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**Evaluation Report of the 1991-1994 AKF/USAID Matching Grant  
"Strengthening the Effectiveness, Management and Sustainability  
of Primary Health Care/Mother and Child Survival Programs  
in Asia and Africa"**

**VOLUME I  
EVALUATION REPORT**

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The evaluation teams wish to make clear that all views expressed in this report are those of evaluation team members, and do not necessarily reflect the opinions of USAID or of institutions of the Aga Khan Network.

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## ABBREVIATIONS AND ACRONYMS

A.I.D./USAID	United States Agency for International Development
AA	Administrative Assistant
ADRA	Adventist Development Relief Agency International
AIHD	ASEAN Institute For Health and Development
AKCHP	Aga Khan Community Health Programme, Dhaka AKDN Aga Khan Development Network
AKES	Aga Khan Education Services
AKF USA	Aga Khan Foundation U.S.A.
AKF(B)	Aga Khan Foundation (Bangladesh)
AKF(G)	Aga Khan Foundation (Geneva)
AKF(K)	Aga Khan Foundation (Kenya)
AKDN	Aga Khan Development Network
AKHN	Aga Khan Health Network
AKHS	Aga Khan Health Services
AKHS(K)	Aga Khan Health Services (Kenya)
AKMC	Aga Khan Medical College
AKU/CHS	Aga Khan University/Dept. of Community Health AKU Aga Khan University
AMREF	African Medical and Research Foundation
ANC	Antenatal Care
APHA	American Public Health Association
ARC	American Refugee Committee
ARI	Acute Respiratory Infection
BRAC	Bangladesh Rural Action Committee
BSH	Bangladesh Society of Hypertension
CB	Community Based
CBD	Community Based Distribution (of Contraceptives)
CBDD	Community Based Drug Distributor
CBDS	Community Based Drug Supply
CBHC	Community Based Health Care
CBHW	Community Based Health Worker
CBMIS	Community Based Management Information System
CBPHC	Community Based Primary Health Care
CBTOT	Community Based Training of Trainers
CCDB	Christian Commission for Development in Bangladesh
CEA	Cost Effectiveness Analysis
CEDPA	Center for Development and Population Activities
CEO	Chief Executive Officer
CHC	Central Health Clinic
CHD	Community Health Doctor
CHN	Community Health Nurse
CHO	Community Health Organizer (Officer)

CHV	Community Health Volunteer
CHW	Community Health Worker
CIC	Correctly Immunized Child
CIS	Clinic Information System
CIT	Community Intervention Team
CMT	Community Management Team
CMV	Community Mother Volunteer
COSAS	Coverage Survey Analysis System
CQI	Continuous Quality Control
CS	Child Survival
DANIDA	Danish International Development Agency
DHMT	District Health Management Team
DNO	District Medical Officer
DPT	Diphtheria Polio Tetanus
DUSS	Dhaka Urban Surveillance System
EDI	Economic Development Institute
ENHR	Essential National Health Research
EPI	Expanded Programme of Immunization
FHI	Family Health International
FHP	Family Health Project
FIC	Fully Immunized Child
FP	Family Planning
FPAK	Family Planning Association of Kenya
FPAP	Family Planning Association of Pakistan
FS	Field Supervisors
FWA	Fisherman's Welfare Association
GCDO	Grax Community Development Organization
GK	Gonoshastha Kendra
GM/P	Growth Monitoring and Promotion
GP	General Practitioner
GPU	Growth Promotion Unit
HDC	Health Development Committee
HH	Household
HKI	Helen Keller International
HSR	Health Systems Research
HW	Health Worker
ICDDR,B	International Centre for Diarrheal Disease Research, Bangladesh
IDDRP	Integrated Drug Demand Reduction Programme
IDRC	International Development Research Centre
IG(A)	Income Generating (Activities)
IMR	Infant Mortality Rate
IUCD	Intra-uterine Contraceptive Device
KARI	Kenyan Agricultural Research Institute
KMC	Karachi Metropolitan Corporation

KMWO	Kudzecha Mwavumbo Women's Organization
LB	Livebirth(s)
LBW	Low Birth Weight
LHV	Lady Health Visitor
MCH	Maternal and Child Health
MDP	Maripur Development Project
MECA	Monitoring, Analysis & Comparative Analysis of PHC Programs
MIS	Management Information System
MMC	MAP Management Committee
MMR	Maternal Mortality Rate
MPHC	Mombasa Primary Health Care Programme
MSH	Management Sciences for Health
MTP	Management Training Programme
NCDDP	National Control for Diarrheal Disease Programme
NCIH	National Council for International Health
NGO	Non-governmental Organization
NSP	Nutritional Surveillance Project
OMB	Office of Management and Budget
OPP	Orangi Pilot Programme
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PAMM	Program Against Micronutrient Malnutrition
PAVHNA	Pakistan Volun. Health and Nutrition Association
PGC	Project Governing Council
PHC MAP	Primary Health Care Management Advancement
PHC	Primary Health Care
PHO	Public Health Officer
PHT	Public Health Technician
PIC	Project Implementation Committee
PICT	Programme for The Introduction of Contraceptive
PNC	Prenatal Care
POS	Pregnancy Outcome Study
PRA	Participatory Rural Appraisal
PRICOR	Primary Health Care Operations Research
PRITECH	Technologies For Primary Health Care
PTA	Parent-Teacher Association
PVO	Private Voluntary Organizations
QR	Quarterly Report
RNP	Regional Network Programme
SA	Self Assessment (Report)
SCF	Save the Children Fund
SHD	Safe Home Delivery
SSS	Salt and Sugar Solution

SUH	Society for Urban Health
SVF	Samboon Vacharotai Foundation
TAC	Technical Advisory Committee
TBA	Traditional Birthing Attendant
TH	Traditional Healer
TL	Tubal Ligation
TOF	Training of Facilitators
TOT	Training of Trainers
TSG	Technical Support Group
TT	Tetanus Toxoid
U5MR	Under 5 Mortality Rate
UNICEF	United Nations Children's Fund
UPHC	Urban Primary Health Care Programme
URC	University Research Corporation
URTI	Upper Respiratory Tract Infection
VAC	Vitamin A Capsule
VGM	Visual Growth Monitoring System
VHC	Village Health Committee
VHSS	Voluntary Health Services Society
VIPP	Visualization in Participatory Programme
VITA	Volunteers in Technical Assistance
WRA	Women of Reproductive Age

## INTRODUCTION

This is the required final external evaluation of the five Aga Khan Foundation sponsored health projects that received support through a Matching Grant from the Agency for International Development, 1991-1994. The Matching Grant was for

*strengthening the effectiveness, management and sustainability of primary health care/mother and child survival programs in Asia and Africa*

and provided \$1.2 million over three years to match \$1.48 million from the Aga Khan Foundation USA.

Site visits for this evaluation began in May 1994, and the final report, after review and comments of projects and national evaluators, was completed in December 1994.

This evaluation differs from previous Matching Grant evaluations in four ways. First, in response to the objectives specified in the Scope of Work, this evaluation is detailed in systematically examining all indicators specified in the MG Application, then evaluating achievement compared to each of them. Second, it is analytic in that judgements are based upon calculations and systematic analyses of data that often go beyond those made by the projects themselves. This led to many suggestions for further uses that the projects can make of their own information. Third, it contains a systematic, in-depth assessment of cost analyses, financial management and sustainability in the PHC projects and of the PHC MAP modules that deal with these topics. And, fourth, reflecting the volume of detail entrained by these rigorous approaches, it is very long.

Hence, a few words describing the differences in the several sections of this document may be helpful to the reader. The shortest overview of the Matching Grant is the Executive Summary (I), which contains a summary of the evaluation team's findings and main recommendations. A view across the several projects at the major issues whose improvements were the stated goal and objectives of this Matching Grant--equity, effectiveness, efficiency, sustainability, and management--is presented in section II, Accomplishments and Cross-cutting Issues of the Matching Grant.

Within each of the three PHC projects, achievements are summarized in two places beyond their full presentation in the main text. In Section A, Achievements Compared to Original Objectives and Targets, tables present indicator levels planned and attained, and very brief comments on these comparisons; a narrative commentary on the achievements follows the tables. Section K, Overall Impression and Brief Recommendations, starts with a short narrative over-all impression of the project, and is followed by a complete, abbreviated listing of the recommendations which are made, with rationales and qualifications, in the main text.

## **I. EXECUTIVE SUMMARY**

In 1991, the Aga Khan Foundation (AKF) USA was awarded a three-year, \$1.2 million Matching Grant by United States Agency for International Development (USAID) to support five AKF-sponsored health programs in Asia and Africa. The overall goal of the Matching Grant was to contribute to improving the equity, effectiveness, efficiency and sustainability of primary health care programs in developing countries of Asia and Africa.

The purposes of the Matching Grant were to: 1) expand coverage, increase effectiveness and test new organizational models for community-based primary health care in three programs serving the health needs of more than 289,000 urban and rural residents by strengthening the capacities of local communities and non-governmental organizations to deal with their own health problems; 2) strengthen management, information systems, and the social, organizational and financial sustainability of 10-12 primary health care programs involved in the Regional Network and Primary Health Care Management Advancement Program activities; and 3) produce, distribute and promote the use of 8 field-tested primary health care management information modules and related training and resource materials.

An external final evaluation of the five programs - the Regional Network Program (RNP), the Primary Health Care Management Advancement Program (PHC MAP), and three primary health care programs (PHC), including the Mombasa Primary Health Care Program in Kenya (MPHC), the Urban Primary Health Care Program, Karachi, Pakistan (UPHC) and the Aga Khan Community Health Program, Dhaka, Bangladesh (AKCHP) - as required by the Matching Grant, was undertaken in May- October, 1994. The overall purposes of the evaluation were to: 1) assess the progress made to date by the various projects; 2) document improvements in the projects' performance and the health infrastructure for delivering services; and 3) evaluate the overall accomplishments of the Matching Grant.

Five evaluation teams, consisting of 3-4 people each, were drawn from a total pool of 6 evaluators. The group of evaluators included 3 international health consultants and 1 local health consultant from each of the three countries. The evaluation process included the following: review of available project reports, records and relevant documentation; visits to program areas; discussions with program staff and other relevant persons; community meetings; review of program self-assessments; and review of project progress in terms of qualitative indicators used by the Mombasa, Karachi and Dhaka primary health care programs.

In addressing the purposes of the evaluation, the evaluation teams assessed the following: 1) the level of achievement of each of the projects; 2) the availability, accessibility, utilization and effectiveness of the priority health services provided; 3) the management information systems; 4) the overall costs of the projects; 5) the relative costs and effectiveness of various service providers, levels of service and long term financial and organizational sustainability; 6) the major outcomes and impacts of outreach health services, local service delivery, and of strategies to increase community awareness of health needs and demand for health services; and

7) what actions the primary health care/ maternal health projects took at the community and household level to improve health behaviors.

The evaluation teams found that each of the programs had made significant achievements during the Matching Grant period. The RNP successfully supported 3 international workshops, held 4 regional training sessions, produced 3 newsletters, published 5 annual workshop reports, and created a strong network among the AKF primary health care (PHC) programs. The PHC MAP program produced 21 booklets on how to improve the management of PHC information and 3 computer diskettes of related software. The PHC MAP materials have been effectively promoted and disseminated and are being used by a number of national health services development programs, non-governmental organizations and consultants. Of the materials produced, Module 2 seems to be the most widely used.

Each of the 3 PHC programs achieved their targets for immunization of children against EPI diseases and mothers against tetanus. The PHC programs all demonstrated significant capacity to train health personnel. Each made remarkable gains with regards to the utilization and coverage of important maternal and child health services, including antenatal service and family planning services. Utilization of curative services increased in both Kenya and Bangladesh but declined in Pakistan.

The evaluation teams identified several weaknesses in each of the 5 programs. Due to apparent problems with staff development and training needs, the RNP was unable to meet 2 of its 5 objectives. To address this issue, the evaluators recommend that RNP expand its list of training resources and tap into other training opportunities. In addition, it is recommended that the RNP identify more egalitarian ways to manage the program, consider expanding its audience base and develop a 5-Year-Strategic Plan with a focus on sustainability.

The evaluators noted a number of errors in the PHC MAP materials. Moreover, the distribution of the materials began about a year later than originally planned. The evaluators recommend that the significant errors in the MAP modules be identified and corrected. It was also noted that none of the prototype modules are used routinely in their entirety in any of the PHC programs and no systematic feedback from module users and authors has of yet been organized. It is recommended that follow-up surveys be finalized and distributed as soon as possible and that a plan for further financial and organizational support be developed. The evaluators note that the PHC MAP materials can be an important training resource for the PHC projects if AKHN plans to expand the for-pay training role of projects. They recommend that AKHN and AKF invest in continuously improving the quality of the PHC MAP materials as they are a unique contribution to the improvement of health services globally.

In each of the PHC programs, program coverage appears to have decreased rather than expanded during the Matching Grant period. It may be that the objectives set for increasing coverage in each case were overly ambitious. The evaluation teams recommend that each program analyze how registration with the program and utilization of services differ among the poor and better off to assess program equity. In addition, it was found that growth monitoring



activities were unsuccessful as child malnutrition remained high. Each program and AKHN need to review and reassess growth monitoring, including consideration of low birth weight and maternal anaemia.

With regards to the management information systems, the evaluation teams are impressed by the efforts made by the 3 PHC programs to modify and utilize their information systems. Nevertheless, much information collected that would be useful for program management, was not analyzed. No follow-up population surveys to track health status changes, health service utilization and to validate the ongoing reporting systems were carried out in any of the 3 PHC projects and none of the projects calculated morbidity nor cause-specific mortality rates. The evaluation teams, therefore, recommend that the programs conduct follow-up population-based surveys to validate morbidity and mortality reporting in the management information systems. Furthermore, epidemiological technical assistance should be provided to each of the programs to address the weaknesses. Although the Matching Grant contains a wealth of useful indicators with which progress in development of the PHC projects can be measured, it was found that each project made many changes between the proposed indicators and those actually measured and followed. The evaluation teams attribute these changes to insufficient decentralization in the planning, programming, monitoring, evaluating and grant application process. For each health project, it is recommended that the management teams and communities be involved in setting their own indicators with aid of a technical consultant and that each team produce it's own logframe.

Innovative ways to deal with the major issues in the development and provision of basic health services in developing countries were addressed and attempted in each of the five programs. However, the evaluation teams identified leadership and management issues that require further attention. These are as follows: the organizational structures of the 3 PHC projects fostered separation of accounting functions from the decision-making responsibilities of project management; and many of the projects experienced problems with staff turnover. The teams recommend that future project planning and programming be more decentralized and that all vacant posts should be filled, preferably with women to assist AKF in its commitment to improving the status of women in development. Information on cost recovery, financial management at field level and financial sustainability needs be shared among the 3 PHC programs and consideration should be given to devoting an entire RNP session to these issues.

Improvements in the efficiency of the 3 PHC programs were approached differently for each project as evidenced by their modes of service delivery. The evaluation team notes that improvements in the efficiency of each program can be achieved through the reduction of administrative, indirect and vehicle operating costs. The estimated per capita costs in these 3 programs were as follows: \$2.05 in Mombasa, \$6.17 in Dhaka, and \$3-\$6 in Pakistan. The evaluation teams recommend that AKHN address the need for timely feedback of financial information with project managers and provide them with a greater ability to allocate resources and manage their funds effectively, thereby increasing effectiveness, efficiency and sustainability of activities.

Program sustainability was assessed on a number of different levels, including how well the 3 PHC programs had developed linkages with other agencies working in health in the project areas. The evaluation teams found that the Mombasa and Dhaka projects had developed linkages with other agencies, whereas the Karachi project, in general, had developed limited linkages. It is recommended that the projects increase their efforts to make more formal linkages with other health services organizations and take further steps towards developing their referral mechanisms. Of the 3 PHC programs, only the Dhaka project had made strides in achieving financial sustainability, although each of the projects have experimented with cost-recovery and income-generating activities. It is recommended that each project create an action plan for sustainability. Each of the three projects has demonstrated a significant capacity for training health personnel and should explore possibilities to increase the income of the PHC projects through an increased training role, capitalizing on their reputations, on rising demand and on attractiveness of PHC MAP and other training materials already produced.

Although each of the 3 PHC projects has made efforts to integrate the target communities into their programs, the resulting involvement of communities in the 3 programs has differed greatly: MPHC achieved outstanding results, while UPHC and AKCHP had limited success in mobilizing the community. The programs need to continue efforts to involve their respective communities in the support, management and provision of health services.

Additional numerous detailed recommendations are presented for each of the five programs evaluated in the body of this report. In general, the evaluation teams are impressed with the dedication displayed by each of the programs' project staff, the thoughtful work accomplished, the products produced in each of the five programs and in the overall management of the Matching Grant by AKF USA.

## II. ACCOMPLISHMENTS AND CROSS-CUTTING ISSUES OF THE MATCHING GRANT

This section highlights the major achievements of the five components evaluated (MPHC, UPHC, AKCHP, RNP, PHC MAP) compared to the overall objectives stated in the 1991 Matching Grant Application: Strengthening the Effectiveness, Management and Sustainability of Primary Health Care/Mother and Child Survival Programs in Asia and Africa. The overarching goal of the matching grant was to contribute to improving the equity, effectiveness, management, efficiency, and sustainability of PHC programs in developing countries of Africa and Asia, which are the major headings of this section.

While conducting this evaluation, the team was struck by important similarities and differences among the projects reviewed. This section, therefore, describes overall trends and cross-cutting issues found and proposes some recommendations of strategic importance to the Aga Khan Foundation and the Aga Khan Health Network. These comments and suggestions are made in addition to those for the specific projects in the main body of this report.

Having visited each of the projects and seen the difficult challenges faced by their staff, the evaluators judge that each of the field teams has worked diligently, and has produced many positive results.

### A. IMPROVEMENTS IN THE EQUITY OF PHC PROGRAMS

Although stated as a goal in the MG application, equity was not addressed in any of the project self-assessments. Equity was operationalized in measurable terms in UPHC and AKCHP, but was analyzed only in the latter.

However, there was evident concern for equity on the part of service managers and providers in both Karachi and Dhaka, and some actions taken to address equity concerns. Now that increasing pre-occupation with sustainability of services promotes the search for those who can, and will, pay for them, it is timely to refocus on those who can not, and on the relative importance that should be accorded to the often conflicting objective of equity.

"The concern for equity, as an objective" Donabedian explains clearly <sup>1</sup>, "arises because those who are furthest behind in health status and, therefore, most in need of additional services, are least able to pay for these services." There may be other reasons for non-utilization of needed services, but poverty is universally the predominant concern. Donabedian also explains that there are at least three different kinds of primary equity objectives, depending on intent to maximize, in a given population, total lifetime health status, or its increase equally in all social groups, or achievement of equal levels among them.

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<sup>1</sup> Donabedian, A., Benefits in Medical Care Programs, Harvard U. Press, 1976, pp. 372-3

The initial choice of sites and service programs for the three PHC/MCS projects was equitable in several ways. It selected especially poor target populations within poor countries.

It also focused on maternal and child survival services. That was logically equitable due to the extremely much higher relative risks of infants, small children and mothers dying, than of men and older women, when death rates in each of these subgroups in the target populations is compared to those in industrialized countries. Hence, promoting coverage and effectiveness of MCS services, in itself, promoted equity.

The decreases demonstrated in both the UPHC and MPHC programs in maternal, infant and child death rates, therefore, represented progress in health status equity which reasonably can be attributed to the efforts of the projects. To make such an attribution with confidence, however, requires comparison with the progress of a control population that did not have such a special program. However, no controls were identified by any of the PHC projects during this MG period.

While the PHC MAP materials provided tools for more equitable services by operationalizing the measurements of coverage, high-risk populations, and sustainability, they did not address equity per se.

1. Relative Allocations to the Poor and Needy

How did the objective of equity fare within the PHC projects? It is a relevant question since there was obviously considerable disparity between those extremely poor and those more financially secure observed by the evaluation team while visiting various parts of the target areas in Karachi and Dhaka, which are not economically homogeneous. The team did not, unfortunately, have enough exposure to the dwellings of beneficiaries of the MPHC project to comment on their economic heterogeneity.

The only effort to identify and analyze project results by economic status of beneficiaries, observed by the evaluation team in the 3 PHC projects, was made in AKCHP, where demographic and vital statistics data tracked in its Surveillance System are categorized into the slum (poor) and mohalla (low income, or working class) categories. AKCHP analyzed this data and reported that the infant mortality rate dropped, from 1991 to 1994, an extraordinary -63%, from 94 to 35, in the mohallas, but a much more modest -19%, from 113 to 92, in the slums. Further analysis of these economically contrasting populations, by the AKCHP Research Unit, has shown slum teenagers to be at a much lower level of education and higher likelihood of being already married than their mohalla counterparts.

In provision of service, equity is considered in both the Dhaka and Karachi programs, as the very poorest are distinguished and exempted from paying the user fees. Staff at Azam Basti, whose catchment contains many relatively well-off government employees, rate every household into one of four levels of economic well being. Just 21 out of about 1300 families registered (1.6%) were considered by clinic staff to be "welfare" cases, who are on the poor list and can

get free treatment. Those four-part categorizations, like much of the information gathered by the CHWs, is unfortunately not used in the analysis of program results.

Yet another type of equity is pursued diligently in several clinics of the UPHC program through their program of identifying "high-risk" mothers and children with the assistance of colored pins stuck into households on local area maps, or with growth charts of the faltering posted on a wall. By identifying, monitoring and servicing the especially needful with additional visits, the clinic staffs essentially promote the equity of allocation of their limited personnel-time resources.

It is also important to examine whether there has been equity in utilization of services among population sub-groups, such as those distinguished by economic, religious, political, migratory or other status. The evaluation team saw no evidence that any religious or other category of sub-group, except for those in greater need of M/CS services, received preferential treatment.

The evaluation team recommends that each project analyze how registration with the program, utilization of services, levels of protection, and improvement in health status have differed among the poor and the better-off within the boundaries of their target populations.

## 2. Coverage and Utilization of Services

Since M/CS services are intrinsically equitable, equity can also be examined in terms of how well projects increased coverage and utilization of them.

### Coverage

The objectives of expanding coverage presented in the 1991 Matching Grant Application, shown in the table below, were probably overambitious. Also, the estimates of populations already covered in 1991 were probably too high.

**INITIAL, PLANNED AND ACTUAL POPULATIONS COVERED BY PHC PROJECTS  
1991-1994**

Country (project)	1991 population covered	End of project population to be covered (planned)	% increase over '91 pop. planned	% change from '91 pop. achieved	End of project population registered (actual, '94)
Kenya (MPHC)	48,500	48,500	0 %	- 8%	44,435
Bangladesh (AKCHP)	62,000	70,000	+ 13%	- 62%	23,712
Pakistan (UPHC)	57,900	170,550 (with MACRO operating)	+ 195%	- 16%	48,829 (MACRO not operating yet)
<b>TOTAL</b>	<b>168,400</b>	<b>289,050</b>	<b>+ 72%</b>	<b>- 31%</b>	<b>116,976</b>

It is evident that the populations covered by the three primary health care projects supported by the matching grant did not expand by 72%, as planned, but decreased in each project, and overall by about 30%. Several reasons are apparent for this shortfall.

The largest of the gaps between planned and achieved was in Karachi, where there was a 16% drop in the population registered compared to the planned expansion of 195% over the estimated 57,900 covered in 1991. This was due largely to UPHC not being able to make the planned MACRO site operational within this MG period. The MACRO has been advanced to an active planning stage, including some achievements in availability of water, but not to provision of PHC services. Further, utilization of services by the population in the original 5 Katchi Abadis declined during this period, so that there were fewer registries at the end than at the beginning.

In contrast, most measures of utilization rose in the Dhaka project, but the 1991 AKCHP estimate of population "covered" was approximately 24,000, not the 62,000 cited in the MG Application. It appears that less than 40% of slum families registered with the program. In terms of equity, the team has not seen data on how the economic status of registries compares with that of those who did not register. This is an important unknown, since more than half of the residents in the target areas, which are still Dhaka Wards 61 and 62, are not registered, hence do not receive house visits. Therefore, the evaluation team strongly recommends that AKCHP conduct a representative population survey, or find other valid means, to characterize and

compare the registered and non-registered populations in its target Wards. This study should use some measures of economic status, of need for PHC services, and of sources of services used.

Also, since an increasing percentage of users of curative services are not registered, it is important to investigate whether it is the poor or the better-off who are being attracted, as well as the proportion of non-registered users who come from within and from outside the two target Wards. Another consideration is that there has been some net outmigration from the areas serviced, both in Dhaka and Karachi. A true assessment of coverage and its expansion requires information on the characteristics just mentioned above of users and non-users, in and outside the target areas, which is currently unknown.

Furthermore, in these two populations, there has been a trend toward outmigration of families during the project period. Karachi experiences temporary migration of families, depending upon economic conditions and cultural traditions surrounding birth.

Finally, the evaluation team feels that coverage targets for Pakistan during the matching grant were overly ambitious, given historical difficulties in working with these urban communities and the community-based approach adopted for the project. It is highly recommended that the UPHC staff be more realistic in planning future targets.

In Kwale District, Kenya, there may have been a greater increase in coverage than is apparent from the figures in Table 1 because the principal services provided by MPHIC project staff have been mobilization and training of community members so that the latter could provide service within their own communities. This process has extended progressively throughout the period so that almost all villages have been engaged, and most are now active.

The evaluation team concludes that coverage gains have been satisfactory for Mombasa and Dhaka during the grant. However, coverage for the Pakistan case was limited by the slow progress of the Macro, as well as the other factors described above.

### Utilization

The main objective of the matching grant was to improve coverage of maternal and child health care services in the target populations. Although the MG Application states that PHC/MCS programs will be made "accessible" and "available", to 80-90% of the target population, those terms were never operationalized, so we judge them from the utilization achieved. In the three PHC Projects, utilization and coverage of important MCH services increased during the matching grant. For instance, child immunization services were well promoted and used in all three PHC projects, which achieved or exceeded the target of 85% of under 5 year olds completely immunized. Progress also was achieved in raising tetanus toxoid coverage in women of reproductive age in these projects as well. However, administration of immunizations to children at the appropriate age interval was identified a problem and is now being addressed by all three projects.

Utilization of antenatal care services was nearly universal among the target population in Kenya (97%), compared with 70% in Pakistan.

In addition, use of family planning services improved in all three projects during the matching grant, with reported contraceptive prevalence reaching 23% in Kenya, 31% in Karachi, and 47% in Dhaka.

Although a high proportion of children were weighed for growth monitoring purposes in the three projects, none of them achieved significant progress in reducing malnutrition. The high prevalence and intractability of child malnutrition led the MPHC and Karachi projects to several innovations, including changing the age for growth monitoring activities to less than two year olds rather than less than three year (or less than five year) old children; better tracking of trends in growth through identification and education of mothers of rising and falling growth curves; emphasizing food mixing and frequent feedings in nutrition education; and helping rural farmers to increase food production in impoverished rural areas.

One major observation made by the team was that overall utilization of curative and some other services declined steadily in the Pakistan UPHC Project during the matching grant; whereas, utilization increased in both the Mombasa and Dhaka Projects. Factors influencing declines in utilization need to be identified and documented by the Pakistan project in order to understand how to provide continuing coverage to the target population and to improve the probability of sustaining project activities within these communities.

### 3. Gender Issues

Because an explicit objective of the matching grant is to increase use of priority health services by mothers and children, and because AKF states that "all projects have a major focus on women as both beneficiaries and providers of care", gender issues pertaining to the three PHC Projects evaluated are discussed.

While the role of gender rarely is considered in most PHC Projects during design or implementation stages, gender differences in 1) who participates in delivery of services; 2) who benefits from services; and 3) who pays for services ultimately can determine the effectiveness of a project. The AKF funded PHC programs are to be commended on the steps they have taken in identifying the need to educate themselves about gender issues, and the status of women.

Gender issues were explored at the 1993 and 1994 annual international RNP workshops and during two, three-day gender-sensitization workshops. Utilizing information learned during these sessions, the status and situation of women in each individual project was analyzed and strategies to ensure inclusion of women in the decision-making process and roles were devised. For instance, the Kisumu Project applied knowledge gained at the RNP workshop and increased participation of women in their project. In addition, the Mombasa Project was sensitized to the needs of women in their communities for water collection and quality. Through indigenous



womens' groups, the project mobilized women to work on creating improved water lines and water sources.

The steps needed to expand the roles of women is, of course, a challenge strongly dependent on each cultural and social context. Merely the creation of a corps of some 60 women routinely visiting households to provide social services in their neighborhoods in largely Muslim Karachi was considered by many there to be a major accomplishment. Many families, at first, were unwilling to let their women leave the security of their houses to visit other dwellings. Now, the Community Health Worker role has become accepted, some of the CHWs have graduated to better pay or higher responsibility as TBAs or in-charges of clinic activities, and some families are seeking employment of their women as CHWs. The CHWs, thus, have become role models; they have shown that women can go out to work in the city, to provide services and earn a modest income, without negative repercussions for themselves or their families. One Pakistani professional told the evaluation team, "The CHWs are a national treasure."

Gender issues do not pertain exclusively to the participation of women in PHC, however. While female health workers are the most effective in relating to female clients of health and family planning programs in many countries, experience has shown that projects which exclude men from education and decision-making processes, risk overlooking one of the main deterrents to utilization of contraceptives. The Mombasa PHC Project discovered that utilization of family planning services by women in one community was linked to approval of use by men and mothers-in-law. Because men were integrated into health and family planning education in this community, family planning services now are widely accepted and utilized. Similarly, in Pakistan, the evaluation team recommended that men be included more in family planning programs.

While all AKF funded PHC programs have grown stronger on gender issues, project organization above the field level tends to reinforce traditional gender roles. For instance, women are selected as community-based health workers for the most part. Further, women currently participate as doers in the AKF funded PHC projects but are not as equally involved as decision-makers. Increasing the opportunity of female participation on Community Management Teams (CMTs), and increasing contact of patients with female doctors in field sites in Pakistan may be two effective approaches for increasing utilization by community members while at the same time providing role models for young women. In Mombasa, it is recommended the project hire an additional female front-liner, who would assist with education and provision of family planning services in Kwale District.

Placing more women in upper management positions within the AKF network might help to expand, incrementally, gender norms within African and Asian cultures, and assist AKF in its commitment to improving the status of women in development.

#### 4. Distribution of Benefits

One approach to examining improvements in equity of PHC Projects is the extent to which the distribution of benefits among population groups has become more equitable during the period of the matching grant. As the foregoing sections have stated, coverage rates for maternal and child health services have risen in most cases, and the role and status of women in projects have been given priority. However, the evaluation team noticed that some strategies which were being adopted or implemented by the PHC projects may reinforce biases in the distribution of benefits, or contribute to declining access and demand for services among different population groups.

While the Mombasa PHC Project has developed effective strategies for involving women and poor individuals, families, and communities into project activities, it was the impression of the evaluation team that food production activities as currently implemented through plow may result in an unequal distribution of benefits towards male farmers, even though female farmers are responsible for most farming activities in Kwale District.<sup>2</sup> Project staff did suggest that groups of farmers sometimes pooled resources to purchase plows, thereby spreading the financial burden and improving access. In addition, it was felt that women farmers benefitted from this strategy since the time required to prepare fields was decreased through this farming method. While it was beyond the scope of the evaluation team to investigate these issues carefully, we recommend that the project document who is receiving benefits from this project activity, and whether there are any potential barriers to access and benefits among the communities they serve.

The Pakistan Urban Primary Health Care Program works in urban communities which are often diverse ethnically, socially, culturally, and politically. As such, the potential for unequal distribution of benefits of project activities exists, as some groups may have easier access to services than others. Recent changes in providing preventive services through lane, rather than house visits; and in raising user charges in field sites may be related to declining utilization rates, though the project has not evaluated which individuals or families are no longer participating in or benefiting from AKU/CHS health activities. Therefore, the evaluation team suggests that project staff carefully review and assess strategies to ensure that they are not creating barriers to access and negative incentives for utilization of services.

Finally, both the Dhaka and Pakistan Projects provide services to registered and non-registered populations in urban areas. It would be important to know whether there are any socio-economic differences between the populations served, and if so, to develop strategies to cover vulnerable groups more.

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<sup>2</sup> For instance, the TechnoServe Report mentions that most of the non-farm wage incomes accrue to men, whereas, women depend upon farming.

## B. IMPROVEMENTS IN THE EFFECTIVENESS OF PROGRAMS

Effectiveness of PHC Programs can be assessed in two different ways: 1) managerially, by the extent of achievement of the targets and objectives set, as addressed in section A of each of the individual projects, or 2) epidemiologically, by impact on health status, as discussed in this section. Effectiveness of efforts to promote community-led PHC programs can be shown by evidence of functioning community organizations participating in the management of community-based PHC services.

### 1. Changes in Mortality and Morbidity

Reduction in morbidity and/or mortality is the clearest epidemiologic measure of effectiveness of a health program.

Impressive decreases in infant, child and maternal mortality occurred in Dhaka under the AKCHP program during this matching grant. The infant mortality rate dropped 63%, from 94 to 35 in the mohallas (working class) areas of the project (please see figure 1), and 19%, from 113 to 92 in the slums. At the same time, maternal deaths, of which there had been an average of 5 per year during the preceding 4 years, dropped to 1 in 1992 and to 0 in both 1992 and 1993. Thus the objectives expressed in the MG Application--IMR reduced by 40% and MMR by 70%--were well met, in the managerial meaning of effectiveness.

In Karachi, the steep decline in infant and child death rates seen in the preceding MG period unexpectedly rose in 1992, then declined again in 1993 to just below the levels of 1991 (please see figure 2). The reported cause of death most likely implicated in this setback was "diarrhoeal syndromes", which bumped up prominently in both 1990 and 1992. This is all the more likely in view of the detection of unsuspected cholera in Karachi during the preceding year by the new Chief of the CHS Department. It is noteworthy that the yearly changes in infant and child death rates varied considerably among the 5 katchi abadis, as did the levels they reached in 1993. IMR varied from a high of 80 in Chanesar Goth to a low of 32 in Azam Basthi (please see figures 3-7 in Annex 6).

The major, rapid declines in mortality seen in the Karachi and Dhaka projects were probably due to sharp drops in deaths due to diarrhoeal dehydration and to immunizable diseases.

The maternal mortality rate in the UPHC Karachi project dropped from 39 per 10,000 livebirths in 1990 to 19 in 1993, an impressive 50% decline, however based on small numerators of less than five maternal deaths each.

No cause specific death or morbidity rates were reported by any of the PHC three projects. Deaths, by cause, are collected in both UPHC and AKCHP, and reported as %'s of the total. The same is done for various categories of disease seen in the clinics of these two projects.

In Kenya, the MPHC does not track or report either mortality or morbidity, focusing entirely upon indicators of process and practice in families, determined by annual household surveys.

Services to deal with acute lower respiratory infection are just beginning to be developed in 2 katchi abadis in Karachi, and have been extended to all clinics in Dhaka.- At the current reduced levels of child mortality, respiratory infections are now a major source of deaths; in Dhaka they are the main cause of child death.

Young child malnutrition did not improve, despite growth monitoring efforts, in any of these projects. Anemia of pregnant women and low birth weights are common, apparently unimproved, conditions in all three projects. UPHC is trying to track LBW by getting TBAs to report births within 48 hours of delivery. Malaria, schistosomiasis, and intestinal worms are highly prevalent in the MPHC Locations, but the project is unable to measure or track these devitalizing conditions because it lacks laboratory services.

None of the three PHC Projects conducted post-matching grant community surveys of morbidity and mortality, in order to determine accomplishments within the period. Data on mortality and morbidity are based on reports from service statistics and verbal feedback from community health workers in Pakistan and Dhaka. It is strongly recommended that such surveys be conducted in order to develop a better gauge of effectiveness for future activities.

## 2. Ineffectiveness of GM/P in UPHC, MPHC, AKCHP

Growth monitoring and promotion (GM/P) has been judged by the staff of each of these three projects to be ineffective, in that it did not significantly change the proportions of malnourished children in the weighed populations. CHS staff have been the most active in trying to find new approaches, more effective approaches, with surveillance of low birth weights through increased TBA early reporting of births, weighing stations, visual display of growth charts at clinics, etc.

The evaluation team would like to offer here several observations and suggestions for all three projects. These suggestions are based upon the reconsideration of growth monitoring/promotion going on globally, such as several recent reports from India questioning its efficacy, and new directions being promoted by UNICEF.

Concern for GM/P is not only about ineffectiveness, but also cost. The cost analysis shows an average annual unit cost per child weighed of \$7.42 in UPHC.

a. GM/P in any of the projects might have been more effective than judged to have been the case, but this could have been masked by too blunt analysis that lumped together children of all ages under 5 or 3 years. The GM/P Projects should re-analyze their results by disaggregating their data according to age. The crucial ages in which malnutrition can be prevented is 6-18 months; from 18-36 months, curative action can be effective. From 3-5 years

of age, probably not much can be done. If the yearly rise of 1% in "normal" among Karachi children were found to have been concentrated in the 6-12 or 1-18 month old children, then that could be considered a very successful effect of GM/P in the first year of life.

b. Lack of a control population makes it difficult to determine whether the GM/P has produced positive results because this lack deprives us of an estimation of what the relative distribution of malnutrition would have been had there not been the GM/P activities. Malnutrition levels continually fluctuate in response to many changing factors: weather, crop failures, rising pulse and other food prices, decreasing incomes, inflation, public disturbances that deprive daily earners of their wages, epidemic diseases, etc. Given the cost and the importance of the GM/P program, a reasonably comparable population, in which GM/P is not to be initiated, should be identified for examination at the start and end of a period of interest. Changes in relative proportions of malnourished children in this population, due to multiple changing forces, could then be compared with the changes that resulted from the GM/P activities in the project area.

c. After evaluating numerous GM/P programs, UNICEF has concluded that a crucial element for success is community and maternal participation in and management of the GM/P activities. It does not appear that such maternal participation has been specifically promoted in these PHC projects, even in MPHC which is so finely attuned to community process, except perhaps for those schools in Kwale district where community schoolchildren have done the GM/P. The team recommends that this approach be considered seriously by the several projects. The RNP might be a useful mechanism to examine this issue, provided that the several members agreed.

### 3. Community Participation

Community process includes the strategies used by each project to enlist the active participation of communities in the design, implementation, and evaluation of primary health care services provided by the project.

In February 1992 a workshop on "Community Participation in Context of Evolving PHC Systems" was held in Mombasa through the annual meeting of RNP. At this meeting, each AKF funded PHC project defined how it enlisted the community's participation in project activities. Looking back, the role communities would play in each PHC project in Mombasa, Dhaka and Karachi could have been predicted from project presentations made at that time. Subsequently, the effectiveness of community processes undertaken under this grant has differed greatly among the three PHC projects.

#### Results

The MPHC has been the most skillful, carrying forward techniques tested in the Kisumu project, and by far the most successful, having established a functioning Project Implementation Committee in each of its three Locations, and working groups in most of its 58 villages.

UPHC has obtained only very modest results from apparently only modest efforts. In Baba Island, Essa Nagri and the Macro area there do exist "community organizations responsible for health and exercising some degree of control over local health activities", to use the language from Output 1 of the MG Application. They are at quite different levels of functioning, with respect to that definition, and owe their existence to UPHC in different degrees.

The strong, well functioning Fisherman's Welfare Association of Baba Island was working well and negotiating with outside organizations before it began a fruitful collaboration with UPHC staff.

The Community Management Team of Essa Nagri was created by UPHC staff, continues to meet, functions to raise money for special services, is discussing internally how it might take over management of some PHC activities from UPHC, but feels that it lacks budget to do so, and seems a long way from achieving that goal. UPHC has created in the Macro area, for which Karachi Ward #45 was selected, a so-called Community Management Team, which appears to be a task force. It calls together NGOs, various local organizations, and identified individual activists to discuss possible development and PHC activities, that might subsequently be negotiated with a to-be-strengthened District Health Management. There does not yet seem to be a community-based organization functioning in the Macro area.

Although AKCHP has worked intensively with women in three small communities adjacent to its main catchment in order to frame a local organizational infrastructure to manage PHC activities in their community, this did not succeed.

These very limited fruits, outside of the steady progress of the MPHIC project, after three years of effort only show how difficult it is to be effective in community process. The only truly 'community-led' PHC effort, which was sought in both urban PHC projects, was seen in Baba Island.

All three projects, then and now, have integrated communities into their PHC programs to different degrees. This is especially significant since the role of the community in each program is directly related to the each project's effectiveness in the delivery of PHC services, and its prospects for sustainability.

### Approaches

The Mombasa PHC Project utilizes the most diverse and flexible strategies to engage the participation of the community in PHC, and could be placed at one end of the continuum of increasing the role of the community in decision-making and implementation. The project has increased significantly the number of villages with active community health committees and number of beneficiaries during the period of the matching grant. In addition, the project identifies and utilizes existing community leadership structures and organizations (such as schools), from which to achieve an entree into communities regarding health and development activities. Furthermore, communities are encouraged to identify and prioritize health needs which the project

attempts to meet through the efforts of various frontliners. In addition, the project has trained and makes use of volunteer community health workers to instill health messages into their communities.

By contrast, because of its relationship to AKU and the need for training and research sites, communities have been integrated into decision-making and implementation of the Pakistan UPHC Project on a more limited scale. Community health needs were determined by the CHS Department at the outset through a series of health surveys.

However, there are cases where the community is involved more in setting priorities and selecting strategies, such as in the Macro field site and Baba Island. In the Macro site, as well as two other field sites (Grax and Essa Nagri), the UPHC has experimented with Community Management Teams, which appear to be functioning to various degrees of effectiveness. In Baba Island, the community identified the need for preventive and clinical services, and invited the CHS Department to work with them.

Another important issue for the Pakistan UPHC has been its reliance, and AKCHP's as well, upon paid community health workers from the beginning of the project. The rationale behind this policy was to ensure continued and active participation; however, during the matching grant, there have been significant clashes from CHWs demanding more rights as AKU "employees", as well as incipient movements to unionize health workers. Paid workers are identified within their communities as being agents of their employer rather than performing services in the community's interest. The project has chosen to move away from paid CHWs by not replacing those resigning from their positions.

For both Mombasa and Pakistan projects, the community is involved in planning and implementation on technical issues related to health. Skill-building in decision-making, management, and self-sufficiency are also important for communities to learn in order to increase program effectiveness and ensure sustainability. An example where this is occurring is in Dhaka through the PHC funds. Their experiences with this activity would be worthwhile to share among all PHC projects.<sup>3</sup> The MPHIC has been working on management skills at the community level, but needs to institutionalize this more within the project.

