEF headquarters in Bethesda prior to its submission to FVA/PVC.

IV. PROJECT ACCOMPLISHMENTS

The discussions of project accomplishments presented below follow the format established in the Guidelines for CSI Final Evaluations recently distributed by FVA/PVC. A summary of the objective findings for each of the indicators identified in the project's DIP is presented in Appendix C.

A. Primary Focus and Use of Funding

The overall project objectives, as outlined in the project's DIP, are listed above (in section I). Although the overall health impact objective for the project is "to reduce and prevent curable blindness", reduction of infant and child mortality is specified among the intervention-specific objectives outlined for diarrheal disease and measles.

Toward the overall project objectives, four primary interventions were proposed, each with a specific health impact objective linked to the prevention of ocular disease and blindness in children:

1) Vitamin A Deficiency: "To reduce the prevalence of vitamin A deficiency in children under the age of six years";
2) Diarrheal Disease: "To decrease the prevalence and incidence of diarrhea and diarrhea-related mortality";
3) Trachoma: "To decrease the prevalence of inflammatory trachoma in children under the age of six and women of child-bearing age (15-40 yrs.); and,
4) Measles: "To decrease the prevalence and incidence of measles and measles-related mortality in children under the age of six".

Achievements/Strengths

This project has primarily used CS funding to further develop primary eye care (PEC) in the target area. For two of the four project interventions (diarrheal disease control and measles immunization), project funding was used to develop and strengthen MOH services in the project area. For the remaining two interventions (vitamin A and treatment of trachoma), IEF developed new mechanisms for service delivery using their own mobile teams.

IEF has recognized that, although the Child Survival program objective of reduction of infant and child mortality has been broader than its own organizational objectives, interventions designed to reduce the prevalence of ocular disease and blindness in children largely overlap those promoted by Child Survival programs. The strategy of improving PEC by strengthening primary health care (PHC) infrastructure and improving the delivery of basic CS interventions is new to IEF. If documented to be sucessful, the strategy of promoting sustainable delivery of CS interventions to improve ocular health might become more attractive to this and other organizations concerned with the prevention and cure of blindness.

Problems/Constraints

Although the proposed project focus included both the development of PHC services as well as the development of community awareness of their needs for those services, the "supply-side" received more attention than demand-creation in the face of limited staff resources. Project funds were,therefore, used primarily to develop and provide services in a "top-down" fashion, while little was done to develop mechanisms for contacts with families and communities in a more "bottom-up" approach. This emphasis on PHC "suprastructure" development reflects IEF's history of primarily providing clinical care and training of secondary or tertiary health care workers.

It was observed in the project proposal that it could "be added to an existing program of long-standing in Malawi, with start-up immediately on funding." However, there was little infrastructure at the village level at the project's outset, and project resources were not directed toward development of the communities to provide the promised community participation in PHC.

B. Organizational Development

B1. Human Resources

Achievements/Strengths

IEF has been very effective in identifying and retaining technically competent and dedicated ophthalmologists. Outreach activities in the Lower Shire Valley were dramatically strengthened during the tenure of the first two IEF ophthalmologists during the project period, despite their heavy clinical burden in Blantyre. The current IEF ophthalmologist is well respected by those he supervises as well as informants in the MOH and other agencies working in the health sector. His sensitivity to local political realities and respect for his Malawian colleagues continues to strengthen project activities.

The recently arrived Project Administrator is energetic, diplomatic, and has a solid technical background. Given the necessary control of project activities in the Lower Shire Valley and appropriate technical backup, he will be more than able to strengthen CS activities.

Training provided to OMAs, HSAs and TBAs has been a prominent project activity. Although OMAs (some of whom were trained five years ago) have received no formal refresher courses since their initial group training, TBAs have received some continuing education (through the MOH/MCH) and HSAs have received annual opportunities to consolidate their training achievements through refresher courses.

Problems/Constraints

During the project period IEF has experienced significant changes in leadership and in staffing. Both at headquarters and in the field there has been considerable staff turnover. At the field level staffing problems were particularly difficult. Soon after the departure of one ophthalmologist for personal reasons, an administrative staff member who was accused of financial mismanagement was discharged. The reactions to his discharge led to local political problems, resulting in the departure of a second ophthalmologist and barriers to clearing the appointment of a health education specialist. In the wake of these difficulties, however, both the MOH and USAID now appear to be more than willing to work with IEF and the current staff in Malawi.

Field office staffing, for much of the project period, was therefore more limited than planned (limited, in fact, to a single IEF staff member for part of the project period), and included no staff member who lived and worked in the Lower Shire Valley. Although the concurrent matching grant project operations do not appear to have been greatly impaired, CS project activities suffered from having no on-site management to promote the proposed CS interventions. The activities proposed for the Project Director (ophthalmologist) in the CS project were somewhat unrealistic, failing to take his heavy clinical burden under the matching grant into account.

The proposal promised that there would be Malawian counterparts selected and incorporated into project management. One such counterpart (an OA) was

identified by the MOH as an Administrative manager and assigned to Nsanje, although he "did not work out".

Staff development for field staff was limited to brief, unstructured orientations provided by the Bethesda office before departure to the field. No formal management or technical training in CS interventions was provided to field staff. Headquarters and field staff have participated in CS workshops held in Virginia (1985), Sierra Leone (1986), and Arizona (1988). No budget was provided for senior staff CS training locally or travel to regional or central sites for such staff development. The two ophthalmologists were sent in November 1986 to the American Academy of Ophthalmology (AAO) meetings, which are a major opportunity for networking among IEF staff posted overseas.

Although training of peripheral health workers was a prominent part of the project plan, no clear strategy was developed to monitor the quality or effectiveness of that training. Although the project proposal made reference to plans for "pre- and post-testing" and "performance evaluations" of HSAs and "village health workers", no such activities were outlined in the DIP or undertaken by the project.