To the evaluation team, it appeared that most effective projects allocated substantial staff time to increasing the role of the community. The MPHIC, which has made tremendous strides in community development during this grant period, has expertise in community development on staff. AKU/CHS, having obtained mixed results, intends to allocate additional time and effort to obtain community participation in the Macro site.

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<sup>3</sup> A thorough evaluation of community process was not possible in Dhaka due to differences in evaluation team composition.

## C. IMPROVEMENTS IN THE MANAGEMENT OF PHC PROGRAMS

### 1. The PHC Model(s) Tested

An interesting objective of the matching grant was to "test new organizational models for community-based PHC in three projects." This section attempts to address two questions: what have been the results of this testing? and, what approaches to PHC has each of these projects demonstrated to be successful which could be used in other PHC programs elsewhere?

Utilizing the lessons of the Kisumu project, MPHC has demonstrated that it is possible to engender community participation in support of primary health care activities. MPHC staff have been able to gain the confidence and collaboration of communities, and to motivate them to change many of their health-related behaviors. However, the project has not been able to measure changes in health status to quantitatively demonstrate the public health impact of this result. Nor has it been able, so far, to develop possibilities of financing except through continued donor support.

Impressively, MPHC staff have succeeded in guiding community process far more than have the staff in the other two projects, by skillfully and patiently following the "lessons learned" that they clearly outline in their Self Assessment Report. These lessons include working closely and reliably with, and listening carefully to, their communities, and then assisting them to work on needs identified by the community itself. The MPHC acknowledges and demonstrates that successful community management of PHC is a long-term process.

UPHC and AKCHP have both demonstrated the large potential impact on infant/child and maternal mortality possible from a PHC program based on house-visits, even with limited community mobilization, when there is high prevalence and incidence of communicable diseases.

Since 1983, AKU/CHS has experimented with PHC modules (called micro-modules because they address a limited population) in the squatter settlements of Karachi. In 1994 it reported its judgement on them. In its Self Assessment report UPHC unfortunately did not characterize specifically the "model" of these micro-modules that was tested, nor the constant and varied input factors examined, nor the critical output variables used in decision making. The following, therefore, is the evaluation team's attempt to briefly describe the UPHC micro-module model (please see Box below).



## KARACHI MICRO-MODULES

In Karachi 5 squatter settlement target areas, each with 7-10,000 people with one clinic provided by project, and targeted for basic PHC services with:

- 10-14 paid Community Health Workers who make daily visits, getting to every household at least once a month, there to weigh <5 y.o. children for growth monitoring, check immunizations, check reproductive age women for pregnancy, educate and refer as needed
  - clinic target area divided into sectors, one per CHW, containing approximately 100-125 families
  - CHW visits 5-6 households per day
  - 70-80% households actually get visited each month
  - high risk Hhs, e.g. growth faltering, pregn. prob., visited more often, up to 4 times in a month
- 1-2 Lady Health Visitors supervising the CHWs and the mothers and children who came to a simple clinic for immunizations, contraceptives, other preventive services, and basic curative services for a fee
- 1 Community Health Nurse who manages the clinic and the CHNs
- 1 full time equivalent community health doctor, made up of a number of different doctors who visit the clinic from the CHS department of AKU
  
- clinics are open 9-2, five mornings a week
- Services are standard basic Primary Health Care services
- Community was surveyed and diagnosed initially, but little mobilized
- A few collaborative links were established with other NGOs
- No working links were established with local government (KMC)
- Rare contact with the large number of practitioners in the area
- A computerized MIS based on CHW & clinic data, & verbal autopsies
  
- During this MG period, seeking cost reduction, UPHC experimented with two forms of convoking women to come to CHWs, instead of the CHWs going to them:
  - health education to groups of women in "lane meetings"
  - doing GM at "weighing stations" in the clinics
- Other economies: children over 3 not targeted for weighing, imm.
- UPHC did cost analyses yearly to examine affordability
  
- Management of CHW workforce encountered troubles: strikes for higher pay and benefits, some CHWs bored with repetitive work, some data unreliable

In judgement on its experience with these five micro-modules, CHS/AKU reported the following as Major Lessons Learned in its Self-Assessment Report:

The infrastructure of using paid CHWs which makes it feasible to pursue the goal of equity in health care i.e. universal coverage and care according to need, may not be sustainable. Furthermore, CHWs when paid, tend to become representatives of the employer rather than the community....The program has not resulted in a system sustainable either financially, socially or culturally in the community. This is in part because the population is poor, but also because it is ethnically and religiously diverse, often to the point of conflict.

CHS then notes further reasons for non-sustainability:

- difficulty of getting PHC support money from communities where priorities are not dealt with,
- sustainability needs involvement of community which is slow and can produce inequities, and
- sub-communities are hard to organize to participate if their needs (e.g. water) are not addressed.

Hence, CHS/AKU has apparently decided that its micro-module approach effectively improves health status, but can not be sustained because the communities serviced will not collaborate or pay enough to maintain them. The main problem, in this view, is that the communities are difficult to work with, and that they were not dealt with in terms of their felt needs and were not organized.

However, UPHC has not documented the particular strategy it developed and applied to obtain community mobilization, which was needed as a critical input into the process of "testing the model" in the katchi abadis. UPHC staff do not seem to have learned from MPH staff the basic approaches and techniques needed to mobilize communities, whether in rural or urban settings. This lack of transfer of know-how is despite their mutual participation in the RNP. Community mobilization was articulated originally, but theoretically, as part of this model, and especially during this MG period, in which efforts were to be undertaken to propel the projects towards "community-led" PHC programs. But the evaluation team unfortunately finds little convincing evidence that much professional effort was given to community participation, although CHS/AKU now concludes that this is a critical necessity for sustainability. In short, the evaluation team feels that the valid conclusion is not that the micro-module model was tested and found wanting, but that it was probably not given an adequate test because key inputs were wanting.

Is it too late? Could communities in the 5 katchi abadis still be mobilized, given the right effort? Unfortunately, the evaluation team does not know enough about those communities or the CHS/AKU to offer an opinion.

The UPHC project also demonstrated the value that a community-based program provides to a university for teaching nurses and medical students, and in research on community-based health. In addition, the urban focus of the project helped CHS/AKU develop intriguing conceptual models for PHC.

However, this project demonstrates that universities more readily support research and teaching activities than they do empathetic outreach service programs in communities. In fact, there are instances when the agendas of teaching versus community conflict. For instance, the hours of operation of the field sites are convenient for medical students and community health physicians who have other responsibilities; whereas, the needs of the community may call for greater availability of doctors services.

To profit from the hard lessons learned in this process, and to attain a scale perceived to be more sustainable, UPHC embarked upon a more community-led approach, known as Macro. Services were planned to be operating by the end of the matching grant. Despite an excellent conceptual model, the Macro is still in the initial exploration, study, and discussion stages. Progress has been slower than planned due in part to unanticipated changes in the communities, turnover in project staff, and reluctance of the Board of Trustees, according to statements by reviewers of the draft of this evaluation report.

Because the evaluation team was unable to assess the progress of the Macro during the matching grant, it is difficult to determine whether this approach could be generalized to other PHC programs. The evaluation team would like to highlight that some of the approaches utilized for the UPHC Project have been included successfully in a separate rural project implemented by the CHS Department. This experience begs the question of whether the PHC approach adopted for the urban field sites would be more appropriate in rural areas.

The AKCHP service structure and approach is similar to UPHC's except for the differences shown in the Box below.

## **DIFFERENCES BETWEEN AKCHP SERVICES AND UPHC'S MICRO-MODULES**

- The entire population is half as large
  - 23,712 registered in Dhaka versus 48,829 in UPHC
  - A smaller % of the population resident in the ward is register.
- More clinics per population; 3 satellite clinics in each of Wards 62 & 65, or 1 satellite clinic for 2,500-5,000 registered inhabitants  
1 satellite clinic for 6,750-13,500 reg. + unregistered inh.
  - S.clinics in tinier, shabbier buildings provided by community
  - S. clinics operate only two days per week
  - Most S. clinics offer some simple, cheap laboratory services
  - Referrals to numerous hospitals, none an AK hospital
  - Record keeping in clinics seems much less than in UPHC
- 1/3 the CHWs per population: 13 paid CHWs for 23,712
- Each CHW responsible for 25-30 units of 15 HHs each, for an average of 370 households containing an average population of 1830 versus average 125 households per UPHC CHW
- Each CHW visits about 15 targeted, high risk households per day, 2+ times the UPHC rate
- CHW work complemented by large number (181) of trained TBAs, 124 Community Mother Volunteers, and 27 Moholla Mother Volunteers; project meets with them periodically
- Good working links with local government, some hospitals, and numerous NGOs
- Despite some attempts to do so, has not been able to mobilize communities for organized support of PHC
- Different, more rigorous fee structure (please see Cost Analysis)

Although health status and community utilization have improved progressively in the AKCHP catchment, and the staff have undertaken a number of measures to improve cost recovery, and have made a sustainability as well as a cost analysis, AKCHP is still developing the form and function of its PHC model. AKCHP does not appear to feel that its model has been sufficiently tested to judge it yet. The evaluation team concurs.

## 2. Project Management

### *a) Administration of PHC Projects*

All effective primary health care programs require strong leadership and management skills in order to make good use of limited project resources. The evaluation team felt that both leadership and management issues need further attention in order to enable the PHC Projects to meet their stated objectives.

Turnover in the Project Manager position in Dhaka and Mombasa has affected staff morale and ability of each project to meet goals and objectives. In Dhaka, nearly 16 months passed prior to hiring the current Project Manager; nine months have gone by since the previous Project Manager resigned in Mombasa. The evaluation team was informed that there have been ongoing efforts by AKHS,K to find a replacement, without satisfactory results.

There has been turnover of other health personnel involved in implementation of project activities. In Karachi, several key staff were reassigned to other grants and not being replaced under the current project. Turnover also occurs for field directors and community health nurses who sign a one year contract. In addition, both Karachi and Dhaka are operating with fewer community health workers than at the start of the project. Replacement of these workers will not occur since the project's emphasis is changing toward non-paid, volunteer CHWs. The effects of these changes on effectiveness and sustainability of the project should be followed closely.

Staff development is another area of personnel management which is important to the success of projects. Continuing education and staff development activities were limited in Mombasa; while, the opposite was true in Dhaka and Pakistan for professional-level staff, and also for CHWs.

Another aspect of staff development is technical assistance support. The process by which TA is made available needs to be streamlined, broadened, and made responsive to project needs in a timely fashion.

Managers of PHC Projects evaluated currently lack authority to make key management decisions, although they are held responsible for project outcomes. The disproportionate delegation of responsibility and authority is a common problem area of most organizations not unique to these projects, but is vital to them because of the constantly changing challenges and the need for continual, active problem solving.

However, the evaluation team believes that more authority by project managers in hiring and firing of personnel, use of key equipment for project activities, such as vehicles in Mombasa, and allocation of human resources among project activities, such as making CHNs more responsible for operations of field sites in Pakistan, would be useful steps toward decentralizing authority within the organizational structure.

In addition, it is strongly recommended that along with increased authority for management decisions, project managers or directors develop a "systems" approach to management, which would be based on an integrated set of information on human, material, and financial resources. This approach would allow managers to allocate resources more optimally, thereby increasing effectiveness, efficiency, and sustainability of project activities.

b) *Financial Management*

Financial management of the Matching Grant by AKF has been excellent owing to thoroughness of documentation and systems established to maintain financial control. The Matching Grant accounts are audited annually in each country and in Washington, D.C. The grant employs qualified accounting staff at all levels.

There are areas, however, where management of finances at the project level could be improved, particularly with regard to feedback and sharing of financial information, separation of resource allocation decisions from financial management activities, and management of community-level resources.

The Mombasa and Pakistan projects could increase the amount of financial information available to project managers and field-level staff through more routine and comprehensive feedback and analysis of project accounts. This could be accomplished by developing in-house capacities for financial analysis, and by routine reporting of accounts not only to finance personnel, but also to managers.

Further, all three projects experienced separation of accounting functions from decision-making responsibilities of project management, though to varying degrees. In order to allocate scarce resources in the most optimal manner, to control project costs, and ensure financial sustainability, project managers need to have more knowledge and control over their budgets, in addition to using financial information to make decisions regarding level and type of activities. For instance, most project managers are not aware of balances in local currency budgets and do not have available to them the U.S. dollar amounts for the grant. Sharing this information more widely may improve the ability of managers to monitor resources and to plan more carefully for project activities.

In addition to implementing primary health care projects, each PHC Program has endeavored to raise needed resources from the community through user charges and other income-generating activities. While undertaking these activities, project staff have very few skills with regards to financial management at the community level. Hence, management of community-level resources needs to be strengthened in both the MPHC and Pakistan UPHC Projects. In Mombasa, additional attention needs to be paid to management of revolving drug funds and strengthening community financial management skills. In Pakistan, the system for collecting and monitoring resources spent at the field site level, as well as the revenues collected from patients, needs to be improved in order to increase accountability and develop a greater sense of self-reliance and autonomy.

The evaluation team recommends strongly that much information on cost recovery, financial management at the field level, and financial sustainability needs to be shared among these three projects, and the team proposes that an entire session of the RNP be devoted to these issues. Rather than have only the project managers available for such an RNP meeting, it is urged that the project financial managers and accountants have the opportunity to share their experiences and to gain new ideas.

### 3. Training and Education of CBHWs

#### **Training and Education Capacity**

All three PHC projects demonstrated substantial skills in training of community-based health workers and other health personnel. For instance, the Kenyan team included strong capable trainers, and the project utilized hands-on and participatory methods for adult learning. While training materials were developed for the different cadres of workers, the project could use additional back-up and technical reference materials to support training efforts. In addition, as identified by staff, the MPHC project does not do as well in retraining, although steps have been taken to address this through TOT supervision activities and retraining sessions.

On the other hand, the Karachi UPHC and Dhaka AKCHP are strong in the area of retraining of workers, and much emphasis is spent on upgrading of technical skills by maintaining close tabs on the medical literature. However, it is believed that much of the technical information remains in the hands of the professional staff and is not decentralized to the field level in the form of visual aids to be used for training of community workers and less technical staff. Use of easy to understand and technically current training materials at the community level will be more important during the next phases of the UPHC. Increasing reliance on lane- rather than household-visits will require group training methods instead of one-on-one approaches.

One area where all projects could improve is to involve, to a greater extent, the participation of men in family planning training within the community, as was done through focus group discussions in MPHC, and to a more limited extent through male student volunteers in AKCHP. Missed opportunities for service delivery may be related to lack of information given to men on the family planning methods available and risks involved.

### 4. Use of RNP

The Regional Network Program has evolved into an effective forum for exchange of ideas, information and experiences on all facets of community-based primary health care programs among the members of the AKHN.-In addition to the annual international meetings, training workshops and newsletters have been utilized to share experiences. The exchange of information through these different forums has led to cross-fertilization between the RNP members. In light of this excellent experience, the RNP should explore other methods of communication available to enhance the exchange of information and which might also be faster and more cost efficient.

The RNP has successfully completed three out of five objectives: 1) to form a network of community-based PHC programs to exchange and learn from the experience of other participants; 2) to review problems and opportunities faced by participating programs with respect to management, monitoring and evaluation, and help develop action plans; and, 3) to collaboratively explore selected issues that are shared priorities of the network members. The results of the other two objectives of the RNP: 1) to review, evaluate and advance 'state-of-the-art' techniques of community-based PHC programs within and outside the AKN; and, 2) to identify and respond to the training needs of the participating programs, have not been as favorable. A major reason for not meeting these other objectives appears to be that the RNP did not obtain technical expertise from outside of the AKU system.

When originally conceived, the RNP was viewed as an AKU/CHS-managed activity, the purpose of which was to provide technical support and coordination for the growing number of AKF sponsored PHC programs. Over the last four years the management of the RNP has become more decentralized with the participant members actively involved. While major steps have been taken in decentralization, AKU continues to play the dominant role in the RNP. The current make-up of the Steering Committee, in which AKU holds the five out of \_\_ positions, or the inability of RNP members to tap into technical resources from outside the AKU-fold, may be contributing factors.

The major challenge over the next grant period will center around the ability of the RNP to attain its goals for institutionalization and sustainability. One suggestion is to review expenditures patterns for the RNP. For instance, nearly 50% of the RNP costs in MGIII and MGIV cover salaries at AKU, and perhaps there are alternative uses for some of these funds.

AKF USA should take the lead in stimulating RNP members to develop a five-year strategic plan for the RNP as a whole. Participants from other countries, such as India, Tanzania, and Tajikistan should be included in such strategic planning.

##### 5. Use of PHC MAP

The PHC MAP materials were designed to improve management of health services by improving the capacity of managers to collect, process and use information. In addition, by the end of the matching grant, it was anticipated that the MAP materials would be used actively in ten to twelve specified PHC programs for a period of more than a year. Success in this area would be measured by evaluating management indicators and information systems.

While the use for a year of the nine modules of the PHC MAP series was not realized during this period for any PHC program, there were many impressive accomplishments.<sup>4</sup> For instance, several of the individual modules have served as important resources for management improvement in the three PHC projects visited.

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<sup>4</sup> The full series of nine User Modules did not become available for general distribution until November 1993, thereby eclipsing the time available for use by PHC projects .



In Mombasa, Module 3 (Planning and Assessing Health Worker Activities) was found useful by MPHC staff in planning and scheduling their workloads. In addition, the methods of Modules 3 and 6 (Assessing the Quality of Services) were used by staff to develop their own indicators for two new instruments for monitoring their progress: 1) Format for Staff Self Appraisal, and 2) Mombasa PHC Quality Assessment. In addition, the project undertook a comprehensive cost analysis for this evaluation using Module 8 of the series.

In Karachi, field-testing the MAP modules prompted the staff to rethink and replan their programs, and to improve management information materials for use in each of the five field sites. The Field Test Evaluation Report of May 1992 notes that "the MAP modules were useful in helping the PHC teams do a situational analysis, probe into the question of program effectiveness and thus identify those management related areas which need to be strengthened.....the MAP modules provided a strong conceptual basis for the PHC teams to address management issues."

AKCHP, like MPHC, used Module 8 (Cost Analysis) to produce detailed analysis of PHC program costs. However, this project was the only one to perform a sustainability analysis as suggested in Module (Sustainability Analysis). The AKCHP has modified and translated the MAP modules for use in a UNICEF-sponsored project to improve urban health systems management in urban Bangladesh. AKCHP will play a prominent role as provider of training and follow-up technical assistance for this project.

Consistent with unexpected uses found with new tools and technologies, MAP materials have proved valuable in the hands of several NGOs, such as the American Refugee Committee. Although the MAP materials were designed to be user friendly and not requiring sophisticated technical knowledge, health systems consultants have found the checklists and systems framework to be useful in their work with counterparts.

Therefore, the evaluation team concludes that the PHC MAP modules have been demonstrated to be useful both for the three PHC Projects, as well as for other NGOs and consultants. While the goal of using these modules in a specified number of countries for a period of one year has not been achieved during this matching grant, the gap between objectives and achievements seems mostly due to overly optimistic planning and scheduling estimates.

## 6. Management Information Systems

A major tool which supports decision-making is a management information system (MIS). All three PHC projects should be commended for the efforts made to modify and utilize their information systems during the matching grant.

The MPHC, like the other two PHC projects, developed its MIS to help with project planning and to enhance project management. In fact, MPHC has integrated indicators with workplans, in its Quarterly Progress Report review, in a way that is exemplary. With the

departure of the project manager in September of 1993, however, the system is currently not fully functional and much data remains to be computerized.

Unlike the other two PHC projects, however, MPHC does annual representative household surveys, interviewing mothers with small children to determine selected health knowledge and practices in families. Thus it follows closely changes within the families due to its community process and educational efforts. UPHC and AKCHP have not conducted such surveys during this MG period, and do not have a clear view of the state and evolution of health knowledge and practices amongst the mothers whom they continually provide with health education. Only MPHC has estimated the relative proportion of services received by households that were provided directly by its program. Two recent examples illustrate an important point that is relevant to all three projects (please see Box below).

#### **EXAMPLES OF RESULTS FROM MPHC 4/94 HOUSEHOLD SURVEY**

In MPHC's community survey of 4/94, the question, "Who has taught you about diarrhea treatment?", was answered as follows:

CHW/CBDD	5%
MPHC staff	15%
clinic staff	37%.

That showed a respectable MPHC educational complement to the major role of the government services, as related by mothers.

But the results of such surveys can be quite sobering. While the development of 40+ Community Based Distributors of Drugs by MPHC is commendable and heartening, the relative contribution of these agents to family curative care, was found to be more limited than one might guess. Results in response to the question, "Where did you go for help last time any of your family members was ill?" were:

CBDD	1%
Govt. Health Unit	79%
private doctor	4%
traditional healer	3%
shop	5%

UPHC and AKCHP have avoided exposure to the sobering feedback from household surveys of the populations they serve, although they are amidst a multitude of other practitioners.

Thus, they have also not been able to validate the accuracy of their reporting systems, which is based on feedback from housevisiting CHWs.

UPHC correctly points out that the completeness of CHW reporting will decrease as they back away from paid CHWs and cut back on the intensity of house-visiting. UPHC staff explain that they do not try to report morbidity rates because they do not trust the completeness of CHW reporting; for the same reasons there is bound to be some under-reporting of deaths. Without measures of validation, however, there is no way to tell whether reports of declines in deaths is due to declining death rates, or whether it is due to increasing under-reporting.

MPHC has also conducted 100% household censuses to obtain basic demographic information and estimates of vital events. The last of these was in 1990. The former director had intended to do another in preparation for the present evaluation, but that plan fell awry with her departure.

The other projects also did similar surveys, as a baseline, and in the last MG period, but not in this one.

MPHC does not report either morbidity or mortality. Its Self Assessment, which is such an excellent primer on the physiology of successful conduct of community process, also does not report on services provided other than the educational sessions given, agents trained, and latrines built, although it notes many important measures of protection achieved in the population, such as 81% of pregnant women having gotten 4+ ANC visits.

Although it has two adequate computers, MPHC is the least capacitated in MIS manpower of the three projects, and is badly backlogged in the entry and analysis of much useful data. It also needs additional staff skills in the analysis and interpretation of data.

Both UPHC and AKCHP have adequate computers, personnel for data processing, MIS systems which have been reviewed and intelligently revised, staff capable of interpreting and describing findings, and lots of good data which they have not used. Many specific examples of this have been given in each of the individual PHC project chapters, especially in the Cost Analysis and PHC/MCS service delivery sections.

It is an outstanding accomplishment of AKCHP to have produced the most advanced, integrated and streamlined software program for its MIS, which it began thoroughly revising in late 1991. AKCHP is also the nimblest project in terms of analysis for special studies. However, there were several notable omissions of basic program information from its 1992/93 annual report. For example, % of children weighed was not given, and malnutrition distributions among children weighed were not compared between years, nor were the figures presented interpreted. As another example, % of pregnant women seen in ANC clinics was not reported. The evaluation team hopes that brilliance in conceiving, implementing and analyzing special research studies--which is a strength in the AKCHP project--will not displace a concern for routine reporting of basic information necessary to monitor progress in the provision of services. Let

us hasten to add that it is also acknowledged that AKCHP has made the best managerial use of its MIS, quickly and frequently translating results found into decisions for improving how services are provided.

Both UPHC and AKCHP have verbal autopsy systems, and UPHC is field-testing and validating a refined version. Curiously, neither project used the numerator and denominator data it had collected to calculate and track changes in the cause-specific death rates, although it was foreseen to do so in the MG Application.

Given that all three sites are collecting much data useful for program management that has not been analyzed, the evaluation team suggests that each project re-examine the data to determine its potential management uses.

#### 7. Use of Indicators

The AKHN enjoys an international reputation for the work it has done in utilization of indicators and information technology to improve the management of basic health systems. This stems from the development of its own inter-institutional management information system and sets of standardized indicators from the early 80's, through its 1988 international workshop on "Management Information and Microcomputers in Primary Health Care", and now to the publication and dissemination of the PHC MAP series in 1993.

Further, the 1991 MG Application contains a wealth of useful indicators with which progress in development of PHC projects could be measured. The Application also states, in section 23 of the Country-specific Activities, that the AKCHP had based its innovative MIS "in part on the AKF's Standard Indicators for Monitoring and Evaluating PHC Programs", that MPHIC had adopted 33 of the original 47 of these standardized indicators, and that 32 of them would be generated from data routinely collected by UPHC.

When the evaluation team, in order to evaluate progress in the PHC projects, began to compare achievements with original objectives and targets, it encountered a difficulty. This was the many changes made in indicators, between those proposed in the MG application and those actually being measured and followed in each of the projects. Those changes are indicated in the tables of the Achievements section of this report (please see Section A) where the different indicators actually used by the project are set in parentheses. There were approximately 19 such changed indicators in MPHIC, 10 in UPHC, and 8 in AKCHP; also, many more had changed than had remained constant.

Some of the changes in indicators used were due to changes in technology or operating norms during the period, for example measuring complete immunizations not in children under 5 years, but in children 12-23 months old, then under one year, and then by correspondence with immunizations given within the recommended age intervals (COSAS method). Another example was the change in criteria for "complete tetanus immunization of women", from 2 doses to 5

doses received. Some of the changes were due to the project staff having developed greater specificity in their own indicator than was in the indicator used in the MG Application.

However, a number of the many changes made in indicators were due, as the evaluation team observed in all three countries, to a more general desire on the part of service teams to work with their own indicators. The implications of this psychological need for "ownership" of the indicators that will be used for monitoring and evaluation of project efforts, lead to some recommendations that may be helpful for improving management of information in a megaproject like this one, with its five component projects. A number of observations that are related to this theme of changing indicators, when considered together, point to a need for further decentralization (please see Box below).

### Observations Relevant to Centralization/Decentralization Balance

1. Most indicators used in projects (e.g. in Self Assessments) were different from those presented in the MG application.
2. When UPHC staff were asked about the 33 AKF Standardized Indicators, the reply was, "Oh, we don't use those, we've made our own...". In fact, all three project teams stated clearly that they had defined, refined, and were using their own indicators. It was then observed that each project was, indeed, working assiduously on its own indicators.
3. The evaluation report of 1990 noted that "there was considerable initial resistance to the notion of adopting a standardized set of MIS indicators for the Monitoring, Evaluation and Comparative Analysis (MECA) of community health programs. It appeared that the thought of comparative analysis was far more threatening than attractive to the PHC programs targeted to participate in MECA."
4. Likewise, the evaluation team of 1994 has noted similar resistance in project staff to "standardized indicators", perceived as imposed.
5. Great frustration of both of the excellent health advisors from AKF, Geneva in dealing with MPHIC and UPHC staff over indicators and the management of information was both reported to, and observed by, the evaluation team.
6. After the PHC MAP prototypes were tested, they were not taken up for routine use in any of the three PHC projects. When UPHC staff were asked "Why not?", the reply was that they had developed their own materials and that PHC MAP had been pushed pretty hard.
7. At the end of the MG Application Logframe appeared the following--"Note: LOGICAL FRAMEWORKS FOR INDIVIDUAL PROJECTS ARE AVAILABLE UPON REQUEST". However, requests to USAID, AKF USA, and in each of the projects were unsuccessful in retrieving any of these individual project logframes. These would have been the logical instruments to use in comparing what had been planned with what was actually achieved in each individual project.
8. When asked about the discordance between indicators in the MG Application and those followed in the project, the former Manager of the MPHIC project replied, "We submit our plans, but they change it above us.....We've tried to force our ideas of indicators onto communities but it absolutely doesn't work, it backfires; they have to develop their own".
9. Several technically sound basic indicators promised in the MG Application were not produced in the projects, to their own disadvantage. For example, both UPHC and AKCHP collected causes of deaths via verbal autopsy. They also updated estimates of their target populations. At considerable expense they had, therefore, collected the numerators and denominators needed to calculate cause-specific death rates, as planned in the MG Application. However, both teams, then analyzed the specific causes of death merely as percentages of all deaths (as is classically done in hospital studies when denominators of the at-risk are not known) but not as rates in the population. This led to misunderstanding and lost opportunities for action. Thus, two surges in diarrheal deaths seem not to have been recognized.

The evaluation team sees all of these observations as parts of a common problem that are readily soluble at relatively low cost through a change in managerial styles. The common problem is insufficient decentralization in the planning, programming, monitoring, evaluating, and grant application processes. This conclusion echoes that about the parallel problem of insufficient decentralization of financial and personnel management addressed in the Cost Analysis sections of this report.

This evaluation team agrees with the 1990 evaluation team, with the three PHC project teams in this review, and with abundant findings in the management literature, that busy field teams are most likely to keep working on activities and indicators for which they do feel a sense of "ownership", and to abandon those for which they do not. This means that they need to make their own indicators. However, the teams may not have all the technical knowledge and epidemiologic understanding to make good indicators. Thus, they need technical assistance, but they also must be willing to accept it. This can occur when the team feels that the consultant is basically a facilitator who helps them in their task, not an enforcer trying to get them to follow his agenda. Enforcement is achieved if the team also feels responsible to some other higher authority to produce a good quality plan as well as indicators which it will later implement, monitor and defend.

Hence, the evaluation team recommends the following:

1. Each project team should be required to produce its own individual logframe to receive funding, including the indicators it can and will measure for monitoring, and indicating those it will use for end-of-project evaluation. The teams should be advised to fix targets and objectives sufficiently attainable to avoid embarrassment at the time of evaluation.
2. The individual project logframes should be treated seriously at all levels. They should be kept on file, reviewed and revised annually by the projects and their technical support staffs, and reworked by the project team whenever there is a major change in its leadership, as occurred in all three PHC projects during this period. At the time of evaluation, they should be provided to the evaluation team, and the AKHN should recommend to the projects that they include their revised logframes in their self-assessment reports.
3. The external technical staff supporting these teams should function strictly as supportive facilitators, listening more, responding to questions and showing, when appropriate, specific examples of both good and bad indicators produced by others. The challenge of the technical consultant is to find a style in working with implementers so that the latter achieve two things: 1) a clear view of how to measure the work that needs to be done, and the progress they hope to make, and 2) a sense of ownership of the measures to be used, i.e. "their indicators." The team and the consultant should acknowledge and agree that the final responsibility

and accountability for project plans, indicators, and logical framework will be left to the team in relationship to its hierarchic authorities.

4. The same style of non-disruptive, preponderantly listening, supportive technical facilitation should be provided to "frontliners" in MPHIC, who are using community process techniques with extraordinary skill in trying to get Chiefs and Project Implementation Committees to craft their own indicators but without alienating them.

If these recommendations were carried out successfully, the team feels that the problems listed above either would be avoided or mitigated.

These recommendations, of course, would affect and require a re-examination of how discussion and negotiation are conducted up and down the AKHN hierarchy in grant preparation, management, and evaluation in order to determine how much decentralization of planning and programming it is ready to promote.

#### **D. IMPROVEMENTS IN THE EFFICIENCY OF PHC PROGRAMS**

##### **1. Service Delivery**

The major way in which MPHIC promotes efficiency of service delivery is by relying mainly on other existing organizations to provide the direct services, while remaining mainly an educator and facilitator or catalyst in its own role. Hence, it attempts to increase the benefits received by its client population from the resources which already exist in their area, but which they might otherwise not be able to use. The other way MPHIC promotes efficiency is by stressing technologies and approaches that families can use self-reliantly with the resources in their homes, e.g. any-kind-of-fluids oral rehydration.

UPHC has been trying to promote lower cost delivery by reducing the number of paid CHWs per households visited, and the frequency of household visits for older children and for educational sessions. It has also tried to replace some of the services of Lady Home Visitors, who directly supervise CHWs and who are a cadre in short supply, by training and elevating CHWs to take on some of the LHV's responsibilities. Similarly, Community Health Nurses are running clinic sessions that were formerly run by a Community Health Physician.

Both AKCHP and UPHC are providing low cost laboratory services for a fee, for example urine testing for pregnancy, in its clinics, which is an economy for their clients.

AKCHP keeps clinic costs down by providing services in very modest facilities provided, in part, by the communities. Although both UPHC and AKCHP provide house-visiting by paid CHWs, the frequency is only every three months in Dhaka compared to every month in Karachi. It remains to be demonstrated what the savings and lost health benefits of the more infrequent pattern are for AKCHP's registered clients.



## 2. Costs of Providing Services

One measure of efficiency of service delivery is how resources are used to implement activities. All three projects evaluated had estimated the costs of their projects. Mombasa PHC Project utilized the PHC MAP Module 8, Cost Analysis, for all three levels of analysis; AKCHP, Dhaka utilized the first levels of both the cost analysis and sustainability modules; the Pakistan UPHC analyzed costs using their own formats and procedures.

Recurrent costs represented more than 95% of total costs in Pakistan and Dhaka, but only 88% of total costs in Mombasa because of large capital expenditures for that project, owing to a greater concentration on provision of wells, dams, and water pipelines. Personnel costs accounted for the greatest share of total costs for all three projects, although the Mombasa PHC Project also had very high shares for capital expenditures. Administrative costs also represented large shares of total cost in the three projects. For all projects, areas where resources could be conserved were identified, including administrative and operating costs of vehicles.

Project costs increased during Phase II for all three projects, from 12% in Pakistan, 27% in Mombasa, and 27% in Dhaka. Mombasa was the only case where costs for all individual line items increased every year, most likely as a result of inflation. In Pakistan, there were decreases in drug and rent costs, and increases for vaccine and training costs between years. In Dhaka, there has been a decrease in direct service costs, while administrative and support costs have risen. Explanations for these patterns in all three projects include inflation, changes in emphasis on project activities; alteration in the demand for services; inefficiency in service delivery; or, some combination of the above factors.

Unit costs for all the three projects are tabulated and discussed in the Resume. Comparison of the costs of project activities with those of other NGOs or the government would be useful to determine whether these projects are cost-effective providers of services.

## **E. IMPROVEMENTS IN THE SUSTAINABILITY OF PROGRAMS**

Sustainability refers to the ability of the projects to ensure continued provision of services in the community, through political commitment to project objectives; assured financing of project activities; and continuous demand for services by the community.

### 1. Linkages with Other Agencies

Linkages with other agencies are important for the sustainability of health projects, in that project activities could be shared and ultimately taken up by these other organizations in the future. Linkages with local organizations were strongest in Mombasa PHC and the AKCHP Projects.

One indication of the collaborative approach to PHC activities by the MPHIC was the creation of the Coast Province Committee in 1991. This committee aimed to strategize and

collectively plan for health activities for coastal communities and has government, donor, and project membership.

Working relationships also have been established with many ministries at the local level in Mombasa including the Ministry of Health, Ministry of Agriculture, and Ministry of Public Works, which provide key technical assistance and inputs for project activities. In addition, project staff have worked with various types of extension workers, such as Public Health Technicians in the MOH clinics and Adult Education Teachers from Culture and Social Services, among others. Some of these workers have been trained by the MPHC to be Trainers of Trainers (TOTs).

In addition to government agencies, the project has developed collaborative relationships with other donor agencies working in Kwale District. For instance, UNICEF has provided key inputs into health service activities of the project including CBDD kits and bednets. MPHC staff have also tried to tap the resources of numerous other international and non-governmental agencies for the benefit of their communities, including AMREF.

Despite the extraordinarily rich networking of the MPHC Project, no formal linkage exists or is institutionalized between the project and the Provincial MOH level to assure joint planning of activities and sharing of health information. This link will be important for sustainability of project activities in Kwale District.

In AKCHP's excellent annual report is a section entitled, "Partners in Development". In its 1992/93 Annual Report, for example it names more than a dozen different organizations, both governmental and non-governmental, with which it maintains working relationships. First mentioned, and of primordial importance for an urban PHC project are the EPI project Directorate and the Dhaka City Corporation, who are active partners in EPI, and who furnish supplies to and regularly meet with AKCHP. The Helen Keller International and AKCHP participate in a Nutritional Surveillance Program. UNICEF provides drugs through the National ARI Program, and provides support as well for diarrhea, sanitation and school health activities. AKCHP also collaborates with several organizations that coordinate the efforts of multiple NGOs, including the Voluntary Health Services Society (VHSS) and the NGO Coalition for the Urban Poor. Without mentioning the others, it is clear that AKCHP collaborates easily and widely with many organizations, and derives stimulation and resources from these linkages.

In contrast with the many active, collaborative working linkages formed with other locally active organizations by MPHC and AKCHP, the Pakistan UPHC has had difficulty in creating consistent and continuous working relationships with other local organizations working on health or development activities in the five urban communities served under the matching grant. However, in all field sites there appeared to be good functional collaboration with the Family Planning Association of Pakistan for family planning services.

While AKCHP sought to develop working relationships with other NGOs, these relationships were often time-limited and activity-specific. Thus, a concerted collaboration with

a range of organizations never fully developed under this project. For example, in the Orangi field site, there was an initially strong relationship with the Orangi Pilot Project, but collaborative efforts are now restricted to a few activities.

Many more linkages have been identified and initialized for the development of the Macro Project, which relies heavily on community input and implementation of health activities and development strategies.

While collaboration with other agencies has been somewhat restricted in the areas serviced, the UPHC Project has had influence on policy and procedures at both national and provincial levels. Nevertheless, persistent inability to identify and engage the appropriate health authorities in the Karachi Municipal Council has been a hindrance to the longer term prospects for sustainability.

## 2. Financial Sustainability

Financial sustainability refers to the ability of projects to ensure continued financing of project activities. All three projects were experimenting with some form of cost recovery by charging user fees for services. In Kenya, fees are collected during treatment of communicable diseases and from revolving drug funds at the community level (CBDDs), though the project does not view this activity as an income-generating activity. In Pakistan, users of the clinics pay a fee for consultation and drugs. In Dhaka, separate fee schedules exist for registered and non-registered populations when paying for clinic services. Pakistan is the only case where patients are charged for preventive services, such as Rs. 2 for a syringe for a vaccination.

Cost recovery from the community based on user fees was limited in all cases. In Pakistan, between 2% of total project costs, 5% of clinical costs, but 93% of drug costs were recovered from user charges from field sites.<sup>5</sup> In Mombasa, less than 1% of total project costs could be recuperated, but the equivalent of 27% of drug costs were raised through user charges. In Dhaka, 2% of service delivery costs were recovered from user charges, but 18% of service delivery costs were recuperated from all income-generating activities.

Because most households in project areas are economically poor, and based on the above findings, the evaluation team believes that cost recovery from user charges will be limited, and therefore, other sources of income need to be pursued. Cost recovery funds could be used to recuperate the local currency cost of drugs and perhaps some costs of community health worker personnel. User charges will not be a substitute for foreign exchange, so that financing of some project inputs must be made using government or donor support.

All three projects are experimenting with income-generating activities (IGAs). In Dhaka, innovative strategies including ladies garment making, training courses, and community funds for PHC are being attempted with preliminary success. Similarly, in Pakistan, nearly Rs. 350,000 has

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<sup>5</sup> Based on field site costs not those of the entire project.

been raised from communities over the period of the matching grant. Mombasa also has experience with income-generation from training and community-based harambees to generate needed funds for construction of clinics or other health activities. While AKF highlights its growing experience with income-generation in these projects, it is the view of the evaluation team that these activities tend to compete with scarce personnel time and attention needed for priority health interventions. Therefore, it is recommended that the PHC projects not spread themselves too thin with IGA activities and attempt to turn over responsibility for these to other NGOs with a comparative advantage in this area.

While both the Pakistan and Mombasa projects had discussed sustainability as a major issue, only the DUCHP actively planned towards sustainability, first by going through Module 9 on Sustainability Analysis, and second, by needing to search for additional revenues and donor funding to keep project activities going. The evaluation team highly recommends that both the MPHIC and UPHIC take the necessary steps to identify threats and opportunities for financial sustainability and to estimate best and worst case scenarios for financial sustainability. In addition, these projects need to create an action plan for sustainability which would outline information needs and strategies for improving the chances for sustainability.

### 3. Role of Training

Each project has significant capacity for training and has tried to capitalize on these skills to generate additional revenue for the project. In Mombasa, project staff have been involved in training district health management teams with UNICEF for the Government of Kenya, as well as working with other donor agencies (UNICEF, FHI, and CEDPA) in training of trainers and training of facilitators (TOTs/TOFs). In Dhaka, courses on epidemiology as well as management training of district level government health workers have been implemented with success. The AKCHP is currently planning to undertake a major training effort with UNICEF on the PHC MAP modules. These modules represent a key element around which training capacity in all three countries could be expanded.

There has been some discussion to enlarge the training capacity in Mombasa to include a regional training center for Kenya, Tanzania, and Uganda. The evaluation team supports a feasibility study into this effort, bearing in mind that a careful balance needs to be struck between implementation of project activities and time spent on training. It would be unfortunate if PHC efforts in Kwale became overshadowed by regional training activities.

The evaluation believes supports expansion of training capacity, both from the perspective of additional project resources, but also to contribute to better care of wider populations by improving the skills of health workers in government and other NGO programs.

#### 4. Economic Development and Health

All three projects have demonstrated awareness of the crucial link between primary health care activities and overall economic development in the communities in which they work, in order to sustain the health benefits achieved over the past few years under the matching grants. A seminal paper on the subject was drafted by AKF, Geneva entitled, Sustainable Health and Economic Development. This paper has advanced new thinking and ideas concerning the role of PHC projects in the nexus of health and development.

Mombasa has identified the crucial role of water and the time constraints placed on women, the beneficiaries and providers of PHC, because of water shortages as one area in which to devote staff time. The evaluation team applauds the efforts by the project staff in this area, and encourage further work. In addition, lack of food was seen as an impediment to growth monitoring and nutrition activities of the project, so that food production efforts have become a growing priority. The evaluation team is concerned that success in this area may be beyond the reach of the skills of project staff, however, and encourage involvement of other NGOs in this domain.

Similarly, in Pakistan, water and sanitation have historically been identified by urban community as priorities. Given high rates of diarrheal diseases and other water-borne diseases in the field sites, the evaluation team encourages continued emphasis by the project on water and sanitation activities, by enlisting the active participation of other local NGOs.

The Dhaka Project has created several innovative activities which enhance the social status of community members and increase the probability of sustaining health benefits. First, the project has created a scheme whereby women are provided basic literacy training, skills in financial management, and asked to contribute to a PHC fund for their children which cover the costs of immunizations and basic PHC services. Although limited in scope, this idea taps into the notion that empowerment of women through literacy and economic independence, will contribute to improved health and survival of children.

#### 5. Demand for Services

One of the key elements in sustaining health outcomes and project activities is a continuous demand for services by the community. Previous sections have described and analyzed how these projects have been able to engender the support of the communities in which they work. Factors, such as increased participation of the community in identifying health priorities and in developing strategies to meet health needs, as well as the accessibility and affordability of services, will have an impact on demand for services.

In addition, the quality of the services provided can have a substantial effect on demand, particularly if individuals and families are asked to pay for services. As a result, it is strongly recommended that each project objectively evaluate the quality of services being provided and identify ways in which quality can be maintained or improved.

## 6. PHC in the Context of Health Systems

PHC Projects cannot operate within a vacuum if they intend to provide effective, efficient, equitable, and sustainable services to poor communities. AKF was among the first to identify the role of PHC services generally during a conference sponsored jointly with WHO in 1981 which explored the role of hospitals.

In addition to hospitals and PHC projects, health systems include services provided and financed through governments, private practitioners, private voluntary organizations, donor agencies, and traditional practitioners. The three PHC Projects in this evaluation have made strides toward integrating their services and approaches with other players in the health system. However, in all three cases, the relationship between the PHC Project and the hospital sector is ad hoc and not well-defined.

For instance, in Mombasa, the hospital provides a purely administrative function for the project. The evaluation team recommends the role of the hospital be expanded to provided back-up referral services for the PHC activities conducted by the project as well as diagnostic and laboratory services. In Pakistan, the hospital agenda of providing training and teaching sites for medical students has taken priority over implementation of PHC services in the most cost-effective and sustainable manner. It is highly recommended that the communities be given more opportunity to take greater responsibility for setting priorities and defining strategies. Referral networks between the field sites and the AKU hospital or other hospitals in Karachi have yet to be worked out.

Similarly, a cohesive referral network remains to be identified. However, the project provides subsidized diagnostic and laboratory services through its central health clinic which serves as a bridge between the hospitals and the satellite clinics.

The projects need to view themselves as one player within the health system, by identifying how project activities either support or conflict with incentives to seek care and to pursue healthy behaviors on the part of the population.

### **III. BACKGROUND AND METHODOLOGY OF THE EVALUATION**

#### **A. RATIONALE FOR THIS EXTERNAL EVALUATION**

The Matching Grant agreement, number PDC-0158-A-00-1102-00, required that an evaluation be conducted prior to the end-of-project. Thus, this final evaluation of the projects supported by that matching grant was performed to meet the requirements of the Aga Khan Foundation U.S.A. and its partner in this grant, the United States Agency for International Development (USAID). This evaluation was intended to help both USAID and the Foundation to assess the effectiveness of their grants and to refine development strategy, to guide future Board decisions, and to meet reporting and evaluation requirements. It is also the policy of the Board of Directors of the Aga Khan Foundation USA (AKF USA), that an external evaluation be conducted on every major program or project funded by the Foundation.

Evaluation of health care programs funded by AKF and its partners (such as USAID) are particularly important, as the AKF Board has expressed its strong interest in learning generic lessons from major grants in the health sector for improving the effectiveness, management and sustainability of health care programs of the Aga Khan Health Network (AKHN). The AKHN comprises the Aga Khan Foundation (AKF), the Aga Khan Health Services (AKHS), and The Aga Khan University (AKU) Faculty of Health Sciences.

#### **B. MATCHING GRANT GOAL AND PURPOSES**

In 1991, USAID awarded AKF USA a three-year (July 1991 - June 1994), \$1.2 million Matching Grant to support five AKF-sponsored health projects. Three of these projects provide Primary Health Care / Mother and Child Survival (PHC/MCS) services directly to needy populations in Kenya, Pakistan, and Bangladesh: the Mombasa Primary Health Care Programme (MPHC), the Urban Primary Health Care Programme (UPHC) and the Aga Khan Community Health Care Programme (AKCHP), respectively. Two additional projects, the Regional Network Programme (RNP) and the Primary Health Care Management Advancement Programme (PHC MAP) have operated as regional and international programs.

The goal of this Matching Grant program was to contribute to improving the equity, effectiveness, efficiency and sustainability of PHC/MCS programs in developing countries of Asia and Africa.

The program had three main purposes:

- 1) To expand coverage, increase effectiveness and test new organizational models for community-based PHC/MCS services in three projects serving the health needs of more than 200,000 urban and rural residents by strengthening the capacities of local communities and NGOs to deal with their own problems.

- 2) To strengthen management information systems, and the social, organizational and financial sustainability of 10-12 PHC/MCS programs involved in the RNP and PHC MAP activities.
- 3) To produce, distribute, and promote the use of several field-tested PHC management information modules and related training and resource materials.

### **C. IMPLEMENTING AGENCIES OF THE MATCHING GRANT**

Institutions of the Aga Khan Health Network (AKF, AKU, and AKHS) implemented five projects under this Matching Grant:

- 1) The Aga Khan Foundation Geneva (AKF G) implemented **PHC MAP** in collaboration with the University Research Corporation/Center for Human Services (URC/CHS) (based in Bethesda, Maryland), AKU, AKHS, the Somboon Vacharotai Foundation (SVF) and the ASEAN Institute for Health Development (AIHD), Mahidol University, in Thailand.
- 2) The Aga Khan University (AKU) implemented and served as the secretariat of the **RNP** which provides a mechanism for regional networking and sharing of information between management teams of 10-12 participating PHC programs in Bangladesh, India, Pakistan and Kenya.
- 3) AKU also implemented the **UPHC** in several areas of Karachi to develop various models of urban-based PHC/MCS projects and provide field laboratories for its community-oriented physician and nurse education, training and research activities.
- 4) The Aga Khan Health Services in Kenya (AKHS, Kenya) implemented the **MPHC**, a rural-based PHC/MCS project in Kwale District which was planned in collaboration with the Ministry of Health and UNICEF, based in part on the experience gained in the AKF-sponsored Kisumu PHC Project.
- 5) The Silver Jubilee Commemoration Society in Bangladesh, implemented the **AKCHP**, an urban-based PHC/MCS project serving the priority health needs of low-income residents of selected slum and peri-slum areas of Dhaka. Management of the project was subsequently turned over to the newly-formed NGO, SUH, as anticipated in AKCHP's sustainability plan, and joint funding was provided by DANIDA.
- 6) Aga Khan Foundation U.S.A. managed the overall Matching Grant, coordination of its several components, documentation of its progress, and preparations for the evaluation.



The three community-based PHC projects in Kenya, Pakistan, and Bangladesh all aimed to: 1) strengthen community participation in management of community-based health care activities; 2) enhance the overall management, effectiveness and sustainability of their projects; and 3) test new approaches and strategies for organizing and financing PHC/MCS programs to help promote the long-term financial and organizational sustainability of these PHC/MCS programs.

In addition, the matching grant anticipated outputs of 1) greater community capabilities for community planning and management to facilitate long-term local sustainability; 2) increased use of priority health services by women and children; 3) increased numbers of appropriately trained PHC manpower; 4) increased awareness and effective use of home- and community-based PHC technologies such as ORS, recognition and treatment of acute respiratory infections, growth monitoring and improved infant feeding; 5) mechanisms for local financing of PHC activities which are likely to ensure long-term financial sustainability. In addition, the urban projects were anticipated to produce 1) greater knowledge and awareness of local social and environmental determinants of morbidity and mortality and testing of potential strategies for improvement of these determinants through community and institutional efforts; and 2) a functioning prototype of a macro-PHC system involving collaboration with government and NGOs engaged in community-based activities, and establishment of reliable linkages for technical support and clinical referrals.

The other two programs under this Matching Grant Program, RNP and PHC MAP, were multi-country projects. The RNP, which was established under a previous USAID Matching Grant to link five projects in three countries, was expanded to ten PHC programs in four countries (Bangladesh, India, Pakistan, and Kenya). This was done to enhance its catalytic role in the stimulation of field-based innovation and exchange of experiences on important issues concerning PHC/MCS programs. The RNP provided technical exchanges for strengthening the effectiveness, management and sustainability of participating PHC and child survival programs.

PHC MAP developed and field tested practical tools to help PHC/MCS management teams to collect, process, analyze and use management information more effectively. This was done to improve the management, effectiveness, and sustainability of their PHC programs. PHC MAP has involved a range of PHC programs in Asia, Africa and Latin America, operating in a variety of settings (urban, rural, remote) with different levels of expertise and various collaborative arrangements. PHC MAP Modules have been field tested in thirteen countries of Asia, Africa and Latin America, including: Bangladesh, Chile, Colombia, the Dominican Republic, Guatemala, Haiti, India, Indonesia, Kenya, Pakistan, Senegal, Thailand and Zaire.

The five projects and their objectives were described in detail in AKF USA's proposal to USAID for a Matching Grant dated September 14, 1990 and the Amendment dated May 7, 1991.

#### **D. EVALUATION OBJECTIVES AND SCOPE OF WORK**

The overall purposes of this evaluation were to: 1) assess the progress made to date by the various projects; 2) document improvements in the projects' performance and the health infrastructure for delivering services (in the case of the PHC/MCS projects); and 3) evaluate the overall accomplishments of the Matching Grant.

The evaluation addressed the following general areas of interest to AKF USA and USAID: 1) the primary focus and use of funding; 2) the NGOs' organizational development; 3) the project design and implementation plans; 4) effectiveness and impacts of services; 5) PVO/NGO-host government cooperation; 6) sustainability strategies; 7) project finances; and 8) lessons learned by the Matching Grant projects.

The major objectives and scope of work of the external evaluation were to:

- 1) Assess and document the level of achievement of each of the projects, and the overall program's, planned objectives, targets, outputs, and improvements in the health status of the target populations, identifying, where possible, the strategic and operational factors which facilitated these achievements (or constrained progress resulting in the lack of certain achievements).
- 2) Assess and document improvements in the availability, accessibility and utilization of priority health services and their effectiveness, paying particular attention to each project's organization, management and management practices;
- 3) Assess the utility, timeliness and accuracy of each of the project's management information and monitoring systems and the quality of their data sets, including the completeness and accuracy of key indicators.
- 4) Assess if the health information collected through the monitoring and evaluation system is used by field-level administrators and managers to redirect resources, staff time, etc., and the extent to which this information has been used to provide feedback to the project staff and community.
- 5) Assess and document the overall costs of each of the projects by: a) total population; b) target populations; and c) actual beneficiary populations in the project areas, based on the cost analyses.
- 6) Assess the relative costs and effectiveness of various service providers, levels of service, and the long term financial and organizational sustainability of: a) the current service program; and b) one or more alternative program options which could potentially improve sustainability.

- 7) Assess the grantees' plans for program sustainability in light of the experience gained to date, the results of the basic cost analyses, community organization and participation, and the observations and conclusions of the management team. Draw conclusions and make recommendations for the grantees' future plans giving emphasis to each project's: a) strategy; b) organization; c) management practices; and d) operations. In the recommendations, particular focus should be given to factors which could achieve greater effectiveness and efficiency, reduce costs and/or improve program income, and lead to long-term financial and organizational sustainability.
- 8) Assess the major outcomes and impacts of the following major foci of the Matching Grant: a) to support the delivery of health outreach services from established sites; b) to support and improve local service delivery through training, monitoring, and supervision; c) to increase community awareness of health needs and demand for health services; and d) to change health behaviors.
- 9) Assess what actions the PHC/MCS projects took at the community and household level to improve health behaviors.

#### **E. EVALUATION METHODOLOGY AND TEAMS**

The evaluation teams conducted an objective evaluation of the five Matching Grant component projects, drew conclusions and have made recommendations based upon findings. The evaluation process included review of available project reports and relevant documentation, review of project records, visits to the program areas, and discussions with program staff, collaborating groups, local officials, community leaders, beneficiaries and others concerned, and through community meetings where relevant and as time allowed.

Additionally, self-assessments of their progress to date, prepared by each of the project teams, including a cost analysis and the development of a sustainability plan, provided bases for the discussions with the evaluation team. For MPHIC, AKCHP and UPHC, the team also reviewed progress in terms of the quantitative indicators used by the program. This information was utilized to assess changes during the project period, in addition to other qualitative and quantitative information that was provided to the team or gathered during the course of the field review. The evaluation teams provided oral feedback on each component to the project staff concerned at a debriefing meeting scheduled before its departure.

#### **The Evaluation Teams**

The evaluation teams had a different composition for each project. They included three international health consultants (one from USAID/BHR/PVC/MGD) plus one local health consultant in each of the three countries (Kenya, Pakistan and Bangladesh). In each country, the work of the evaluation team was facilitated by the local AKF program officer or CEO, and one or two AKF Geneva health program officers. The AKF/USA matching grant manager was

available as resource person in Karachi and Bangkok. The team member from USAID was in the core team in Kenya and Karachi. Please see Annex 4 for descriptions of the several evaluators.

The varying composition of the evaluation teams is shown in the table below. Because scheduling was extremely compressed, the evaluation teams had very limited time to share among themselves the data they had gathered or to process final judgements and recommendations for the several projects.

#### THE TEAMS THAT EVALUATED EACH PROJECT

Evaluator	MPHC	UPHC	AKCHP	PHC MAP	RNP
C. Bowes	+	+			+
L. Brenzel	+	+	+	mod. 8, 9	+
M. Thorne	+	+	+	+	+
P. Ocholla	+				
N. Jafarey		+			
Z. Hussein			+	+	

International Health Consultants. Two of the international health consultants formed the "core" of the overall Matching Grant evaluation team, visiting the PHC programs in all three countries. They were responsible for continuity in the evaluation process and for preparing a high-quality, well-written Matching Grant evaluation report. One of these consultants was selected because of specialized skills and experience in cost analysis of primary health care and child survival programs and in the local financing of health care programs, in order to systematically evaluate the cost analysis documents and sustainability strategies of each project, and the PHC MAP modules on these subjects. The results constitute a special study, within this document, of cost, financial management, and sustainability of the PHC projects evaluated.

Local Health Consultants. In each of the three countries one local consultant joined the evaluation team, working under the supervision of the team leader. These were Penina Ochola in Kenya, Naeem Zafarey in Pakistan, and Zakir Hussein in Bangladesh. AKF had consulted USAID, AKF officers and the grantees in each of the three countries to select the candidates more fully described in Annex 4.

## **IV. REGIONAL NETWORK PROGRAM**

### **A. BACKGROUND**

Initiated in 1988, the RNP began as a mechanism to strengthen the capacity and effectiveness of the Aga Khan PHC projects. Originally it was visualized with AKU/CHS managing, coordinating and providing technical support to the activities of PHC/MCH Aga Khan sponsored projects in South Asia and East Africa. While some of the elements of the original vision are still intact, the RNP has evolved further into a forum for the exchange of ideas, information and experiences between PHC/MCH practitioners in the above region.

The current specific objectives as fashioned by the RNP members are as follows:

1. To form a network of community-based PHC programs in order to collect, analyze, exchange and learn from the experience of participants;
2. To use organized approaches for shared explorations of selected issues that are current priorities of the members of the network;
3. To review the problems and opportunities faced by participating programs with respect to the management, monitoring, and evaluation and to develop appropriate action plans;
4. To consider how 'state of the art' techniques of community based PHC programs can be advanced both within and outside the Aga Khan Health Network; and
5. To identify training needs and develop or assist in developing training materials and training programs to the extent practical.

To reach its objectives, the RNP currently sponsors local training workshops, annual international workshops, exchange visits between PHC projects, a newsletter, and a report from the annual international workshop.

### **B. CURRENT STATUS**

The decision making body of the RNP is the steering committee. The steering committee members make policy decisions, monitor the RNP activities, determine and then set the agenda for the international workshops, and approve portions of the RNP budget. Members on the steering committee are also responsible for communicating and monitoring the RNP activities in their own organization. Normally, the steering committee meets twice a year, once during the annual workshops to decide on the agenda for next year and once between the workshops to finalize the agenda.

The steering committee is currently made up of 3 persons from AKU, 1 person from AKHS/P, 1 person from AKHS/K, 1 person from AKHS/I and 1 person from AKCHP. The steering committee is chaired by the committee representative from the country which hosts the next annual workshop. Thus, this position changes annually.

In addition to the steering committee there is a secretariat. The secretariat has always been housed at AKU/CHS in Karachi. The secretariat is responsible for keeping all RNP members up-to-date on the RNP activities, preparing and distributing the newsletter and annual report, circulating articles and materials of interest, facilitating steering committee meetings and exchange visits, preparing budgets for discussion and approval, controlling expenses and financial reporting, coordinating workshop preparations along with the host country, and communicating with AKF and others about the RNP.

### 1. Annual International Workshops

Under the current Matching Grant, 3 annual international workshops were supported. The workshops were held between February and March each year in the following locations: Kenya, Nepal and Sri Lanka.

Attendance at RNP meetings is controlled by a formula. Historically the grant has covered the cost of the following slots: 5 for AKU, 5 for AKHS/P, 5 for AKHS/K, 3 for AKHS/B, 5 for AKHS/I, 1 for AKF Geneva and 1 or 2 for Aiglemont. The hosting country receives 6 additional slots.

As stated above, the steering committee is responsible for determining the agenda for each annual workshop. In the past, the workshops have contained presentations and a field site visit. The process of determining the topics starts one year in advance at the previous annual workshop with a list of topics for the next year being placed on the table. Steering committee members then take these topics home to their respective countries to obtain feedback from other country members. This has led to a wide variation in topics.

### 2. Regional Training Workshops/Exchange Visits

Four regional trainings have occurred during the last matching grant periods. The RNP members bring requests from their respective countries on areas of technical needs to the steering committee meetings. These needs are then reviewed and when possible lead to exchange visits. In these, a member of a PHC program who is proficient in a certain topic, "the expert", visits other member PHC programs and leads a workshop, or local workshops, where members receive group training on a specific subject. For example, in 1991 people from the Kenya PHC program came to Pakistan and facilitated a workshop on the successful 'Child to Child' school health education program. Not all requests are filled. The process for determining which requests were honored was unclear to the evaluation team.

### 3. Newsletter and Workshop Reports

The newsletter and workshops reports are put together at AKU/CHS in Karachi. Articles for the newsletter are currently accepted from any RNP members on any topic. At one time, the newsletter focused around one issue and thus topics were only accepted which focused on this issue. This policy has recently changed and articles are now accepted on any topic pertaining to PHC with hopes it will increase the number of articles received from members. Three newsletters and five annual workshop reports have been published. A list of the titles for the newsletters and annual workshop reports can be found in the bibliography.

### C. ACCOMPLISHMENTS/STRENGTHS

The RNP has successfully completed 3 of its 5 objectives. It has:

- formed a network of community-based PHC programs to exchange and learn from the experience of other participants
- reviewed problems and opportunities faced by participating programs with respect to management, monitoring and evaluation, and helped to develop action plans
- collaboratively explored selected issues that are shared priorities of the network members.

The RNP has created a strong network among the AKF community based PHC programs which is viewed very positively by member participants. It provides the type of forum they want and need to share their experiences, discuss issues of common interest and broaden participants understanding of these issues. It offers them a comfortable arena in which they can discuss common issues and share positive and negative experiences.

As a result of the communication which occurs at the local and international RNP workshops, many cases of cross-fertilizations can be documented. RNP facilitation of each of the three PHC projects is shown below

#### 1. MPHC

Innovation and changes in PHC implementation due to RNP include sharing by MPHC staff of their know-how in school education and community mobilization with the other PHC programs in Pakistan and Bangladesh.

Perhaps as a reflection of improved plans, schedules, budgets, procedures and MIS reviews, MPHC reports of their Quarterly Review Meetings, at least through April 1993, showed an excellent manner of reviewing objectives, indicators, implementation of planned activities, identification of problems, and future actions to be undertaken.

In addition, several ideas brought back from RNP meetings were used to advantage in MPHIC, including gender sensitization that led to increased mobilization of women in the field.

Participation in a POP conference by an AKHS/K member lead the project to add a counseling component to their growth monitoring intervention and to computerize the MIS system. Both of these acts appear to have strengthened the project and made it more effective. After attending a gender sensitization session at RNP, Kenya/Kisumu actively sought to increase women's participation in their project. When questioned, the men from the project area said they invited the women to attend the meeting. The project manager sent out a driver to confirm the women had been invited, found out it wasn't true and invited the women to come. The women came and were not silent.

After an exchange visit from the Kenya project, UPHC implemented the 'Child to Child' school health program back at their project sites. The session on ethics at one international workshop so impressed the UPHC project personnel that they held discussions with the CHWs back in the project sites on the topic.

## 2. UPHC

Gathering and analyzing information to develop a presentation for a RNP workshop have also helped a project to identify problems before they became major. UPHC discovered, while gathering information for their presentation at an international workshop, that the CHWs at their project sites were bored with the group process and wanted opportunities to learn new skills. They also became aware the young CHWs were having difficulty talking about family planning to older women in the community because the younger women didn't have children, and thus were not viewed as credible messengers. Corrective actions were taken in both cases.

## 3. AKCHP

Practical benefits realized by AKCHP from participation in the Regional Network Program include: improved Training of Trainers (TOT), approaches used in the school health program, discussion of ethical issues in the AKCHP, and stimulation as a forum in which to present results of practical operations research. AKCHP seeks increased egalitarianism among the participants in RNP.

AKHS/B sees marked improvement in areas such as school health, ethics, mental health, traditional healers, and community participation because of sharing experiences with other member countries.

The types of topics discussed at the RNP annual international workshops have been varied and diverse. This results from the participatory manner in which they are identified. In reviewing the lists of topics which have been presented at the RNP international workshops, one can measure where the AKF/PHC programs are in their stages of evolution. The first few RNP international workshops focused on specific technical project issues such as what the key



components of PHC are, and how one implements a strong growth monitoring component. Now the topics have become more global, more focused on looking at ways the PHC programs fit into the overall picture of health care.

Lastly, the annual workshop reports and newsletters contain excellent documents which are both thought provoking and informative. Besides recapping the events of the workshops, they are good reference materials for the projects and member partners who were unable to attend.

#### **D. AREAS FOR IMPROVEMENT/WEAKNESS**

In regards to the following two objectives, the results of the RNP have not been as favorable:

- to review, evaluate and advance 'state-of-the-art' techniques of community-based PHC programs within and outside the AKHN, and
- to identify and respond to the training needs of the participating programs.

One of the main reasons, it appears, for not meeting these objectives has been the inability of the RNP to go outside of AKU to meet staff development and training needs. While AKU is a renowned center of higher learning, there are subjects in which it lacks expertise, e.g. farming, micro-enterprise development, village banking, to name just a few. These are known areas of weaknesses in some projects yet, thus far, appropriate assistance has not been made available even though the topics have been suggested by the projects. The RNP needs to expand its list of training resources and tap into other training opportunities. This may also prove to be more cost-effective if the training sites are local to the project.

The inability of PHC members to go outside of AKU has to some extent fostered the feelings members expressed about the current role AKU plays in the RNP. Historically, AKU/CHS has had a dominant role in the RNP. While the role of AKU/CHS has diminished somewhat, there are members who feel the system still needs to be more egalitarian. The rationale for housing the RNP secretariat within CHS, the ability of the RNP coordinator to be neutral while holding a CHS faculty position, and the role of and need for the CHS chairperson are all questioned.

There is a strong sentiment among staff members outside of Karachi that there needs to be more responsibilities shared among the RNP members in regards to the administration of the RNP. The team received suggestions on abolishing the present fixed secretariat and coordinator positions by rotating them among member countries, as well as on shifting publication of the newsletter out to member countries. It was felt that this sharing would increase the sense of ownership among other participants. Some members were of the opinion that, under the current situation, AKU/CHS people always got the first choice in choosing responsibilities. In addition, while some budget decisions are made by the steering committee, some are made by AKU/CHS.

For the RNP to even contemplate being sustainable, the steering committee needs to have complete control of the total RNP budget.

In combination with the need for responsibilities to be shared, there also was a need, voiced by some RNP members, to open up the RNP membership to more AKHN field staff and to people outside the AKHN network. While the RNP has made giant leaps from how they were originally envisioned, there appears to be an underlying struggle between the people associated with research/academics (AKU) and those who associate themselves with the practical/field side of PHC programs. Over half of the person interviewed felt that the annual RNP workshops should reflect much more of the work in the field. Some also expressed the desire to have PHC programs from outside the AKHN network invited to attend the annual workshops. Many felt the diversity could only strengthen the RNP's ability to meet their needs.

Until now, it appears, AKU/CHS has been the primary provider for meeting the staff development and training needs of the RNP members. While this decision may have been based originally on economic reasons, this decision should be re-examined. AKU/CHS does not appear to be able to meet the expanding range of assistance needed by AKHN programs. AKU does not have the 'expertise' in all subjects related to PHC, such as micro-enterprise, and thus has been unable to fulfill the training requests of it's members. In addition, there may be better ways for the RNP members to obtain needed training in PHC areas. Quite frequently training opportunities are available in member countries which would be more applicable to the project, more cost efficient to attend and which would offer excellent opportunities to network with local PHC projects.

The evaluation team feels the current make-up of the steering committee needs to be re-evaluated. Historically, there may have been a reason for AKU/CHS to hold three positions, but if one applies the logic used to assign seats to the other projects, AKU/CHS should only hold one position. This would be for the UPHC project. There is concern among the team members that in the present situation, Pakistan members can easily constitute a majority.

Finally, the RNP produces excellent reports and newsletters which thus far have only been disseminated within the AKF/PHC network. The information in these documents would be of great interest and perhaps use to PHC programs world-wide. Yet to the evaluation team's knowledge, there has been no organized effort to distribute them.

## **E. SUSTAINABILITY**

The major challenge over the next grant period will center on the ability of the RNP to become self-sustaining. To accomplish this, the RNP needs to clearly define it's role for the future and perhaps consider expanding it's audience base. In regards to financial sustainability, one suggestion is to review the current costs breakdown of the RNP. Approximately 50% of the RNP costs in MGIII and MGIV cover salaries at AKU/CHS. The cost effectiveness and efficiency of this in relation to the mandate of the RNP need to be closely examined. Some members of the RNP have questioned the need for the present secretariat and coordinators

position and suggest rotating them among the member countries. Perhaps alternative methods of management need to be explored.

## **F. RECOMMENDATIONS**

### Immediate Recommendations

1. Revise the current make-up of the steering committee.

The steering committee should be revised to only include 1 member from each participating health project. The secretariat or coordinator should not be a voting member unless to break a tie.

2. Identify other ways of sharing experiences.

The RNP should explore other avenues of communication available which in the long run might be faster and cheaper and more efficient. Email and Internet connections might be more cost-effective means of actively engaging all levels of staff in the discussion and sustaining the communication, dialogue and progress during annual meetings. This recommendation also appeared in the MGII.

3. Share the RNP publications with a wider audience.

The RNP needs to explore avenues to disseminate materials they have produced. International and National conferences such as the National Council for International Health (NCIH) held in Washington annually or the American Public Health Association (AHPA) would be appropriate settings. There are numerous electronic methods also available for distribution such as World Bank's QCare, and listservs like Health Management, to name just a few.

### Long Range Recommendation

1. Develop a 5-Year Strategic Plan with focus on Sustainability.

The RNP currently serves a vital role in the AKHN. It is the current mechanism by which AKHN/PHC projects exchange ideas, information and lessons learned. These activities have created and fostered a sense of camaraderie rarely found among like projects. The RNP has also been an excellent vehicle used to introduce new ideas and skills to AKHN/PHC staff.

In light of all these accomplishments, the RNP needs to look towards its future. Funds available to the RNP under the Matching Grant program are slowly decreasing and after this grant period will be non-existent. The RNP must therefore seriously look at ways to sustain the organization outside of USAID funding if it hopes to continue.

The RNP needs to develop a five year strategic plan with a focus on sustainability. In developing this plan the RNP should take into consideration where it was, where it is now, and where it wants or needs to go in the next 5 years. The output of this strategic plan needs to be a clearly identified course of action for the RNP to follow. This plan would be the framework on which the RNP should build to insure it will continue to play an important role in the AKHN.

## V. PRIMARY HEALTH CARE MANAGEMENT ADVANCEMENT PROGRAM, PHC MAP

### A. EXECUTIVE SUMMARY

#### 1. Accomplishments/Strengths

PHC MAP is notably the first comprehensive set of practical manuals on how to collect, process and use data and information for the management of basic health services. It is also one of the first to provide software that can be used to conduct the work described in the text.

By placing these materials in the public domain, with open invitation to anyone to modify and copy them at will, and by making the text files available on request, the project has effectively stimulated their revision, dissemination, and use by numerous other groups using their own resources.

The project has done an excellent job of technical development and review, organization, layout, and physical production of very attractive materials. The PHC MAP achievement has been outstanding in terms of the production of not merely the originally planned 8, but 21, attractively laid-out and packaged, useful booklets on how to improve the management of PHC information. These modules are accompanied by 3 diskettes containing relevant software, including Epi Info and the PRICOR Thesaurus.

MAP materials have been promoted and disseminated vigorously and effectively. Distribution began only in the second half of 1993; through vigorous and well targeted promotion, however, about 80% of the 5000 sets printed will have been expedited by mid-1994. The SVF, in Bangkok, has done an excellent job of prompt filling of orders for the MAP sets, which are available for only a little more than the costs of shipment, and keeping track of distribution.

Numerous well-targeted and run orientation sessions to introduce MAP materials, and workshops to teach their use, have been conducted and all have met with enthusiastic responses by attendees, most of whom strove to obtain sets. These sessions have led to a number of efforts to use them in various country PHC programmers.

Training in use of MAP was started at the ASEAN Institute for Health Development (AIHD) with a "Master Training" course in August 1993, and will continue there. The course had a major impact on subsequent activities in most of the countries from which the trainees came. Part of the credit for this success is due to the active support of the East Asia and Pacific Regional UNICEF office in Bangkok.

In East Africa, AKF is working with the local Ministries of Health to plan for training on the PHC MAP modules in Kenya (assisted by AMREF), Zanzibar/Tanzania, and possibly Uganda.

Impressively, MAP methodology is already being used to develop approaches and to forge instruments for information management within a number of national health services development programs, including: Bangladesh, India, Mongolia, Myanmar, Thailand, and Vietnam.

A number of Non Governmental Organizations (NGOs) have found the MAP materials to be extraordinarily useful in carrying out their work in support of health services. A striking example of unforeseen applications of MAP that clearly produced improvement of the management of service programs in a number of countries was recounted by various staff of the American Refugee Committee (ARC).

## 2. Areas for Improvement/Weaknesses

There are errors in the MAP modules and in some of the accompanying software spreadsheets that are not simply aesthetic blunders. Some are such misstatements as might confound understanding by local managers or teachers unfamiliar with the concepts or procedures being presented. Some of these errors have been noted by URC staff on technical consultations, and some have been noted by students and teachers at Mahidol and at Johns Hopkins Universities. Several examples are presented in this report.

Also, some experts in training and management of health services have expressed reservations about whether the "cookbook" approach of MAP may not sow more confusion than clarity when uninitiated service personnel try to use the modules without the benefit of technical assistance. This remains an open question as there has not been enough time to evaluate what achievements and problems will result from use of these materials as working tools in programs. Some light is shed on this question by the assessments in this report of the utilizations made of modules 8 and 9 by the several PHC projects in preparation for the evaluation.

Distribution of the MAP set began about a year later than originally planned (o/a November 1993 rather than November 1992). There were some complications of coordination among the many different, widely dispersed persons involved in production, who labored heroically to produce the commendable results they did. There were also some desktop publishing software problems. Thus the project ends with about a year's less time having been available to document the uptake and use of the materials than was originally envisioned.

The prototypes of the current MAP modules, and some of the final modules, underwent intensive "field testing". This was actually pre-testing of materials in workshops, simulations or field exercises to see whether testers found them to be understandable, usable, and whether they could suggest improvements in the materials. This interaction with field teams was very helpful, often in unexpected ways. For example, it led to revision of the planned content for module 3 (Planning Health Worker Activities) because it was found that the field team in Karachi automatically included mapping of households when doing planning health worker activities in the service areas. Module 9 was extended beyond financial sustainability. Feedback from the field testing contributed greatly to the usefulness of the current materials.

To date, however, there has not been a comprehensive test made of all the modules used at one site, nor of a single module whose use was monitored over a prolonged period of time, from which judgements could be made as to whether the uses made of the materials had produced improvements in the information produced or in management of health service programs. That remains to be demonstrated.

There is no single, comprehensive final report on the results obtained from "field-testing" of the PHC MAP materials. Hence there is no formal guidance, based upon empirical testing, for example, of which modules (or parts of modules) can be used in which circumstances without technical assistance. Nor of which modules are most in need of revision. Opinions about these matters have been collected from various MAP users by the evaluators.

The MAP module prototypes were not taken up for routine use in their entirety--either as a series or as individual manuals, after pre-testing--in any PHC programs that pre-tested them, to the best knowledge of the evaluators. While staff of all three projects denied continuing use of the PHC MAP modules in the ongoing management of their PHC programs, they all acknowledged that their pre-testing of the modules had led them to rethink procedures and to modify some of the instruments they use to manage their programs (see descriptions under the three PHC projects). All three programs, however, continue to use some portions of the modules in training. Module 8-Cost Analysis and Module 9-Sustainability were used in MPHIC and AKCHP in preparation for the evaluation.

The most vigorous plans for use of PHC MAP, among the three PHC projects visited, were developed by the Dhaka Urban Community Health Program (DUCHP, formerly AKCHP) and the Society for Urban Health. The AKCHP Director participated in revising and adapting PHC modules for a major management training program in Bangladesh, the PHC MTP. The Primary Health Care Management Training Program intends to train 400 urban health services managers in three large cities, follow up with technical assistance and to evaluate impact on managerial practices, if funded. An indicator targeted in the proposal is "% of programmers regularly using the PHC MAP modules". It would be part of a UNICEF funded project, the Urban PHC Initiative.

It should be noted that this account of the current uses of MAP is incomplete, as the evaluation team was able to visit only 3 of the 10-12 PHC programs envisioned to be PHC MAP users at the end of the matching grant.

Aside from the field testing conducted as an integral part of the finalization of the modules, and discussion at RNP meetings, no systematic feedback from MAP users and authors has been organized to date. Thus there has been no systematic collection of errors detected, modifications and additions made in the materials during use, nor systematic documentation of the various uses made of the MAP materials, or of the results obtained. No form requesting such information is currently included in the sets of materials distributed. However, a follow-up questionnaire is currently being planned. This will be mailed out to recipients of MAP sets to solicit such information.

Although data is not available, and these are only qualitative impressions based on the responses of those interviewed, the MAP module most widely used seems to be Module 2 on doing surveys for "Assessing Community Health Needs and Coverage"; the easiest modules to understand and use seem to be Module 3 "Planning and Assessing Health Worker Activity" and Module 6 "Assessing the Quality of Service"; and the most confusing and difficult to use appear to be Module 1 "Assessing Information Needs", Module 8 "Cost Analysis", and Module 9 "Sustainability Analysis". Regarding the software, some groups lack sufficient computer literacy to use it. The computer users all seem to value Epi Info and to use it to analyze their surveys. Very few reported using the PRICOR Thesaurus, and those only rarely.

Although great efforts have gone into making the MAP materials as close as possible to "do-it-yourself cookbooks ", experience so far in their training and use indicates that technically competent persons should be available to backstop initial training, and that technical assistance might be required to facilitate field use of MAP for most local managers who are not initially already sophisticated in the techniques used.

Several types of management skills clearly needed in some of the PHC projects evaluated, but not covered in the current MAP materials are :

- Financial Management of Community Funds in PHC
- Assisting Communities to Formulate, Use and Track Indicators for Community Management of PHC (i.e. Creating and Supporting a CB MIS)
- Cost Effectiveness Analysis
- Qualitative Research and Analysis

3. Recommendations

1. The team recommends strongly that an Errata, to accompany PHC MAP sets distributed, be produced as soon as possible .
2. The team also recommends strongly that significant errors in the current modules be corrected before they are printed again.
3. The follow-up survey being planned to obtain feedback from recipients of MAP sets should be finalized and mailed out as soon as possible. Returns, perhaps after one second mailing, should be analyzed by October. As the RNP is an organized forum for sharing of field experiences, it may be a useful vehicle for collecting in-depth feedback on the effects of the use of MAP materials. If, but only if, the membership of RNP decides that it wishes to employ RNP meetings to improve the quality and use of PHC MAP materials, the results of such use could be reviewed and discussed in a RNP/RTP meeting. In the RNP/RTP a systematic pattern could be organized of forwarding to designated individuals feedback on MAP use. Particular persons should be focal points for each module. They should receive, read, judge, and compile reported strengths, weakness and



suggestions. This processing of feedback should distinguish two different uses of the MAP materials: 1) as tools used in-service to process information to improve the management of PHC programs, and 2) as educational or training materials used in teaching. The same person might become the focal point for identifying lists of persons competent and willing to provide technical assistance with use of the module that they shepherd.

4. The Facilitator's Guide, a separate one of which accompanies each of the 9 User's Guides, has been criticized by many of the persons interviewed by the evaluator. The Facilitator's Guides being distributed have not been field-tested for their impact on training/learning, and contain some significant errors. They should be evaluated by persons who have used them in conducting training on the MAP modules. In consideration of the results of this evaluation, and of how guidance for trainers in designing and running MAP training courses could be simplified, alternative ways of packaging such guidance should be considered, including production of a single Facilitator's guide for the 9 User's Guides.
5. What software to enclose with PHC MAP should be reconsidered in terms of the field experiences and suggestions of users, e.g. Epi Info version 6 should replace the current version 5.01b.
6. Since electronic media are excellent low-cost vehicles for promoting feed-back from and discussion among professionals on subjects that interest them, consideration should be given, once email and internet connections are established among the several PHC programs, to their use to discuss, develop, and diffuse the MAP materials and local modifications of them. The AKHN might, in this regard, wish to consider the cost-effectiveness of establishing its own email MAP support groups, Bulletin Board Service and/or Listserv on Integrated Health System Development.
7. Further printings of the PHC MAP materials should be for distribution at prices that are sustainable, i.e. that will recover overhead costs of further management of feedback, developments of materials, printing, advertising, and distribution. If continuous updating of MAP materials and their availability is achieved electronically, then printing of revised paper editions would be necessary less frequently, perhaps every 3-5 years, assuming that they continue to be used in training and management improvement programs.
8. The AK health organizations should continue to invest in continuously improving the quality of the PHC MAP materials as they are a unique contribution to the improvement of health services globally, as their imperfections are eminently corrigible through feedback from users and trainers, and because their likely wide-spread use will burnish the reputation of their producers. If PHC MAP materials are continuously maintained as the best available in their field, then various donors

will probably come forward to underwrite local revisions, translations, dissemination, training, and further printings of the sets.

9. In consideration of sustainability of this excellent technical resource, and under the assumption that the matching grant application currently under consideration is approved, then a plan for further financing of PHC MAP beyond the third year of that grant should be developed before 1996.

## **B. BACKGROUND**

The Primary Health Care Management Advancement materials were produced by the Aga Khan Network and the University Research Corporation's Center for Human Services to provide tools for local managers to process their own data for improving the management of health services. Under the directorship of Dr. Jack Reynolds, the managerial guidance of the PHC MAP Management Committee chaired by Dr. Ronald Wilson, of AKF Geneva, and the technical guidance of the PHC MAP Technical Advisory Committee, chaired by Dr. Nirmala Murthy of the Foundation for Research in Health Systems, India, 9 basic modules for management of health services information accompanied by 9 facilitator guides, three additional guides on management, problem-solving, and computers, and 3 diskettes of related software were made ready for distribution in November 1993.

Dr. R. Wilson recalls having first recognized the need for guidance for better management of program information during his work in the Lampang Health Development project in Thailand in the 70's. The use of information to calculate specifically defined indicators within a systems framework had been developed for many years by Dr. J. Reynolds, with extensive field work under the Asia Operations Research and PRICOR projects. The direct impetus for development of the current materials was a 1987 workshop in Lisbon on "Management Information Systems and Microcomputers in Primary Health Care", attended by Wilson and Reynolds. A key participant at that workshop was Dr. Duane L. Smith of the Division of the Strengthening of Health Services, WHO/Geneva, who later joined AKF as Associate Director of Health Programmers, Aga Khan Foundation. Unfortunately both he and another health officer, Dr. William B. Steeler, Director of PHC at the Secretariat of His Highness the Aga Khan, died too young; the PHC MAP series is dedicated to them and to "all other health leaders, managers, and workers who follow their example in the effort to bring quality health care to all in need."

MAP was envisioned to provide important and useful tools to help local managers cope with the data processing needed to obtain better quality information for better management of services and for successful decentralization of health services. These were also seen to be of great importance to assist the global movement toward greater involvement of non-governmental and private sector organizations in the provision of health services.

The final modules were enriched and guided by the findings of a decade of professional work with indicators in the PRICOR (Operations Research in Primary Health Care) project in forty countries and the interaction in and feedback from pre-testing of prototype modules by staff

of AKHS (including those of the MPHC, UPHC, and AKCHP projects) and many other professionals. Each module had its own expert review committee, and was reviewed by numerous technical and field persons in small meetings and in two large conferences.

Many agencies have contributed support to the development of these materials: AKF Canada, AKF USA, AKF Geneva, the Commission of the European Communities, the Rockefeller Foundation, the Canadian International Development Agency, Alberta Aid, and the United States Agency for International Development under two matching grants to AKF USA. The first of these matching grants was "Strengthening the Management, Monitoring and Evaluation of PHC Programs in Selected Countries of Asia and Africa" (cooperative agreement no. OTR-0158-A-00-8161--00, 1988-1991). The second matching grant is the object of this evaluation.

### C. DESCRIPTION

The following description of, and commentary on, the MAP materials is drawn from recent text for a book review in the WHO World Health Forum<sup>6</sup>.

"The Primary Health Care Management Advancement Programme (PHC MAP) is the most cost-effective guide in the world to better management of PHC services through better use of information. All 21 booklets (1,809 pp.) plus 3 high density 3.5" computer diskettes (7+ megabytes of files) are available for merely the cost of shipping from the distributor, Somboon Vachrotai Foundation, Bangkok, Thailand. All these materials have been placed in the public domain, can be modified to adapt them for local use anywhere, and can be copied freely. To make these materials as useful as possible for District or local PHC management teams, the Aga Khan Health Network and the University Research Corporation's Center for Human Services painstakingly produced and refined these materials through field testing in a dozen developing countries during 1989-1993, and through intensive discussions at several international conferences. These materials make practical use of the rich field experience that these organizations have accumulated.

The 9 "User's Guide" are written in a simple, straight forward manner. Each begins with a 1-3 page Quick Start, an overview of the contents that permits the reader to decide whether to start entering data directly into the blank worksheets in the Appendix, or whether to study the text first. Numerous concrete examples are included. The modules are beautifully designed, laid out in a consistent format, and published as ring-bound booklets that could fit into a wide pocket. Each also has an accompanying, color-coded Facilitator's Guide with step-by-step instructions for setting up and conducting an effective workshop on the subject of that respective User's Guide.