B2. Use of Technical Resources

Achievements/Strengths

General "support" provided by headquarters was uniformly seen as strong by those at the field level. This support was, however, generally logistic rather than technical in nature.

A pediatrician provided technical assistance to the project in 11/85, although his recommendations were found to be "of little use". A USAID-funded consultant from REACH (the Resources for Child Survival project) made a subsequent field visit to assess, review and suggest modifications in the DIP in 1986. Modifications in training, transport and monitoring were incorporated into project activities following the consultant's guidance. Many other appropriate technical consultations were suggested in the project proposal, however these plans were not reflected in the subsequent DIP nor were these consultations obtained in the project period.

Problems/Constraints

The first potential source of TA to the project was that provided in the FVA/PVC letter of 22/April/1986 reporting its technical review of the DIP. Two major recommendations included that the IEF proceed with the plans to reconstitute the village water committees, and that the project activities be prioritized in the event that delay or scaling down should become necessary. It was also pointed out that the DIP was "sketchy" and recommended that the DIP, including more complete plans for monitoring and evaluation, be resubmitted with the first project report. The review also raised the issue that the social marketing components in the DIP neglected the need for "extensive groundwork and preliminary investigations usually needed" for such a program, and recommended that additional TA be sought in this area. Few of these recommendations were implemented, and the DIP was reportedly revised but never resubmitted to USAID.

For part of the project period, there was no headquarters staff primarily responsible for identifying or providing TA for the CS activities. Although the DIP had suggested that TA would be solicited in areas of ORT, immunization, and vitamin A training, no local, IEF or USAID technical assistance resources were used to strengthen CS activities after the Arnold consultancy. In view of the limited local IEF staff, there was a clear unmet need for TA to help assure optimal approaches to design and implementation of the four interventions, as well as training, supervision, monitoring and evaluation. The project proposal originally suggested that most of the TA would be drawn from volunteers, which was, in retrospect, probably not feasible.

B3. Health Information Syatems

Achievements/Strengths

The project's health information system (HIS) was intended not simply to meet the requirements for CS monitoring and evaluation, but also to meet the needs of the MOH for such information after the end of the project. This concern for the sustainability of the HIS was an important feature in the project design.

A strength in the project's HIS (which was more potential than real) was the availability of data on the prevalence of target health problems from a baseline survey. Unfortunately, however, original plans to capitalize on this resource by implementing a follow-up survey proved infeasible.

Another major strength of the project in the HIS arena was its use of the opportunity of a local EPI survey to gather data for project monitoring and evaluation. GOM/MOH conducted an EPI evaluation in June and July of 1988. IEF had the foresight to profit from the opportunity by adding its own evaluation questions to the EPI survey. The OMAs collaborated with EPI personnel in a classical cluster survey which identified 1244 children under 6, the target group for IEF's interventions. The selection process for children outside the EPI cluster survey age group (12-23 mos.) was made based on presence in the home and availability of immunization cards. Over 25% of the children under six were in the EPI cluster survey target agegroup, such that children of other age groups were under-represented, skewing results for non-immunization coverage.

The institution of health facility checklists, HSA monthly reports, and "village spot checks" in (initially) randomly selected villages was a creative approach to developing and maintaining an information system to support good management. Although the use of these instruments has fallen off in frequency with the staff changes, the recently arrived Project Administrator has instituted new efforts to obtain and compile data to strengthen management, including supervision of health workers.

Problems/Constraints

Two of the four project interventions were delivered through providing support to MOH programs, rather than as services provided directly by IEF. Whether or not this "supportive" role was the most appropriate, such a strategy introduces

problems for monitoring and evaluation. Several of the indicators set forward in the DIP included figures not monitored by IEF staff (e.g., vitamin A capsules provided by the MOH, boreholes rehabilitated by the Ministry of Works (MOW), villages covered by the EPI mobile teams). Although it remains appropriate in the setting of such a supportive role to continue to monitor the "bottom line" (such as coverage with these interventions), the interpretation of such data is complicated by the fact that the "bottom line" may reflect failings of other inputs even when support provided by the project has been ideal.

The project proposal's plan for the HIS was perhaps somewhat ambitious, yet lacking in detail as to how it would be implemented. The project's DIP indicated that "brief mini-surveys" would be conducted "at various times throughout the project to provide further data, and a more detailed follow-up survey" was promised to compare to the "baseline" data gathered in the 1983 survey. Another more extensive vitamin A supplementation impact study was not performed based on decisions made by Johns Hopkins University and other potential collaborators in that study. None of the proposed "mini-surveys" were performed either, although the EPI survey was exploited as an opportunity to collect data for project evaluation, as noted above.

After the Arnold consultancy, the more ambitious plans for impact evaluation were (appropriately) discarded, and attention was paid to the development of a more basic HIS to monitor the input and output indicators. Although such monitoring systems were functioning earlier in the project, at the time of the EOPE there were no project records at the field level for most of the process indicators. Monitoring of supplies of ORS and tetracycline ointment were reportedly discontinued recently because "everyone had enough". Throughout the project, there was a lack of adequate personnel resources and appropriate staff training to maintain an effective information system. There is little evidence that information gathered was used for supervision or management decision-making, and there has been no feedback provided to project staff and/or the community. Communications difficulties with the MOH accounted for the fact that the project's mid-term evaluation did not occur as scheduled.

C. Project Design and Implementstion

More subjective observations on overall project design and implementation are summarised in the text below. The project's objective accomplishments compared to each of the activities and indicators specified in the the project's detailed implementation plan (DIP) are outlined in Appendix E.

C1. Project Design

Achievements/Strengths

A major project strength lies in the fact that primary data collection (i.e., the results of the 1983 survey) was used as a basis for selection of the project interventions. Areas of overlap are large between health problems which must be addressed to enhance child survival and those which must be addressed to reduce the prevalence of blindness among children. IEF took good advantage of this overlap in designing its CS project in Malawi.