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<sup>6</sup> World Health Forum, book review section, in press

These materials address the kinds of information that local managers should use to better plan, manage, and sustain their programs. PHC MAP explicitly disclaims any pretension to being a complete instruction in health planning or management. Step-by-step procedures, numerous concrete examples, blank formats, checklists, templates, spreadsheets and computer programs assist local managers in deciding what information is most important to obtain, how to gather it, and how to use it.

The nine core modules are based upon a "systems" conceptual framework that inter-links indicators in a presumptive chain of cause-to-effect that runs

inputs-->processes-->outputs-->effects-->impacts

for monitoring or evaluating a programme, and in the reverse order for planning one. This framework is applied either to specific services (23 of them, such as Household visits, Health education, Family planning, Breast feeding, Malaria, Hypertension, etc.) or to selected, supporting management services ( viz. planning, training, supervision, community organization, and management of personnel, finances, logistics, and information).

The 9 modules are practical step-by-step, how-to-do-it manuals to help managers to actually produce tangible products, tools for improving management of services. These products include the following.

- Tables that specify what additional, priority general information, and what service and management indicators managers may need (Module 1: Assessing Information Needs), as well as which of the other 8 modules to use for guidance for obtaining them.
- A rapid, small-scale household survey (Module 2: Assessing Community Health Needs and Coverage).
- Community maps and instruments to assess risk factors and to plan, guide, record and assess service activities of health workers (Module 3: Planning and Assessing Health Worker Activities).
- A local system to track trends and identify causes of mortality and of selected, priority diseases (Module 4: Surveillance of Morbidity and Mortality).
- A local system for using indicators to monitor and evaluate capacity, provision, coverage, and effects upon clients of specific services (Module 5: Monitoring and Evaluating Programmers), and/or the support of these services by selected management services.

- Checklists (short for professionals, long for beginners), worksheets, and tabulation sheets for conducting quality assessment of 22 specific PHC services, plus guides for group discussion on how to involve workers in improving these services (Module 6: Assessing the Quality of Service).
- An assessment, based on detailed checklists, and a plan of action to improve, using discussion guides, 8 key management services (Module 7: Assessing the Quality of Management).
- A cost analysis of programme revenues and expenditures, using worksheets and data analysis templates (Module 8: Cost Analysis).
- Finally, a strategy for assuring sufficient financial and management support to assure the continuation of the PHC programme over time (Module 9: Sustainability Analysis).

PHC MAP makes a outstanding contribution to the use of computers to support PHC programs: it integrates computerized with textual resources. While all of the procedures described in the modules can be done by hand, most of them can also be done using computer tools and programs that are included in the diskettes, and clearly referenced in the texts. Most of these are spreadsheets, for use in Lotus 1-2-3 or QuattroPro, that guide the user in entering his own data, and then apply pre-programmed formulae to calculate the desired results. In addition, the diskettes contain Epi Info 5, a useful, user-friendly program that integrates word processor, database, and analysis subprograms. Computer files also contain the full text and index of the 400 page PRICOR Thesaurus of indicators for measuring the many processes required to produce effective PHC services. Several programs provide computerized tours of the modules. In addition, one of the three Manager's Guides that supplement the modules is titled Computers. This provides a clear introduction to, and helpful tips on the choices and uses of computer software and hardware to support management of information in PHC (or other health) programmers at district or local level.

Another Manager's Guide is Problem-Solving, which describes 5 steps in the problem-solving process, and offers examples, from actual programmers, of practical solutions (some a bit simplistic?) to a number of specific problems common in PHC and in management services. Better Management, 100 Tips contains aphorisms and advice from experienced managers and the management literature, organized under such categories as "managing your time", "running effective meetings", etc.

Although the PHC MAP techniques and materials are perfectly usable in any health services program, they seem somewhat biased towards non-governmental and special projects funded by donors, as distinguished from national PHC programs. This is evident in the guidance provided for the crucial initial step of how to select those small amounts of additional high priority information that feasibly might be collected and used locally to improve PHC programmers. Ten well crafted key questions are offered to pin-point information gaps, but there

is no reference to the existing National Health Plan, nor to already established regional or district programme objectives and targets, although these determine the information needs of most workers in Ministry of Health systems. Also, while it is advised to work in teams and to include the participation of communities, no reference is made to identifying and including in the workgroups representatives of those government departments whose participation and resources may be crucial for sustainability of any changes introduced. The materials, however, can be adapted easily to accommodate such considerations.

While the systems framework of PHC MAP is an excellent device for interconnecting all of the modules and the procedures proposed, it does represent an initial set of terms and concepts that must be learned by health workers before they can begin analyzing what additional information they should collect. Presumably this has not proved a hurdle with local level health workers during field tests.

The PHC MAP materials will prove very useful as practical guides for anyone carrying out in the field any of the multiple assessments addressed. Also, the systematic organization, the clear presentations, and the Facilitator's Guides constitute a superb resource that will facilitate in-country training of health services managers and health workers. The conceptual soundness, field-tested instruments, richness of examples, and computer tools will also make the PHC MAP materials very useful in the educational programs of health professionals, especially in schools of public health."

#### **D. ACHIEVEMENTS RELATIVE TO ORIGINAL TARGETS AND OBJECTIVES**

In the consolidated Logical Framework of the 1991 Matching Grant Application, objectives and targets for the PHC MAP component which were to be achieved by mid 1994 were the following:

##### **Purpose 2:**

Strengthened (due to PHC MAP) management, information systems, and sustainability (social, organizational, and financial) in 10 to 12 PHC programs. The 10 programs would address a total target population of about 731,000 in 5 countries.

##### **Purpose 3, Output C10:**

8 field-tested PHC management information modules and related training and resource materials Produced, distributed, promoted, and used in all PHC/MCS projects involved.

##### **Output C8:**

Innovation and exchange of knowledge and experience in both social and technical aspects of PHC implementation increased due to annual PHC MAP managers workshops and reports.

Output C9:

Planning and management capabilities and skills of program management teams strengthened (by PHC MAP), along with greater availability and more appropriate use of information for rational decision-making.

Additionally, in section D, it was posited that "self-sustaining training activities arising from MAP materials and activities will have been institutionalized in at least two sites: the ASEAN Institute for Health Development and the Aga Khan University." Also, that "PHC MAP modules will be absorbed widely into PHC field programs, according to local need and perception of usefulness, and subsequently assessed for long-term utility, and modifications suggested where appropriate."

How much of this has been achieved as of June 1994?

The achievement has been outstanding in terms of the production of not 8, but 21, attractively laid out and packaged, useful booklets on the management of PHC information, accompanied by relevant software on diskettes, and intensively pre-tested by professionals working in PHC programs. Important modifications in the development of the materials resulted from feedback and discussions.

MAP materials have been promoted and disseminated vigorously and effectively. Distribution began in the second half of 1993; through vigorous and well targeted promotion, about 80% of the 5000 sets printed will have been distributed by mid-1994.

Numerous orientation sessions to introduce MAP materials, and workshops to teach their use, have been conducted and all have met with enthusiastic responses by attendees, most of whom strove to obtain sets. These sessions have led to a number of efforts to use them in various country PHC programmers.

A number of Non Governmental Organizations (NGOs) have found the MAP materials to be extraordinarily useful in carrying out their work in support of health services. A striking example of useful changes at several levels of an NGO, the American Refugee Committee (ARC), are described below under applications. Other NGOs that have found MAP useful are: Africare, Care, Save the Children USA, World Vision, and Project HOPE

Unfortunately, there are a number of significant errors that confound understanding in the current PHC MAP materials. Despite the obvious popularity of the materials among potential users, the evaluators also noted a number of reservations expressed by various experts and reviewers of MAP who were interviewed. These views are presented in section 5 below. They raise questions about how constructively the MAP materials can be used in their present form by unsophisticated local managers without technical assistance .

It is not possible at this time to judge the achievement of purpose 2 and output C9 above, for two reasons.

The first reason is that continued use of the PHC MAP materials, at least as a system, appears not to have occurred following their field testing in most of the programs where this was done. It is difficult to be sure of this, since no system to track usage of the MAP materials was established. Portions of the voluminous MAP materials were either adapted and absorbed into ongoing procedures, or caused rethinking of instruments already in use in each of the three PHC projects visited during this evaluation; none of them, however, embraced and is continuing to use PHC MAP as a system to improve the quality and management of its information. It is worth noting that each of these PHC projects already had developed its own management information systems before it received the MAP prototype materials for testing.

The second reason is that there has not been time in this matching grant period to observe the institutionalization of MAP and the changes in quality of information and of management that might have resulted from its use in programs. The sets became available for distribution--which was in itself a monumental achievement considering the dispersion of those who had to collaborate in its production and the laudable manner of incorporating feedback from field testing into further revisions of modules--but only in November 1993, rather than in 1992, as planned.

#### **E. ORGANIZATIONAL DEVELOPMENTS**

The PHC MAP Management Committee, Co-Chaired by AKF, AKU and Aiglemont and the PHC MAP Technical Advisory Committee, chaired by Dr. Nirmala Murthy of the Foundation for Research in Health Systems, India, met often and seem to have functioned very effectively. Work of the staff at URC/CHS was very effective, but sometimes delayed due to delays in funding and to dispersion of its members and the time competition of other projects.

Staff in MPHC, UPHC, and AKCHP examined and tried out various modules, and offered constructive feedback.

The Somboon Vachrotai Foundation in Bangkok in October 1992 entered an agreement with AKF Geneva to assume responsibility for assisting the editor in monitoring printing processes, storing, and distributing PHC MAP materials.

The Asian Institute for Health Development of Mahidol University gave the first Master Training course on PHC MAP in August 1993, supported by UNICEF. In 1994 and future years, the MAP course as AIHD will be billed as an international course.

Apparently most AKF offices and AKF funded health projects have been utilized to obtain feedback and as points of promotion and distribution of MAP materials.

What has not yet been done is to organize a system to receive and process feedback from users of PHC MAP, nor to provide technical assistance, as needed, to them.



Also, there is not presently evident any organizational support for the corrections needed, revisions, quality improvements, and further printings of PHC MAP that would be necessary for them to have a widespread impact on the health systems of developing countries.

## F. FIELD-TESTING AND REVISIONS

Testing of various modules took place at various sites in 13 countries by scores of groups under a wide range of different circumstances, and with very different kinds of reports being fed back to the final arbiter of changes in the formats and texts, Dr. Jack Reynolds. Some of these testings were accompanied by facilitators and some were not. There are a number of aspects of the PHC MAP collection of materials that were not "field tested".

For example, most of the facilitators guides and none of the three supplementary guides on Management Tips, Problem-solving, or Computers were field tested.

Although field tests were made of individual modules, the entire series of the 9 MAP modules as a system has not yet been field tested comprehensively.

As module 4 on Surveillance was a late addition, it was not field tested in its final form.

Important modifications in the development of the materials resulted from feedback and discussions, such as the community mapping and use of registers added to module 3 (Planning and Assessing Health Worker Activities) because field staff in UPHC considered these fundamental steps, although they were not in the original design.

A summary report on the results of field tests was prepared by Paul Richardson of URC for the May 1992 Bangkok conference on the management and sustainability of PHC programs, but there does not appear to have been a consolidated, comprehensive final report on the results of field testing. There is no summary of these field tests which provides statistics on the strengths, weaknesses, or suggested changes proposed in the several materials.

While the feedback produced was presumably all considered in what revisions were made in the original prototype materials, there does not seem to be a record of which of the proposed changes were made, which were not, or why.

The feedback obtained from the field testing was in the nature of the judgements of group participants on whether the modules they tested had been understandable and easy to use. There does not seem to have been much effort made to assess the quality of information produced in workplace or--mostly--the workshop settings, nor to identify specific changes in management that resulted.

Thus, the testing undertaken was more in the nature of an intensive "pre-test" of provisional materials for use in their modification and development, but did not constitute a "field-test" of the efficacy of the final materials for achieving the objectives for which they were

designed. That will have to come from systematic observation and analysis of how they are used and what they produce in various health service programs.

## **G. DEVELOPMENT AND QUALITY OF PRODUCT**

### **1. The Development Process**

The development process was very complex. Dr. J. Reynolds outlined 8 major steps that had to be achieved: concept development, proposal development, materials development, professional and technical reviews and field tests, revisions, production, information dissemination/promotion, production. He further specified sub-steps within these, which number about 65. Production was complicated further because those who had to collaborate were dispersed. The project Director, Dr. Jack Reynolds, had moved from Hawaii to Indonesia. Some of the staff was at URC in Washington, D.C., while others were in Geneva, Switzerland and Karachi, Pakistan. As there were also difficulties with the Desktop Publishing Programs, the print work could not be accomplished by May 1993 as scheduled. Production of the PHC MAP series including software programmers was completely finished in Bangkok on 18 November 1993.

### **2. Quality of the Product**

The MAP series is generally very attractive, as described at length in section C above. AK health organizations have received an enormous correspondence from health professionals of many kinds who express their interest in and admiration of these materials, and their desires to try them out. The PHC MAP set has not been available long enough for testimonials to have been received on the results obtained from using them.

Despite the field testing, technical editing, copy editing and assiduous proofreading employed, there are a number of errors in the materials. Some of these are significant in that they may confound the understanding of a trainee or a trainer who has little prior experience with the concepts being presented. A few examples are given here for illustration.

In the Facilitator's Guide to Module 1 Assessing Information Needs there is the mis-substitution of the term " Outcomes" for "Outputs" in the several diagrams (pp. 22, 24, 25) which display the Expanded Systems Framework. The terms are correctly displayed, however, on pp. 21 and 23, as well as in the Module 1 User's Guide. This is shown in Annex 7.1. Since understanding of the systems approach and learning to use the systems framework are both challenging tasks, it may be quite unsettling to a facilitator with only a modest background to be confronted by this confusion in terms.

In Module 8 Cost Analysis User's Guide, the text and the graph on p. 13 that illustrate the concept of "break-even" analysis do not correspond (please see Annex 7.2). The text should indicate 1988, not 1989, as the year in which the table and the graph show that expenditures exceeded revenues. This simple error may cause consternation to a neophyte who is struggling

to understand unfamiliar economic concepts. A more fundamental question about the very definition "break-even analysis" used in this module is presented in section 11 below.

The graph which is generated from the spreadsheet file for Template D in Module 4, to display frequency distributions for two or more series of data, incorrectly excludes malaria, as does the miscalibrated graph D-3 displayed in the text on page 61 (Annex 7.3). These are either simple errors due to selection of too limited a range having been specified in setting up the graph, or sophisticated choices not explained in the text, but they can be quite confounding to those attempting to learn from the examples how to use the templates in the spreadsheet program.

Several experts in the field of management training for PHC, who are familiar with and basically supportive of the PHC MAP materials, were interviewed for their assessments. Along with praise for the MAP undertaking, however, they expressed professional reservations over what may happen in programs when scarcely educated local managers, without other technical guidance, use materials that may lead them into overly simplistic analysis of complicated health services problems. One, who was mentioned as a Reviewer in the Acknowledgements section of several modules, opined that some of the modules may be bad compromises between the complexity of a technical science, on the one hand, and the unreflecting, rote use of an accessible cookbook in the field on the other. He wondered whether, beyond the orientation seminars, what would happen when local PHC managers got into the field. Would they be clearly guided, or misled, and confused? Such reservations and speculations can only be answered by evaluating the results when MAP materials get used in the workplace, as will occur in the next several years.

A contrary opinion, expressed by one of the reviewers of the draft of this evaluation report, is that MAP is an effort to empower district health managers, to liberate them from the control of experts, to demystify the complexities of management, and to make management more democratic. Granted these intentions, however, it remains to be demonstrated to what extent the particular approaches and simplifications used clarify or confuse the various managers who will try to follow them.

Another expert, who was very impressed with the MAP materials and process, and generally enthusiastic about them, nevertheless expressed a similar concern, that they might be used too much as cookbooks. He felt that the MAP modules were better guides for 'doing things right' than they were for 'doing the right things'. In pre-occupation with the right steps to take, there might not be enough indication of the right general questions that should be asked before deciding which steps to take. This expert felt that there are a number kinds of information important in PHC programs that the modules do not seem to address, for examples:

- What information from local, regional, and national levels is needed to improve local management of PHC?
- How to get current information on new approaches, treatments, and techniques to make PHC services more effective or efficient?

- How can district managers get communities involved in developing and measuring their own indicators for local ownership, involvement, and action?
- How to apply basic, systematic epidemiologic thinking to situational diagnosis information to develop a good response?
- What information is needed to deal with "transition" programs, after mortality has dropped due to adequate EPI and CDD programs?
- What information, or information gathering process, can local managers use to empower communities to look at longer term health needs?
- How to get beyond simple, unreflective steps to an overview of a good sequence of questions and decisions needed to understand the problem and then to craft a solution?
- How does one use the information obtained to transform it into an effective action plan?

The important thing now, opined this expert, is to study users of MAP closely to see what works well for them, what doesn't, what support they need, and what further corrections, improvements and revisions of the materials are needed. The same conclusion was offered by two staff from URC who had authored and field tested modules, as well as by numerous others during discussions with the evaluators.

## **H. ORIENTATIONS**

Orientation sessions to MAP have included:

- May 1992, Bangkok, International Conference and Workshop on Management and Sustainability of PHC Programmers.
- June 1992, Washington, D.C., MAP displayed at the National Council for International Health Annual meeting.
- October 1992, Atlanta, use of several MAP modules in a course on Rapid Surveys and Monitoring for the Program Against Micronutrient Malnutrition of the Centers for Disease Control.
- November 1992, overview of MAP presented at Annual Conference of the American Public Health Association.
- December 1992, MAP Orientation Seminar for US PVOs, health consulting firms, and donor agencies at URC/CHS.
- February 1993, Washington, D.C., overview of MAP Modules on Cost Analysis and on Sustainability presented to staff of the World Bank's Economic Development Institute.

- March 1993, Atlanta, presentation of MAP in a Workshop on the Future of Microcomputers in Epidemiology at the Centers for Disease Control.
- June 1993, Washington, D.C., one day Workshop on MAP in conjunction with the annual meeting of the National Council for International Health .
- August 1993, PHC MAP Workshop at the Annual Meeting of the Network of Community Oriented Educational Institutions for Health Sciences, Sherbrooke, Canada.
- October 1993, at ARC headquarters, one week training by URC of ARC staff.
- November 1993, MAP presentation at the IDRC/CSIH sponsored International Conference on Needs-based Technology assessment: Exploring Global Interfaces, Ottawa, Ontario, Canada.
- April 1994, Nairobi, workshop for NGOs and District Health Management Teams from Kenya, Uganda and Tanzania.

## I. DISTRIBUTION

Final production of the 5,000 sets of the MAP series, including software, was finished on 18 November 1993. In May and June of 1993, SVF had received orders for the MAP series, but had been unable to deliver them until late June. From then until early November, SVF delivered partial sets for use in various orientation meetings and workshops. From mid November 1993, SVF delivered the most recently printed modules to complete all the partial sets that had previously been sent to participants of various meetings.

By January 1993, SVF had distributed 1421 sets to 423 different "institutes" (organizations) in 45 different countries.

As of May 1994, 3951 sets of PHC MAP had been distributed from SVF. These had gone to 521 different organizations in 50 countries. Please see Annex 8 for details. Of the total, 2571 sets had been distributed to or through AKF in 10 countries. Within Thailand, 425 sets had been sent to 175 different institutes, including 19 universities, 31 provincial offices, and 46 hospitals.

The country that received the largest number of sets of MAP, 1,165, was India. Communications from Suresh Ambwani, AKF India, indicate that many of these will be used to help monitor financed population projects in at least nine states of India, in a large World Bank project. A National Training Project within the India Population Project of USAID, New Delhi, also intended to use numerous sets of MAP with many NGOs in a project entitled Private Voluntary Organizations of Health (PVOH-II). They have also been used at the Indian Institute

of Management (Ahmedabad), the Indian Institute of Health Management Research, and numerous other organizations active in India.

The expedition of sets ordered from SVF, and maintenance of records there, have been exemplary. The major disadvantage in having this single source of supply has been the inconvenience and wait of ordering from Thailand, and the expense, depending on whence one is ordering, of shipping from there. This comes to \$140 for a set shipped to the USA, but would be much less to most developing countries, which are closer to Thailand. Secondary distribution has also taken place from a number of AK offices. The cost is mostly for shipping, but it was originally intended that SVF might be able to make such distribution a financially self-sustaining operation by earning \$20 per set shipped. However, this was undermined when this service charge was stripped out of the price, unfortunately, in the enormous number of sets dispatched to India for the World Bank project.

Staff at CHS/AKU have expressed the desire to have a secondary point of distribution, for Pakistan, at AKU. The UNICEF office in Karachi has indicated that it might be willing to stock and distribute MAP sets, if large scale use of these materials can be promoted within the Pakistani health services.

## **J. TRAINING IN PHC MAP**

In August 1993, in Bangkok, a 3 week MAP "Master Training" course was given at AIHD at the ASEAN Institute for Health Development (AIHD), for 26 participants from 8 countries. The course will continue there. Although there has been some difference of opinion over whether that course was adequately backstopped technically, and whether it was actually given as a "Master Training" (to create capable trainers of trainers) course, it has had a major impact on subsequent activities in the countries from which the trainees came.

It has led to serious efforts to translate/adapt and to disseminate MAP methodology in 5 of these countries: Thailand, Bangladesh, Mongolia, Myanmar and Vietnam. AIHD is preparing to give another training course in August 1994 and in future years, with sponsorship largely from UNICEF.

Discussions are advancing between AKF/Geneva and AMREF about the latter providing training in MAP materials in Kenya. The potential of an increased role of the AKHN and DUCHP in training health workers, raised in this evaluation, means that the role that MPHIC staff can plan in such training is worth examining closely.

Instructors at George Washington U., D.C., and Johns Hopkins U. School of Hygiene and Public Health have used selected portions of the MAP materials in several courses.

Very useful suggestions were made by Dr. J. Quick of MSH in Nairobi, Kenya, on how to structure the use assignments for the PHC MAP materials, and the sequence of modules, in order to train in such a way that effective use follows. These are included as Annex 9. The

basic idea is to train personnel for tasks that they need to do on their jobs, and to follow-up with them repeatedly in the field on how they are doing.

## **K. APPLICATIONS OF PHC MAP**

### **WITHIN THE AKF FUNDED PHC PROJECTS**

A number of the 10-12 PHC programs targeted for uptake of the MAP final materials did participate in the field testing (or pre-testing) of the MAP prototypes, and did incorporate usefully some of the methods and instruments into their programs. By and large, however, they did not embrace nor continue to use the MAP materials as a central, systematic vehicle for improving either their program or information management, 2 1/2 years following the first field tests. Also, none have attempted to document improvements in management skills or capacity that may have resulted from such uses of MAP materials.

This conclusion must be tempered by the qualification that the evaluation team obtained information only on four of the 12 targeted PHC programs: MPHC, UPHC, AKCHP, and Srisaket Provincial Health staff, Thailand. Srisaket staff tested modules, but reportedly have not used them since, pending finalization of the Thai version of the MAP materials and commencement of a Thai national program to employ them.

In the Mombasa PHC, prototypes of current MAP modules # 1, 2, 3, 6, 7, 8, & 9 were field tested and feedback was provided to URC and AKF/Geneva. Module 3 on Planning health worker activities was used by MPHC staff to determine workloads. Module 4 was not used because Surveillance had been attempted in the Kisumu project and found not to work. Modules 3 and 6, on Health Worker Planning and on Assessing the Quality of Service, were used to develop individual self-assessment forms for evaluating quality of work.

In Mombasa, module 3 (Planning and Assessing Health Worker Activities) was found useful by MPHC staff in planning and scheduling their workloads. The general methods of Modules 3 and 6 (Assessing the Quality of Services) were used by staff to develop their own indicators for two new instruments that proved very constructive in practice: 1) Format for Staff Self Appraisal, and 2) Mombasa PHC Quality Assessment.

The Mombasa PHC Quality Assessment form was a checklist to use on field visits, with key questions to answer when observing community mobilization, training, ante-natal care, growth monitoring and nutrition, child immunization, and family planning.

The Format for Staff Self Appraisal, used during a full day of self appraisals undertaken by the entire MPHC staff once every three months, compared targets and achievements of planned activities, noted reasons for success or failure, ranked support from the several managers, appraised one's own team skills, levels of efficiency, effectiveness, and innovativeness, and ranked level of participation for such community structures as the Project Implementation Committees.

MPHC staff used the general methodology of the modules, but did not take indicators directly from them, preferring to develop their own indicators. Every third of the monthly staff meetings was accorded a whole day in which staff made their own self-assessments using these instruments (see Annex 10). Other staff attending would respond to the self-judgements on why scheduled work had not been done: real constraints, or excuses? This exercise in quality control had worked very well but was abandoned shortly after the Manager left the project. The Acting Manager allows that this abandonment was not due to deficiencies in the procedure but because staff became very busy and didn't get around to it. This illustrates how staff became somewhat overwhelmed by growing time demands of developmental activities at the same time that there was some loss of firm overall governance of the project during the prolonged search for a new project manager.

Staff of AKU, who were co-authors of Module 3, Planning and Assessing Health Worker Activities and Module 4, Surveillance of Morbidity and Mortality, continue to use these materials in the courses they teach. They have accumulated a number of modifications, case studies and other improvements in these materials. However, they have neither provided these improvements to whomever might revise the MAP modules, nor have they received commentary from others who have used their modules. Apparently no mechanism for such feedback has been established.

AKU tested modules 1, 2, and 6 in the five katchi abadi clinics of the UPHC, and in Baba Island, from mid- to late 1991, producing a voluminous, well documented report by May 1992. The clinic teams chose the modules they wished to test. Of the six teams, five chose module 1 Assessing Information Needs, four chose module 2 Assessing Community Health Needs and Coverage and each focused on 2 particular programmers, and two chose module 6 Assessing the Quality of Service. This field testing came at a good time, as the Urban PHC program, having registered a 50% decline in mortality, was exploring the issue of residual mortality as a focal point for entering into a second planning cycle. As stated in the report:

"One of the major needs identified for this new planning was the need to strengthen field-based management. A working group is drawing up specific recommendations for improving the managerial skills of the PHC teams and making the managerial process more effective. Members of the working group consisted of Field Directors who were involved in the field testing of the MAP modules. They found the modules to be particularly useful. The MAP modules provided a strong conceptual basis for the PHC teams to address management issues."

In early 1992, AKU reviewed and modified module 7 on Assessing the Quality of Management, but URC did not incorporate those changes in finalizing the module due to pressure of time limits, deadlines and impending conferences. This was a discouragement for AKU. When asked, aside, by the evaluation team why MAP was not currently being used more actively in UPHC or AKU, AKU staff replied that maybe they had been told too much about it, were a bit tired of it, and perhaps somewhat "allergic". This reaction was reminiscent of the negative reaction that had developed to the predecessor program MECA (Monitoring, Evaluation and



Comparative Analysis of PHC Programs) in the previous matching grant, due to resentment at the perception of external promotion and enforcement, and to fear of being unfairly compared and having one's efforts judged in some distant office by indicators removed from the different working realities of each project. In consideration of these related phenomena, the evaluation time recommends that the technical staff of AKF Geneva review the strategies it employs to develop a sense of "ownership" of these technologies and tools among project staff in the several countries.

At AKU, both Khatidja Husein and David Marsh, both co-authors of two MAP modules, continue to use portions of these materials in their teaching. Recently David Marsh needed to prepare materials on tuberculosis and found it very useful to go through all of the checklists of the several modules to quickly accumulate this material, which he subsequently checked against the indicators on tuberculosis in the Pricor Thesaurus in the accompanying software.

It should be noted that both K. Husein and D. Marsh have not received feedback from users on the materials they helped produce, although both would like this.

Another excellent application of PHC MAP instruments is being made by CHS faculty member Janice Burns, who is preparing a "Quality Assurance Checklist: A Handbook of Primary Health Care for the Community Health Nurses". This will contain checklists that can be used by CHNs to assess the quality of PHC activities by LHVs and CHNs.

In Dhaka, director of AKCHP, Dr. M. Siddiqi, and Director of PHC in the MOH of Bangladesh, Dr. Z. Hussain, working closely, revised and shortened all 9 MAP User Guides, and will have them translated into Bengali for use in strengthening government urban health services management in three cities. They recount that, as faculty at AIHD in the "Master Training" course often could not reply to technical questions asked by their fellow students, the two of them, having somewhat stronger technical backgrounds, fell into a role of teaching assistants. This led to their critiquing the modules carefully, and ultimately revising and adapting them for use by the government health services in Bangladesh. They found the modules wordy, repetitive and vague in places, e.g. not distinguishing clearly between "survey" and "surveillance", or between "monitoring" and "evaluation". They attempted to correct these deficiencies, and inserted terms and examples that would make the procedures seem familiar to personnel working in government health services of Bangladesh.

#### IN NATIONAL PROGRAMS

Impressively, as a consequence of the AIHD "Master Training" course in August 1993, and the vigorous support of the UNICEF East Asia and Pacific Regional Office in Bangkok, the MAP methodology is already being used to develop approaches and to forge instruments for information management within a number of national health services development programs, including:

- Thailand--MAP module 2 has been adapted, translated into Thai, photocopied, and is being used by MOH in every region of Thailand for situation analysis rapid surveys of populations; the other MAP modules are also being adapted (e.g. to include their Quality of Life indicators and approach) and translated, with support of UNICEF, for MOH planned upgrading of management and use of information, first in 9 targeted districts with about 400,000 population, then, if successful, eventually into 75 provinces, 40 nursing schools, and 6 health worker colleges.
- Vietnam--MAP module 2 was used to develop surveys in November 1993 of about 6000 mothers in 15 districts which will be targeted by UNICEF for management strengthening. Modules 2 (Surveys), 4 (Surveillance), 7 (Management Quality), and 8 (Cost Analysis) are being locally adapted, translated into Vietnamese, and introduced into training for PHC managers. Extension into 53 provinces is planned, provided that initial 15 provinces are successful.
- Mongolia--some translations of MAP modules have been made under guidance of trainee from ASEAN, and a workshop has been held to promote the methodology into AMOKs (provinces) and SAMARANs (districts). The government desires technical assistance, but this is not readily available.
- Myanmar--government has requested technical assistance with introduction of training for use of MAP modules 2-7 in the 209 accessible (of 380) Townships
- Bangladesh--trainees from ASEAN course revised MAP materials, shortened them, adapted them to Bangladesh system. MOH plans to use them in urban PHC programs, with support of UNICEF.

### IN NGO PROGRAMS

Striking examples of unforeseen applications of MAP that led to improved management of programs was recounted by three levels of staff of the American Refugee Committee (ARC).

- The USA based health coordinator for ARC, Sandra Krause, heard URC's Neeraj Kak present the MAP materials at an NCIH meeting. She immediately recognized that MAP would be useful for ARC field staff. She took a set to Nairobi in February 1994 to conduct a 3 day seminar on MAP and the LOGFRAME.
- From that seminar, Michelle Kelly, East Africa Regional Health coordinator for ARC, took MAP to Southern Sudan and to Somalia. ARC staff in Somalia used module 2 to prepare and conduct a 78 question, 30 cluster, 210 respondent survey of a target population, which they were currently analyzing with the EpiInfo package from MAP. Another ARC survey was started in Sudan, but was interrupted when the center was bombed and staff were obliged to evacuate. This reinforced the importance of MAP's injunction that questionnaires be brief and

surveys rapid. Kelly finds MAP extremely useful because emergency relief work must be task oriented and rapidly done, and MAP's task checklists are immediately usable. The MAP format permits ARC to streamline their service tools for quick results. ARC field staff have found module 3's checklists for assessing health worker activities useful. In the field ARC finds lack of standardization and loss of the most experienced local health workers, hence a need for skills checklists, and monitoring and evaluation instruments that can help local workers to make their own assessments of the duties, job descriptions, accountability, and supervision that are needed; the MAP methods and checklists provide tools for this that are easy to use and effective. She noted that every NGO which saw the MAP materials wanted to get a set.

- In Bangkok, Assistant Country Director for ARC, Gary Dahl, most heartfully described practical benefits derived from MAP both in terms of a working framework he uses for divers activities, as well as for usable data. The MAP systems framework and management cycle, together with a copy of the Alma Ata declaration, provided him with a framework into which he could fit coherently a wide array of previously disconnected issues and activities of concern to NGOs working in relief and towards development in Thailand. This enabled him to more clearly communicate ideas and plans to other NGO representatives. This systems view of PHC also gave him the confidence to accept the chairmanship of a coordinating group of 6 NGOs that meets monthly in Bangkok. Without this systems view derived from MAP modules, he would not have had the confidence, being non-clinical, to accept the chairmanship.

Other uses that have already been made of the MAP include the use of Module 2 by the African Housing Fund, Nairobi, to do a housing survey.

#### BY CONSULTANTS

At URC, Lori DiPrete Brown noted that people who provide technical assistance in health services call frequently to ask for checklists and structures for organizing data from the PHC MAP modules, as these are just the kinds of materials they need to use and want to share with their counterparts. The director, Dr. David Nicholas, noted that URC staff on field assignments in Quality Assurance frequently use portions of the MAP materials to assist in making baseline analyses and periodic assessments. As reference guides they are easy to use and permit quickly pulling together instruments for collecting information credibly. The modules are easy to read and work with, and the diskette software is easy to modify.

URC's Wayne Stinson, who had just returned from Indonesia, was able to describe a good specific example of how MAP tools facilitate technical assistance. He had been assisting the World Bank in conduct of a health services quality assessment. Dr. James Heiby, of USAID, with whom he was working, had brought out the MAP modules, and their Indonesian counterparts then very quickly and easily made good instruments for data collection by

modifying, adapting, and translating the quality assessment checklists in the MAP modules. This process had put the Indonesians in charge, and quickly, but working within a credible framework within which all the organizations felt comfortable.

All of these URC staff agreed that portions of MAP were enormously useful as particular tools that could be used to address a particular priority problem or program. The entire system or series of MAP, however, is too voluminous and difficult to digest at once. They noted that this viewpoint had been the consensus of fieldworkers in MAP meetings.

## **L. LESSONS LEARNED**

The acts of putting the PHC MAP materials into the public domain with an open invitation to anyone to use and to copy whatever parts of them they wish, and to modify them in any way desired, have stimulated various groups to adapt portions of these material for use in ongoing, separately funded health services. This process was facilitated further by making the text files available, by request, on disk. The fruits of this wise policy can be seen in the uses of MAP described in the preceding section.

The PHC MAP materials make a very attractive package and are quite inexpensive, so many professionals wish to obtain them. The question of whether modules continue to be used constructively in PHC programs, however, is more complicated. Results thus far are quite mixed. Only selected portions of the prototype modules have continued to be used in the 3 PHC projects evaluated, although MAP has provided some useful tools for ongoing work in each of them.

Continued use may result from urgent needs for particular kinds of information, as in the assignment for those projects to produce Cost Analysis Reports, or in the needs of ARC field staff to obtain quick situational analysis of changing populations for emergency relief. It may also result from high level initiatives to improve organizational management based on better uses of information, as is potentially the case in Thailand and in Bangladesh.

Ways of structuring the necessary facilitating environment that promotes use have been indicated in a number of training programs that were successful in promoting follow-up action, notably in the Financial Management of the Facility Improvement Fund in Kenya, and in WHO's District Team Problem-solving in 13 countries. The common elements in both approaches are the explicitly expressed interest of a senior official in improved performance on the job of trainees doing a task which is both challenging and feasible, providing usable tools, and then following-up on the job to discuss how the new techniques are working out.

## **M. APPLICATION OF PHC MAP MODULES 8 AND 9 IN THREE PHC PROJECTS**

Additional information about the use and application of PHC MAP Modules 8 and 9 during the USAID/AKF Matching Grant are contained in the individual evaluations of each PHC Project. The main elements from each project are summarized below.

1. Mombasa Primary Health Care Project, Kenya

The MPHC Project was involved in pretesting the cost analysis module in 1992. In addition, the previous project manager had received training in cost analysis with the Kisumu Project in 1987, although this training focused on evaluating the economic costs of health projects. The project had two experiences in conducting cost analysis. The first case was in 1991-1992, when costs were estimated by hand and then mapped into Lotus 1-2-3 spreadsheets. The second case was the most recent exercise using the PHC MAP Module 8.

The cost analysis conducted for the self-assessment was initially prepared by the previous project manager. With some assistance of the acting project manager, the previous project manager, and the information officer, the finance officer was responsible for preparing the final 47-page cost analysis using the audited project accounts for the period 1989 to projected through June 1994. The analysis was conducted over a period of two months and completed in May 1994.

Since many of the figures contained in the final cost analysis, generated from Module 8, were calculated retrospectively, many of the data tables created were of limited value for project management. The scant written text and interpretation of the results reflected this as well.

All three levels of the cost analysis were calculated using data from financial accounts. However, there was a difference between the financial accounting system codes and structure and the cost analysis framework. Much effort was spent on the part of the Mombasa team translating figures from the audited accounts into the framework proposed by Module 8. As a result, figures for expenditures and revenues represented accrual accounting conventions as well as cash flows. For instance, accounting losses on sales of assets were debited to revenues. In addition, in order to translate financial accounts into the Level II and Level III analyses, many assumptions were made which did not take into consideration differences in the intensity of resource use or in activity levels between different project areas.

The experience of Mombasa with Module 8 highlights the limitations of the module as currently constructed. If it is to be regarded as a tool to improve and strengthen management based on cost information, then the framework proposed in the Module should bear some relation to that currently established for PHC projects. Or, at the least, the module should contain detailed guidance as to how cost data from cost accounting systems can be translated into the framework proposed, such as which items to include or exclude, and under what categories of cost. Simply stating that the codes for cost analysis and current accounting methods need to be changed is not enough to guide the novice.

For the MPHC Project, the main interest in performing a cost analysis was to estimate the cost per unit of output, rather than to make comparisons between actual and budgeted revenues and expenditures. Additional guidance would have made calculating unit costs easier.

## 2. Aga Khan University, Community Health Services Project, Karachi, Pakistan

The AKU CHS Project did not use either of the modules on cost or sustainability analysis for this evaluation, though the project had used previous versions of Module 8 at the beginning of the matching grant. The AKU CHS Project does not presently use Module 8 because they have developed their own format and procedures for calculating both financial flows and economic costs of their project based on their experience and knowledge of a range of approaches. Regarding the sustainability analysis, it was not felt as a priority to complete this exercise, although project information was utilized at a meeting on project sustainability in Bangkok in 1993. Project staff reported that this experience helped influence the final version of Module 9.

The lack of use of the modules by the AKU CHS Project for cost evaluation is surprising given its role in the development of both. In fact, much of the cost analysis module was based on approaches which were being used in the project to measure and evaluate costs. The three levels of analysis promoted in the cost module were an outgrowth of the types of calculating being performed by project staff. However, it must be mentioned that certain aspects of the modules are being used by staff for teaching purposes at the university.

The AKU CHS Project conducted a detailed observation analysis of health worker time in 1990 in order to allocate different categories of costs to individual components, such as immunization services or antenatal care. This distribution of time among activities was not verified using other methods, nor has it been repeated since 1990 in order to update the 1991, 1992 and 1993 data because of the time and resources required. However, the project is to be commended for performing such a detailed analysis in the first place, and in using the results of this analysis, to alter management practices. This time study found that 40% of health worker time was spent on record-keeping and collecting data for the management information system. Based on these results, the system was streamlined to reduce the workload required.

Some of the criticisms from AKU CHS staff of the costing module were that the spreadsheets are too simplistic, and that data entry is labor-intensive. In fact, the project has on staff an individual who works on cost data entry and analysis, in addition to a supervisor who oversees the analysis.

Project staff suggested that a d-Base program be developed which would speed up data entry, and macros could be used to make the cost calculations. Project staff also reported that the level of detail and flexibility required to perform an accurate cost analysis for their project was not reflected in the current cost analysis manual, and this contributed to its non-use for the evaluation.

## 3. Dhaka Urban Community Health Programme, Bangladesh

The DUCHP performed both the cost and sustainability analysis for the self-assessment. These analyses were found to be the most streamlined and management-oriented of those

conducted for review. The project manager, executive secretary, and the finance officer all worked as a team to produce these analyses. The project director had received some training in the use of the modules at a special session in Bangkok in 1993, and is anticipating conducting training of district health officers in their use as well. These exercises were the first attempts by the project to track and evaluate costs using the modules.

Regarding the cost analysis, the major issue was that project financial accounts were organized in a different manner than that outlined in the cost analysis framework. This is a similar problem to that identified in the MPHIC Project. In addition, the project was interested to estimate the cost-effectiveness of project activities, but was not able to do so because of lack of guidance on this subject in the manual (although there is a discussion about calculating unit costs).

For the sustainability module, the project director felt that the five-year projections of revenues and expenses was useful for project management and also for lobbying for additional resources from donor organizations. However, there were some inconsistencies in terminologies in both modules which made the text confusing, and the Level III analysis in Module 9 was difficult to understand. The layout of tables and text in this module also needs to be improved to prevent tables from running onto several pages.

The DUCHP has revised all of the MAP Modules for training of district health officers. The revisions entailed removing all of the computerized aspects of the modules, as well as simplifying and clarifying the text.

#### **N. EVALUATION OF THE TECHNICAL CONTENT OF MODULES 8 AND 9**

This section highlights the drawbacks and limitations of Modules 8 and 9 based on a synthesis of reported experiences of PHC Project staff included in the evaluation of the USAID/AKF Matching Grant (July 1991-June 1994), as well as a technical review based on familiarity in the field with most of the costing and cost-effectiveness manuals produced by international organizations, such as the World Health Organization, UNICEF, USAID, the World Bank. Only the use and technical merits of financial sustainability is discussed in this review of Module 9.

The positive features of these two modules are similar to those of the series of MAP modules discussed at length in previous sections. AKF should be commended for its efforts in integrating the sustainability of health projects into its MAP module series. This represents a unique feature of the modules and demonstrates that AKF is at the forefront on this issue.

This review begins by asking the question: what manuals and methodologies already exist and how do these compare with these modules? Specifically, do these modules build upon the approaches currently available?

The evaluation team recognizes it is impossible to "please" everyone when developing a manual, particularly one for which technicians differ markedly. While it is acknowledged these modules are being used in other country projects which were not part of the scope of this review, it is believed that lessons can be drawn from the application of the module in the field in order to improve and strengthen the product.

First, the cost analysis module focuses solely on financial costs or expenditures and does not provide complete guidance on how to evaluate the costs of donated time or supplies which may be essential to the operation of the project, particularly for the novice. Without examining the "full cost", it is difficult to make an accurate assessment of the share of costs among different sources of financing and the potential for sustaining the project. Further, decisions about the most economical choice of health care delivery strategies need to be made using economic cost information.

It is highly recommended that the cost analysis module be revised to include methods for estimating both financial flows and economic costs, as well as a section on cost-effectiveness analysis. The latter is particularly critical since CEA is promoted by most international organizations as an important tool for management and policy decision-making.

Second, not enough discussion is made on the difference in terminology and meaning between financial costs and financial accounting of costs. In the latter case, there are instances where accounts are balanced with non-cash accounting conventions. Since the idea behind evaluating financial costs is to examine financial flows of funds, there needs to be stronger guidance as to how to translate an accounting system into the proposed costing framework. The cost analysis, if it focuses on financial flows, should really be described and promoted as a financial management tool rather than an analysis of "costs".

Third, the cost analysis manual recommends several evaluations of budgeted revenues with actual revenues and budgeted expenditures compared to actual expenditures. This procedure generates many figures of limited use to analysts. It is recommended that any revision of the manual consider sifting through the various types of calculations to come up with the key ones for project management.

Four, although the Module 8 begins by describing the reasons for conducting cost analysis, the organization and presentation of the material leaves much of the methodology up to the reader. The manual does not provide clear-cut guidance on how to answer questions in a systematic manner relevant for project management. For instance, there is not distinct section explaining the individual steps for determining how much more it will cost to expand the project's operations, or how to identify where costs can be conserved. Module 9 presents additional information how to cost project expansion, but there is little connection with the previous module. Other costing methodologies exist which accomplish the goal of posing management questions and providing guidance on how to answer them using cost information much more effectively.



Five, the greatest drawback of the cost analysis module is that it does not provide sufficient information on how to interpret the results of the analysis for project management in Step 7. This gap was also reflected during the evaluation of the use of these modules for the PHC Projects. It is strongly recommended that additional thought be given to how to guide novices through an interpretation of cost figures for project management.

Six, other recent costing manuals contain descriptions of different types of efficiency indicators which can be derived from cost analysis. It is an oversight to not include what could be considered the current "state-of-the-art" in cost analysis in the PHC MAP modules. Management indicators such as productivity of health personnel, time spent per contact, and wastage rates can all be derived from cost data.

Seven, several project staff remarked that there was not enough emphasis or direction given on how to estimate the costs of different health activities or components of the project in the manual descriptions of Level III analysis. In addition, while the manual presents different approaches to allocating costs, the manual provides limited guidance on when to use which rule-of-thumb for allocating costs among components. It is recommended that the module clearly state how costs should be allocated in order to generate greater uniformity and consistency in approaches used.

Eight, the text needs to be more succinct, with greater attention paid to explaining key concepts in ways that will be convincing to novices. The glossary of terms needs to be expanded to encompass all of the key terminologies and the different types of meanings assigned to words such as "cost". Other costing manuals do a better job of this.

Finally, it was often remarked by the PHC project users met during this evaluation, that the spreadsheets themselves were sometimes confusing. This reviewer supports this assessment of the spreadsheets. However, the graphical presentation of the results is a positive feature of the modules. It is recommended that the spreadsheet organization be strengthened by use of macros in Lotus, including instructions for how to expand or modify the sample frameworks built into the spreadsheets.

Regarding Module 9 on Sustainability Analysis, there was no clear methodological link between the cost and financial sustainability analysis. Once a project manager has completed the exercise of fully analyzing project costs, these data should be utilized as the basis for assumptions in the "what if" scenarios.

Further, it needs to be recommended that a project conduct both a best and worst case scenario of revenues and expenditures, in order to visually and quantitatively capture the range of experiences under which the project must operate.

Finally, the approach suggested for the "break-even analysis" appears to differ from standard definition. A break-even analysis is designed to determine at what level of coverage or level of cost recovery project revenues would be equal to project costs. As it stands now, the

break-even analysis is merely a comparison of projected revenues and expenditures, without really identifying the factor(s) which would allow the project to break even.

## **O. OVERALL CONCLUSIONS AND RECOMMENDATIONS OF THE PHC MAP MODULES**

The conception, development, production, promotion, and distribution of MAP has been an enormous success. It is a unique and very attractive resource for better management of information in health services world-wide. The AKHN and the DUCHP could use MAP to enhance their roles in training and technical assistance in the development of health systems. However, MAP contains some significant errors, which should be corrected using feedback from MAP users. Impact of the use of MAP on health services remains to be tested. Continuous improvement of the quality of these materials is an option the AKF should consider as it might be a cost-effective way to influence the quality of health services.

The greatest obvious needs now, in the interest of promoting the successful use of the PHC MAP materials to improve management of information and thereby management of health service systems, are the following:

- Organize a focus for feedback from users of MAP;
- Identify the significant errors in MAP;
- Produce and distribute an Errata to accompany MAP sets;
- Develop and make available Technical Assistance to users;
- Correct the errors in MAP before they are printed again;
- Democratize the process and reduce cost of all the above by using the internet to facilitate them;
- Use the results of all the above to increase the user friendliness and practical usefulness of these materials when they are revised, perhaps in 3 years;
- Continuously strive to make PHC MAP the best guidance materials available for managing information in health systems development; and
- Develop a plan for further organizational and financial support for all of the above.

The evaluation team strongly recommends that significant errors in MAP modules should be corrected before it is reprinted.

The team also strongly recommends that an Erratum be prepared as soon as possible, to be shipped together with sets of the first edition PHC MAP materials.

Needed now are analysis of feedback from in-program users, and observation and analysis of the programmatic results obtained from field use of MAP. Field use of MAP over time in PHC programs should be analyzed carefully to determine the strong and weak portions, and changes that would make use easier and more helpful. Some of the key questions that such analysis should seek to answer are: Was better information obtained? Did it get used? Did this lead to

better decisions? Did management of service programs thereby improve? Were the "dangers of a cook-book approach" evidenced by creation of confusion and misunderstanding of technical decisions? For what was technical assistance needed? Should a list of basic questions be added to as a framework to the steps to take in each module?

Further, it is recommended that the several AK health organizations seriously consider undertaking a continuous quality improvement (CQI) program to continually improve the quality and user-friendliness of the MAP materials. Part of such CQI should be to promote use of MAP materials in AKF funded PHC field programs. Another part should be to promote use of MAP materials as an important component in the development of health services management training and technical assistance competencies within the several AK health organizations and projects. This strategy, of making the MAP materials the best PHC information management guides available, is likely to lead automatically to investments by others in adapting, translating, disseminating and using the MAP materials and methodology. If the AKHN chooses to increase its roles in training and providing technical assistance to other programs, a path clearly traced already by DUCHP in the PHC MTP in Bangladesh, this could lead to greatly increased revenues from these sources, to widespread influence on improving the quality of management and of health services of other programs, and thus to very high returns in impact and prestige for AKF for very modest investments. MAP materials are already available to be a central resource if the AKHN opts to enlarge its scope beyond direct service provision into training and technical assistance. If it chooses this option, continuous quality improvement of MAP would be the crucial point of leverage to make it successful.

Once the AKHN field programs are connected to Internet, an AK Bulletin Board Service should be created. Then a feasibility study should be done on whether it would be cost-effective to create an AK listserv. Feedback from and guidance for users of MAP materials would be only one of the functions of these low-cost electronic resources.

## **VI. URBAN PRIMARY HEALTH CARE PROJECT, KARACHI, PAKISTAN**

### **Project Description**

Since 1983 the Department of Community Health Sciences of the Aga Khan University has run community-based health services in five squatter settlements of Karachi, ranging in size from 8,000-12,000 population, for a total of about 50,000. These are Orangi, the first served; Azam Basti, with a better equipped, referral clinic; Chanesar Goth, Grax, and Essa Nagri. Health Education and outreach services, such as growth monitoring, are conducted by paid Community Health Workers who visit households around the 5 clinics. Basic PHC services are offered plus simple curative care for walk-ins, with fees for both consultations and medicines. A principal purpose of developing these "modules", as the SA states, was to "expose health personnel as well as medical and nursing students to the situation of ill-health in such areas, while actively involving them in the planning, implementation and evaluation of PHC systems."

UPHC has also provided technical inputs into two other areas quite different from the squatter settlements. Baba Island is a small, detached area with a homogeneous population of about 5,000 with a strong past history of community-led development activities. The Fisherman's Welfare Association there was already mobilized and active in dealing with outside organizations before CHS approached it to collaborate on PHC. With support of this Matching Grant, the UPHC has provided three clinical personnel, and has apparently collaborated well with FWA which has done the outreach through volunteers. The other area, Karimabad, is a well serviced middle-class community which has received assistance from AK institutions for more than a decade, and has recently developed a volunteer-run program of screening and counseling for chronic diseases, such as obesity and hypertension.

During the first AKF/USAID Matching Grant of 1988-1991, UPHC appeared to have had great success in these populations, "reducing infant mortality by about 50% at a cost of 2 to 3 dollars per capita" in the 5 CHS-led squatter settlements, in the words of the former head of CHS. The current Matching Grant was intended to maintain that progress, make interventions more effective, shift towards lower costs and devolution onto community control of activities, initiate a macro-site prototype of urban PHC to permit "scaling up", improve urban PHC management, train field-based urban PHC managers, improve referral, and increase collaboration with government and NGOs involved in health.

### **A. ACHIEVEMENTS COMPARED TO ORIGINAL OBJECTIVES AND TARGETS**

#### **1. Tables**

Objectives and targets set in the 1991 MG application are shown in the following tables, as well as the results actually obtained, followed by brief comments on the progress evidenced. If different indicators were used subsequently by the project, they are shown in parentheses.

**Urban Primary Health Care Project, AKU, 1991-94**

AREA FOR IMPROVEMENT IN UPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
<b>COVERAGE: PHC/MCS PROGRAMS ACCESSIBLE TO MORE PEOPLE</b>	-PHC/MCS accessible & available to % of target population: -->80%	-??	-no follow-up demographic survey -no estimates available
	-population covered 57,900-->170,550, including macro site	-48,829	-macro site partly surveyed; only in discussion stage -outreach & utilization have decreased in the original 5 k.a.s
<b>HEALTH STATUS: LOWER DEATH &amp; DISEASE RATES; HIGHER PROTECTION</b>	-IMR: '90 93/1000 LBs -->?  -1-4 MR: '90 22/1000 LBs -->?  -MMR: '90 39/10,000 Bs -->?	-IMR: '91 65 '92 76 '93 56  -1-4 MR: '91 19 '92 24 '93 18  -MMR '91 25 '92 31 '93 19	-good mortality tracking through CHW house visits and verbal autopsy follow-up -continued decline of IMR after rise in '92 -plateau of 1-4 MR '91-93, after decline from '90 and rise in '92 -but above patterns vary by katchi abadi -steady decline in MMR
	-cause-specific death rates [measles, diarrhoea, ARI]: ???	- ??? -in <1 y.o., 5 (measles deaths) in '89-93, 4 in '90, and 1 in '93 -in 1-4 y.o., 2 (measles deaths), both in '92 -in <1 y.o. & 1-4 y.o., (watery diarrhea leading COD), with rises in both '90 & '92	-cause specific death rates not calculated; but deaths by cause by age group, and populations by age group were measured -death analysis presented in Self Assessment is of causes as % of total deaths, less informative than rates
<b>HEALTH STATUS: LOWER DEATH &amp; DISEASE RATES; HIGHER PROTECTION</b>		-(% of weighed who are normal wt/age): 12/91 60% <5 y.o. 12/92 61% <5 y.o. 12/93 62% <3 y.o.	-malnutrition status of weighed children essentially unchanged

AREA FOR IMPROVEMENT IN UPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
		-(morbidity patterns are given only as % of diagnoses made in UPHC clinics): e.g. in 1993 URTI 15% skin probs. 14% gyn. probs. 8% diarr/dysent 7% musculoskel. 4% preg. related 4% anaemia 4% etc. etc.	-morbidity determined by CHWs in HH visits not reported; is considered under-reported and unreliable  -no follow-up catchment population surveys done
PROVISION & USE OF KEY SERVICES	-% <3 y.o. weighed regularly: 75-->85%	-(%<5 y.o.weighed): 12/91 86% 12/92 83%  -(%<3 y.o.weighed): 12/93 74%	-indicator changed -gradual decline from early attainment of target and from 92% of <5's weighed in 12/88
	-% <5 y.o. immunized: 68 -->85%  -"children fully immunized in the first year of life"	-("complete" + "appropriate" immunization  of <5 y.o.): 12/90 84% 12/91 85%  (of <1 y.o.): 12/92 74% 12/93 75% [tab.2c] 12/93 79%[SA text]	-immunization rates high and plateaued  -Self Assessment does not comment on 3 measles deaths in '92-93; immunized?
	-% all women 15-49 y.o. immunized with TT: 53%-->75%	-(% all married women 15-49 y.o. immunized against tetanus): 12/90 79% complete 12/92 88% " [2TTs] 12/93 53% " [5TTs]	-high levels of tetanus immunization achieved among married women -target met

AREA FOR IMPROVEMENT IN UPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
<b>PROVISION &amp; USE OF KEY SERVICES</b>	<p>- "increased use of priority health services by women and children"</p> <p>- "pregnant women using antenatal services"</p>	<p>-(% women delivered who got ANC at least once during pregnancy):</p> <p>'91 75%</p> <p>'92 66%</p> <p>'93 69%</p> <p>-(total number of ANC visits per year):</p> <p>'91 2877</p> <p>'92 2408</p> <p>'93 1640</p>	<p>-ANC use modest and plateaued in target population</p> <p>-steep drop in ANC visits during MG period;</p>
	<p>- "deliveries conducted by trained birth attendants"</p>	<p>-% deliveries by trained attendant:</p> <p>'91 67%</p> <p>'92 74%</p> <p>'93 71%</p> <p>-(% deliveries by TBA &amp; reported within 48 hrs.):</p> <p>'91 50%</p> <p>'92 44%</p> <p>'93 50%</p>	<p>-indicators followed that were not in MG application</p> <p>-reasonable coverage of home deliveries through training of TBAs, but plateaued</p> <p>-good indicator for finding LBWs</p>
		<p>-(% married women practicing FP):</p> <p>12/91 25%</p> <p>12/92 28%</p> <p>12/93 31%</p>	<p>-good progress in FP use</p> <p>-70% of this use is with reliable methods</p>
		<p>-(total curative visits per year):</p> <p>'90 20,999</p> <p>'91 19,921</p> <p>'92 14,795</p> <p>'93 11,617</p>	<p>-steep and steady decline in community's use of UPHC sites during MG period; of these visits, the % who were registered also declined:</p> <p>'91 74%</p> <p>'92 64%</p> <p>'93 62%</p>

AREA FOR IMPROVEMENT IN UPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
NUMBERS OF APPROPRIATELY TRAINED MANPOWER	-staffing transformed for 'community-led' approach -train/retrain: CHOs 8 CHWs 40 CHVs 100 TBAs 150 CMVs 100 school teachers 85	-one or more CHWs trained to work in immunization within each clinic -? ? ? ? ? ?	-in Essa Nagri CHWs are in charge of running a number of services, and CMT raises some funds -Baba Island seems to be the only community-led site -community dialogue begun in MACRO, but CHS lacks community process expertise on team
HEALTH PRACTICE & KNOWLEDGE IN FAMILIES		-?????  NO DISCUSSION IN THE UPHC SELF ASSESSMENT OF THIS IMMEDIATE OBJECTIVE OF CHWs' EDUCATIONAL EFFORT IN THE COMMUNITIES	-no follow-up catchment population surveys done by UPHC  -several small survey studies were done by medical students in limited areas on a particular health problem
	-% mothers who can demonstrate proper preparation and use of ORT  -% mothers who can interpret growth monitoring info.  -recognition and treatment of ARI	-the UPHC Self Assessment notes that "CHWs monitor the use of ORT when children have diarrhoea", but no statistics are given on the % of cases in which this done correctly	-these indicators cited in logframe [Output 4], were apparently not measured in UPHC  -since watery diarrhea remains the leading cause of child deaths, time trends in mothers' correct ORT use at home would be highly appropriate statistics to track effectiveness of CHWs' education of mothers



AREA FOR IMPROVEMENT IN UPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
<b>COMMUNITY ORGANIZATIONS RESPONSIBLE FOR HEALTH ACTIVITIES</b>	-number of communities with organizations responsible for health and exercising some control over local health activities -extent of community management of financial and in-kind contributions	-4 of 7 sites have established such community organizations: -FWA+BBSF active in Baba Island - CMT in Essa Nagri active in rehabilitation, plans for other hlth. respons.; also, CIT anti-drug program -MDP in Grax was active in EPI, FP -Karimabad volunteers manage screening, counseling, ed. for chronic dis.	-CHS has developed such com. org. management for local health in 1 of 5 CHS-led sites [EN] -although CHS dealt skillfully with it, the Fishermans Welfare Association [BI] was active before CHS came -Karimabad is a relatively affluent community

AREA FOR IMPROVEMENT IN UPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
<p><b>LOCAL FINANCING OF PHC FOR SUSTAINABILITY</b></p>	<p>-feasibility studies of IGAs</p> <p>-no. of communities with IGAs</p> <p>-no. of communities with fee-for-service schemes, or alternative</p> <p>-amount of local resources generated annually</p> <p>-amount of local resources available and used for health activities</p> <p>-level of community health contributions</p> <p>-level of community involvement in management of local resources</p>	<p>-no feasibility studies seen</p> <p>-5+ IGAs include:          .sewing center[EN]          .stringing beads &amp; organizing/market.          training for CHWs and comm. women [Chanesar Goth]          .shop at center, &amp; CHW rehabilitates pay [Grax]          .loan scheme for CHWs [Orangi]</p> <p>-all 5 sites have fee-for-service, for consultations and for medicines</p> <p>-contributions + fees from 5 field sites:          '91 Rs. 62,549          '92 Rs. 105,594          '93 Rs. 97,663          4/94 Rs. 27,337          [see table P10]</p> <p>-% of program component costs that could have been covered, on average, Tb.P11:          .drugs costs 93%          .clinical costs 5%          .total costs 2%          - community management limited</p>	<p>- please see analyses and suggestions in section G below</p>

AREA FOR IMPROVEMENT IN UPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
PHC IMPLEMENTATION CHANGES DUE TO RNP AND PHC MAP	-increases in innovation; knowledge exchange; availability and use of information; planning and management capabilities; quality of plans, schedules, budgets, guidelines; supervisory skills; monitoring and evaluation procedures	-impacts of RNP or PHC MAP were identified not in the UPHC Self Assessment report, but in CHS' RNP Self Assessment report	-for further specifics, please see sections E, F, I, and J below
PROTOTYPE OF A "MACRO" PHC SYSTEM FUNCTIONING	-MACRO field sites fully staffed and operated by: 10-14 CHWs 1-2 LHV's 1 CHN 1 C Doctor CHS supervision	-no MACRO sites staffed or functioning	-promising conceptual model devised for process of creating the MACRO; partial survey done; dialogue with community led to successful collaboration in getting an improved water supply; but no constructive dialogue yet among the "6 types of service providers"[SA]
MANAGEMENT INFORMATION SYSTEM	-Level of development, relevance, efficiency of MIS.	-Forms, indicators reports, maps, developed; data reviewed regularly and used for decision making at sites & center.	-UPHC MIS has influenced national MIS and forms of Pakistan -Good managerial use made of part of the data generated.

AREA FOR IMPROVEMENT IN UPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
KNOW LOCAL DETERMINANTS OF DISEASES TO USE NEW STRATEGIES	<p>-new studies planned, designed, implemented</p> <p>-local disease determinants analyzed</p> <p>-strategies formulated against critical determinants</p> <p>-potential strategies tested and evaluated -new strategies implemented and monitored for improvements in delivery, morbidity, mortality</p>	<p>-8 studies listed in Self Assessment as being carried out; none completed</p> <p>-found that majority of 1992 under 5 y.o. deaths occurred at youngest ages; % underweight not decreased by GM and NUT programs; most &lt;5 y.o. malnutrition deaths in &lt;3 y.o.s</p> <p>-imm. target group changed from &lt;5 yo to &lt;1y.o. in 7/92; new MCH care and weighing protocol in 6/93, focus on &lt;3y.o.s and "at risks"; ARI programs started at Grax and Azam Basti</p> <p>-??</p> <p>-not yet</p>	<p>-either original objectives for local determinants of disease were over-ambitious or research efforts have lagged, probably both</p> <p>-refocus of programs on younger and more at-risk children should increase effectiveness &amp; efficiency</p> <p>-no evaluations of new strategies seen</p>

## 2. Comments on Tabulated Comparisons

As of mid-1994, most of the objectives and targets set in 1991 had not been met. This was due in part, perhaps, to some over-ambitiousness in the original objectives and targets, but also to numerous civic disturbances in the Karachi communities served and to turnover in the personnel of UPHC.

The period of this grant was a particularly difficult one for development of constructive community process. Ethnic, religious and political diversity and antagonisms in the urban squatter settlements served boiled over into street violence during this period. This weighed heavily upon normal social and economic life of the communities, and upon progress of development projects. Security vehicles still cruised the streets of Karachi during the evaluation team's visit. Within the UPHC project, Community Health Workers struck for higher wages and complained about the boredom of their repetitive jobs; a number left and were not replaced. There was a change in the head of the CHS department, and a significant turnover in other key UPHC personnel.

Major UPHC accomplishments during 1991-1994 included:

- nationwide acceptance of the importance of community training in medical and nursing education
- influence on the new MCH card and the national MIS
- high immunization coverage and rapidly rising contraceptive prevalence
- refocusing of field efforts on younger and at-risk children
- initiation of two ARI programs at 2 field sites
- initiation of innovations in GM and NUT programs to lower malnutrition
- community-based training of numerous medical students and nurses

Major disappointments were:

- infant and child mortality rates did not continue to decline
- neither cause-specific mortality nor morbidity rates were calculated
- mothers' health knowledge and practices were not analyzed & reported
- PHC activities did not become more community-led except in AB
- service coverage did not expand, but contracted
- malnutrition did not improve
- cost recovery from communities was only a fraction of program costs
- the MACRO did not become operational

-much available data was not analyzed for decision-making to deal with epidemiologic and financial problems.

UPHC made major policy dialogue contributions, at National and Provincial levels, to the development of health information and services in Pakistan.

However, the population covered with PHC/MCS service programs, including the macro site, did not increase from 57,900 to 170,550 as purposed in the logframe, but remained just under 50,000. The macro is still at the study, talking and early planning stages.

The Community Health Nursing program is a unique pioneer, and remains an important asset in Pakistan. It has been formally recognized as a pattern to emulate, and receives trainees--into the UPHC services--from many other institutions. Thanks to the UPHC program, and the AKU Scholars program, AKU CHS was recognized in 1993 by the Pakistan Medical and Dental Council as a leader in and model of population-based training of doctors, along with Dow and Baqai universities, and as an important resource to the many other health educational institutions in Pakistan for development of their faculties. The reputation of AKU and the CHS are generally excellent in Pakistan.

The UPHC staff impressed us as an excellent, motivated, hardworking team. However, there have been a number of key staff members who have left in the past year, some fearing a decreased interest in health systems development in tandem with increased emphasis on epidemiology and quantitative methods in research. In the service areas unreplaced personnel, cutbacks in community outreach, and continuous decrease in clinic visits over the past three years was noted. It is not clear to what extent these declines may have been due to AKU/CHS being primarily interested in the training and research potential of UPHC, rather than in seriously mobilizing to evoke community collaboration or to provide community services.

Utilization of clinic services has declined steadily since 1990. This decline seriously affects the ability of the project to generate revenues from user fees and threatens potential sustainability of the project. The evaluation team suggests that the project examine, in a scientific manner, the reasons for the decline and develop strategies to overcome this problem. For instance, are inconvenient hours inhibiting utilization of services?

A major constraint in attempting to judge the impact of UPHC project activities on mortality patterns is the lack of any comparison or control area in the city in which mortality trends have been observed in populations without the benefits of a PHC program.

Immunization coverage, however, has been good, and incidence of immunizable diseases seems to have been decreasing satisfactorily.

## **B. PHC/MCS Service Delivery**

### **1. Eleven Services Delivered**

UPHC has attempted to improve the health status of its target populations through health education in the community by local women (CHWs) and the following basic services:

- i) immunization of infants and children
- ii) growth monitoring and promotion
- iii) management of diarrhoea
- iv) antenatal care
- v) immunization of women against neonatal tetanus
- vi) family planning
- vii) safe delivery through TBA training
- viii) curative treatment for those who come to seek care
- ix) acute respiratory infection program (ARI) at 2 centres
- x) several small scale water and sanitation projects
- xi) several drug rehabilitation programs.

i) & v)           **Immunization of infants, children, and women**

As noted in the SA, immunization coverage improved in all field sites. The originally stated objective of reaching 85% of under 5 year olds immunized was achieved in 1991, if one takes this to be "complete + appropriate".

Consideration that many of these children were reaching "complete" status later than recommended, and sometimes later than exposure, led UPHC in July 1992 to change its target to infants, following the recommended age schedule of the Expanded Programme for Immunization. Older children requiring immunization still receive it. CHWs from the various sites have been trained to immunize and now assist the Lady Health Visitors and Community Health Nurses in conducting the weekly immunization sessions at each of the clinics. CHWs go out in the morning of the immunization clinic to urge mothers to bring in their unimmunized children, particularly focusing on drop-outs identified by the MIS.

This method has replaced the earlier "crash immunization" sessions, and has produced high coverage rates. Infants fully immunized by one year of age have increased from 74% by 12/92 to 79% by 12/93, on average, with Azam Basti the highest at 87%.

Pertinently, UPHC has organized a special category for "EPI Preventable Diseases" in its tables of causes of death. With high levels of immunization being achieved, one might expect to see very few deaths from immunizable diseases. This category makes it easy to spot that there was one measles death among under five year olds in 1992, and 2 in 1993. There is, unfortunately, no mention of whether these 3 measles deaths were investigated, and with what results? Where did those cases occur. Were those children immunized? If so, were there cold chain deficiencies? Further, do the CHWs ask about any measles cases when they visit households and neighborhoods (lanes)? If not, why not? If they do, why are such data not aggregated and reported to determine whether there is a declining trend? In this regard, it may be worth mentioning that the evaluation team noted during field visits that CHWs collect much information that is apparently little used by higher levels of staff to determine epidemiologic patterns, e.g.

analyzing the pin maps of malnourished children to detect areas of concentration and their causes and remedies.

The same remark and questions about case investigation applies to the 2 neonatal tetanus deaths, which occurred in 1990 and 1992. Did either of the deaths occur following delivery by a trained TBA or other attendant? If so, why? The MG application objective of raising the percentage of all women 15-49 years old from 53% to 75% was displaced by the UPHC indicator of 2 Tetanus toxoid shots among married women, which rose from 79% (12/90) to 88% (12/92). Then the level dropped to 53% (12/93) when the stricter criterion of 5 tetanus toxoid immunization was introduced, in keeping with EPI regulations. However, the SA states that this figure has since been raised to an average of 62% in the 5 sites. It is difficult to comment on progress over time in such protection given the several changes in criteria, and without the basic data to produce a trend based on an earlier criterion.

#### ii) **Growth monitoring and promotion**

The SA identified nutrition as one of the areas in which the project had done less well. In early 1993, UPHC examined the results of growth monitoring and promotion noting that there had been little progress in proportions of children malnourished between 12/91 and 12/92, as the SA table 2b (please see Annex 11) showed. The % of children < 5 who were weighed slowly declined from 86% (12/91) to 74% (12/93), for reasons to be explored below. The % of the weighed children who were "normal" inched up from 60 to 62% (but to 74% in Azam Basti), but the % of severely malnourished stagnated at 7-9% of those weighed.

UPHC then undertook a range of different actions to attempt to achieve greater effectiveness. These included the decision to weigh only children under three years, as most of the malnutrition deaths of children had occurred in those early years. Prior to June 1993, children under three years old had been weighed on a monthly basis during CHW home visits, and children 3-5 years old had been weighed once each quarter. A new MCH card was developed and introduced in 6/93, similar to the new card introduced by the National Management Information System of Pakistan, which had received technical assistance from UPHC in developing it. The new child card has a growth chart limited to the first three rather than the first five years, and expresses extent of malnutrition in terms of standard deviations below the median rather than as a percentage of it. The new program was to refocus on promotion, following more frequently the "at-risk" children, those who were found to be moderately or severely malnourished, or showed static or decreasing weight for 3 consecutive months. Workshops on appropriate and nutritious diet were held for CHWs (and some mothers) in all field sites.

A special Growth Promotion Unit (GPU) was created at Azam Basti, adapted from a similar program at the Civil Hospital, with weekly cooking demonstrations and giving of food to severely malnourished children. The field director at Azam Basti felt that the GPU had already saved the lives of at least two children, one who had severe anemia and septicemia, and another with repeated bouts of pneumonia.



Also developed at Azam Basti was a "Visual Growth Monitoring System" (VGM), a posting of growth charts on the walls at the clinic to facilitate CHWs in planning strategies for individual malnourished children, and then following whether the children had begun to gain weight. During the evaluation team's visit to Azam Basti, observations confirmed the statement in the SA that "this VGM system has shown a positive impact on CHW motivation and on the nutritional status of children." It was found regrettable, however, that they had plotted two children on each graph. This made interpretation of either child's progress considerably more difficult, as was revealed by the responses to several questions posed to the CHWs and the LHV. In addition, a supervisory challenge with the VGM was reported to be the difficulty in getting CHWs to "double mark, i.e. to get the CHW to plot the growth chart for the clinic wall in addition to the one she marked in the home for the mother.

As there was a sharp rise in diarrhoeal deaths in children in 1992 compared to 1991 in UPHC, there probably was also a sharp rise in diarrheal morbidity, with resultant increase in malnutrition of various degrees. Since no effort seems to be made to measure and track morbidity in UPHC, one can only presume that this was so. Despite this presumptive increase in malnutrition, the relative proportions of normal, and of severely or moderately malnourished children did not change between 1991 and 1992. Was this because the GM/P successfully offset what would have been an increase in malnutrition? The team recommends that UPHC use the reports of the house visiting CHWs to estimate selected morbidity rates of a few key conditions, and that the results and their implications be discussed with the CHWs. Such information, suitably qualified for its inaccuracy and incompleteness, can be useful in program management. Such discussion also would tend to improve thoroughness of CHW observation and reporting, and might also improve CHW morale.

As mentioned above, there has been a decrease in both the number of children weighed and the % of children who were weighed, from 1991-94. Among the reasons for this are: the laudable change of focus in 1993 from weighing of children under 5 y.o. to those under 3 y.o.; replacement of home-to-home weighings with weighing posts, experimentally, at Azam Basti, Grax, and Orangi; decreasing use of the UPHC services, as seen in the decreasing numbers of registrations and of curative visits. Of greatest concern, both for equity and death prevention, is whether the children increasingly not weighed are those in most or least need of it. Is it preferentially the poor and high risk children who are not registered, not brought to weighing posts, thus improving overall statistics of those weighed by dropping from sight? The evaluation team recommends that UPHC formulate specific hypotheses and protocols to find answers to such questions, which will be needed to judge the implications of the experiments being conducted in reorganization of GM/P. It is further recommended that UPHC consider the necessity of carrying out representative household surveys to determine which children are not being seen away from their homes.

### iii) **Management of diarrhoea**

Management of diarrhoea is operationalized as education of mothers by CHWS on need for and preparation of Oral Rehydration Therapy (ORT), either cereal based or home-made Sugar and Salt Solution (SSS). The educational messages are delivered during home visits, at weighing

posts, or to groups at Lane meetings. UPHC states that CHWs also monitored the use of ORT, when children had diarrhoea, aggregating this into a program statistic quarterly until June 1993. As this was usually reported to be 100% in the face of high diarrheal mortality, it has not proved to be a very useful intermediate indicator. Cereal based ORT is either prepared by mothers at home, which some find time consuming, or it can be bought in rice powder packets prepared by clinic staff at Azam Basti or Chanesar Goth for Rs.1 (\$0.03) or less.

One very pertinent analysis, case studies of individual deaths, was done by staff at Azam Basti clinic, who found that 50% of the deaths in under five year olds were due to acute watery diarrhea. Further investigation revealed probable mismanagement, the SA reports, as these children had been referred to a tertiary care hospital, but died soon after return. The SA notes that "the team is now trying to take some steps to overcome the problem of mismanagement of the diarrhoea cases." This excellent initiative highlights the importance to UPHC of identifying and improving the practices of other health services providers in their catchments in the interest of lowering community mortality.

A visual chart was developed at Chanesar Goth to highlight how many and which children currently have diarrhea and should be followed up. At the evaluation team's visit on 19 May, 6 cases had been displayed since the beginning of May. The staff noted that there would be many more in the peak months of June and July. The staff felt that the chart helped them to follow proper treatment more vigorously, and credited it with reducing the % of their total child deaths from 40% to 19% between 1992 and 1993.

UPHC notes in its SA that "despite the education regarding hygiene and the use of ORT, diarrhoea remains the leading cause of deaths in children under 5". Despite this recognition, and the obvious fact that the objective of the education is to get mothers to use ORT appropriately when their children have diarrhoea, UPHC does not track, and apparently has not tried to measure what mothers know about ORT or what they do when their children have diarrhoea. The pertinent indicator proposed in the matching grant Logframe "% mothers who can demonstrate proper preparation and use of ORT", or some similar measure, has not been measured by UPHC, to the best knowledge of the evaluation team. Thus, it does not appear that UPHC has attempted to evaluate whether its educational efforts in this critical activity are effective.

This deficiency is particularly regrettable in consideration of the observation by the evaluation team that the disturbing rise in <5 y.o. mortality between 1991 and 1992 was probably due mainly to a rise in diarrhoea. Main cause diarrhea deaths per 1,000 children under five years of age rose from 5.1 to 8.2 between those years. The following table, drawn from data presented in the SA, shows numbers of main deaths, and population figures, for children under five years old, 1989-1993.

**DEATH RATES PER 1,000, MAIN CAUSE DEATH COUNTS, AND POPULATIONS  
OF <5y.o.s UPHC AREA, 1989-1993**

	1989	1990	1991	1992	1993
DIARRHEA DEATH RATES	<5.2	8.3	5.1	8.2	3.9
ARI/PNEUMONIA DEATH RATES	<1.6	2.4	1.9	2.0	2.4
MALNUTRITION DEATH RATES	?	0.3	0.3	0.3	1.1
LBW+BIRTH INJURY DEATH RATES	<4.4	2.8	2.2	2.2	2.2
a) SUM OF ABOVE	?	13.8	9.5	12.7	9.6
b) DEATH RATES FROM ALL CAUSES	?	20.9	15.4	19.0	13.8
a/b	?	0.66	0.62	0.67	0.70
POPULATION <5yo	8271	7998	7816	7592	7250
DIARRHEA DEATHS	<43	66	40	62	28
ARI/PN. DEATHS	<13	19	15	15	17
MALNUTRITION DEATHS	?	2	2	2	1
LBW+BRTH.INJ. DEATHS	?	22	15	17	16
DEATHS FROM ALL CAUSES	?	167	120	144	99

The method used in the SA to compare the relative strengths of causes of mortality between years by comparing the differences in percentage of the total mortality was misleading. It led to the conclusion in the SA that the introduction of a new tool for verbal autopsies in 1991, which was more sensitive in identifying ARI deaths had led to the observed increase in the percentage of ARI deaths, from 10.4 to 17.2% ('92 to '93). However, scrutiny of the raw data reveals that the number of main cause ARI deaths changed little, being 15 ('91), 15 ('92), 17

('93) while diarrhoea main cause death counts changed abruptly each year, as follows: 40 ('91), 62 ('92), and 28 ('93). Hence the apparent increase in percentage of ARI deaths seen in 1993 was actually due to the large drop from the previous year in the number of diarrhea deaths.

The evaluation team is not in a position to know the relative validity of the mortality data provided over the several years, but wishes to call attention to the apparent spikes of diarrhoeal deaths that appeared in both 1990 and 1992. These should be investigated further.

The UPHC staff noted that they had been frustrated in not being able to collect good data on diarrhea through the CHW house visits, getting prevalence rates of only 2-3% in the face of high mortality rates. They changed the enquired period of recall to "since my last visit.....". The new Head of CHS suggested that the surveillance tool needed was a trained team independent of the service program which collected data continually throughout the areas to produce indicators of interest. The evaluation team can not judge to what extent CHW data collection could be made more accurate and reliable, but agrees that such an independent surveillance mechanism would be quite useful. For the two major main causes of death in children 1-4 years old, diarrhea and acute respiratory infections, UPHC program efforts primarily can reduce case fatality rates by seeing that the ill get ORT and proper treatment. But major reduction in morbidity rates, except for large changes in response to improving water supplies, will require long term socio-economic development. For a true measure of impact of the program, it would be desirable to track morbidity in order to show how low mortality can be brought in the face of it.

The evaluation team therefore recommends that UPHC:

a) Use its population figures to form denominators, and its counts of deaths by cause from verbal autopsies to prepare matching numerators, in order to calculate and track a selected number of cause specific mortality rates, including diarrhea and ARI. Not having done this, which was envisioned initially in the Logframe of the MG application, was a lost opportunity for UPHC. Calculating such rates would allow UPHC to use its data, which was collected at considerable cost, and to produce its best measures of the ultimate effectiveness of its major PHC program components. Both cause-specific infant mortality based on livebirths of the same year, and 1-4 death rates based on average 1-4 olds present, should be calculated. The evaluation team lacks the detailed data necessary to do this.

b) Examine the pattern of diarrhoeal main cause deaths among the several clinics to see to what extent they may explain the differing patterns of child and infant mortality trends among them. The evaluation team does not have access to this detail of data, but notes that this pattern did not occur in the Azam Basti catchment as we learned during site visit there that diarrhea deaths had declined as follows: 17 ('90), 17 ('91), 16 ('92), 11 ('93).

c) Do periodic household surveys to determine whether mothers know, value, make and use ORT correctly when their children have diarrhea. There are a number of answers it would be useful to get from representative mothers in response to questions like the following:

What did she do for her child when last it had diarrhea? Where did she take it? What treatment was given? If she didn't go to the UPHC clinic, why?

d) Examine other Karachi statistics to confirm whether there were spikes in diarrhoeal disease in 1990 and 1992 in other areas of the city.

e) Consider creation of an independent, trained surveillance team to measure and track morbidity in the catchments.

iv) **antenatal care**

In principal, routine antenatal care was provided to all pregnant mothers in the catchment areas. CHWs identify them during their house visits, then refer them to the UPHC clinic. The CHW then follows up with home based monitoring, supervised by the Community Health Nurse and/or Lady Health Visitor. The MCH card introduced in June 1993 facilitates CHW identification and referral of pregnant women who are at special risk. In 1993 about 69% of women delivered had been seen by a CHN or LHV at least once during their pregnancy. This indicator had declined slightly, from 75% in 1991.

The most striking trend, however, was the very sharp drop in antenatal care visits: 2877 ('91), 2408 ('92), 1640 ('93). Although births, and fertility, were in decline in this period, total deliveries dropped only 5% from 1534 to 1449 ('92-'93), which would not explain the 32% drop in ANC visits from '92 to '93.

The SA offers no explanation for this ostensible decline in coverage, nor any commentary on whether it is the poorer, higher risk women who have become less likely to receive ANC services, i.e. whether it adversely affects equity. Similarly, since UPHC does not appear to have used surveys to examine health practices in the homes, there is no estimation of trends in what might be the anticipated effects of the content of the antenatal care, except for tetanus toxoid coverage, which was discussed above under immunization. Some of the principal positive effects of good ANC that could be measured, for example, are: the % of high risk women who are properly handled in referral, the % of high risk women who are delivered in an institution, the % of women who breastfeed through the period recommended, etc.

vi) **family planning**

The SA notes that contraception was first made available in the UPHC clinics in response to community demand. During this MG period CHWs have provided family planning education and counseling during home visits and lane discussions. Virtually all methods are made available. Intrauterine device insertion has been done at the UPHC clinics since training of staff in 1993. Workshops were also held in 1993 and 1994 to ensure that staff knew indications, side effects, counselling techniques, and how to identify, motivate, and refer potential couples for birth spacing.

By 1993 the majority of couples protected were still using effective methods: tubal ligation 42%, IUCDs 12%, injection 9%, pills 6%, and condoms 31%. There is apparently excellent working collaboration between the UPHC staff and the Family Planning Association of Pakistan.

The contraceptive prevalence in the squatter settlements has risen rapidly, the SA reports, as follows:

1989		1991		1992		1993
16%	----->	25%	--->	28%	--->	31%

and the number of family planning contacts at the clinics, unlike a number of other services, increased between 1992 and 1993, from 1775 to 2070, a 17% rise. The evaluation team did not have time to validate against basic records this very good progress reported. Nor were we able to obtain any idea of the continuation rates obtained.

The rise in family planning practice reported by the MIS for all UPHC sites is shown in the following table.

**MARRIED WOMEN PRACTICING FAMILY PLANNING  
AS % OF MARRIED WOMEN REGISTERED  
DECEMBER 1990-DECEMBER 1994**

	DEC. 1990	DEC. 1991	DEC. 1992	DEC. 1993
OR	23	35	34	38
CG	15	20	26	27
GRAX	19	20	22	24
EN	17	25	33	37
AB	14	27	24	30
TOTAL	21	25	28	31

During field visits it became clear that progress in family planning practice was related to the interest of the service personnel in promoting it. The staff at Essa Nagri indicated their enthusiasm for this part of the program, noting that they are the only center in which the system of colored pins in maps, used to identify at-risk registrants in all the centers, is used for family planning. They noted exceptional results in sectors 7 and 10 because of the special interest and effort of the CHWs there. Essa Nagri produced the steepest rise in contraceptive prevalence rates between December 1990 and December 1993, +118%, in contrast to the already remarkable overall increase of 48%.

An unusual and interesting outcome indicator for family planning services is produced quarterly by the MIS: pregnant women as a % of married women. The response of this measure

of fertility to the rapid rise in FP practice is shown in the table below. This indicator appeared to drop between 1991 and 1993 at every site except Azam Basti, and about 20% overall. The ~ in the table due to an approximation being used instead of the clearly erroneous entry in the tabulation received.