The project proposal was strong, with objectives, activities and indicators generally well stated, appropriate and quantifiable. Oddly, however, the proposal sets forward a project plan in considerably more detail than the supervening DIP. Project accomplishments are, however, judged against the DIP rather than the project proposal.

Principal target groups selected for the project interventions included children under six and women of child bearing age, although several project activities were designed to benefit the entire community. The extension of the more traditional "under 5s" age group to children under six was appropriate, particularly in view of the project's emphasis on treatment of vitamin A deficiency, which is frequently more manifest in older children. The selection of women as a target population appropriately reflects their importance in child care as well as their higher prevalence of inflammatory trachoma (as observed in the 1983 survey).

The specific activities proposed in the DIP were also selected with the benefit of information gathered in the 1983 survey. Predisposing factors to trachoma (reduced access to water and face-washing frequency) and xerophthalmic corneal scarring (recent measles infection) guided the selection of specific activities for each health intervention.

The interventions, target groups and activities chosen seem appropriate to the local needs and constraints, as well as to the organizational goals of the IEF. The activities specified in the delivery of the interventions were also generally acceptable theoretically, although, in many cases, not feasible in view of IEF's limited resources.

Strategies proposed for the delivery of interventions (including the proposed use of village committees, the Malawi Congress Party (MCP) and communications media such as radio) were creative and potentially appropriate to the LSV. In view of the enormity of the tasks, the project proposed an appropriate plan for phasing of project activities by geographic areas.

Problems/Constraints

The major causes of death among children under five in Malawi are pneumonia, diarrhea, measles, and malaria. Only two of those four causes of death are addressed by the project interventions.

The primary intervention strategy specified in the project proposal was de-emphasized in the subsequent DIP. The proposal indicates that "the intervention strategy for this project is one of developing a new capability in a village health worker (VHW) selected and supervised by the village health committee. Support and supervision for the VHW will be provided through additional training to existing health assistants."

This strategy (i.e., using VHW's) for providing an interface with the community at the village level is absent from the DIP and from project activities. Opposition within the MOH to expanding the role of TBAs as PHC workers had been pointed out in the DIP, yet this obstacle was ignored in subsequent statements

suggesting that TBAs would be trained to deliver services at the village level, since numbers of HSAs were clearly inadequate to achieve adequate coverage. Project documents as well as project activities lacked a consistent strategy to provide community education and other outreach services.

In the absence of a more sustainable mechanism for access to the community, IEF depended largely on visits to villages by OMAs using the Mobile Eye Unit (not provided with project funds). Outreach services were therefore limited to such "paratrooper"-style visits to villages in the absence of infrastructure development. HSAs were estimated (by their OMA supervisors) to visit each village an average of every 3-6 months (based on numbers of villages covered and villages visited per day).

The activities specified in the DIP were frequently not feasible in view of IEF's staffing constraints and limited access to the community level in the LSV. Many proposed activities (such as those in health education) also suggested that IEF had a larger element of control over the activities of the HSAs and other peripheral health workers. Village committees were to be constituted and supported through the HSAs, for example, although contacts with villages through HSAs were, at best, limited. The project design was weakened considerably in that it promised project activities which it had neither the resources nor the power to deliver.

One activity, the prophylactic use of tetracycline ointment in prevention of trachoma, is one for which there is no data to support its efficaciousness. The medical literature does not support the use of such prophylactic therapy, and the impact of such a policy on antibiotic resistance patterns would be impossible to predict. The DIP also outlined the use of vitamin A megadoses in lactating women, which might have introduced the risk of teratogenicity in treating women who might be pregnant. To their credit, IEF field personnel ignored these parts of the DIP.

Although the health education components of the four interventions were designed to alter the relevant health behaviors, the implementation plan placed little emphasis on strategies to change or measure changes in health behaviors. Behavioral indicators of project effectiveness such as dietary or gardening practices, ORT use, sanitary and hygiene habits might have been used to monitor the effectiveness of project efforts to alter such health practices. Even the vitamin A distribution and measles immunization depended upon attendance at vaccination or distribution sessions to achieve good coverage. Yet no emphasis was placed in the project design on monitoring the effectiveness of project efforts to improve such health behaviors.

C2. Project Implementation

Achievements/Strengths

The project was implemented in the setting of dramatic limitations in both staff and budgetary resources. Field staff accomplished what they could under the circumstances, appropriately limiting their investments to activities which provided an opportunity to progress toward meeting project objectives.

Unfortunately, however, these alterations in the DIP were not reflected in a revised DIP. The original project plan and DIP, which were not developed by the field staff, therefore became "dead" documents, although they remain the yardsticks against which project accomplishments must be judged.

Early in the implementation of the project a UNICEF/CCCD initiative took over the major burden for immunization and ORT activities in the Lower Shire Valley. IEF staff were quick, however, in identifying appropriate supportive roles for the project in promoting measles immunization and ORT use. IEF worked to fill gaps and solve problems, conducting the village spot checks, and even conducting a seminar on VHC development, an issue which had been found to be difficult for MOH personnel. These contributions were not well documented by the HIS, however.

Problems/Constraints

As noted above, many of the proposed activities were not feasible in light of limited project resources, particularly the staffing crisis. The project also suffered from lack of access to state-of-the-art technical inputs to refine strategies for delivering CS interventions. The project staff had little control over field activities in the latter phases of the project beyond the direct supervision of the OMAs provided by the Project Director on visits to the LSV.

Although such direct supervision of the OMAs by the Project Director (ophthalmologist) permitted some high quality supervision and opportunities for continuing education for the OMAs, they estimated that the recent frequency of visits by the ophthalmologist was only monthly, even at the Chikwawa District Hospital which was nearest to Blantyre. The OMAs estimate that the frequency of their supervision of the HSAs is twice per month, while other district-level supervisors visit HSAs approximately monthly.

That staffing problems interfered with such supervision is suggested by the observed falloff in the proportion of monthly reports expected from HSAs and TALRES workers which were actually submitted. For 1987 91% of expected (243 of 267) reports were received, while in the first 6 months of 1988 only 69% (78 of 113) of expected reports were received. (However, we might add that the fact that these figures are now being actively monitored by the new Project Administrator bodes well for the future.)

"ORT Corners" were to be established in every static health facility in the LSV by Peace Corps Volunteers (PCVs). PCVs were, however, fewer in number than had been anticipated at the time of project design, and those actually detailed were unable to travel to the LSV from Blantyre for want of transport. Although IEF helped to allay PCV's transport problems, these constraints interfered with the plans to use the ORT Corners as the chief site for teaching local health personnel about appropriate use of ORT. It was planned that the personnel thus trained would "provide similar appropriate instruction to the local populace". Although there remains some doubt that such a strategy would have successfully increased ORT use and reduced diarrheal disease mortality, these unforeseen events hampered project implementation per the DIP.

D. Effectiveness/Impact of Services

Achievements/Strengths

It appears that coverage with both measles immunization and vitamin A improved during the project period. The results of the two EPI coverage surveys during the project period should be interpreted with the usual cautions, and methods have been only generally described. Measles vaccine coverege, which was initially 39% (WHO cluster survey), appears to have improved to 73% by 6-7/88 (MOH cluster survey). However, it is also important to note that approximately half (44% in Chikwawa and 58% in Nsanje) of infants were noted to have been immunized in the most recent survey, whereas less than 25% (i.e., those over 9 months of age) would be expected to be immunized if the vaccine is not being given too early.

The prevalence of trachoma was also apparently affected through project efforts. Although the prevalence of trachoma among children under six was found to be 39% on the 1983 survey, the survey performed in 6-7/88 in conjunction with the MOH EPI survey showed a prevalence of 11% (139/1290) in the same agegroup.

Vitamin A, which was not actively being distributed at the time the project was initiated, had been received by 57% of children under 6 within the past year and 38% within the past 6 months in the same recent survey. ("Village spot checks" recorded higher figures in 1987 for both vitamin A and measles coverage, however selection bias introduced by convenience sampling among children with cards probably accounts for some of these differences.)

The other potential effectiveness measures are hampered by the lack of denominator data for the project. Even numbers of health workers of various categories differed, depending on the source, so that training coverage figures can not be computed. It is clear, however, that all of the health centers (MOH only) had adequate supplies of key commodities (ORS, vitamin A and tetracycline) whenever data for this indicator was assessed.

In support of the impact of the project's efforts is the observation that some of the VHCs which had been constituted or strengthened through project activities were being used by the MOH at the time of the EOPE to implement other activities in the health sector.

Problems/Constraints

Although project staff feel that the strategy chosen to deliver services at the village level (i.e., asking village headmen to exhort mothers to appear at a central location with their children) has been effective, such strategies have been found in other programs to be most likely to miss the most needy. The lack of any method to enumerate women and children in the target groups for project interventions makes it impossible to assess the success of this strategy in achieving good coverage with project interventions.

The constant influx of refugees into the target area during the project period would also have made monitoring of coverage difficult. Project staff as well as others working in the health sector felt that communities would freely report

which families were permanent residents and which were "recent arrivals" so that a strategy might have been developed to monitor or periodically evaluate coverage in the two groups separately. The lack of denominator data has restricted the project to use of survey techniques for evaluation of the project's effectiveness. There are no available indicators of project effectiveness in promotion of the use of ORT.

E. PVO/Host Government Cooperation

Achievements/Strengths

A major source of strength for the project is its relationship with MOH activities. IEF's programs globally are designed "to be complementary to government activities". This project was no exception, and was originally conceived to incorporate counterparts from the GOM for all the IEF expatriate staff. The basic strategy for delivery of interventions involves supporting and strengthening service delivery by the GOM, rather than setting up a separate and parallel system.

It is evident the GOM/MOH viewed this project as a mechanism to expand its delivery of community-based PHC (with strengthened PEC) services to the LSV. The DIP indicated that the project would "work in close cooperation with recently initiated ORT and EPI programs in the LSV to coordinate inputs and activities", and promised a close coordination of training activities. MOH informants were enthusiastic about IEF's contributions, but emphasized that they "could do more", referring to expanding IEF's role in delivering other CS interventions.

In the implementation of the project, IEF collaborated with MOH Maternal and Child Health (MCH) and EPI teams. Planned collaborations with the Ministry of Works (MOW) and the MOH's divisions of Public Health and Health Exteneion as well as the Nutrition Unit were weaker, however.

The best example of IEF's collaboration with other PVOs was in its work with a local Seventh Day Adventist-sponsored leprosy control program. The project effectively expanded its coverage with the preventive health services provided by HSAs by training the outreach TALRES (Tuberculosis and Leprosy Research) workers (who are "roughly equivalent" to HSAs) to deliver the IEF package of CS interventions. The project has also been strong in identifying and using other PVO support in providing additional funds and commodities for project activities.

Problems/Constraints

Although IEF's sensitivity to MOH politics is generally a strength, they have perhaps been too quick to defer to the MOH in areas where MOH activities are weak, rather than taking primary responsibility for delivering, promoting and evaluating PHC services. There is no evidence that the MOH would have been resistant to IEF's adopting a stronger role at the community level.

Several contacts within the MOH suggested by their comments that they saw IEF's activities as being limited to interventions for eye problems. It was clear that more promotion will be required to establish IEF's role in the more comprehensive

CS activities. The lack of any formal agreement with the MOH specifying CS project activities probably contributed to this problem.