**PREGNANT WOMEN AS A % OF MARRIED WOMEN REGISTERED  
DECEMBER 1990-DECEMBER 1994**

	DEC. 1990	DEC. 1991	DEC. 1992	DEC. 1993
OR	11	12	8	8
CG	8	10	7	9
GRAX	9	10	9	6
EN	11	~11	10	9
AB	9	8	7	8
TOTAL	10	~10	8	8

Unfortunately, the SA does not explain why the number of married women serviced has decreased 6% between 1992 and 1993, from 6508 to 6096, or whether that trend has continued into 1994. In summary, steady growth in contraceptive prevalence appears to indicate that UPHC is doing a good job in providing family planning protection in response to the demand of its target community, in collaborating with the FPAP and a few local female physicians in the private sector, and in providing educational efforts of motivated staff at the field sites. Possible areas for improvement are 1) targeting of men and mothers-in-law for FP education, as they often control decision-making concerning family planning, and 2) ensuring that CHWs do not push women into using birth control without their husband's approval, which could have negative repercussions on the project.

**vii) Safe delivery through TBA training**

Because more than 50% of deliveries are done at home, UPHC has trained TBAs (dais) in all of the field sites. The MIS July-September Quarterly Report gives the following overview of the number of trained TBAs working, the deliveries they do, the births delivered by other trained personnel or not by trained personnel. It also shows how many of the births by trained TBAs get reported within 48 hours in UPHC's effort to weigh newborns and to detect and track low birth weight babies.

**TRAINED TBA DELIVERIES AND REPORTING, UPHC,  
JULY-SEPTEMBER 1993**

SITE	TOTAL BIRTHS	# TBAs TRAINED	DELIVERIES BY TR.TBAs	TBA DELIVS. REPORTED 48 HRS	DELIVS. BY OTHER TRAINED PERS.	DELIVS. BY NON-TRAINED PERSONS
OR	59	6	16	0	17	26
CG	85	10	29	9	26	30
GX	55	13	24	17	19	12
EN	89	10	47	29	30	12
AB	57	9	21	12	30	6
TOT.	345	48	137	67	122	86

In the third quarter of 1993, 48 UPHC trained TBAs assisted 137 of the 345 deliveries. This was somewhat more than the 122 births assisted by other trained personnel, or the 86 births that were not assisted by trained personnel. Thus, the trained TBAs obviously provide an important proportion of the delivery services in these catchments. Unfortunately, we do not have available an inventory of the number of active TBAs present in each area to see what proportion of them remain to be trained. Nor do we have evidence of improved outcomes that one might attribute to the training, other than the 67 births reported within 48 hours of delivery. The complications during pregnancy and delivery reported in the Quarterly MIS report are not shown here as they would be difficult to interpret without further information.

The following table converts these counts into several ratios and proportions that show trained TBA workloads and coverage of births.

**UPHC, JULY-SEPTEMBER 1993**

SITE	%TR. TBA DELIVS REPORTIN 48 HOURS	# TBAs TRAINED	AVERAGE DELIVERIES per TR.TBAs	% BIRTHS DELIVRED BY TR. TBAs	% BIRTHS DELIVRED BY OTHER TRAINED PERS.	% BIRTHS NOT DEL. BY TRAINED PERSONS
OR	0%	6	2.7	27%	29%	44%
CG	31	10	2.9	34	31	35
GX	71	13	1.8	44	35	22



EN	62	10	4.7	53	34	13
AB	57	9	2.9	37	53	11
TOT.	49%	48	2.9	40%	35%	25%

Trained TBAS cover a larger proportion of all births (40%) than do other trained personnel (35%), while births without benefit of a trained attendant are at 25%. The community whose births appear to be least well covered by trained attendants of one kind or another appears to be Orangi with 44% of deliveries not assisted by a trained attendant, in contrast to an average of 25% and a low of 11% in Azam Basti. Judging by this indicator alone, Orangi and Chanesar Goth would logically be the communities to focus on during the next training of TBAs. However, there is some uncertainty about the basis for the figures reported, in view of the fact that OPP trained TBAs in Orangi. It is not clear whether "trained" in the CHS figures refers only to "trained by UPHC" or to "trained by any source".

The average number of deliveries in this quarter per trained traditional birth attendant was 2.94, or approximately one per month. This varied from 1.8 per month in Grax to 4.7 in Essa Nagri, or about 7 to 19 births per year. These workloads are all light enough that TBAs presumably would also have time available to do some antenatal care, if they were not pre-occupied with other activities.

Approximately 75% of deliveries are done by trained attendants in the project areas. A simple monitoring system is used for TBAs. Efforts have been made to get TBAs to report their deliveries within 48 hours, with the result that about 50% of such deliveries are this promptly reported. TBAs seem to be responding well except at 3 sites (average over 60%), except at Chanesar Goth (31%), and not at all at Orangi (0%).

The poor TBA reporting situation at Orangi was commented on in the SA, and reasons for it were reviewed during the evaluation team's field visit there. The SA notes,

"In Orangi, despite training programs held for local TBAs, there has been a consistent failure to initiate a reporting relationship with them. Frequent attempts have been made to bring these trained TBAs together by inviting them to planned meetings. However, there seems to be a lack of rapport and currently CHWs are responsible for identifying new births and weighing the child within the first 48 hours. It was felt that in meetings with TBAs, emphasis should not be given to the poor reporting relationship, but should instead stress the conditions during pregnancy and delivery that TBAs should consider referral, in order to further lower infant and maternal deaths."

On the field visit, it was noted that the main incentive used by UPHC to get TBAs to report their deliveries is the obtaining of the birth certificate. The TBA presents it to the mother, who needs the birth certificate to register her child for school. In most communities it is not easy to access birth certificates. In Orangi, however, the office which distributes them is only a few

doors down from the UPHC clinic. Apparently UPHC has not been able to find an alternative incentive to motivate the Orangi TBAs. However, there is also another other important element that complicates the relationship of the TBAs with UPHC, and that is their several relationships with the pre-existing Orangi Pilot Program (OPP). It appears that a number of community agents have stronger loyalty to OPP, which pre-dated UPHC, operates with a different philosophy and in a different manner, and currently does not seem to be in good working relationship with UPHC.

For all births in the CHS-led sites, the weighings within 48 hours have been raised from 53% in 1991 to 60% in 1993. The purpose is for CHWs to follow up promptly with weighing at home to identify and focus special care on low birth weight babies. Low birth weight, which is seen as an important precursor to malnutrition and multiple morbidities, was measured at 14% of livebirths in 1991 and about 10% in 1993. Overall, SA reported maternal mortality rates as having decreased from 39 in 1990 to 19 in 1993.

Improvement of delivery seems to have progressed well.

#### **viii) Basic curative treatment for those presenting**

Basic curative centers are provided at all CHS-led clinics to those who present themselves, both to the registered persons and to those from adjacent areas. Services include such specialized clinics as gynecology, paediatrics, and psychiatry. Follow-up is made only to patients in the catchment areas.

As noted in the SA, "a major concern...has been the decrease in client load." In fact, the most striking change in UPHC services, generally, during this period has been the decreasing use that the target population has made of many UPHC services, as shown in the following table.

It is apparent that curative care utilization of the 5 CHS-led sites has dropped continuously and steeply since 1990, declining successively 5%, then 26%, then 21% in the three intervals through 1993. Curative visits by both registered and non-registered patients peaked in 1991, and then declined annually. The percentage of curative visits that were by registered patients dropped progressively from 65% to 51%. The average number of curative visits to these centers by registered patients fell 50% from 1991 to 1993, from 0.25 to 0.12. Several inferences can be drawn from this data.

One inference is that the UPHC sites were probably used by the catchment populations for only a fraction of the curative care they sought, even in 1991, as the total average curative care utilization in this population is probably considerably greater than 0.25 visits per year, and more likely between 1 and 2.

Staff at the various centers confirmed that there are multiple other service providers in the several katchi abadis (see details in Family Physicians below).

The other inference is that their users have been increasingly going elsewhere during the past several years, and that UPHC providers have been losing market share. This has eroded UPHC's capacity to finance itself through user fees, and also its ability to improve mortality outcomes by ensuring that the ill get the right treatments for diarrhea and ARI.

#### CURATIVE CARE UTILIZATION AND PRODUCTIVITY OF CHS-LED SITES

	1990	1991	1992	1993
curative visits	20,999	19,921	14,795	11,617
total registered	46,718	47,874	48,499	48,829
curative visits by registered patients	13,649	11,953	7,841	5,925
curative visits by non-registered patients	7,350	7,968	6,954	5,692
% of curative visits by registered patients	65%	60%	53%	51%
annual curative visits per person registered	0.29	0.25	0.16	0.12
children weighed	6992	6689	6290	3021

UPHC has conducted small scale surveys to identify reasons for decline at two field sites. The SA reports that "reasons given by community members interviewed included long waiting hours, non-affordability, inconvenient timings of the curative care clinics, unsatisfactory treatment and medication especially lack of injections, and in one field site, distance of the PHC center." Commendably, staff at center and field levels discussed these findings, then reviewed service and drug charges, decided to experiment with evening clinics at two centers, decided to improve management to reduce patient waiting time, and to educate the community about dangers of over-medication through lane and community meetings, and home visits. Results of these laudable initiatives were not available at the time of the evaluation team visit.

Although the surveys and initiatives undertaken are steps in the right direction, deeper understanding of the reasons for the target population's decreasing utilization of UHPC's facilities will be necessary to redress it. Why are progressively fewer people choosing to use the UPHC outpatient facilities? How can CHS find out?

These questions lead to discussion of three aspects of CHS's approach to the UPHC project that, in the judgement of the evaluation team, have not been adequate to obtain the objectives set. CHS has:

-overlooked, rather than trying to inventory, understand, and influence, the network of existing other health services providers in the catchments

-taken services to, but not tried systematically and professionally to understand the composition and dynamics, and to engage and mobilize the catchment communities

-not developed sufficient departmental capacity in methodology, expertise and techniques of either qualitative analysis or community process .

During a telephone interview with the former head of the CHS department, he acknowledged that it had been a deficiency in the original model used to create the UPHC project that other service providers in the catchments were not studied and dealt with. Describing the prototype PHC systems in the katchi abadis, an article co-authored by CHS staff (Soc. Sci. Med. Vol. 36, No. 5, pp.585-596, 1993) notes that "...people live in deprivation, with...little access to adequate health services" and then does not mention those (actually numerous) other providers again, nor what information about them might be germane in a "management information system that supports the pursuit of equity, effectiveness, and affordability."

Efforts to get the other providers together, or to influence them, were undertaken from time to time by staff in the various centers, but these were ad hoc, not very concerted, and never successful. This was understandable as an estimation of the relative contribution, or market share, of other providers of services was not included in the basic design for UPHC services.

It should be added, however, that several of the centers reported that they have formed good collaboration, including mutual referrals, with individual female general practitioners in their catchments. Also, the former head of CHS noted that one physician in CHS, I.H. Thaver, had taken an active interest in inventorying and interviewing other health services providers in the catchments. Unfortunately, none of the results of that effort were available in reports seen by the evaluation team, among papers listed as either presented or published (from CHS memo of 1 June 1994), or by interview, as Dr. Thaver had gone to the faculty of Baqai U.

Evidently, whether acknowledged by CHS or not, a host of other providers have continued working in the same catchments, collectively retaining the major share of the curative market, increasing it against UPHC's in the past several years, continuing to treat diarrhea, ARI and other ailments as they think best, and presumably little influenced by UPHC's better understanding of how to minimize mortality. CHS might have exerted more influence on this balance of forces, particularly utilizing the prestige of the AKU as a lure to continuing education of community practitioners, but that would have required, first, recognition of the ecologic reality of the curative health services marketplace. The same challenge awaits the developers of the MACRO.

Regarding community mobilization, the SA acknowledges that "community involvement has been rather slow" and that "cost sharing remains a problem in all (the CHS-led) field sites". While recognizing that this is a very complex and difficult challenge anywhere, and particularly in Karachi, the evaluation team nevertheless feels that CHS has never developed sufficient community process expertise on staff, nor addressed this challenge seriously enough with an

adequate strategy and program, to have made substantial progress toward the community management objectives envisioned in the MG application. Our analysis and recommendations are developed in section C below.

To explore the reasons for which people use the UPHC or alternative health services in sufficient depth to arrive at potentially winning strategies to redress the recent decline would probably require additional approaches complementary to those useful first steps that have been undertaken. These include ethnographic study of where people have go for health care of various kinds. The study design would need to recognize and explore the utilization patterns and reasoning of different classes of users, including those who never used UPHC, those who always use it, those who switched from UPHC to other users, those who switched from UPHC to "quacks", etc. Focus group discussion and other qualitative analysis techniques should be considered. The evaluation team did not get the impression that competence in such qualitative analysis currently exists in CHS.

Aside from the observations above, the evaluation team feels that further insights into the curative use decline can be obtained from further analysis of and reflection on the data already in hand. Although the "selective demographic indicators" in the SA document a net outmigration from these areas of about 2,700 persons from 1990 and 1993, total registered climbed progressively to 48,829 in 1993. Does this represent a community response to fewer clinic hours per day, to different hours of opening, or to abandonment of UPHC centers for other providers who are cheaper or considered more desirable?

If one disaggregates to individual service sites the annual number of curative visits per person registered, one sees the pattern displayed in the following table.

**AVERAGE CURATIVE SERVICE VISITS PER REGISTERED PERSON PER YEAR**

service site	1991	1993	% change
Orangi	0.15	0.08	-47%
Chanesar Goth	0.32	0.12	-63%
Grax	0.34	0.14	-69%
Essa Nagri	0.14	0.09	-36%
Azam Basti	0.33	0.19	-42%
<b>TOTAL</b>	<b>0.25</b>	<b>0.12</b>	<b>-52%</b>

Apparently there was a similar sharp decline in curative care utilization at all 5 sites during this period. The greatest decline was in Grax (-69%) from the highest annual utilization of 0.34 curative visits, while the least was in Essa Nagri (-36%) from the lowest utilization of 0.14. It is also evident that these 5 centers divide into 2 relatively homogeneous groups regarding utilization: Orangi and Essa Nagri both had utilization ratios very close, in 1991, to

0.15, falling in 1993 to about 0.15, while Chanesar Goth, Grax, and Azam Basti had initial levels quite close to 0.33, that fell to about 0.15. Hopefully, the UPHC staff will explain these similarities and differences.

It may seem somewhat surprising that Azam Basti did not turn out to have an exceptionally high curative utilization ratio, considering that it is supposed to function as a referral center. Perhaps the volume of referrals is not very high. In fact, the MIS Quarterly Report for July-September 1993, shows that only 1 referral was made to Azam Basti from the 4 other clinics while they took care of 1,583 curative visits. Hence, very few referrals are really being received at Azam Basti from the other UPHC clinics. During the same period those 4 centers made 18 referrals to AKU (all from Essa Nagri, none from Orangi, Chanesar Goth or Grax) and 15 referrals elsewhere (10 from Chanesar Goth). The referral patterns are complex, different for each center, and most of the personnel queried said that they were not very satisfactory.

ix) **acute respiratory infection program (ARI) at 2 centres**

A task force addressed ARI, which is the third main cause of death in children 0-5, the second main cause of death in children 1-<5 years old, and it vies with skin problems as the leading diagnosis among all curative visits to the UPHC clinics. This core group developed the following:

- Recommendations for program activity
- Identification of training needs
- A training module, using materials of the Pakistan Child Survival Project
- Training of PHC staff and CHWs in 2 field sites: Grax and Azam Basti
- New (ARI) indicators for the MIS
- A supervisory checklist with which Community Health Doctors and Community Health Nurses can check the validity of cases

The evolution of the ARI program at Azam Basti is informative. In early 1991, prototypes of PHC MAP module 1 were field-tested in 6 UPHC clinics in 1991. The Grax team went through the exercise of prioritizing PHC program components, and gave top priorities to growth monitoring and antenatal care; ARI was not on the list of components they considered. The Azam Basti team began by examining the program objectives of reducing IMR and child mortality, and decided to add "Control of Acute Respiratory Infections" for its relevance to those objectives, and because some team members were already working on the possibility of developing such a program. The AB team emerged with ARI and Curative/referral as its tied top priorities.

The AB team went on to pre-test PHC MAP module 2 in the field by devising and conducting a stratified representative household survey, in October/November 1991, for rapid community assessment of the knowledge, attitudes, and practices of mothers of children under five years of age with respect to ARI. A systematic random sampling proportionate to population was made from each of the three sectors of Azam Basti because of their different socioeconomic statuses. Five experienced surveyors then collected 285 interviews in 6 days. The results were to be used in the ARI program, which was to be under development from July 1992 until its implementation in December 1992. Training of CHS personnel in Case Management of ARI according to the WHO Protocol was planned for June 1992.

The ARI survey data were analyzed by Phase II medical students, as their field project (please see Box on next page). All aspects of this exercise were very good: excellent use of the PHC MAP materials, of the UPHC personnel, of medical students, of resources and expertise in CHS, of intelligent focus on a major cause of child mortality to develop a needed program. What happened subsequently, however, is unfortunately not clear. The evaluation team's visit was too rushed, and spread over too many different topics, and the SA adds little more information for assessing CHS's strategy for dealing with ARI.

The AKU medical students were quite on target in pointing out the importance of UPHC developing some strategy to improve the treatment of ARI by local doctors, and to collaborate informally with them in some sort of surveillance of it. Also in indicating the very limited use that representative mothers said they would make of the UPHC services when they thought their child seriously ill. As described elsewhere, these are both areas the evaluation team thinks CHS should explore and develop further in the interests of effectiveness and sustainability.

### **AKU MEDICAL STUDENTS ANALYZE THE ARI SURVEY IN AZAM BASTI**

With the assistance of the Data Analysis and the MIS Units of CHS, medical students analyzed and interpreted the ARI survey. This gave them practice in using dBase, SPSS, and Wordperfect. 99% of mothers interviewed correctly said that rapid breathing and cough were dangerous, and 97% said that fever and difficulty breathing were dangerous. Chest in-drawing, however, was identified as a sign of serious respiratory disease by only 32% of mothers, unfortunately. 83% of mothers knew that complete immunization reduced risk of ARI, and 50% knew that smoking inside the house increased it. Only 1.4% of mothers, however, thought that malnutrition was a common childhood disease, and only 54% identified it as a risk factor for ARI, which corresponded with the minimal 3.3% of all visits to the PHC center at Azam Basti that were for malnutrition. Breastfeeding was high: 94% of mothers had breastfed at least one child for more than a year.

Of considerable programmatic significance, 19% of mothers said that they would use the Azam Basti clinic for minor problems like colds, and cough (21%), but only 6% of them would use it for pneumonia! The medical students speculated as to whether this was due to mothers' undervaluation of UPHC services because of the minimum fees, or whether they thought they might get stronger medications elsewhere. The students then made logical use of the information they had collected to lay out a quite good plan for developing an effective ARI death control program including Master Training of trainers, training of community health doctors and nurses, training of CHWs, developing a manual for CHWs, educating the community (especially grandmothers, and taking teaching advantage of any respiratory infection), involvement of local doctors (develop a manual of proper treatment for them, hold informal meetings every 6 months), and surveillance to know whether intermediate changes had been produced, and whether ARI death rates had decreased.

During the evaluation team's visit, Azam Basti personnel said that their ARI program had been going for about a year, and well, they thought. Eleven cases of pneumonia had been identified in the quarter, and all had been treated by a doctor. Further, they noted that there had been 4 pneumonia deaths in 1992, but none in 1993.

For the whole UPHC catchment, ARI as a main cause of death has not changed much since 1990, as can be seen in the table below.



**ARI/PNEUMONIA DEATHS AND DEATH RATES AND POPULATIONS OF  
<5 YEAR OLDS IN UPHC KATCHI ABADIS, 1990-1993**

	1990	1991	1992	1993
pop. 0-5y.o.	7998	7816	7592	7250
ARI/pneumonia deaths in 0-5 y.o.	19	15	15	17
ARI/pneumonia death rate per 10,000 0-5 y.o.s	24	19	20	24

It is not clear whether, and how, CHS intends to evaluate its two initial ARI programs, whether it intends to extend them to the other sites, and whether it intends to make a concerted effort to influence the appropriateness of treatment of ARI by other practitioners in its catchments. The evaluation team recommends that CHS produce a written plan of action for dealing with acute respiratory infections in the current UPHC and the MACRO catchments.

**x) Several small scale water and sanitation projects**

The SA (p.18) describes valuable lessons learned from three water projects that CHS assisted in Chanesar Goth and Essa Nagri. UPHC staff learned the importance of obtaining the assistance of organizations with adequate expertise when pumped water in one location and piped water in another emerged unfit for drinking. They learned, as well, the importance of strong community management of water operations when a meter was stolen from a filter plant, when disputes between several groups caused removal of a pump, and when a local organization lost its interest in continuing maintenance of a system. Hopefully, these lessons learned about collaboration will aid CHS as it tries to garner some initial successes in its developmental approach in the MACRO area, where inadequate water appeared to be the top concern of the community representatives met by the evaluation team.

**xi) Drug and handicapped child rehabilitation programs**

The best examples of community-initiated programs in the five CHS-led sites seem to be the rehabilitation programs for drug addicts and for children with disabilities.

The former is a typical problem of urban populations. The latter is of particular concern because of increased prevalence of disabilities associated with the high consanguinity of marriages in some communities. The functioning Community Management Team (CMT), in Essa Nagri since 1991, identified increasing numbers of drug addicts as an important community problem. A few community members organized themselves into a Social Welfare Organization Community Intervention Team (CIT). The CIT carried out a survey to identify persons at risk, and then attempted to involve them in other activities like sports. It also identified and referred

addicts, working in collaboration with government and other NGO organizations (Darul Tabssum, Ibtada, AKUH Psychiatry Department). CIT has produced a community newsletter and recorded anti-drug songs. The evaluation team recommends that CHS provide technical assistance to the Essa Nagri CMT and CIT in developing an evaluation plan that will help them assess their progress, estimate effectiveness, and revise strategy.

The SA describes rehabilitation programs for disabled children at 3 of the 5 CHS-led sites--Azam Basti, Essa Nagri, Grax--and at Baba Island. CHWs and volunteers have been trained by a local NGO, Bait-ul-tabassum, that deals with rehabilitation of the handicapped. UNICEF provides some support at Azam Basti, where the Center for Special Education implements the program.

## 2. Service Providers

Service providers of importance in the UPHC project commented on in this section include the following:

### **-volunteers**

There appear to be few volunteer workers in the program, except in Baba Island.

### **-community health workers (CHWs)**

With the exception of Baba Island and the Macro site, all CHWs are being paid by UPHC. This has created problems for UPHC. The CHWs view themselves as employees of UPHC. Thus, the CHWs have demanded certain rights as employees. The effectiveness of CHWs could also be effected if the community also perceives the CHWs to be employees of UPHC rather than representatives of the community working in the clinic.

There has also been a change in policy by UPHC in hiring CHWs from outside the clinic community. Originally, CHWs came from the communities in which the health centers were located. This is not true at the moment in some communities. It appears that this has occurred for two reasons: 1. UPHC's inability to find recruitment within a given clinic community and 2. the natural tendency for currently employed CHWs to recommend persons to fill vacant positions.

All CHWs have become quite skilled in health areas because of their training from UPHC. Technically, their training appears superior in spite of the fact that the training manual has not been updated since 1988. It appears the training manual has been augmented with different current training materials. The health messages the CHWs are giving all seem appropriate. It has made them marketable if other positions become available. UPHC in some instances has helped some CHWs to go further in the health area by subsidizing further training for them as traditional birth attendants.

Besides doing home-to-home visits, CHWs spend a large amount of the time filling out forms and collecting information which is used in the research being carried out at UPHC. This has created a co-dependency between the two groups. This relationship needs to be evaluated before UPHC phases out the paid CHWs and replaces them with volunteer CHWs. UPHC needs to reevaluate what hours and type of work they can expect the CHWs to carry out as volunteers.

UPHC has not been replacing CHWs in some communities as old CHWs leave. When asked why this was occurring UPHC stated it has had difficulty in finding replacements and UPHC is planning on phasing out paid CHWs in the next phase of the grant. The lack of qualified CHWs available in each community has brought about a change in project design. In 3 sites, Orangi, Grax, and Asam Basti, CHWs do not conduct home visits exclusively but hold subcenter or lane meetings. In Orangi some women and CHWs were of the opinion that the lane meetings were tedious and the topics were redundant.

**-lady health visitors (LHVs)**

These have been hard to recruit in the program because their certification requires a rural service period that many women are not willing to accept. The originally planned ratio of LHVs to the CHWs they supervise therefore had to be decreased.

**-community health nurses (CHNs)**

AKU created this category, which is trained in a dynamic program that attracts trainees from all over Pakistan. The UPHC has been a vital training area for them.

**-community health doctors (CHDs)**

Similar remarks as for CHNs.

**-traditional birth attendants (TBAs)**

Information was provided that at some field sites the Department of Obstetrics and Gynecology of AKU conducted training programmes for TBAs. Some CHWs were also trained and are now working as TBAs.

**-local practitioners**

The most important linkage at this level that was looked for was with other health providers in the community served by the particular PHC. On enquiry it was determined that there was a wide range of health services providers in the field sites. These included qualified (MBBS) physicians, Homeopaths, Paramedicals and TBA's. In addition a Maternity Home and a small Nursing Home were situated within (Azam Basti) or near the field site (Chanesar Goth).

## **-family physicians**

The presence of many family physicians in the neighborhood was confirmed by the staff of the UPHC clinics. In the Azam Basti catchment they estimated about 20 MBBS and about 30 "quack" general practitioners and 3 hospitals (aside from AKU) that people use. Chanesar Goth staff estimated that there are about 35 general practitioners working in their catchment area, plus a government dispensary and a hospital that people use. At Essa Nagri, staff estimated that there were about 8-11 "quacks", 3 general practitioners, and 16 doctors at a hospital. A recent survey in Orangi detected an astounding 597 "private clinics", according to OPP. Hence the UPHC health services are actually part of a dense ecology of service providers, in which they have a limited share of the market (although they are probably the main provider of preventive services).

On the whole, linkage with these local health providers was missing. It appears that UPHC has failed to identify and influence the practices of the numerous other providers of health services in the five field sites. They provide something in the order of 80%, and probably a recently increasing percentage, of the curative care received in the project areas.

Some of the Field Directors when directly questioned mentioned having made attempts to liaise with local Family Physicians but did not pursue it after getting a cold initial response. The one exception that was found in this visit was with a female physician in Chanesar Goth, although there may be more that we did not get an opportunity to find. One explanation that became apparent was that the PHC clinics worked in the morning hours while most of the family physicians worked in the evening.

UPHC has failed to identify and influence the practices of the numerous other providers of health services in the 5 Katchi Abadis. They provide something in the order of 80%, and probably a recently increasing %, of the curative care received in the project areas. This has mortal implications for such conditions as diarrhoea and respiratory infection, and appears to be an important constraint on the extent to which the UPHC services can further lower mortality. The designer of the original health services model for UPHC, Dr. J. Bryant, acknowledges that it was a deficiency in the model to attribute only passing interest to this critical component of the health ecology of the squatter settlement populations. Preliminary work on this neglected problem was initiated by Dr. Inayat Thaver, now at Baqai U., but neither he nor his work was seen by the evaluation team.

In all the sites, women and CHWs questioned are seeing the clinic physician and the private physicians in the area when they or their children are sick. Women are required to pay much more to see the private physician and do. In exploring the reasons for this occurrence, we were informed that the UPHC clinic was not open in the evenings, does not often prescribe or give shots or drips, is not viewed as treating certain types of ailments, and has long waits to see the physician, when open.

UPHC has explored to some extent the other health care practitioners in the area but has not tried to forge many linkages with this group. In Chanesar Goth the clinic personnel meet with 1 GP and specialty care clinic. Azam Basti held a meeting with providers. At the first

meeting 8 out of the 16 local providers showed up at which UPHC talked about turning the project over to them. At the second meeting not one provider showed up. In Essa Nagri of the 11 GPs only 3 are medical graduates. There has been no meetings during the last 3 months and we were unable to determine the number and agendas of previous meetings. In Orangi there is a GP practically every 4th house. The project has had no contact with doctors except for 1 doctor who let them use her place for polio outreach.

### 3. NGOs and Government Agencies

#### **-Non-Governmental Organizations (NGOs)**

The project has conducted several specific health activities with various NGOs during the matching grant period. For instance, the success of the project in Baba Island is directly related to its cooperation with the Fisherman's Welfare Association. In addition, the community and the project have worked with the Balia Home School Project and the Mauripur Female Association for developing their school programme.

In Essa Nagri a drug reduction programme is funded by the Integrated Drug Demand Reduction Program (IDDRP), an NGO working in the field of Drug Addiction. The Essa Nagri community also sends its drug addicts for detoxification to Darul Tabasum, another NGO in Karachi, and to Ibteda for vocational rehabilitation. A Women's Work Centre, established with external support and back-up by the project, is working on income-generating activities. However, a WHO-sponsored project to provide water in the field site area has been described as a failure.

In Orangi, the oldest field site, there has been a long-standing working relationship with the Orangi Pilot Project (OPP) at multiple levels. In fact, the experiences of OPP were useful in designing and establishing the first urban PHC site of the project. The OPP and the UPHC still work together on some activities in this community.

The clinics at Azam Basti and Chanesar Goth have utilized the services of a number of NGOs during the matching grant. They have taken the help of Network of Enterprising Women (NEW) for training women in income generating activities. In addition, street theatres have been organized with the help of Tehrik-e-Niswaan, a women's group. In Chanesar Goth, the help of SCOPE, another NGO, was taken in setting up a water filter plant, although this plan is presently not working.

In all field sites, women requiring tubal ligation are sent to the clinics run by the Family Planning Association of Pakistan (FPAP).

#### **-Government Agencies**

The project worked with the Expanded Programme for Immunization (EPI) which is run by the government. Vaccines used by the PHCs were obtained from EPI. In addition, the clinic at Azam Basti started a training programme in collaboration with Minister of Special Education

to train mothers in taking care of their handicapped children. Presently the activities are suspended as funds available with the project have run out.

In Baba Island, the link with the Karachi Municipal Corporation (KMC) and the District Health Office for referral appears to have been entirely the initiative of the community.

Examples of linkages with other government health services are lacking, although the evaluation team was encouraged by the emphasis on NGO collaboration in the new Macro Project. This project identified NGOs working with its target population, and is beginning to solicit interest from them and to develop linkages.

In addition, the project team is actively engaged in setting up a Community Health Management Team bringing together a number of groups working in the community and different Government agencies at the Municipal, Provincial and Federal levels.

#### 4. Collaboration and Referral

##### **-Collaboration**

UPHC has not, unfortunately, been able to develop working linkages with the Karachi Municipal Council in the five Katchi Abadis. This lack of local government participation augurs poorly for sustainability of the services UPHC has developed.

It appears from the above that, while working relationships have been developed with NGOS in the five *Katchi abadis*, these relationships tended to be activity or problem-specific, and only of limited duration. Therefore, the evaluation team concludes, that during this matching grant, only a very modest amount of collaboration with other agencies and service providers has been developed by UPHC.

The evaluation team is concerned that it appears that no new strategies for engaging and developing long-term collaborative linkages with local NGOs and community organizations are being developed, and that the Macro Project may be utilizing in the field the same approaches which have not proved successful in the past. This conclusion must be qualified, however, by noting that different observers came to different conclusions about the degree of collaboration of UPHC with NGOs, and that the time available for examining this aspect of the program was too brief for any personal interviews with their personnel. However the evaluation team does encourage the project to thoughtfully outline alternative strategies for garnering active collaboration.

##### **-Referral**

Only two examples of a linkage with secondary care facilities in the neighborhood were found. In Azam Basti, pregnant women were sent to Bakht-Bari while at Chanesar Goth, Al Razi clinic offered concessional rates to patients sent by the PHC.

The PHC located at Azam Basti was designated as a Secondary care centre for the other PHCs in the project. Although a transport was provided, enquiry showed that, except for nearby Chanesar Goth, patients from other PHCs did not like to travel the distance for this secondary care service.

Arrangements for tertiary care were left to the community except at Azam Basti and Chanesar Goth, where they appear to have been developed by the local CHWs rather than as part of a policy. Thus, there is a need for central policy decisions on secondary and tertiary care referrals. Also, adequate referral patterns have not been worked out for all the service areas.

## C. COMMUNITY PROCESS

### 1. Community Process in the Five Katchi Abadis

#### **Impressions from field visits**

Evaluation team visits to the field sites revealed little current organizational activity for community participation except at Essa Nagri and Baba Island.

At Azam Basti, the team was informed that efforts had been made in 1989-1990 to form a Community Management Team (CMT), but this had not worked out. They were only able to find a few women who would leave their houses and come, on an individual basis, to sewing to make some money. The population was divided into different political and religious affiliations. They were mostly well enough off to be able to afford to go elsewhere to buy services, and lacked a perceived common problem, so why should fractious parties collaborate? Efforts to organize the community were "episodic things, with nothing coming of it.....we never tried, put efforts on it..".

At Orangi, the Orangi Pilot Program (OPP) had already begun a process of community mobilization with numerous community meetings since April 1980, a low cost sanitation project in 1981, a women entrepreneurs project in 1984, and a health and family planning project in 1985.

In Grax, CHS tried to collaborate with a local NGO, the Maripur Development Project (MDP), by providing a LHV to work in their facility for immunization and family planning clinics, but this has become increasingly difficult with the breakdown of the MDP, according to the SA (pp.35-6). Another NGO which is currently active, the Grax Community Development Organization (GCDO), was asked by CHS in 1990 to participate actively in management of the PHC project. But the GCDO declined, disagreeing with the UPHC approach, which it perceived to contain the following unacceptable features:

- Sophisticated high tech services
- A no fee or low fee service
- Home to home approach
- Extensive data collection

- Paid CHW
- Costly staff, vehicles, furniture, etc.

Chanesar Goth, which never had a CMT, had two unfortunate experiences with water projects that started with enthusiasm but ended in discouraging failure; the major lesson drawn was that gains could not be sustained unless they were actively protected by the community. No CMT or other organization representative of the community is currently working with them.

### **Essa Nagri**

Of the five UPHC katchi abadis only Essa Nagri demonstrates active community involvement through the past year, through its Community Management Team (please see account of this CMT in the box below).



## THE CMT IN ESSA NAGRI

The SA notes the following.

"A community management team (CMT) comprising of community leaders, political leaders from the area, and religious leaders has been formed in Essa Nagri. The CMT...is seeking registration and has developed a plan of action to cover a wide range of activities, including a collaborative linkage with the PHC program. The CMT has been actively involved in dealing with a community health priority -- the problem of drug addiction. Similarly, the community has been instrumental in establishing a Women's Work Center with external funding and back up support from the PHC team. Another unique feature in this field site has been the transition of management from AKU dominated personnel to the CHWs who are now in-charge of the various components."

The executive committee of this CMT met with the evaluation team during the visit to Essa Nagri, and provided the following information. The CMT was formed in 1991. The Executive Committee meets twice a month, but is not hard to get together. a general meeting is convened almost once every quarter. There are the following 11 men on the Executive Committee:

President	works on Peace and Justice Commission
Vice President	community activist; makes wall blocks
General Secty.	teacher of political science
Joint Secty.	teacher
Info. Secty.	works at IDDRB
Treasurer	cl.treasurer & admin. asst. (CHS employee)
member	govt. employee in Pak. Overseas Found.
member	teacher and runs small shop
member	Pakistan International Airlines employee
member	teacher
member	registered nurse

The CMT also has a general body of 24 members. Five of these are female: 3 CHWs and 2 TBAs. When the executive committee was asked if the women voted, they replied that these women were "too tired to make decisions." It should also be noted that the CMT holds its meetings at night. This decision specifically excludes women from participating since cultural constraints prohibit them from going out at night.

They reported that the last meeting of the CMT has been to consider what PHC activities it might take over to manage. They had considered immunization, growth monitoring and family planning, all being services now run by CHWs at Essa Nagri. The greatest difficulty in taking over would be a shortage of money. However, with a little technical assistance, perhaps, they think they might find a way.

The executive committee also noted that they, along with Baba Island, are the best at organizing and raising raising money. Last Christmas a musical evening produced by professionals, who got 50% of the proceeds, netted Rs.2500 for a rehabilitation center for disabled (mostly mentally handicapped) children. The Essa Nagri community is mostly Christian Catholic. Through activites during last Easter Week, they had raised Rs.7700 for a sewing center.

## 2. Assessment of UPHC management of community process

Increases in community planning and management of the PHC program, were recommended in the 1990 MG Evaluation, and then planned as a major output in the 1991 MG application logframe.

This engagement presumes a CHS agenda for planned change in organizational processes in the targeted populations, then some documentation of how CHS managed, or attempted to manage, the changes in community capacity en route towards "community-led" PHC programmes. Unfortunately, the evaluation team has not seen evidence of a planned program nor documentation of activities undertaken to mobilize the katchi abadis.

Of the five, only Essa Nagri seems to have made any progress, through its Community Management Team (CMT), and that seems quite limited in comparison with the original objectives. None of the other four field sites have a functioning community organization for collaborating on PHC.

The SA offers several explanations:

" From 1990 to date, the city of Karachi has passed through an especially turbulent phase, leading to sharp ethnic polarization. Grass roots NGOs and community organizations have been adversely affected.

The field teams have not been able to mobilize the community and develop organizations or groups partly due to rapid turnover of manpower at the field sites and also due to lack of expertise."

The evaluation team agrees that there has been, and continues to be, a "lack of expertise in CHS" regarding the extremely challenging work of "community process". The team has found no plans for analyzing and mobilizing these communities, no written strategies for how to deal with heterogeneous and mutually antagonistic populations, no lists of organizations nor of formal or informal leaders who need to be engaged, no register of meetings held with notes on outcomes and follow-up actions to be taken, and no descriptions of group process techniques applied (for example, no focus group discussions with mothers, with grandmothers, with husbands concerning felt needs, attitudes towards and or uses made of the UPHC clinics and competing facilities).

The AKF,USA Annual Reports, as well, do not appear to document any formal strategy nor any actions taken to mobilize these communities, although it was well recognized before 1991 that this challenge, though difficult, was crucial for sustainability.

Another indicator of staff concern, especially for staff of an academic organization, is the topics addressed in the papers presented and published. The lists of these for 1991-1994 (please see Annex 15) show few or none from CHS staff that appear to focus directly on managing change for community organization and participation, though those listed below probably address related issues. Among projects submitted by students, however, a high proportion (6/25) appear to have been focused on such planned change.

The SA, in the section on "Transition Toward Community Management and Cost Sharing" notes that "in the five 'AKU led' field sites, community involvement has been rather slow." However, there is little evidence that CHS undertook any program of activities to try to speed it up.

The impression one gets is that the UPHC/CHS staff was pre-occupied with administration of its own services, with change of leadership, with responding to technical and internal management problems, but was undertaking only a limited number of community mobilization actions, and those in an ad hoc and short-lived manner. The SA understandably bemoans that little was accomplished, that there was little progress towards "community-led" PHC programs. However, there is no documentation, that the evaluation team has seen, of what was done systematically and professionally by CHS to make it otherwise. Whose expertise and experience was guiding this part of the UPHC program from 1991-1994, and whose guides it now?

An important difficulty in mobilizing public support has been the tenuous role of women. Numerous staff at the field sites mentioned to the evaluation team that women are now freer to leave their homes, particularly to come to the clinics, than was the case several years ago. Similarly, the initial recruitment of CHWs was difficult because of reluctance of families to allow their women to circulate in the community, a role that has now become more accepted. A number of CHWs have also been trained for additional skills, such as delivery on becoming TBAs, setting up for-pay rehabilitation centers, etc. Having demonstrated honorable, and paid, means of providing service in the community, outside their homes, the CHWs are viewed by many as having established role models for young women in the communities.

It is generally recognized that a basic problem with community process in the katchi abadis is that the communities were not mobilized from the outset, so that the populations served have come to regard the project as the "Aga Khan's", and that this attitude has been difficult to change.

The UPHC staff appears to be an excellent, motivated, hardworking team. However, there have been a number of key staff members who have left in the past year. The person whom the evaluation team understands to have been responsible for Community Process in UPHC was diverted to a rural project more than a year ago, and has not been replaced. CHS currently does not appear to have on staff a highly trained and competent person responsible for community process despite the current main emphasis on community planning and management in the macro project. The evaluation team recommends that CHS accord high priority to acquiring in-house qualified professional expertise in community process and qualitative research methodologies.

The person presumably guiding community process in PHC was diverted from the UPHC areas to a rural project more than 1 year ago; no suitable substitute was provided. CHS remains understaffed regarding academic competencies in sociology and community mobilization despite the current main emphasis on community planning and management in the macro project. It is not clear to what extent such inertia is due to AKU/CHS being primarily interested in the training and research potential of UPHC, but little interested in seriously mobilizing to evoke community collaboration or to provide community services. Why, from a marketing perspective, have so few

attempts been made until recently to hold clinics at times that might be more accessible to families, e.g. in the afternoons or evenings? In judging the minimal progress in community mobilization, the team recognizes, of course, that the areas serviced are very difficult, with little defined community structure, but full of fractious groups and political turmoil which has boiled over recently into street violence.

It seems as though the university agenda of providing training and teaching sites for medical students has taken priority over implementation of PHC services in a cost-effective and sustainable manner. The evaluation team agrees with the assessment made in the 1991 MG application that sustainability in the katchi abadis would be increased if those communities were given the opportunity to take greater responsibility in operating the PHC programmes.

On the other hand, CHS's manner of dealing with community process has been quite different, and more successful, in three other areas: Karimabad, Baba Island, and Karachi south (MACRO). UPHC is attempting to initiate forms of community dialogue in new areas, of the "macro", that may give greater promise of community mobilization than has been achieved in the original 5 squatter areas. These efforts, and the particular features that make these areas unique, are addressed below.

Baba Island is unique in many ways (please see Box below for specifics).

### **Community process in Baba Island**

The population is small, isolated, quite homogeneous, and already had a well organized and functioning community organization, the Fisherman's Welfare Association, with a record of having collaborated with other external groups, before CHS approached it for PHC. The credit for mobilizing the community in Baba Island belongs in that community; CHS, however, appears to have collaborated well with the FWA rather than trying to take over. Since 1988, AKU has provided one Community Health Doctor, one Community Health Nurse, and one Community Organizer to collaborate with the community to "identify their health needs, make decisions and plans, implement and finance strategies for dealing with the identified health problems."

Immunization was the first priority identified, so AKU provided liaison with the local EPI office. Later, curative care, antenatal care, family planning, and rehabilitation of handicapped children were added as center-based services. A self-sustaining medicine bank, with medication costs fixed by the community, was established with FWA funding. Gradually, some outreach activities by volunteers were added, such as health education through "lane meetings", home visits, immunization outreach, and health education in schools. As the SA notes, the Baba-Bhit Student's Federation has joined forces with the FWA to actively plan and oversee PHC program activities, and women have become more mobile and active participants in the program.

The pattern of PHC developed collaboratively in Baba Island appears much more sustainable than those developed in the katchi abadis, and the FWA actively taps the resources of multiple organizations outside AKU, e.g. the KMC, other NGOs, nearby hospitals, etc. CHS appears to have worked well in Baba Island with a rather unique, pre-existing community organization, the FWA, and perhaps has helped to strengthen the FWA's capacity. However, CHS it was not instrumental in creating the FWA, which is the challenge in most of the katchi abadis and in the MACRO area.

In contrast to the outstanding social mobilization accomplishments in Baba Island, the public health accomplishments remain somewhat limited. For example, whereas immunization (complete + appropriate) in children under one year has risen, from September 1992 to December 1993, from 72% to 79% in the UPHC katchi abadis, it rose more rapidly but within a much lower range in Baba Island: from 12% to 46%. Although the infant mortality rate in Baba Island decreased greatly from an estimated 209 in 1988 to 112 in 1992, the latter figure was still much higher than in the UPHC katchi abadis that year, when the average IMR was 76 and the maximum was at 95 in Essa Nagri.

### **3. Community Process in Karimabad**

Karimabad is exceptional because the community there is middle class, and because it has had well organized Ismaili volunteer activities and has received technical assistance from AKHN organizations since the early 1980's. A "Health Promotion and Disease Prevention" program is

run there by volunteers in collaboration with local practitioners, with screening for risk characteristics of chronic diseases--hypertension, obesity, diabetes--and provision of education and counselling. AKU's role has been to provide the technical training and guidance for an already mobilized community.

#### 4. Community process in the MACRO area

In contrast to the other areas, the SA describes a strategy, plus a concerted and sustained series of activities, that UPHC has used to promote "community development for effective participation" in the MACRO-PHC area. The MACRO objective is creation of a lower cost, sustainable health care structure, at a scale that corresponds to units in governmental health plans. The SA documents creditable initiatives that the UPHC Macro PHC team has taken to develop community organization and linkages with existing government health structures and with NGOs (please see Box below).

The background of the MACRO-PHC is that, after much searching, UPHC had settled on Karachi Ward #45, which includes Chanesar Goth, as the best site for a population of about 50,000. The ward is the smallest areal unit for which KMC plans health services.

Deciding on the area and coming to agreement with the relevant organizations and authorities had taken, not 6 months as originally thought, but closer to 1 1/2 years. There had been frequent transfers of personnel, political problems, changes in committees which rendered prior acceptance of a package of services (e.g. growth monitoring, oral rehydration, etc.) no longer acceptable. Community members had expressed their own, different felt needs, like social problems (drugs, alcoholism, etc.), inadequate water and sanitation. UPHC then agreed, profiting from lessons learned in Baba Island and the katchi abadis, to become facilitators of the needs expressed by the communities.

Near the end of 1992, UPHC began to identify community activists (about 18), to hold seminars with them, and to facilitate their getting organized. UPHC also went up to the District and Provincial and Zonal levels to discuss the program and to see what needed strengthening of units at those levels could be achieved through the contiguous Family Health Project. The UPHC Macro team thus tried to link together the MACRO and the FHP projects, as well as numerous organizations and individuals that rarely meet or collaborate, which are clearly illustrated in the MACRO PHC PROGRAM chart (please see Annex 12). Linking the KMCH Director, Deputy Director and Medical Officer collaboratively was necessary, but had not been done in years. Many planned and many more unplanned meetings were required, requiring much time and work.

**STEPS TAKEN BY UPHC TO DEVELOP COMMUNITY ORGANIZATION  
AND LINKAGES IN UPHC MACRO**

- developed an action plan, inventories of local activists and groups, records of meetings, and an excellent visual model of the many individual activists and organizations in the community whose collaboration is to be promoted (please see Annex 12)
- identified local groups through community and AK NGO Resource Centre
- held meetings with individuals and groups to discuss program objectives and involved community actively in developmental activities
- identified women activists
- taught women activists social development and awareness skills, health promotion, disease prevention, adult literacy, income generation skills and activities
- surveyed part of the catchment of about 50,000 using several community volunteers and AKU students
- aided community to understand water supply problem and to mobilize to lobby the concerned government departments
- obtained an initial success in water supply and used it to bring community members together for formation of a community management group
- facilitated interaction between the Project Implementation unit of the World Bank funded Family Health Project (FHP) and the three major governmental health service providers in the area--the Karachi Metropolitan Corporation, the Zonal Municipal Committee District South, and the District Health Office of the Sindh Provincial government
- facilitated formation of a District Health Management Team (DHMT) of health professionals and managers, which it will help in training for health systems management, MIS and PHC technologies, all profiting from the lessons learned in the UPHC experience.

### **BRIEF VISIT WITH COMMUNITY MEMBERS IN THE MACRO PHC AREA**

During a brief field visit with community members in one corner of the MACRO area, the evaluation team noted the apparently good listening skills and facilitating manner of the UPHC field director. It was evident that community men and women are likely to express somewhat different priorities. In the room in which about a dozen men were discussing the priorities of the community, only one woman dared enter and sit, and then only briefly. These representatives of the community expressed, informally, the following priorities:

- water....there is little of it, dirty, hard to get
- sanitation
- no community council; no public representatives.. ...politicians will help you as an individual but they won't do anything for the community...there are 12 different groups in this community
- inadequate, unresponsive health services
- lack of schools; -unemployment
- many heroin addicts come in from the outside, and some drug dealers here
- many chronic alcoholics on wine
- it is hard to get treatment in hospitals, hard to get blood, the community has to give it

In response to the question of the CHS Chief, "How can AKU help you?", this male group replied that, at the KMC dispensary now:

- there are no medicines
- we have to purchase all the medicines
- they won't talk to people, just read their books
- they never come to community meetings, though invited
- the doctor refused to collaborate with community on national immunization day
- we had to work ourselves for immunization, no support at all from the government (during polio mobilizations).

The external evaluator excused himself from the male conversation and went to question the women in the adjacent room, through a female interpreter. They requested that he position his chair just outside of the room they were in. When asked, "What do you want to do?", they replied:

- improve the water
- mobility of girls, they want training but families won't let them out
- would appreciate some embroidery that could be brought for them to work on
- some men and women have been trained to be vaccinators, but then have no jobs---can they be found?
- some houses are not legalized; we need help with the tedious process...govt. does not want to legalize them because squatters have settled on a railway area
- in some houses women, mostly widows, are very poor and do not have enough to eat; the Zakat committee has funds but the men don't pass it on; they eat it themselves.

The details expressed in the box above are included to illustrate the diversity of community needs and the complexity of the tasks facing the MACRO PHC team. They help explain why progress has been slower than planned in 1991, and why the PHC pattern established in the katchi abadis must undergo much alteration. UPHC is seeking to avoid creation of a paid corps of house-visiting CHWs, but to rely on volunteers instead. It is seeking to upgrade 2 of Karachi's Basic Health Units, instead of starting clinics of its own.



Despite concerted efforts of UPHC staff, responses of the Karachi health authorities have not been encouraging. The evaluation team observes that the CHS staff continues to have the same blind spot in its splendidly diagrammed model of community mobilization in the MACRO that it had in the katchi abadis; there is no inventory of or plan for collaboration with the private sector local practitioners, who probably number about 35 in Chanesar Goth alone, and who undoubtedly provide the bulk of primary curative care services. Further, in terms of experience, the only community organization that UPHC can claim to have brought into being under the present matching grant is the CMT at Essa Nagri, which has made definite, but only modest progress in the past three years.

Thus, the evaluation team also feels, despite the carefully designed program and diagram for the community mobilization process, and despite the impressive manner of UPHC staff in the field, that there is insufficient community process expertise in the CHS department to backstop the community mobilization underway in the MACRO, or that is needed in the katchi abadis.

#### **D. HEALTH MANPOWER DEVELOPMENT**

Perhaps the most valuable achievement of the CHS department and its PHC field sites, in the opinion of a number of experienced observers, has been the large number of physicians, nurses and community health workers who have been trained in community/family medicine.

Before the UPHC project, community health was ignored in Pakistan and there were only a handful of individuals trained in this field. The programme has produced a number of young and energetic PHD and MPH faculty members.

In addition, the CHS program founded Community Nursing in Pakistan. Currently, the UPHC areas are the only training sites for CHNs and LHVs, and one of only three training sites for physicians to obtain population-based field experience in Pakistan. Even the government is utilizing these sites to train CHNs. New nurses from all over Pakistan are coming to the UPHC field sites for training. Thus, the UPHC field sites have become critical to the government of Pakistan in its quest to increase its medical women power capacity in the rural areas.

Similarly, the UPHC program has played a leading role in developing the role and in the training of CHWs.

#### **CHW Issues**

Some experienced observers in Pakistan consider that the corps of paid CHWs working in the UPHC are a "national treasure" because there are few other examples in Karachi of women freely circulating and working in communities as they do. Initial recruitment of CHWs was difficult because of reluctance of families to allow their women to circulate in the community, a role that has now become more accepted. A number of CHWs have also been trained for additional skills to move on to other roles, such as supervision, delivery to become TBAs, and setting up for-pay rehabilitation centers. Having demonstrated "honorable", and paid, means of providing service in the community, outside their homes, the CHWs are viewed by many as

having established role models for young women in the communities. The CHW work force is thus seen as a major break through in strengthening the role of women in being able to work in non-traditional roles.

CHW house-visiting services are also, certainly, the basis for achieving equity in the distribution of elementary health services to all families; they are the base of the three tier pyramid of health workers that was designed to provide PHC. That role, and the reporting back by CHWs, have also formed the bases for detection of births, deaths and events in the community upon which the community-wide scope of the MIS is based.

Balanced against these strengths and accomplishments of the current program are empirical programmatic difficulties which the SA introduces as "CHW Issues" and concludes, in section 5 "Major Lessons Learned...", as follows:

"The infrastructure of using paid CHWs which makes it feasible to pursue the goal of equity in health care i.e. universal coverage and care according to need, may not be sustainable. Furthermore, CHWs when paid, tend to become representatives of the employer rather than the community.....The program has not resulted in a system sustainable either financially, socially, or culturally in the community."

There evidently have been many difficulties. The CHWs have struck for higher pay and additional benefits from AKU. Some CHWs have become bored with their repetitive tasks and have slacked off in their work and reporting. A number have left for other employment. The UPHC project has responded to these vacancies, and to those created by moving some CHWs into more managerial responsibilities in the clinics, by eliminating some posts and by experimenting with forms of coverage other than through monthly individual house visits. These have included CHWs going to homes less frequently, to meeting groups of women in the lanes, and of convoking them to come to the clinics for services like growth monitoring of their children.

CHS has clearly been impressed with the ostensibly greater financial sustainability of outreach services in Baba Island, based on volunteer effort, perhaps achieving less equity and completeness of coverage, but at much less cost. In its early negotiations with community groups in the MACRO area, UPHC staff are carefully avoiding any commitment to a paid force of community workers.

The evaluation team notes that there does not seem to be at present a plan to carry CHW house-visiting forward indefinitely. It also agrees, as well, that CHWs being perceived in the community as paid agents of the AKU has probably limited their likelihood of being adopted by communities as their own agents.

However, the evaluation team would like to point out that there is little evidence that the management of the UPHC guided the CHWs in ways that might have made them more accepted by and more active in the life of the community. This parallels the project's lack of plans,

strategy, and documented activities for community process in the katchi abadis, as noted in section C above.

The team entirely agrees with the SA conclusion that "organization of sub-communities to more effectively participate in developmental programs is a long process, made more difficult when community priorities are not dealt with", but wishes to enquire why so few attempts were made to determine and discuss such priorities in the katchi abadis by CHS during the MG period, and particularly why CHWs were not guided to become emissaries in such a dialogue. Thus, it is not clear to the evaluation team whether the UPHC experience demonstrates that a paid corps of CHWs providing front-line PHC is intrinsically not sustainable in the katchi abadis of Karachi, or whether it reveals that a well planned and managed effort to make them such was not undertaken.

The "experiments" currently underway in modifying the forms and reducing the hours of outreach of the CHWs are valuable opportunities to learn about costs and effects of different ways of organizing community services, but the results will be informative only if the UPHC staff can validly measure the effects before and after the changes. The evaluation team has not seen any UPHC protocols for making such assessments, and recommends that the UPHC design such protocols if they do not exist.

## **E. PROJECT MANAGEMENT**

### **Management of Clinics**

The overall management of each clinic rests with a field director. This field director is chosen by UPHC, and holds the position for one year. S/he visits the site two or three times a week to ensure all is running smoothly at the clinic. Underneath the field director are the field doctor, the community health nurse and the lady home visitor. The field director, community health nurse and lady home visitor are on a year's contract with UPHC. In some sites, the community health nurse is taking over more responsibility. This arrangement is new and the feasibility and appropriateness of it are yet unknown. Given the historical relationship between doctors and nurses, UPHC may run into some problems.

Every other Thursday morning there is a meeting of field directors, a PHC forum, held at UPHC. This meeting is only open to field directors to talk about issues. On the opposite Thursday mornings there is a PHC management team meeting. This management meeting is open to CHN and CHWs. However, it is held at UPHC, thus there is the problem of transportation. There are weekly meetings held at each clinic which are attended by CHWs, LHV, and CHN.

Collaborative linkages with the Karachi Municipal Council, which eventually will be essential if local government is to participate in sustaining the UPHC service patterns developed, failed to materialize in the five *Katchi Abadis*. In addition, it does not appear that the project has created solid and sustained linkages with most of the other NGOs that would be critical for integrating development and health activities.

## F. MANAGEMENT INFORMATION SYSTEM

As a result of much work that CHS has done on the management information system, the objectives set in the MG application of strengthening the UPHC MIS to be relevant to program goals, efficient, and at an appropriate level of development were largely accomplished. One issue on which there were different views, expressed below, was the efficiency of the MIS, in particular how much UPHC staff time it consumes at several levels.

There is also one important area in which the information produced is deficient. That is measurement and tracking of what mothers know and do about health. Little of this was aggregated from the records of CHWs, and none from independent community surveys, which could confirm, or not, the CHW's impressions. This missing data is what is needed to judge the effectiveness of the extensive and expensive health education provided. It is also necessary to demonstrate whether or not Output #4 of the Logframe ("increase awareness and effective use by families of home and community PHC technologies") was accomplished. For example, of the 32 indicators generated by the MIS routinely, none measure what mothers know. Only two indicators identify what mothers do: outcome #4 % of under 5 children with diarrhea who were given ORS, and outcome #10 % eligible couples practicing family planning. Results obtained using the latter, FP, indicator were provided to the evaluation team, while those from the use of ORS indicator were not.

UPHC has put much effort into conceptualizing, designing, computerizing, describing, revising and trying to simplify its management information system. This has led to important spin-offs, such as modifications in the National maternal/child card, and continuing CHS input into development of a National Management Information System.

The UPHC MIS was specifically designed to provide the minimum information needed to facilitate program achievement of equity, effectiveness and efficiency of health services designed on the principles of Alma Ata and Health for All of WHO. The MIS has undergone several revisions based on feedback from the field. The structure of the MIS, its rationale, the indicators routinely produced by its computer programs, and trade-offs in choosing options in designing the MIS were well described in a recent publication from CHS entitled "Developing a Primary Health Care Management Information System that Supports the Pursuit of Equity, Effectiveness and Affordability."<sup>7</sup>

The SA points out that the monthly and quarterly reports of the MIS indicate the numbers of families covered, immunization and nutritional status, curative services provided, family planning services, costs, births and deaths. Hence, the basic elements are provided to track the PHC services provided as well as their costs and impacts.

A workshop was held in November 1992 to review UPHC goals and objectives, and to readapt the MIS. Indicators were reviewed to eliminate the less useful and to add others needed.

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<sup>7</sup> K.Husein, O.Adeyi, J.Bryant, N.B.Cara in *Soc. Sci. Med.* Vol.36, No.5, pp. 585-596, 1993

Major data collection instruments have been revised during the MG period, including the following.

The original two child cards, one for the mother and the other for the CHW, plus the maternal card, were all replaced by a new pictorial MCH card. The mother's antenatal care is entered on one side, then her offspring's growth chart and information go on the other until age 3 years. The mother retains this card, which was successfully field-tested, and gave rise to the new national MCH card for Pakistan.

Corresponding to empirically determined needs for additional information, several kinds of new registers have been introduced: a Meeting/Training Register to monitor lane and other community meetings, and trainings, of CHWs and TBAs; a Rehabilitation Worker's Register and a Community Coordinator's Register, for these workers to monitor their own activities; and new Clinical Services and Laboratory registers.

The verbal autopsy form for children under 5 was revised to facilitate diagnosis through a series of decision rules and separate modules. It was field tested in Chitral and is being used experimentally in selected sites, with a hospital validation study. The verbal autopsy system, based upon household interviews that follow-up notification by CHWs of a household death, has allowed CHS staff to study the patterns of mortality change in the populations serviced by UPHC. This has led to useful insights on adult, as well as child, mortality such as the excessive burn death rates of women. Analysis of mortality has led to well focused innovations in the PHC service program, such as introduction of Low Birth Weight tracking, refocus of growth monitoring and immunization on younger children and introduction of an Acute Respiratory Infection Program.

Overall patterns of infant and childhood mortality during the past three years vary among the different service areas, and CHS staff said that they remain unexplained. As noted in section B above, these patterns may reflect the superimposition of an epidemic illness (?cholera) upon longer term trends of gradual decline.

A strong aspect of the MIS is its decentralization. Field teams are encouraged to develop their own approaches to using information locally to guide fieldwork decisions. Examples of this viewed by the evaluation team at field sites were maps of individual CHW sectors with colored pins inserted to indicate houses in which there were high risk characteristics, that needed revisits or further attention because of malnutrition, diarrhea, high risk pregnancy, contraceptive need, or other reasons for special follow-up by CHWs or LHVs. Another was the posted growth charts of high risk children at Azam Basti. At Chanesar Goth there was a posted list of children who currently were under care for diarrhea. For useful guidance to fieldwork, such field data are discussed in weekly and monthly reviews at the clinics. However, there seemed to be little advantage taken of this local guidance data to use it more epidemiologically, looking at neighborhood patterns and associations.

As in the other two PHC projects visited, almost no follow-up population surveys have been conducted for comparisons with the baseline survey, to validate current morbidity

assessments made by CHWs during house visits, or to provide estimates of the knowledge and practices of householders. The SA, however, mentions that surveys were conducted in Orangi and Grax to obtain data on families that had not been monitored. The evaluation team, unfortunately, has no further information about those survey except for the remark in the SA that they may show some under-reporting of births and deaths in the MIS.

Morbidity estimates derived from CHW records are presumed by several project staff to be considerably and irregularly underestimated. Lacking survey data, there is thus no reliable tracking of morbidity, and there appear to have been few systematic validations of CHW reporting. The morbidity reports currently produced by the MIS are based on patients who presented for curative care, which have very limited usefulness for estimating morbidity in the community. Lacking reliable estimates of the main causes of morbidity deprives UPHC from being able to evaluate the success of its efforts at promotion of ORS and of appropriate treatment for pneumonia, for example, as means of secondarily preventing the deaths of children already ill with ARI and diarrhea.

Although a respectable number of papers have been presented (28), or published (14), by CHS staff based on UPHC experience, they have noted, and the evaluation team agrees, that there are large amounts of valuable data collected that have not been analyzed. A number of examples of ways that existing data could have been analyzed to help program management have been illustrated in sections B and G of this evaluation report. The team therefore recommends that greater effort should be addressed to the tasks of computerizing, analyzing, interpreting, writing up, and sharing the data and findings of the UPHC project.

The team also feels that a follow-up population based survey should be conducted to validate morbidity and mortality reporting in the MIS, and to provide a point of comparison with the population survey of 1986.

As well, it is recommended that the patterns of morbidity and mortality among adults and children in 1991, 1992, and 1993 should be investigated to determine if there is evidence of a superimposed epidemic disease in that period.

#### **Time consumed by MIS paperwork**

Great concern for efficiency, for keeping data collection at a minimum is expressed by CHS staff (please see the Soc. Sci. Med. article referenced), including redesign to eliminate unnecessary records, little used indicators, unnecessary summaries, or to reduce the frequency of some of these. A number of revisions to streamline the system have been made.

Despite these efforts, the evaluation team has the impression that paperwork might still be consuming a large proportion of health worker time.

During the evaluation team's visit to Azam Basti, personnel there were asked to estimate how much time of each worker was being spent on paperwork. The subjective estimates are shown in the table below.

Health Worker	Subjective Estimate of Time Spent on Paperwork
Field Director	about 20% at center about 20% for PHC work
CHN	about 40-50% "too much"
LHV	about 33%
CHW	2 hrs./5hrs.per day = 40% (LHV estimate) 35-40% (CHN estimate)

However, UPHC staff, in a memorandum of 1 June 1994, state that the 1990-1991 study had shown percentages of time spent on record keeping and compiling reports, as shown in the table below.

Health Worker	90/91 Study Findings on Time Spent on Paperwork
Clinical Associate	20%
CHD	8.5%
CHN	16%
LHV	17%
CHW	15%

These considerable differences remain to be clarified, hopefully by an updated time utilization study, as recommended by the evaluation team in the cost analysis section.

#### **Identify local determinants of disease, test strategies**

This extension of the management information system was intended to obtain information about important diseases that would lead to practical and better strategies for dealing with them. The objectives stated in the MG application for these studies were probably considerably over-ambitious, and there also were probably unforeseen slow-downs due to the numerous changes in the working environment of UPHC. To conduct such studies, find causes, identify new strategies, try them out, and monitor their results--although clearly an appropriate sequence of accomplishments--was probably not possible in the three years and in the circumstances available.

The SA notes the following 8 studies of the determinants of childhood mortality and morbidity which are underway, though none are completed yet:

- i. Determinants of child mortality and morbidity
- ii. Household environment risk factors
- iii. Mother's perception of and responses to ARI
- iv. Identification of Risk factors for Drug addiction
- v. Distribution and Correlates of Hypertension of Adult Males in a low income area
- vi. Anaemia in children
- vii. Breast-feeding practices in low income areas
- viii. Factors affecting pregnancy outcomes and child survival

## **G. COST, FINANCING, AND FINANCIAL SUSTAINABILITY**

### **1. Cost Analysis**

#### **a. Methods Utilized**

The Pakistan UPHC Program has conducted cost and cost-effectiveness analysis of project activities since May 1989 using their own format and procedures based on reviews of other methodologies. These analyses are significant undertakings of the project and there are plans underway to submit the 1990 cost and cost-effectiveness analysis for publication to a major international journal.

As stated in the 1991 Cost Analysis Report, one of the objectives of the UPHC Program is to develop prototypes which can be replicated in other areas of the country through both government and private organizations. The purpose of the cost analysis is to determine whether UPHC Project activities are cost-effective. Another use identified for the cost analysis is to assist in planning and budgeting of activities, as well to identify areas for improving project management. In this sense, the UPHC is advanced in their understanding of the role of cost analysis for the program.

The Pakistan experience with cost analysis was one of the driving forces behind development of PHC MAP module 8. Yet this framework was not used for the cost analysis. It was felt that the computer spreadsheets included with the PHC MAP module were too simple and not designed to meet their needs of examining more than financial flows through the project.

The Pakistan UPHC Program was the only project in this review which attempted to include the value of volunteer time, estimated cost of training inputs, and donated inputs, such as vaccines, syringes, ORS packets, family planning supplies, buildings and furniture, contributed by either the government or the community in their cost analysis. In addition, in 1990, the project undertook a major observation study of the distribution of health personnel among different types of activities such as immunization, family planning, and record-keeping.



Data used for the cost 1993 analysis came from financial accounting reports, petty cash expenditure files, inventories of furniture and equipment, and clinical and medical records. In addition, information from the management information system on process and output indicators were utilized to estimate unit costs.

An "ingredients" approach was used by the project to estimate the cost of drugs, vaccines, family planning supplies, other supplies, personnel, and vehicles costs. This method entails estimating the total number of inputs utilized for the year and multiplying these by unit prices. Line item costs for drugs and other medical supplies represent "net" costs to the project.<sup>8</sup> Costs for other line items were derived from financial reports, such as the petty cash accounts for field sites.

Costs for 1993 were analyzed using Lotus 1-2-3 spreadsheets. An analysis of the total expenses for all activities of the project both for field and central office costs was conducted by combining data from financial reports and costs generated from the ingredients approach. Field costs include the cost of running the project up to the level of the PHC field team; while, central office costs reflect those resources used to support activities at the field level, including salaries of central support staff and the MIS. Activities include preventive care provided through household visits, curative services at field sites, research, training, and on-going project operations. This analysis is divided further into two parts: one which focuses on total expenses by AKU, the government, and the community, and the second, which focuses on AKU expenses only.

In addition, an analysis was made for the costs of providing services to both the registered and non-registered population based on a proportional allocation. Finally, clinical service costs were calculated for five field sites, excluding Baba Island, for curative care, antenatal care, immunization, and family planning services. Costs were divided into fixed and variable costs. Fixed costs included rent and depreciation of furniture and equipment; and variable costs included salaries and benefits, medical and office supplies, drugs, medical supplies, and vehicle running costs. Donated items from the government, such as vaccines and ORS packets, as well as the costs of outreach services to households and lanes, were excluded from clinical services costs.

#### b. Main Findings

The project should be commended for the amount of effort spent in estimating project costs. The cost studies performed by the Pakistan UPHC were used as the basis for an overall economic and financial evaluation of the project. This evaluation entailed a "meta-analysis" of the costing work performed by project staff. To this end, additional analyses, including unit cost comparisons, time trends and growth rates, and assessments of financial information were performed and the results are presented below. Detailed tables are provided in Annex 16.

The total amount of the USAID/AKF Matching Grant for was \$933,500. The following table (P1) provides a breakdown of revenues and expenditures over this phase, as reported to

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<sup>8</sup> This is the case when only AKU contributions are considered.

USAID. Total revenues through June 1994 are less than the budgeted amount by Rs. 149,400 or \$29,533). This difference could be due to exchange rate gains over the life of the project.

**TABLE P1: REVENUES AND EXPENDITURES OF THE PAKISTAN UPHC (\$) 1991-1994 <sup>9</sup>**

YEAR	REVENUES (Actuals)	EXPENDITURES
July 1991 to June 1992	360,890	311,390
July 1992 to June 1993	266,700	312,870
July 1993 to December 1993	156,520	220,200
Total	784,110	844,460
Budgeted Amounts	933,500	933,500
Difference (Actual-Budget)	-149,400 (16%)	-89,040 (9.5%)

*a) Total Cost by Year*

Table P2 presents the total direct cost and cost profiles of the UPHC by year between 1991 and 1993. These figures show both increases and decreases in costs by line item over this period. For instance, total direct costs have increased by approximately 12%. <sup>10</sup> Salaries and benefits grew at a rate of 14%. In addition, training costs rose to 73% of their original low levels in 1991, although training activities represent less than 1% of total costs of the project in that year .

Vehicle operating costs declined slightly by 1%. However, there was a large increase in vehicle operating costs between the first two years, by 57%. Given that utilization rates and other activity rates did not increase by the same amount between 1991 and 1992, this rise in vehicle operating costs needs to be investigated in order to have a clearer idea how the project is being managed.

The growth rate for drugs costs also declined by 64% between 1991 and 1993, as did the cost of ORS (by 51%) and that for medical supplies (by 82%). These declines are probably due to decreases in utilization of clinic services. However, the line item for all supplies costs increased by 11% due to rises in vaccine and family planning costs, as well as the cost of office supplies. Since vaccines and family planning supplies are donated by the government to the

<sup>9</sup> This table reports cash revenues from the USAID/AKF Matching Grant only, as furnished to the evaluation team by UPHC.

<sup>10</sup> Direct costs exclude the value of overhead, G&A expenses, and AKU administrative costs.

project, office supplies costs were attributable to UPHC project management resource allocation decisions (see Annex 16 for details).

**TABLE P2: COMPARISON OF TOTAL COST BY MAJOR LINE ITEM  
(1991-1993) <sup>11</sup>**

CATEGORY	1993	%	1992	%	1991	%
Personnel	4,013,557	76.7	3,810,089	74.7	3,470,616	75.8
Vehicle Operation	88,195	1.7	208,590	4.1	88,987	1.9
Supplies	698,938	13.3	656,850	12.9	623,196	13.6
Training	48,856	0.9	52,750	1	13,169	0.3
Rent	226,459	4.3	212,788	4.2	236,350	5.2
Misc.	15,420	0.3	15,840	0.3	15,600	0.3
Recurrent	5,091,425	97.2	4,956,907	97.2	4,447,918	97.1
Capital Deprec.	144,459	2.8	143,229	2.8	132,408	2.9
Direct Costs	5,235,884	100	5,100,136	100	4,580,326	100
Indirect Costs	1,420,486	21.3	1,234,550	19.5	1,305,032	22.2
Total Cost	6,656,370		6,334,686		5,885,358	

While rent expenses have declined over the three years by 4%, the decline actually took place between 1991 and 1992, which experienced an 11% drop in costs. There was a 6% increase in rent and utilities costs between 1992 and 1993. The project needs to identify a strategy for containing rent and utilities costs for the project. The project could examine the experience of Baba Island in which the community donated a building for the health clinic. This has resulted in lower rent costs for Baba Island by more than 15 times some of the other field sites. Another possible approach would be to follow-up on the suggestion by CHWs in Grax to have them purchase a building and lease it out to the project at reduced rates.

Recurrent costs have increased by 13% over this period, with the largest rate of growth between 1991 and 1992 at 10%. Indirect costs as a proportion of total costs increased over this period by 8%, although there was a decline between 1991 and 1992 of 5%. Indirect costs represent the cost of project management, evaluation, research and development activities, women in development activities, and the costs of Karimabad field site. A proportion of indirect costs

<sup>11</sup> From Tables 7a, 7f, and 3a for 1993, 1992, and 1991 figures, respectively.

is added onto direct service delivery costs based on the distribution of total direct costs among the field sites.

The self-assessment also identified an increase in project costs between 1991 and 1992, and between 1992 and 1993 but attributed this growth mostly to inflation. However, this conclusion cannot be drawn from the data since there are cases when the cost of certain line items decreased over this period, rather than increased. Furthermore, increases were not uniform among all line items and not at the same rate as that of inflation (7%).<sup>12</sup> While it was reported that salaries increased during the matching grant to "correct for inflation", other factors, such as changes in the demand for services, composition of project activities, or levels of efficiency, contributed to changes in individual line items of project costs besides or in addition to inflation.

Table P3 illustrates the variation by line item between the cost analysis and the financial reports for 1993.<sup>13</sup> The cost analysis results were different from project expenditures recorded on the periodic statement of accounts, because of the different methods used to estimate certain line items, such as drug expenses and personnel costs. There are also differences in that the cost analysis was performed to see how much it would cost to replicate the program, while financial reports include the cost of research, management, and policy making. However, a comparison may shed light on areas where costs could be contained.

For the cost analysis, personnel costs were generated by identifying individuals involved in the project, estimating the percent of their time allocated to the project based on the analysis of personnel time, and multiplying this by their gross salaries and benefits. The general ledger reflects which individuals have charged their time to the Matching Grant, either directly to a field site account, or indirectly through the other management, research, and support activities.

A comparison between the cost analysis personnel listing and the personnel who have charged time to the grant reveal there are individuals who spend time on project activities who were not billed to the grant and vice versa. The financial reports suggest that the project is rather top heavy with a lot of administrative personnel being charged to the project, which is not the most efficient use of scarce project resources. Because one of the major objectives of the project is to ensure sustainability of project activities, it may be worthwhile to streamline the personnel who are involved in the project to those who provide the most needed technical and professional inputs.

Another difference which can be explained, in part, by variation in method is the cost of drugs. Drug costs estimated for the cost analysis were much higher than those recorded for the individual field sites on the financial reports. The cost analysis figures were generated by multiplying the total amount of drug consumed and wasted by an end-of-year unit price; whereas,

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<sup>12</sup> The World Bank, World Development Report: Investing in Health, 1993, Washington, D.C. 1993.

<sup>13</sup> Indirect costs for the general ledger case are based on a previous comparison between the cost analysis results and financial statements performed by the grants manager.

the cost of drugs expenditures allocated to each field site was based on actual purchases for the field sites themselves.

While variation in unit prices of drugs may account for some of these differences, the variation between the cost analysis and financial reports of 65%, is probably larger than variation in unit prices used to calculate costs in the two systems. The project claims that because of large stocks of drugs already existing in the field sites due to lower utilization rates, the number of drugs issued by CHS to field sites, particularly to Azam Basti, has been much lower than the amount prescribed. This disparity matches lower cost analysis figures. Therefore, the project needs to assess what other factors besides prices contribute to these differences.

Vehicle operation is another area where the cost analysis and the financial reports differ, with the financial reports recording much higher expenses than those estimated by the cost analysis team based on kilometers traveled.

**TABLE P3: COMPARISON OF COSTS WITH PROJECT EXPENDITURES: 1993  
FOR SELECTED LINE ITEMS**

CATEGORY	COST ANALYSIS (a)	GENERAL LEDGER (b)	% DIFFERENCE (a-b)/a
<b>ORANGI:</b>			
Personnel	626,808	579,940	8
Medical Supplies	80,411	15,527	81
- Drugs	14,649	11,114	24
Office Supplies	6,505	10,362	-59
Vehicle Operation	20,617	29,330	-42
Rent & Utilities	38,915	37,277	4
Recurrent Costs	823,549	702,279	13
AKU Central Costs	235,081	470,279	-100
Total Cost	1,058,630	1,173,244	-11
<b>GRAX:</b>			
Personnel	625,283	359,397	43
Medical Supplies	85,549	5,951	93
- Drugs	14,766	5,197	65
Office Supplies	6,647	4,774	28
Vehicle Operation	15,169	50,834	-235
Rent & Utilities	30,538	28,025	8
Recurrent Costs	822,516	469,989	41
AKU Central Costs	235,081	314,733	-34
Total Cost	1,057,597	784,722	26

<b>AZAM BASTI:</b>			
Personnel	925,318	753,091	19
Medical Supplies	134,269	23,547	83
- Drugs	40,014	17,491	56
Office Supplies	9,822	6,377	35
Vehicle Operation	12,850	29,033	-126
Rent & Utilities	75,177	84,518	-12
Recurrent Costs	1,196,023	927,886	22
AKU Central Costs	235,081	621,369	-164
Total Cost	1,453,282	1,549,980	-7
<b>CHANESAR GOTH:</b>			
Personnel	695,799	996,870	-43
Medical Supplies	93,991	8,576	91
- Drugs	19,432	7,077	64
Office Supplies	7,669	4,397	43
Vehicle Operation	13,151	47,620	-262
Rent & Utilities	42,806	62,666	-46
Recurrent Costs	879,223	1,141,732	-30
AKU Central Costs	235,081	764,572	-225
Total Cost	894,081	1,906,368	-69
<b>ESSA NAGRI:</b>			
Personnel	723,058	793,440	-10
Medical Supplies	95,115	11,730	88
- Drugs	15,040	9,996	34
Office Supplies	7,455	8,508	-14
Vehicle Operation	9,451	22,736	-141
Rent & Utilities	34,028	31,937	6
Recurrent Costs	907,337	893,192	3
AKU Central Costs	235,081	598,128	-154
Total Cost	1,156,069	1,492,420	-29

Table P4 presents cost profiles for each field site of the UPHC in 1993 as estimated by combining financial reports and use of resources at the field site levels (from Tables 7a and 7f).<sup>14</sup> Several trends are apparent. First, personnel costs account for the greatest share of total costs between 76% and 84%. This is the pattern expected for primary health care project costs. While the total cost for personnel was highest in Azam Basti (Rs. 925,318), personnel costs represented the largest proportion of total costs among the field sites for Essa Nagri.

<sup>14</sup> These costs include service delivery (curative) as well as outreach costs and differs from the results produced by the initial analysis conducted by project staff which focuses solely on service delivery (clinical) costs.

Second, except for Baba Island, there is little variation in the cost of medical supplies which includes drugs and vaccines costs. Lower percentages for medical supplies costs for Baba Island could be related to a smaller population size.

Three, there is some variation in vehicle operating costs, with Baba Island and Orangi having the highest shares (3%). However, Grax had the highest number of kilometers traveled per year of 18,228, compared with 11,520 for Baba Island. Variation in vehicle operating costs appears not to be related directly to distance traveled. An explanation offered by project staff is that the Grax vehicle uses diesel fuel which is more expensive on a per unit basis. In addition, the Orangi vehicle requires much more maintenance than the other vehicles in the fleet.

Three, rent and utilities were highest in Azam Basti (6% of total cost) compared with 3% in Baba Island. While rent charges in Orangi are low, electricity charges reported on financial statements are nearly twice that for Azam Basti. The project needs to investigate factors contributing to higher or lower rates for these different field sites and find ways to economize.

Finally, recurrent costs account for more than 93% of total costs in all field sites, ranging from 93% of total costs for Baba Island to 99% of recurrent costs in Essa Nagri. This fact demonstrates that there is and will continue to be a high recurrent financing requirement in order to sustain services in the future.

**TABLE P4: PERCENT OF TOTAL COST PER CATEGORY  
FOR FIELD SITES: 1993  
(includes outreach and financial costs)**

CATEGORY	OR	GX	CG	EN	AZ	BI
Personnel	76.1	76	77.8	78.5	76	78
Medical Supplies	9.8	10.4	10.5	10.3	11	5.4
Office Supplies	0.8	0.8	0.9	0.8	0.8	1
Vehicle Operation	2.5	1.8	1.5	1	1.1	3
Training	0.5	1.8	0.5	1.5	0.3	1.5
Rent and Utilities	4.7	3.7	4.8	3.7	6.2	3
Miscellaneous	3.2	3	2.4	2.6	2.9	3
Total Recurrent Costs	97.6	97.6	98.3	98.5	98.2	93
Capital Depreciation	2.4	2.4	1.7	1.5	1.8	7

NOTES: OR=Orangi CG=Chanesar Goth X=Grax  
EN=Essa Nagri AB=Azam Basti BI=Baba Island

Since the stated purpose of the cost analysis is to identify prototypes for replication in other parts of Pakistan, it is worthwhile to examine both the variation in total costs among the field sites, and the cost by PHC activity for each field site. Since the distribution of personnel time by PHC activity was performed in 1990 and has not been updated, the project itself did not perform a comparative analysis of total costs and cost by PHC activity prior to this evaluation. The evaluation team decided to undertake a preliminary analysis which utilized the time distributions for personnel in 1990 as a basis for estimating total unit costs by field site in 1993, realizing that any major changes in allocation of time among and between field sites would affect these results. As a consequence, these figures should be considered preliminary and merely suggestive of trends in unit costs. It is recommended that the project update this analysis when information from additional time studies become available.

Table P5 presents the results of total costs and cost profiles for each activity. First, the total annual cost for Baba Island is the least at Rs. 783,376 (\$25,684), while the most costly center is double the operating cost of Baba Island: Azam Basti at Rs. 1,453,282 (\$47,649). Azam Basti and Baba Island represent two extremes with respect to the field sites. Azam Basti is designed to serve as a referral center, providing a greater intensity of medical care than the other field sites. It has a small operating theater, laboratory and a wider spectrum of drugs available to patients. On the other hand, Baba Island operates its clinic with a stronger level of community commitment. The clinic has a revolving drug fund and raises donations from the community to help cover operating costs. The main contributions by AKU include the salaries of the medical officer, LHV, and CHN, as well as about 10% of its operating costs. However, it is worthwhile to compare their costs and cost structures as part of the overall UPHC search for cost-effective PHC models.

Among the four other field sites, the average annual cost was Rs. 1,100,000 (\$36,066), ranging from \$38,033 per year in Essa Nagri to \$34,868 in Chanesar Goth. The project would benefit from examining in more detail the differences in costs and cost structures among the various field sites. This is a key step in using cost analysis for program management, to help identify model sites and standard operating costs. This standard can then be used to measure efficiency and effectiveness of services being provided in the field sites.

Table P5 also contains information on the distribution of costs by activity. Curative care is the most costly component of total field site costs, from between 35% in Essa Nagri to 51% in Azam Basti. Immunization is the next most costly component of PHC at the field sites at approximately 24% on average, though costs for Baba Island are the lowest at 20%. Nutrition activities represent the third most costly activity of the field sites at approximately 15% on average. Baba Island is again the exception with 19% of costs being allocated to nutrition activities. ANC/PNC services, family planning, ORS distribution, and health education receive declining shares of total costs.

Analysis of the distribution of costs by component and by field sites provides valuable information for program management, in that these percentages can be compared with the distribution of activity levels among the different sites. These types of comparisons allow one to have a clearer understanding of the relationships between inputs into the clinics and outputs.



These relationships are crucial for identifying ways to reduce costs and improve efficiency, as well as to plan and budget health services.

**TABLE P5: COMPARISON OF TOTAL COST, ACTIVITY COST,  
AND COST PROFILES FOR FIELD SITES: 1993**  
(Rs. 000s)

INDICATOR	OR	CG	GX	EN	AB	BI
Total Cost (Rs. 000,000s)	1.06	1.13	1.06	1.16	1.45	.78
Curative Care	38%	39%	37%	35%	51%	37%
ANC/PNC	11%	11%	11%	13%	9%	12%
EPI	25%	26%	25%	26%	21%	20%
FP	6%	6%	7%	7%	6%	6%
ORS	2%	2%	2%	3%	2%	3%
Nutrition	14%	14%	15%	15%	11%	19%
Health Education	2%	2%	2%	3%	2%	3%

Based on the estimates of costs of different health activities for each field site, an analysis of unit costs of health services was conducted.<sup>15</sup> Unit costs represent the ratio of total costs for an activity divided by levels of output or effectiveness for that activity. Comparing unit costs among field sites can help identify which sites are more efficient in providing services. This type of analysis is important for planning and evaluating project activities. In addition, by comparing unit costs by site, the project can determine which strategy or site could be a prototype for replication to other parts of Pakistan.

Table P6 provides the unit cost data for each field site calculated by the evaluation team. Information on outputs by field site were derived from 1993 MIS statistics. The average cost per capita for the six field sites was Rs. 126 (\$4), ranging from Rs. 99 (Chesandar Goth) to Rs. 179 (Azam Basti).