Collaboration with other PVOs working in CS was not as strong as it could have been. The Adventist Development and Relief Agency (ADRA) is currently initiating a vitamin A project in the adjacent Thyolo area. Although the DIP promised close coordination "with the activities of the child survival program being conducted in Malawi by ADRA", there has been little active effort recently to coordinate these CS activities. Although geographically distant, the CS project conducted by Save the Children Federation (SCF) in Mbalachanda might have been a source of potential models in the solution of some of IEF's operational problems, however no communication had been established with SCF personnel at the time of the EOPE.

F. Sustainability

F1. Community Motivation and Participation

Achievements/Strengths

The strategy proposed by IEF for the development of community-based PHC through constitution or strengthening of VHCs was appropriate to the project area and consistent with MOH policies and plans. Village spot checks suggested that 53% (17/32) of VHCs were "functioning", however this is likely an overestimation of the number of committees actually meeting regularly to address community health issues. HSA monthly reports indicate that 219/721 committees were in place. Community leaders interviewed during the EOPE appreciate the projects activities in improving PEC, although they were less aware of IEF's activities in diarrheal disease control and measles prevention.

Problems/Constraints

Although the DIP proposed a community-oriented approach to delivering its interventions, IEF did not have the access to the communities in the LSV to adequately involve communities in the design of the project. VHC development, although a good strategy as outlined in the proposal, was not as strong as it needed to be to motivate communities or encourage their participation in CS activities. Limitations in IEF's control of HSA activities and the frequency of HSA contacts with each village hampered the proposed strengthening of the VHCs. Even if VHCs had been successfully developed, questions remain as to whether IEF's CS project objectives could be met in the absence of a specific health worker at the village level who was accountable to the project in the promotion of its activities.

F2. MOH Commitment

Achievements/Strengths

The MOH saw the IEF CS project as a mechanism to develop a new community-based PHC program in the Lower Shire Valley. It was at the request of the GOM and in response to the 1983 survey that the project proposal was developed. The design

of the IEF project reflected the GOM's program to strengthen community participation in the health delivery system and was consistent with the planned phased expansion into unserved areas. MOH personnel contacted generally felt the project was effective but emphasized that IEF might expand its role in CS.

Problems/Constraints

Although the proposal was strong in emphasis of selection and training of Malawian counterparts, no such counterparts were selected or trained. No budget was included for per diem or other allowances for Malawians seconded from the GOM/MOH, nor for the costs of their training. There is no evidence that field staff attempted to identify such counterparts during the project period. For the time being, the MOH does not have the resources to maintain the project activities, nor are local personnel trained to manage the existing program.

F3. Efficiency and Cost Issues

Achievements/Strengths

The project proposal was strong in laying the groundwork for consideration of cost-effectiveness and cost-benefit issues. The economic consequences of blindness in the LSV and the intervention potential for each cause of blindness were well outlined. In addition, targets for reduction in the prevalence of each cause of blindness were established such that the project's HIS might have been expected to produce such data as "cost per case of blindness averted". Although actual measurement of prevalence changes was not actually feasible, estimates might be made on the basis of treatments provided and the known efficacy of treatment. Unfortunately, however, project accounting systems were not designed to provide intervention-specific cost data.

It was a strength in the project design that IEF planned to assure that many of the recurrent costs of maintaining the boreholes and pumps would be borne by the communities as well as the MOH. Project staff were efficient in assembling sources of donations of needed commodities and supplies. Local PVO sources were even sought for donations of money and equipment. Such resources, although they may be difficult to sustain when they are used primarily for recurrent needs, have assisted in reducing costs of project activities.

Problems/Constraints

Major constraints to better accounting of project cost-effectiveness include the centralized and non-intervention-specific nature of the project accounting system. It is also impossible to calculate such figures as cost per child served because of the dramatic fluctuations in the size of the population served due to influxes of Mozambican refugees. No cost recovery schemes were planned or implemented during the project period.

G. Project Finances

A summary of actual expenditures is provided as Appendix D.

Achievements/Strengths

Recent audits by USAID of IEF headquarters financial management procedures were concluded with verbal reports to IEF that reports will be positive. The only concern expressed indicated that "inadequate internal accounting controls" had allowed some unallowable costs to "filter through". It was clear, however, that these irregularities were simply accounting errors, and detailed plans have already been made to correct the deficiencies.

Despite the many unanticipated events and expenses in the implementation of this project, IEF has managed to stay within the allotted budget. This has been accomplished, in general, by IEF meeting emerging needs with its own funds.

Problems/Constraints

IEF's management structure places the Bethesda headquarters as "the responsible section of the organization for program development, program management, reporting, documentation, and fiscal control." Field offices are, however, described as having "responsibility for the overall guidance and direction of the country program, and authority for local expenditurea which are project related." In effect, this division of labor depends in large part on the personal style of the Project Director at the field level, with Bethesda staff taking responsibility for tasks not undertaken by the field staff. This has, with the management problems and staff turnover in this project, resulted in a more highly centralized fiscal management of this project than is expedient for sound management at the field level. Steps have already been taken, however, to correct this problem.

The budgets allocated for consultants, travel for staff development and training, and personnel were too small to achieve project objectives.

V. LESSONS LEARNED

Major lessons learned during the three year project period included:

* The project, which might otherwise have been viewed as an experiment with a new strategy for achieving IEF's organizational objectives, was hampered by inadequate budget and staffing (at both the headquarters and the field levels), even prior to the personnel problems.

* Project implementation and management (as well as evaluation) would have been strengthened by placing more control of project design and management in the hands of the field staff, including in particulsr the review and appropriate revision of the project DIP in view of emerging problems and constraints.

* Only by having appropriate senior level staff in the project area would the project have been able to fully achieve its goals (and monitor its effectiveness) at the community level.

* Success in achieving project objectives was hampered by the failure to emphasize strategies outlined in the proposal for creating an interface with the community, through selection and training of VHWs.

* Although the project was successful in providing services, project effectiveness would have been enhanced by increased attention to community motivation and participation, and promoting the demand for CS interventions.

* Particularly in view of the staffing constraints, IEF's CS project would have profitted from more extensive use of technical assistance and additional networking with other PVOs with CS activities.

VI. RECOMMENDATIONS

IEF plans to seek funding to continue and strengthen its CS activities in the LSV. It is with such follow-on activities in mind that the following recommendations are made, based on the lessons learned outlined above. It is hoped that these recommendations will receive due consideration in the development of the CS project proposal.

1. Primary Focus and Use of Funding

* Future project activites funded through Child Survival should focus on developing a PHC infrastructure (i.e., VHCs and VHWs) and promoting the community awareness of need and demand for services at the village level.

* Although primary eye care may be a component of Child Survival activities, any follow-on CS project should strengthen interventions such as immunizations, CDD/ORT, prevention of high risk births, malaria treatment, ARI, etc. No expansion into new geographic areas is recommended.

2. PVO Organizational Development

* Field staff for future CS activities should include at least two senior staff with expertise in public health, management and administration, health education, training, supervision, monitoring and evaluation.

* Technical backstopping at IEF hesdquarters should be strengthened to include a CS Coordinator who can assure adequate availability of technical materials and use of TA and training resources for the field office.

* Careful consideration should be given in the design of the follow-on CS activity to incorporation of a simple health information system to monitor project process and effectiveness indicators, including changes in target health behaviors. Special emphasis should be placed on developing a schedule for the analysis and use of the information, and for providing feedback to staff and communities.

3. Project Design and Implementation

* Care should be taken to assure that project documents reflect actual project activities. Any alterations in activity should be reflected in periodic updates of the detailed implementation plan (DIP), specifying indicators and targets which are feasible in view of emerging constraints.

* A specific strategy and schedule should be established for development and evaluation of training and supervision activities, assuring that those strategies benefit from other PVO experiences in Malawi and additional technical assistance as needed.

4. Effectiveness/Impact of Services

* Documentation of project effectiveness will depend on development of an HIS which addresses the difficulties with ascertaining denominator data in the LSV. Either plans for enumeration of populations in target populations or plans for survey assessment of project effectiveness are needed for future CS activities. TA and/or special training of project staff will be required.

5. PVO/Host Government Cooperation

* Because of the strength of IEF's reputation in eye care, some effort will be required to encourage MOH officials (as well as communities) to view IEF as an organization concerned with CS activities beyond primary eye care.

* Collaboration with other agencies active in CS should be strengthened in future activities. In addition to the other PVOs currently active in CS (i.e., ADRA and SCF), communication should be established with PHAM and staff of the new PHICS (Promoting Health Interventions for Child Survival project, USAID/Malawi bilateral) project.

6. Sustainability

* Sustainability of future project activities will depend on IEF's ability to motivate villages to form village health committees, and committees to select a health representative or health promoter. The HSA's, although they will require additional training to function as supervisors, represent an opportunity to assure sustainability of project efforts by appropriately working through and strengthening the existing health infrastructure.

* To further assure the project's sustainability, consideration should be given to hiring Malawian counterparts for senior staff positions (or requesting that the GOM identify someone to be seconded to the project).

* Consideration may also be given in the design of future CS activities to incorporating mechanisms for cost recovery. For example, recurrent costs for some curative services (such as chloroquine made available through project activities at the village level) might be recovered by minimal charges to patients, generating a small-scale revolving drug fund.

7. Project Finances

* Another concern for sustainability lies in project accounting systems. An effort should be made in future CS activities to improve cost accounting (by intervention) at the field office level to permit cost-effectiveness or cost-benefit calculations from the project's information system.

* Adequate budget should be set aside for costs of necessary technical support to the project, including costs of STCs for TA and travel for additional senior staff training or regional CS workshops.

APPENDIX A

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APPENDIX B

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APPENDIX C

PROJECT ACCOMPLISHMENTS: OBJECTIVE FINDINGS FOR PROJECT INDICATORS

For each of the four objectives in the detailed implementation plan (DIP), the left hand column (entitled Evaluation Indicator) specifies the input, output or effectiveness indicator proposed in the DIP. The right hand column (under the heading EOP Achievments) lists the relevant findings of the EOPE for that indicator.

OBJECTIVE I.

"TO REDUCE THE PREVALENCE OF VITAMIN A DEFICIENCY IN CHILDREN UNDER THE AGE OF SIX YEARS."

EVALUATION INDICATOR	EOP ACHIEVEMENTS
1. Resources budgeted/annual expenditure	1. Allocations and expenditures were not separated by intervention, but estimated % allocation in the CS report is 20%.
2. In kind resources directed toward this objective.	2. According to UNICEF prices, in kind contributions of vitamin A amounted to $5,850, although additional vitamin A was donated by Hoffman LaRoche.
3. Number of vitamin A capsules provided by IEF, MOH, UNICEF, and other sources.	3. 262,500 capsules received from UNICEF through the time of the EOPE. Figures for distribution (below) slightly exceed those for supplies, suggesting pre-existing or alternative sources used.
4. Training materials on nutritional blindness and vitamin A deficiency.	4. Materials were apparently developed on an ad hoc basis by OMAs for training more more peripheral health workers (HSAs, TBAs, etc.), but these were not available in the field for review.
5. Number of health workers trained to recognize vitamin A deficiency, and administer vitamin A capsules.	5. 159 workers trained for 1985-1986, 199 (additional) trained in 1986-1987, and none during 1987-1988 (Total=358).

Objective I (Continued)

EVALUATION INDICATOR	EOP ACHIEVEMENTS
6. Number of health facilties in project area with vitamin A capsules on hand.	6. 1 regional hospital, 2 district hospitals 1 rural hospital, 2 private hospitals, 17 health centers and 2 health posts with vitamin A capsules on hand (100% of total).
7. Number of persons participat- in vitamin A education programs conducted by trained health workers.	7. 3980 (2260 contacts by HSAs and TALRES workers in 113 village visits over one year, and 1720 contacts during the village spot checks), although some may be with the same persons. No records kept regarding number of persons seen.
8. Number of vitamin A capsules distributed in target area.	8. As per number 3 above.
9. Number of home garden pilot projects developed in sample selection of villages in project area.	9. No project activity in this area.
10. Decrease in the prevalence of night blindness in children <6 from 33.94/1,000 to no more than 10/1,000.	10. Not feasible as indicator.
11. Decrease in the prevalence of Bitot's spots and corneal xerosis in children <6 from 4.24/1,000 to no more than 1/1,000.	11. Not feasible as indicator. Survey in 1983 showed 39%, while smaller (different methodology, cluster) survey in 6-7/88 showed 4.6% prevalence of Bitot's spots (6/1290 children <6).

Objective I (Continued)

EVALUATION INDICATOR	EOP ACHIEVEMENTS
12.Availability of vitamin A capsules in 100% of hospitals and health centers in the target area and 80% of health posts.	12. 100% of total static health facilities have vitamin A in stock, as noted above under item 6.
13.Availability of vitamin A in at least 60% of the target villages.	13. 7,327 village visits over 20 months (Jan 87-Aug 88), suggests visits to each village every 2-3 months. Vitamin A was not made available at the village level between visits. Interim report (1985-1987) indicates that vitamin A was made available periodically in 30% of villages the first year, and 60% the second.
14.Provision of vitamin A capsules to 80% or more of the children <6 and nursing mothers in the target area.	14. 57% of 1244 children under 6 surveyed in EPI survey had received a dose in the past year, 38% in the past 6 mos. The interim report filed 11/87, however, indicated that "50% of target" was achieved in 1985-1986, and 80% during 1986-1987. Village "spot checks" (with more selection bias than EPI survey) showed vitamin A receipt in past 6 mos. for 43% in Chikwawa, 34% in Nsanje.
15.Nutrition education given in at least 80% of the target villages.	15. Interim project report filed 11/87 indicated that "50% of target" had been reached during 1985-1986, and "80% of target" during 1986-1987.

OBJECTIVE II.

"TO DECREASE THE PREVALENCE AND INCIDENCE OF DIARRHEA AND DIARRHEA-RELATED MORTALITY."

EVALUATION INDICATOR	EOP ACHIEVEMENTS
1. Resources budgeted/annual expenditures.	1. Neither allocations nor expenditures were accounted for by intervention, however, CS reports indicate 10% for ORT and 10% water/sanitation.
2. In kind resources directed toward this objective.	2. Projected in kind contribution by end of project will be $10,800 for UNICEF ORS.
3. Number of ORT packets provided by UNICEF/CCCD.	3. 90,000 for FY 1986 and FY 1987 per 11/87 interim report. Additional 90,000 planned for procurement and distribution in FY 1988.
4. TA from UNICEF and the MOW.	5. MOW servicing and/or rehabilitating boreholes on limited basis.
5. Training materials on community sanitation, personal hygiene, and proper use of ORT packets.	4. IEF primarily worked to distribute such materials produced by other agencies. Although OMAs gave presentations, no curricula were developed.
6. No. of health workers trained as trainers in community sanitation, personal hygiene, and proper use of ORT packets.	6. Interim project reports filed 11/87 indicates that 75 workers were trained in 1985-1986, 154 in 1986-1987, and plans were made to train 50 more in 1987-1988.
7. Number of boreholes repaired or rehabilitated.	7. No boreholes have been repaired or rehabilitated with project resources. The level of such activity by other agencies is not known.

Objective II. (Continued)

EVALUATION INDICATOR	EOP ACHIEVEMENTS
8. Number of health facilities with "ORT corners" and supplies of ORT packets.	8. "ORT corners" have not functioned well, although all static health facilities reportedly have ORT packets.
9. Number of village tap committees functioning in areas where boreholes have been repaired/rehabilitated.	9. Very few of village tap committees are currently functioning. The project has focused little effort on this activity.
10. Number of boreholes still functioning 6 months and one year after repair/rehabilitation.	10. No such data are available. The MOW estimates 132 of 1200 (11%) need repair. Others suggest 1/3-2/3 are non-functioning at any time.
11. Number of ORT packets distributed in project area.	11. Interim report filed 11/87 submits same figures for this indicator as for supplies in number 3 above.
12. Decrease in the 1 week prevalence of diarrhea in children <6 from 161/1,000 to <80/1,000.	12. No data available since the 1983 "baseline" survey. Not a feasible indicator.
13. Community education in sanitation and hygiene given in at least 80% of villages in the target area.	13. Interim report of 11/87 indicates that "50% of target" was achieved in 1985-1986, and 100% of target in 1986-1987.
14. ORT packets available in at least 80% of the static health facilities in area.	14. ORS packets available in "50% of target" in 1985-1986, and "100% of target" by 1986-1987 per 11/87 interim report. Reportedly ORT packets are available in static health facilities at EOPE.

OBJECTIVE III.

"TO DECREASE THE PREVALENCE OF INFLAMMATORY TRACHOMA IN CHILDREN UNDER THE AGE OF SIX AND WOMEN OF CHILD BEARING AGE (15-40 YRS)."

EVALUATION INDICATOR	EOP ACHIEVEMENTS
1. Resources budgeted/annual expenditure.	1. Neither allocations nor expenditures were separated by intervention, however, CS project reports show 15% for "eye care", 10% water, 10% "disease control".
2. In kind resources directed toward this objective.	2. $24,908 in kind (at $.11/tube) for tetracycline ointment.
3. Number of tubes of tetracycline eye ointment provided by IEF, UNICEF, and the MOH.	3. 226,440 tubes of 2% tetracycline ointment received from UNICEF through time of EOPE. No supplies provided directly by the MOH.
4. Training materials on community sanitation/hygiene.	4. Not developed.
5. Technical Assistance from UNICEF and the MOW.	5. Project activities for this intervention have been limited to curative care for clinical trachoma. Borehole repair and rehabilitation by MOW has been limited.
6. Number of static health facilities with tetracycline eye ointment on hand.	6. Interim report of 11/87 indicates that 60% of static health facilities were supplied with ointment by 1985-1986, and 100% by 1986-1987. Current project staff reports 100% now have stock.
7. Number of health worker trained in recognition and treatment of trachoma.	7. Report of 11/87 indicates 159 workers trained 1985-1986, 199 1986-1987, and 50 targeted for training in 1987-1988.

Objective III. (Continued)

EVALUATION INDICATOR	EOP ACHIEVEMENTS
8. Number of health workers trained as trainers in community sanitation/hygiene.	8. As per #7, although not a formal training of trainers.
9. Number of boreholes repaired/ rehabilitated.	9. No boreholes have been repaired or rehabilitated with project funds. No data available on the MOW activities in this area.
10. Number of tubes of tetracycline eye ointment distributed every 6 months.	10. 32,000 for 1985-1986 and 70,000 for 1986-1987 per the 11/87 interim report.
11. Number of boreholes still functioning six months and one year after repair/ rehabilitation.	11. No such data available. MOW estimates 132 (11%) of 1200 need repair. Others suggest 1/3-2/3 ars non-functioning at any time.
12. Number of village tap committees functioning in areas where boreholes have been repaired/rehabilitated.	12. No data available. Probably very few are functioning and there has been little project activity in developing and supporting committees.
13. Decrease of 50% in prevalence of inflammatory trachoma in children <6 and women of child-bearing age in the target area.	13. No data are available since the 1983 "baseline" survey. No follow-up survey was (or will be) completed.
14. Community education in sanitation and hygiene given in at least 80% of villages in the target area.	14. Interim report of 11/87 indicates that "50% of target" was achieved in 1985-1986, and "100% of target" by 1986-1987.

Objective III. (Continued)

EVALUATION INDICATOR	EOP ACHIEVEMENTS
15. Tetracycline eye ointment available in 100% of static health facilities in the target area.	15. Report of 11/87 indicates achievement of "60% of target" in 1985-1986, and "100% of target" by 1986-1987. Current staff reports all facilities have supplies at the time of EOPE.
16. At least 80% of children <6 and women of child bearing age receiving semi-annual administration of tetracycline eye ointment trachoma prophylaxis.	16. Prophylactic use of tetracycline eye ointment to prevent trachoma is <u>not</u> appropriate. Although % achievements of targets were reported in 11/87, this indicator is not useful in monitoring project effectiveness.

OBJECTIVE IV.

"TO DECREASE THE PREVALENCE AND INCIDENCE OF MEASLES AND MEASLES RELATED MORTALITY IN CHILDREN UNDER THE AGE OF SIX."

EVALUATION INDICATOR	EOP ACHIEVEMENTS
1. Resources budgeted/annual expenditure.	1. Neither allocations nor expenditures were separated by intervention, however CS reports indicate 10% allocation.
2. In kind resources directed toward this objective.	2. Vaccines and other supplies were procured directly by the MOH, no IEF records.
3. Number of doses of measles vaccine provided to the LSV through the MOH.	3. 18,973 for 1985-1986 (that 1985 records for MOH show 9,890 doses given supports this figure), 18,521 for 1986-1987, no data available for 1987-1988.
4. Number of villages covered by the EPI mobile teams on a regular, annual basis.	4. No data available for this indicator.
5. Number of health facilities with functioning cold-chain links.	5. Not monitored by the project.
6. Number of health workers trained to give vitamin A capsules to all children with measles.	6. Not available, however 159 health workers in 1985-1986 and 100 in 1986-1987 were reported trained in "EPI diseases and strategies" per the 11/87 report.
7. Number of doses of measles vaccine given in target area each year.	7. These figures are available only for 1985 when 9,890 doses were given. More useful was the 6-7/88 EPI (MOH) coverage survey showing 73% of 318 children 12-23 mos. had received measles vaccine. In contrast, 1985 WHO coverage survey showed 39% card-recorded measles coverage (51% by parental recall). The (less reliable) village "spot checks" suggested a 64% coverage rate (among children <6) during 1986-1987.

INTERNATIONAL EYE FOUNDATION
DETAIL OF EXPENSES
USAID CHILD SURVIVAL FUND

LOWER SHIRE VALLEY INTERVENTION PROJECT

09/01/85 - 12/31/88
(includes planned expenditures through 12/31/88)

ITEM	USAID	IEF	MINISTRY OF HEALTH	OTHER/ IN-KIND	TOTAL CASH	TOTAL IN-KIND
1. PERSONNEL & FRINGES BENEFITS	216,600	10,376	38,500	0	226,976	38,500
2. CONSULTANTS	0	13,000	0	5,000	13,000	5,000
3. TRAVEL	51,434	13,813	0	6,000	65,247	6,000
4. TRAINING	27,548	21,211	41,171	0	48,759	41,171
5. EQUIPMENT	4,618	4,970	0	44,950	9,588	44,950
6. SUPPLIES	2,872	0	27,505	447,750	2,872	475,255
7. OTHER DIRECT COSTS	70,852	62,700	0	0	133,552	0
8. OVERHEAD	68,376	0	0	0	68,376	0
TOTAL	442,300	126,070	107,176	503,700	568,370	610,876

APPENDIX D
Summary of Grant Expenditures