Since the project aims to provide services to children and women of child-bearing ages, the total cost of each field site was divided by the December 1993 estimates of the target

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<sup>15</sup> Costs by program activity relied on time allocation patterns described for the 1990 cost analysis. The distribution of time among activities probably has changed, so that the project team is encouraged to conduct another time analysis to render these figures more accurate.

population.<sup>16</sup> This results in a cost per target population of Rs. 498 (\$16) on average in the direct cost only case, and Rs. 688 (\$23) on average when all costs, including overhead, are considered.

For both the cost per capita and cost per target population, there is a considerable range in figures. Chesanar Goth field site has the lowest total unit costs when only direct costs are considered, and Azam Basti has the highest. However, when indirect costs are added into the total cost figures, Essa Nagri has the lowest unit costs.

The cost per patient seen for curative services was lowest in Azam Basti at Rs. 118 (\$3.87) which suggests that this model is more efficient than Essa Nagri (Rs. 233, \$7.65 per patient). Differences between these two centers in terms of quality of care and utilization rates, as well as staffing and resource use, should be examined in order to determine how Essa Nagri could become more efficient.

On the other hand, the cost per ANC visit was found to be the lowest in Essa Nagri (Rs. 104, \$3.42), and highest in Grax (Rs. 221, or \$7.24). The average for all centers was Rs. 172 (\$5.65) which is comparable to international estimates.

The average cost per fully immunized child was calculated for the project area.<sup>17</sup> When a strict definition of fully immunized children less than one year of age is used for the denominator (as is the case for other country studies), the cost per FIC was Rs. 1,084 (\$35.55) on average, ranging from Rs. 766 (\$25.11) in Azam Basti, to Rs. 4,479 (\$149) in Baba Island. The ratios are related directly to differences in the numbers of fully immunized children in each field site. Azam Basti, as a teaching center in a relatively more affluent catchment, had high numbers of FIC, while Baba Island, perhaps because of population size and socio-economic status, had lower figures.

Alternatively, the project is tracking the percent of children who receive doses at the appropriate age, though they may not be fully immunized by the end of 1993. The cost per correctly immunized child (CIC) is felt to be a better measure of unit costs for the CHS Project. The cost/CIC was Rs. 252 on average (\$8.27), ranging from Rs. 487 in Baba Island to Rs. 171 in Essa Nagri. Notice that Azam Basti no longer has the lowest average costs for childhood immunization services in this case.

The project needs to find strategies to reduce the unit costs of immunization services, either by holding fewer immunization sessions or by improving strategies to attract mothers and children to immunization sessions.

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<sup>16</sup> An alternative approach would be to use the weighted average of curative visits by the target population for that year.

<sup>17</sup> The total cost for immunization was not used in the analysis since some of the cost is attributable to TT immunization. Through a crude analysis of coverage rates, it was estimated that 25% of total immunization costs were for child doses.

**TABLE P6: UNIT COST ANALYSIS OF FIELD SITES: 1993**  
(Rs., rounded to nearest whole number)

INDICATOR	OR	CG	GX	EN	AB	BI
Cost/Capita (a)	78	74	87	77	141	91
Cost/Capita (b)	111	99	123	105	179	139
Cost/Target (a)	621	399	462	383	694	426
Cost/Target (b)	883	538	657	521	884	648
Cost/Patient	168	160	168	233	118	222
Cost/ANC Visit	225	168	221	104	134	
Cost/FIC (c)	1,256	1,064	1,757	814	766	4,479
Cost/CIC (d)	364	199	346	171	255	487
Cost/Child Weighed	246	133	490	129	250	
Cost/Child Gaining	312	188	590	160	301	
Cost/FP User	170	129	303	401	54	
<p>NOTES:</p> <p>(a) Excludes AKU costs.</p> <p>(b) Includes AKU costs.</p> <p>(c) Based on the number of FIC before one year of age in each field site.</p> <p>(d) Includes children fully <u>and</u> appropriately immunized by one year of age.</p>						

The cost per woman practicing family planning was lowest in Azam Basti (Rs. 54) and highest in Grax (Rs. 303).

The cost per child weighed for growth monitoring was Rs. 226 or \$7.42 on average, with Essa Nagri having the lowest unit costs and Grax the highest. A better measure of the effectiveness of growth monitoring activities is the number of children seen who are gaining weight. The cost per child gaining weight was higher on average at Rs. 290 (\$9.51). Again, Essa Nagri had the lowest average costs (Rs. 160) and Grax the highest (Rs. 590).

Overall, it appears that for curative services, the model offered by Azam Basti is cost-effective relative to other field sites, presumably because of higher utilization of services by referrals and on-demand patients. However, for preventive and promotive services, Essa Nagri

is consistently more cost-effective than the others; whereas, Grax is consistently the least. Understanding patterns of unit costs can assist in identifying areas where project activities can be strengthened, costs reduced, and program outputs increased. It is strongly recommended that the project continue to explore reasons for differences in unit costs among the field sites.

c. Areas for Improvement

Project staff have identified three areas where the cost analysis has been used for management purposes: 1) in diagnosing the extent of health worker time spent on the MIS; 2) in increasing user fees to cover the cost of drugs and to experiment with charging fees for other services, such as family planning; and, 3) in exploring in the future the possibility of using less costly personnel as field directors.

However, a more comprehensive analysis of trends, unit costs, financial and economic costs could have provided additional information for project management. The evaluation team encourages the project to strengthen its use of cost analysis information for project management.

The cost analysis can be used to develop a series of management indicators to assist in identifying areas where costs could be conserved and effectiveness improved. The type of management indicators which can easily be explored include a series of productivity indicators, such as 1) the number of contacts per health worker per day; 2) the average duration (minutes) for a clinical contact or house visit; 3) vaccine and drug wastage rates; 4) plots of unit costs over time and graphs of average costs by field site; 5) ratio of vehicle costs to vehicle depreciation costs; 6) ratio of field staff costs to all other staff costs; and, 7) per capita drug expenditures.<sup>18</sup> It is recommended that project staff review a recent UNICEF manual entitled, Cost, Resource Use and Financing of Primary Health Care, A Practical Manual for further elaboration and ideas.

2) It is unfortunate that neither the self-assessment nor the previous two cost analyses contained a thorough analysis or interpretation of the findings. The cost analysis provides an excellent opportunity to dig behind the numbers to make an assessment of project operations and organization.

3) The project should re-evaluate the distribution of health workers' time to determine whether these patterns have changed since 1990. Because of the resources and time required for another observation analysis, it is suggested that a diary method be used over a period of one month to collect base information. These data need to be verified and validated through selected observation studies or other approach. The 1991 Cost Analysis report highlighted difficulties experienced in retrieving time information from the CHWs. However, it is the experience of the evaluation team that with enough examples and discussion, the diary method using recall can be implemented successfully.

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<sup>18</sup> The project estimated per capita drug expenditures based on the amount of revenues generated for each field site. Calculation of per capita drug expenditures would track ratios of both financial and cost information, divided by the target population.

In addition, it would be useful to analyze the distribution and range of time spent by different types of health workers per site per activity to have a more accurate understanding of the use of key resources, such as manpower, in the project.

4) The above section on main findings included several types of new analyses which reveal interesting information on program operations. The project is encouraged to make further comparisons between years, among program activities, and between field sites to generate programmatic information needed for sustainability.

5) It is important to have more written documentation of how costs were constructed to make assumptions clearer. This is particularly true for the differences behind the series of tables generated. The 1991 Cost Analysis report needs to be rewritten to include a section on major conclusions and recommendations.

6) It appears that there has been little modification in either the approach, format, or presentation of the cost analysis since 1990. The evaluation encourages the project to experiment with other ways of presenting the information. For instance, how much additional information does the project gain between tables 7a and 7c? Which tables are the most valuable, which ones the least? Which figures are the most important and how can these be highlighted in a report? Rather than rehashing a different set of figures in the same way, the project could spend more time thinking about how the information will have the greatest impact on project activities.

7) In order to determine whether the Pakistan UPHC field sites represent a cost-effective way of providing PHC services, it is important to compare the findings of the cost analysis with cost estimates of government services or those provided by other NGOs.

8) The clinical cost analysis for field sites needs to be restructured to reflect standard definitions of fixed and variable costs. For instance, personnel, office supplies, and vehicle operating costs should be reclassified as semi-variable costs. The purpose of a variable cost analysis should be to estimate what it would cost to expand utilization of services.

9) Clinical services costs for Baba Island need to be calculated in order to make fruitful comparisons among all of the field sites. Since Baba Island's experience in community participation is unique, it would be useful to describe and analyze the full range of costs.

10) Depreciation costs were calculated using non-standard figures for useful life. For instance, the project used 10 years for the life of a building, whereas, in most other cost studies, a figure of 25 years is used. Further, the other projects evaluated calculated depreciation on an accrual basis, adding in the depreciation costs of new equipment and vehicles from year to year. In the UPHC cost analysis, there are very few changes from year to year in depreciation costs, which suggests that the same level of inventory of equipment is being used from year to year. If differences exist, these need to be reflected in the cost analysis.

11) The analysis estimates the net costs for drugs, family planning services, and medical supplies based on the value of supplies consumed minus the revenues generated from sales. The

traditional definition of cost is the value of all resources used. Therefore, the evaluation team would like to suggest that the cost analysis needs to reflect the total value of all drugs consumed or the total expenditures on drugs rather than net values. The latter would be useful in determining cost recovery ratios in a separate analysis.

12) It is recommended that the cost analysis also subdivide costs into recurrent and capital costs in order to have a better understanding of the sorts of costs (line items) which will need continual funding to ensure sustainability of the program.

2. Financial Management

a. Description of the Financial Management System

i) *Community Health Services Department and the Aga Khan University*

The Community Health Services Department functions within the financial management system of the Aga Khan University. At the Grants and Contracts Office of the Finance and Administration Department (F&A) of the Aga Khan University, the project accounts are computerized and managed using a system designed for hospital cost accounting. The F&A Department receives U.S. dollar amounts for the Matching Grant from AKF Geneva and places them in an interest bearing, foreign currency bank account which also holds funds from other donor agencies. Interest is paid out to each grant source on the basis of ratio of funds at the end of the fiscal year. Bank statements are not available for each individual grant because resources are pooled.

Each grant is treated as a separate cost center and assigned an individual grant number with corresponding expenditure codes. For the Pakistan UPHC, each of the six field sites are treated as cost centers, so that expenses from each site are charged separately on the general ledger. In addition, evaluation activities, research and development, cost-effectiveness studies, women in development activities, and departmental expenses for program management are charged to the grant under distinct codes.

Requests for payment from the project office for reimbursement of expenses on a quarterly basis are submitted to the Finance and Administration office, and the U.S. dollar equivalent is transferred to the project (local currency) account at prevailing exchange rates.

The Matching Grant was one of several grants awarded to the Community Health Services Department during 1991-1993. Department resources are managed by the Assistant Manager and his staff of two administrative assistants. In addition, the department has a grants manager on staff whose responsibility it is to reconcile grant budgets and expenditures according to the reporting formats dictated by each funding agency.

At the department level, computerized accounts are maintained by the grants manager and are used for preparing quarterly reports for submission to the Finance and Administration Department, as well as a periodic statement of expenses which is used internally for planning and

budgeting. These reports are made on a U.S. dollar basis. Reports submitted to F&A also include information on earned income to the grant from user charges and other income-generating activities.

The department tracks and manages resources from the Matching Grant using a manual system and provides reports to the university. The Finance and Administration Section provides a hard copy of the General Ledger which is used by the department to reconcile and verify expenses and income, so that a formal feedback system exists between the university and the department. In addition, the university provides a monthly listing of all faculty being charged to individual grants for review by the project; the project is able to alter billing of personnel time to specific grants retrospectively.

In addition to financial management of the Department, the assistant manager is responsible for procurement of equipment, supplies, and drugs, as well as the day-to-day operation of the department which is involved in research, teaching, and implementation of several projects.

*ii) Field sites and the Community Health Services Department*

At the field site level, the Administrative Assistant (AA) is responsible for paying stipends to community health workers, collecting and managing user fees for consultations and drug charges; maintaining a petty cash account; and stocking and maintaining a drug inventory at the site. The clinical officer also assists in the management of drugs and supplies. The Field Director is required to approve all petty cash expenses and to sign-off on the petty cash account and the revenue statement before it is sent to the project office where it is reviewed by an administrative assistant and the assistant manager.

Revenues are reported on a monthly basis using a standardized format entitled, "Statement of Daily Revenue Collections". This form disaggregates total revenues by those from consultation charges, drug charges, laboratory charges, and family planning charges. Once this form is submitted to the central office, the AA receives a receipt. Individual patients do not receive any receipt for their donations. During the month, revenues are kept in a locked safe at the field site level. The AA is the only person with access to the key to the safe at the field site level.

Each field site has a Rs. 5,000 imprest fund for miscellaneous expenses, such as refreshments, laundry and dry cleaning, housekeeping supplies, drugs in the event of a shortage, local conveyance, electricity and utilities, gas, printing, repairs and maintenance, clinical supplies, office supplies, furniture, other staff costs, and utensils. The Administrative Assistant submits a "Petty Cash Disbursement Statement" after approximately Rs. 2,000 have been spent. This is then reviewed by the Field Director, an administrative assistant at the CHS Department, the assistant manager, and the F&A office. Once the statement has been approved, the field site is reimbursed.

Payment of community health workers at the field sites is made by the Administrative Assistant using the following system. A local currency check is made payable to each administrative assistant for the total anticipated amount for each month. The assistant manager

cashes the check for the Administrative Assistant and prepares individual envelopes for each CHW for the month. These sealed envelopes are given to the AA who then distributes the revenues based on work attendance by the CHWs. Community health workers sign off on a form once they receive payment for their services. In the event of absences, CHWs are paid less than their monthly stipend and the difference is returned to Finance and Administration at AKU. The administrative assistant receives a receipt for the amount returned.

Drugs are procured at the central office based on consumption patterns which are tracked through the MIS. The administrative assistant, with the help of the clinical officer, collects the kit of drugs and supplies on approximately a monthly basis and transports them to the field site.

b. Assessment of the Financial Management System and Management of Project Resources

The financial management system of the project is vertical with checks and feedback being largely hierarchical. Financial management and control are in the hands of the assistant manager and his staff, which includes the Administrative Assistants at the field level. The project coordinator has only a peripheral role in resource allocation decisions. This separation between structure and function has allowed the project to operate in a costly manner and has provided little incentive to conserve resources and improve efficiency. A more functional system would place resource allocation decisions within the technical arm of the project.

Financial documentation is strong between the project and the university's Finance and Administration Office. However, there are several ways in which financial management and feedback between the field sites and the project office can be strengthened in order to ensure sustainability.

The evaluation team conducted an in-depth analysis of miscellaneous expenses and revenues over a three-year period for one field site (Essa Nagri) in order to differentiate between financial management policies for the CHS and the system in practice. While it is realized that field sites may differ in their expenditure and revenue patterns, evaluations of all field sites were prohibited given the limited time available in Karachi. However, it is hoped that this type of analysis could serve as a starting point for an internal assessment, and that the trends and findings are useful for program management.

Expenses

Miscellaneous expenses are maintained on an imprest basis at each field site. Most field sites have an imprest of Rs. 5,000, although the amount for Azam Basti is Rs. 8,000. Petty cash statements are submitted to the Field Director, and then up through the system, once approximately Rs. 2,000 is spent. This rate of expenditure occurs usually on a monthly basis, although as is described below, there are some months in which more than one statement is received.



1) Thirty-six percent of total field site miscellaneous expenses was for staff beverages. In addition, an analysis of individual receipts for in-house training revealed that nearly 100% of these expenses were for beverages. Therefore, it is concluded by the evaluation team that nearly on-half of all petty cash expenses (those for staff beverages and those for in-house training) in this field site has been for beverages. Expenditures for refreshments of over Rs. 10,000 per year in this particular field site seems excessive. Written guidelines by UPHC management on the preferred distribution of expenditures would be useful, as well as regular feedback from the department to the field sites.

2) The next largest expenditure was for housekeeping supplies (13.6%), followed by repairs and maintenance at 6.5% (refer to Table P7). Expenses for drugs and clinical supplies (Rs. 266) amounted to 1% of annual expenditures. These purchases are only made when supply from CHS is short or when a drug different from the standard set of drugs is required. In this facility, the total value of "extra" drug purchases was small; however, the frequency of purchases (in January, July, August, October, and December) could suggest that the drug kit needs to be altered to meet the medical needs of the community (e.g., including anti-hypertensive drugs) or that shortages are occurring.

3) The average monthly petty cash expenditure was approximately Rs. 2,000. Reporting was made usually on a monthly basis, though this varied by site. In some cases, there were multiple petty cash disbursement statements submitted for the same time period, or time periods between one statement and the next overlapped. Reporting and accuracy of expenses could be strengthened if a ledger system was instituted at the field site level rather than relying on monthly recall to complete a statement.

**TABLE P7: DISTRIBUTION OF PETTY CASH EXPENDITURES**  
(selected field site, 1993, in Rs.)

ACCOUNT CATEGORY	PERCENT OF TOTAL YEARLY EXPENSES
Staff beverage	36.3%
In-house Training	13.4%
Housekeeping Supply	13.6%
Repairs and Maintenance	6.5%
Cleaning	6.2%
Electricity	5.7%
Furniture	4.6%
Other staff cost	4.6%
Gas	4.0%
Stipends	1.3%

4) Expenditures vary by quarter of the year, with the highest rate of spending between October and December (38%) with the lowest between June and August (15%). However, the daily patient load remains constant throughout the year so that variation in expenditure patterns are not driven by utilization of services.

5) Quarterly reconciliation of receipts from Administrative Assistants for stipends, petty cash, and drugs against expenditures is not required by the project. Project management has stated that quarterly summaries are for internal use only by the field site, and the system of checks and approvals within the system is sufficient to maintain adequate control.

However, hand-written quarterly reconciliation statements on lined paper included in the field site files were reviewed for the evaluation. These statements were found to contain mathematical errors, and reporting of revenues from user fees did not coincide with amounts reported on monthly revenue statements. It is highly recommended that the Administrative Assistants be required to submit quarterly reconciliations of receipts and expenses in order to provide additional information to the field sites, and to increase the financial management skills of the Administrative Assistants.

#### Revenues

A review was conducted of user fees collected from consultations and drugs charges (1991-1994) at a selected field site. A more detailed discussion of the total amounts recovered and the potential for cost sharing and cost recovery will be discussed in the next section. The analysis of the Monthly Statement of Revenues submitted by the AAs revealed some interesting facts which could be useful for diagnosis and management of the project:

1) As documented in the monthly revenue statement at this site, a growing proportion of revenues collected from fees for service come from fees for consultation rather than fees for drugs. Table P8 illustrates this point. These trends are in spite of changes in policy decisions to increase the fees charged for drugs in 1993 and in declines overall in utilization of field site services which should affect a reduction in consultation charges. These trends need to be investigated further in order to ensure that optimal user fee policies are in place.

2) In this field site, Rs. 680 was collected in 1991 for family planning services as reported on monthly revenue statements. However, in 1992, income is reduced to Rs. 29 for the year. From 1993 onwards, this center reports no income from family planning services. This drop in family planning revenues seen could be due to the separation of family planning supplies into a distinct rotating fund which is reported to the MIS. Unfortunately, insufficient information is available to the evaluation team at this time to assess whether this factors is responsible for these trend. In addition, there could have been a lack of family planning activities in this site during this period, or all family planning activities may have been provided free of charge. There also could have been some non-reporting of income from these services, or some combination of these factors.

Analysis of data contained in financial reports can provide valuable information for project management and provide opportunities for action. Physical separation of financial and technical functions has prevented sharing of valuable information for project management.

3) According to the number of days on which revenues were collected and reported, the number of working days in this field site has declined since 1991 from 19 to 13. Although there are six normal working days per week, the clinics are open to the public five days a week, resulting in 20 working days per month on average. An explanation for this trend could be ethnic strife resulting in closing of the clinic for some working days, although it is thought that this particular community did not suffer from this problem to the same extent as other field sites. While the provision of free care could reduce the overall revenues generated for a particular clinic day, unless all patients receive free care seven out of a regular 20 clinic working days (35% of the time), then this is not likely to be the cause of declines in the number of clinic days as measured by the number of days reporting revenues. The project is encouraged to review these data as well and to arrive at some determination of factors contributing to this discrepancy.

**TABLE P8: ANALYSIS OF REVENUES COLLECTED**  
(selected field site, 1991-93, Rs.)

	1991	1992	1993	1994
Percent of Revenues from Consultations	40.3%	46.4%	60.9%	56.2%
Percent of Revenues from Drugs	52.5%	52.4%	38.7%	42.6%
Percent of Revenues from Lab, FP, and Medical Services	7.2%	1.2%	0.4%	1.3%
Average Number of Working Days per Month in Which Revenues Were Collected	19	15	15	13
Percent of Patients Receiving Free Care	12.8%	16.6%	17.1%	26.5%
Number of Patients Seen per Day	11	10	10	11
Average Revenues from Consultation Fees	Rs.374	Rs. 362	Rs. 597	Rs. 514
Average Monthly Revenues from Drug Charges	Rs. 488	Rs. 408	Rs. 379	Rs. 390

4) According to monthly revenue statements, there has been a substantial increase in the percent of patients receiving free care from 13% in 1991 to double that (27%) in 1994. This increase was not mentioned in either the self-assessment or the annual report for 1993, although it is probably one of the most important threats to sustainability and cost sharing of project

activities. Analysis of this trend needs to receive high priority from the project. The rise in the rate of free care could be influenced by a decrease in the ability or willingness to pay for health services because of rising poverty or dissatisfaction with care. An alternative explanation is that the rise in the percent of free care is an artifact of the reporting system for revenues.

5) The number of patients seen per day is relatively constant (between 10 and 11) according to the monthly statement of revenues. However, this trend does not seem to match the MIS figures of a declining total patient load from 19,921 in 1991, to 11,617 in 1993. Since this analysis is based on revenue statements which report the number of patients seen and those paying fees, this trend highlights a potential discrepancy between what is reported to the financial management system and what is reported to the MIS. Therefore, it is important the project examine and match data from revenue statements and MIS reports for all field sites.

The evaluation team strongly recommends that the field site financial management system be strengthened in the following manner:

1) Although revenues are collected on a daily basis, revenues are transmitted to the CHS Department on a monthly basis. Because most of the field sites are within a 30-minute drive to the central office, it would make better sense to report revenues collected more frequently than once a month. It is recommended that revenue reporting be conducted on a weekly basis at a minimum. This practice is consistent with that for other PHC projects. For instance, for the Dhaka Urban Community Health Programme, revenues from the satellite clinics are collected on a weekly basis.

2) Although there may be a policy of issuing a receipt each time a patient pays for a drug or consultation fee, this book was not available to the evaluation team during field visits, suggesting that policy and practice may be different. It is therefore recommended that a receipt book system be enforced at the field site level, whereby each time a patient pays a fee for drugs or consultations, a receipt is given. This type of system will provide the necessary checks and documentation to ensure that all revenues collected end up in the project accounts.

3) It is strongly recommended that a manual be developed for the field sites which describes the project's system for managing revenues collected, petty cash disbursements, and drug supply, as well as the roles and responsibilities of the administrative assistants. As it stands now, the field directors and community health nurses have limited knowledge of how funds are being managed and resources allocated.

4) A formal training should be conducted of all administrative assistants in double-entry bookkeeping and a ledger system instituted at the field site level. The rationale for this is to be able to track the flow of funds through the field sites in a more thorough manner, as well as to provide further skills to AAs.

5) The petty cash account also needs to be monitored and managed through a double-entry bookkeeping system, which includes documentation of receipts and expenses. In addition, the project should develop standardized quarterly reporting formats for the field-site level in order

to decentralize reconciliation. This type of approach also will help to strengthen the skills of the administrative assistants as well as increase self-reliance of the field sites.

6) Feedback to the field sites on the types of expenditures made, trends in revenues collected, and drug utilization patterns needs to be instituted on a routine basis. This would involve on-going analysis of petty cash funds by the central office, which could easily be the responsibility of one of the administrative staff.

7) The project needs to verify that information reported to the MIS which have financial consequences, such as drug consumption and patient load, match data reported to the financial management system. Unfortunately, because of the splitting of the technical and financial functions within the department, additional efforts are required. For instance, drug consumption patterns need to be evaluated against drug expenditure data at the field sites on a regular basis.

8) The effectiveness of the drug inventory system instituted at the field site level needs to be evaluated. During the matching grant evaluation, community health nurses complained of shortages of important drugs and a lack of knowledge of drug stock position at the field site level. It is recommended that the project explore methods and approaches to inventory management and control of stocks to have a better understanding of the minimum stock position required at the field site level.<sup>19</sup>

9) The role of the Field Director (usually an MD in training) in financial management is to approve of petty cash expenses and sign off on monthly reporting forms. There is significant turnover of Field Directors and many of them interviewed mentioned that the Administrative Assistants informed them of how the financial management system operated, rather than learning about the system from top management directly. In addition, the Field Directors are spending fewer days and hours actually at the field site so that day-to-day operations cannot be entirely monitored by them. The evaluation team suggests that a manual or guidebook on financial management be developed, and that a larger oversight and management role be given to the Community Health Nurse who is present on a daily basis in the field site.

10) Although there has been an effort by the project to decentralize some of the operations of the field sites, in fact, accountability is vertically connected to the administrative section of the project office which impedes the ability of the field site to function as an autonomous unit, internally as well as externally accountable. Since resources collected from the field sites from community contributions are greater than the level of petty cash expenditures, the system seems primed to go one step further to decentralize activities and management so that the field sites have autonomy to generate and manage a larger percentage of their operating costs. If financial management strengthened at the field team level, this would provide incentives to create more self-reliant field sites.

11) The Dhaka Urban Community Health Programme collects revenues from consultations and charges for drugs, but has developed a much stronger management system. It is highly

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<sup>19</sup>Such as Managing Drug Supply, published by Management Sciences for Health, Boston, Massachusetts.

recommended that some type of exchange of ideas and practices between these two projects take place. An ideal forum for this could be the RNP which could focus on revenue generation, cost recovery, and financial management, pending agreement by participants. An alternative would be to invite the Finance Officer of the AKCHP to provide technical assistance in strengthening the financial management of field sites.

*a) Payment of CHWs*

Payment of CHWs appears to be a cumbersome and highly centralized process, particularly when one considers all of the other tasks and responsibilities of the assistant manager related to management of other grants. Furthermore, it is not clear why any stipend amounts would need to be returned at the end of the month if an on-going and accurate record of work attendance is made and the monthly check for CHW stipends made out in the appropriate amount.

The Dhaka Urban Community Health Programme has developed an innovative program for payment of CHWs which could be used or adapted to suit the needs of the Pakistan UPHC Project. First, payment for each health worker is done automatically into a bank account through a wire transfer. Each community health worker can then go individually to the bank and request their own personal funds based on a bank listing of personnel. Second, a pre-specified amount of each monthly salary of the CHWs and of other personnel is saved in a separate, interest bearing bank account. Staff and CHWs are allowed to borrow on this account and each member also receives accrued interest. This type of system has two main advantages: first, it generates a sense of autonomy and independence from the project; and second, it provides each CHW with an independent source of income and exposure to ideas of saving and personal financial management.

Because one of the major goals of the project is to improve management and sustainability, it is strongly recommended that newer and more innovative ways of paying health workers be instituted. The evaluation team realizes that payment of stipends to CHWs has been a sensitive and problematic factor in the implementation of this project. It has been drawn to our attention that dissatisfaction is related to the lack of employee rights attached to payment by CHS. Providing an individual bank transfer may offer the CHWs a sense of greater independence and remove additional obligations from AKU. It would also streamline the process of managing the disbursement of stipends and put control over resources back into the hands of the individual workers rather than the project.

*b) Vehicle use*

The operating costs of a total of eight vehicles, one for each field site, and two for project management, were charged to the Matching Grant between 1991 and 1993, resulting in very high expenditures for the project. A thorough evaluation of vehicle use has not yet been conducted.

For this evaluation, a simple analysis was made of vehicle use at one field site and for one vehicle allocated to project management at the central office. It was found that one-half of

the total kilometers traveled was specifically for transporting the PHC team to the field sites, with the remaining mileage being attributable to other uses.

Because the project sites are located within 30 minutes from the department office, it seems excessive to have one vehicle per field site. In addition, the sagacity of maintaining a separate vehicle for Baba Island activities, and two vehicles for project management needs to be questioned. In order to conserve resources, reduce project costs, and improve the overall probability of sustainability and cost sharing, it is prudent that the department review its use of vehicles for the project vis-a-vis other activities, and appropriately allocate a limited number of vehicles to share in the required level of supervision and logistics for the field sites. The team recommends that resources could be conserved by having one vehicle for several sites.

### 3. Financial Sustainability

In reading the self-assessment and annual reports, management and sustainability issues have been a key focus of the project during the Matching Grant. The project has repeatedly made the diagnosis that project activities are not sustainable. This section describes some of the major efforts by the project to ensure financial sustainability and provides recommendations on steps which could be taken to improve the probability of sustaining project activities.

#### a. Efforts to Ensure Financial Sustainability

The Pakistan UPHC places a great emphasis on cost sharing by the community through user fees for consultations, drugs, medical and surgical supplies, family planning services, and laboratory services. In 1992, the prescribing patterns for drugs and cost recovery experiences of field sites were evaluated by a drug review committee. This committee found 1) varied prescribing patterns, with some field sites utilizing more expensive brand name drugs; 2) inadequate drugs at field sites to treat chronic conditions such as diabetes and hypertension; and, 3) increased unit prices of drugs procured through AKU, which levies an overhead charge on all drugs which is eventually passed onto the consumer. In fact, a survey of wholesale drug markets showed that drugs could be obtained at least 15% cheaper than the hospital pharmacy. However, a decision was made by the committee to continue procuring drugs from AKU, but to explore how quality drugs could be purchased at lower rates. To the evaluation team's knowledge, no further action has been taken on this issue.<sup>20</sup>

In order to improve cost recovery potential of the field sites, the review committee explored several financing options, including 1) selling drugs at cost; 2) selling drugs at average rates; 3) using a fixed fee (Rs. 7) for drugs; 4) cross-subsidizing more expensive drugs by charging Rs. 10 for Group III drugs and Rs. 5 for Group I and II drugs; or, 5) charging fees based on patient load. The committee recommended that consultation fees be increased to Rs. 5 for all field sites. Each field site was allowed to determine its own drug fee policy. Table P9 below describes the range of fees charged for services at the present time.

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<sup>20</sup> See "Drug Review Committee Options and Recommendations", 1992.

Consultation fee increases at Azam Basti and Chanesar Goth were thought to be responsible for declines in utilization rates. Therefore, fees in these facilities were reduced back to their original levels. It would be useful for the project to determine if utilization rates have reverted back after this last change in user fee policy. In addition, Table P11 shows which sites fare better with respect to cost recovery rates as a percent of drug expenditures. From this table it appears that the strategy of Essa Nagri of charging higher rates overall has not been associated with higher rates of cost recovery (70% compared with nearly 100% in other sites). Project staff need to re-evaluate the current prescribing patterns and cost recovery potential of user fee policies per field site to determine if additional costs of supplies or community staff time could be recuperated through this mechanism.

**TABLE P9: PRESENTATION OF FEE SCHEDULES FOR FIELD SITES**

Field Site	Previous Fee	Fee Change	Present Fees
<u>Azam Basti:</u> Drug charges	Rs. 3	Rs. 5 Group I Rs. 10 Group II and III	same
Consultation fees:	Rs. 2	Rs. 5	Rs. 2
<u>Grax:</u> Drug Charges	Rs. 3	Cost price	same
Consultation fees:	Rs. 2	Rs. 5	same
<u>Chanesar Goth:</u> Drug Charges	Rs. 3	Rs. 10	Rs. 5 Group I and II; Rs. 10 Group III
Consultation fees:	Rs. 2	Rs. 5	Rs. 2
<u>Orangi:</u> Drug Charges	Rs. 3	Rs. 5 Group I Rs. 10 Group II Rs. 15 Group III	same
Consultation fees:	Rs. 3	Rs. 5	same



<u>Essa Nagri:</u> Drug charges	Rs. 5 for 3 days Rs. 10 for 15 days Rs. 15 for antibiotics	same	same
Consultation fees:	Rs. 3	Rs. 5	same

In addition, the project in 1990 collected and analyzed socio-economic information for their baseline survey. This information was an input in determining fee schedules for consultations and drugs. The survey found that median family income per month for the *Katchi Abadis* was between Rs. 1,000 to 2,000, with a median average family size of five.

The project has experimented with fundraising in the different field sites. The most successful experiences came from Baba Island where the community organized itself through the Fisherman's Union to raise funds for the community health center. The community in Kanmabad was able to recover the cost of health services in its community health center, largely as a result of the higher standard of living of its members.

Other fundraising activities have been conducted on an ad hoc basis in the other *Katchi Abadis*, e.g. to generate community donations in Essa Nagri for a rehabilitation center in 1993 and a sewing center in 1994. Resources which have been generated through fundraising have been utilized to institute small-scale enterprises.

Other fund-raising activities have been These funds were collected through the efforts of the CMT.

b. Progress to Date

Despite the conclusion by the project that their activities are not sustainable at field site level, the project has not analyzed these issues in a comprehensive manner, nor has the project outlined an action plan for achieving sustainability. The evaluation team believes that it is too premature to conclude that services are not sustainable, particularly since all alternatives and strategies have not been tried.

Since 1988, the amount of community contributions, including user fees, from five field sites exceeds Rs. 700,000 (see Table P10).<sup>21</sup> These contributions are being held in the local currency account of the department, which is a non-interest bearing account.

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<sup>21</sup> Data on user charges and fund raising components were given to the evaluation team in an aggregate form.

Between 1988 and the first part of 1991, Orangi, Grax, and Chanesar Goth experienced a steady rise in community contributions. However, during the current Matching Grant, there has been a decline in these field sites back to 1988 or 1989 levels. The exception is Chanesar Goth, which peaked in 1992 at Rs. 29,756. In contrast, community contributions at Azam Basti have remained relatively constant over the period 1988-1994. Essa Nagri had high rates of community contributions initially, but the annual amounts generated have declined substantially during this Matching Grant. This pattern is curious considering that the CMT in Essa Nagri has functioned since 1991 and has conducted fundraising in both 1993 and 1994.

There has been little documentation as to reasons for the variability in community contributions among the field sites. For instance, why are contributions at Essa Nagri one-third lower than those for Azam Basti? Is the difference due to variation in both the number and type of drugs prescribed? Are there other factors? The team suggests that these questions be looked into by the project.

Although there have been a few discussions with field sites about what to do with these resources, and Grax and Azam Basti have made proposals to use some of their resources, there has been only one memo written on the possible alternatives in mid-1993. The project, however, has no official position on this matter, two months before the end of the Matching Grant. The lack of a coherent policy and action plan for community contributions represents a major oversight of the project, given that the primary goal of Matching Grant was sustainability of services.

Therefore, the evaluation team recommends that a policy position be developed and action be taken on this issue immediately. In addition, the team believes that the communities have lost out on an opportunity to earn interest on their resources since 1988. The team would like to suggest in the future that some attempt be made to render the communities self-sufficient in fund management by placing community resources into separate local, interest-bearing accounts and in training community members in financial management.

**TABLE P10: COMMUNITY CONTRIBUTIONS: 1988-1994**

Field Sites	Orangi	Grax	Chanesar Goth	Essa Nagri	Azam Basti	Total
1988	12,939	8,976	17,320	61,473	36,157	136,865
1989	17,724	14,025	14,507	39,932	33,444	119,632
1990	19,604	18,578	20,864	13,352	28,499	100,897
June 1991	7,335	9,728	11,621	7,180	14,486	50,350
Dec 1991	10,047	12,215	15,732	6,866	17,689	62,549
1992	12,974	18,126	29,756	9,659	35,079	105,594
1993	12,551	14,968	22,919	10,775	36,450	97,663

April 1994	4,584	4,779	3,991	3,682	10,301	27,337
Phase III	40,156	50,088	72,398	30,982	99,519	293,143

Despite the regular collection of user charges at the field sites, the project has experienced limited cost recovery. Table P11 illustrates this point.

**TABLE P11: COST RECOVERY POTENTIAL OF FIELD SITES**

Field Site	Percent of Clinical Cost	Percent of Total Cost	Percent of Drugs Expenditures
Orangi	4.3	1.6	86
Chanesar Goth	7	2.7	118
Grax	5.4	1.9	97
Essa Nagri	3.7	1.3	72
Azam Basti	6.3	3.2	90
Average	5.34	2.1	93

NOTE: These percentages are calculated from cost and community contribution information.

This table shows that only 5% of clinical costs and 2% of direct costs are being covered by user charges and community contributions. However, on average, 93% of drugs costs are being recovered by the project. In Chanesar Goth, more than 100% of drugs costs are being recovered in 1993. This information suggests that the project needs to build upon the cost recovery potential of drugs in the field sites, as well as find ways to reduce the overall operating costs of the centers. Other than reducing the number of CHWs by non-replacement and changing strategies to lane visits, there have been few efforts to contain costs at the field site level. Central office costs have experienced limited measures for containment. In order to ensure sustainability in the future, the project must work toward creating an efficient health center and low overhead costs by CHS.

Based on an annual clinical cost (direct costs only) of Rs. 807,567 (\$26,478) per field site, and assuming an average of 15 working days per month, each field site has a daily operating cost of Rs. 4,486 (\$147). To cover these costs, the field sites would need to see approximately 450 patients per day at a charge of Rs.10 for drugs and consultation. A significant reversal of declining activity would be required in order to cover direct operating costs.

c. Prospects for the Future

In order to sustain health services, both continued demand and efficient supply are required. We have discussed previously how the project could initiate steps toward reducing the costs of services.

The project also needs to explore why utilization rates for curative services are falling and to identify corrective steps to increase market share of services. For instance, it was unfortunate that the project did not evaluate what happened to utilization once fee increases were instituted. It would be useful to know who in the population was prevented from seeking services, compared to who continued to receive health benefits.

What is the role of the UPHC services in the medical marketplace in the urban areas? The project should map the communities to document the range and variety of health care providers to gain a better geographical understanding of the market for health care services, and health care utilization patterns should be studied.

The evaluation team would like to suggest that the department needs to know its communities better in order to change perceptions that the health services are owned and run by AKU. From an economic viewpoint, the project should evaluate the real earning power of urban poor on a per capita basis and the distribution of income within the communities that the UPHC serves. A simple analysis of household income in Essa Nagri revealed that the median annual per capita income was Rs.3,120 (\$103), but that there were some individuals in the population with a very high earning power, so that the distribution was skewed.

The Dhaka Urban Community Health Programme has some experience with cost recovery and income generation. It is a strong recommendation of the evaluation team that these experiences be shared with the UPHC Program. For instance, the Dhaka project charges different fees for registered and non-registered populations. Perhaps a similar system could be instituted in the field sites in Karachi to help cross-subsidize the provision of care to the target population.

An analysis of present drug consumption patterns should be conducted in order to arrive at drug prices which are competitive with other alternatives in the communities, and which will provide the maximum cost recovery potential for the field sites. Charging a flat rate for groups of drugs may not be the optimal strategy, particularly if the unit prices of some of these drugs are higher relative to the rest of the group. Further, since the price of drugs may be cheaper outside the AKU system, the project needs to develop alternatives.

One strategy which could be adopted is to expand the range of drugs provided at the centers as well as the range and hours of service. This approach could attract more patients and improve perceived quality of care.

Because of the variable track record in generating and managing revenues at the field site levels, it is the opinion of the evaluation team that instituting health insurance schemes would be premature. In addition, the declining trend in utilization rates is a prime threat to sustainability

of any insurance scheme, and until the underlying reasons for this decline are identified and steps taken to reverse this trend, a prepayment or insurance system will not improve chances of financially sustaining health services.

Finally, the evaluation team recommends strongly that the project conduct a Sustainability Analysis using Module 9 of the PHC MAP Module series, based on the trends in project costs over time. The project needs to conduct both a worst and best case scenario, in order to have a realistic picture of the probability of sustaining services and to identify threats and opportunities for sustainability.

Based on the results of the Sustainability Analysis, the project needs to outline a detailed plan which would contain a list of 1) the types of analyses which need to be performed; 2) strategies for overcoming obstacles for sustainability; and 3) indicators of sustainability, such as cost recovery ratios. The plan needs to be action oriented with time lines and roles and responsibilities assigned to project staff members. Evaluation of the accomplishments of the action plan will assist the project in determining the degree of sustainability for project services.

#### 4. Conclusion

Although the self-assessment and annual reports state that improving project management, cost sharing, and sustainability issues will have been a key focus of the project during the Matching Grant, the project is a long way from achieving these objectives. Part of the reason for this is the dual purpose of the project to serve the teaching interests of the Aga Khan University, as well as to implement an innovative PHC Project in urban areas.

As the project is structured within the Community Health Services Department, there are few incentives and opportunities to implement the project in the most efficient manner possible. This is because there is no project manager on staff who has the responsibility of managing both the budget (inputs into the project) and the implementation of strategies to achieve outputs. These functions are separated within the department so that the project coordinator has little control over the resources he needs to get the job done. In addition, financial control, and subsequently power, rests in the hands of the assistant manager and his staff who are involved in the wide range of activities of the department.

Furthermore, analysis of management indicators, developed either through the cost analysis, or from financial statements and vehicle logbooks needs to be undertaken by project staff on an ongoing basis. More in-depth analysis will reveal details of project operation as well as to provide information on how to reduce costs, improve and strengthen management, and improve overall efficiency. Revenue analysis from field sites is also an important step towards sustainability.

#### H. POLICY DIALOGUE AND WIDER IMPACTS OF PROJECT

The reputation of AKU and the CHS are generally excellent in Pakistan. Thanks to the UPHC program, and the AKU Scholars program, AKU CHS was recognized in 1993 by the

Pakistan Medical and Dental Council as a leader in and model of population-based training of doctors. Along with Dow and Baqai universities, AKU is an important resource to the many other health educational institutions in Pakistan for development of their faculties. The Community Health Nursing program is a unique pioneer, and remains an important asset in Pakistan. The CHS model for training physicians in community health has been formally recognized as a pattern to emulate, and receives trainees--into the UPHC services--from many other institutions.

## **LINKAGES**

One of the Objectives (no. 7) of the grant application for Phase III relates to developing a prototype of a PHC system involving collaboration with government and NGO's engaged in Community based activities and establishment of reliable linkages for technical support and clinical referrals.

The means of verification of the objective was stated as dialogue/discussion with government agencies that are involved in this collaborative effort.

As a prototype the PHC sites were to serve as models for other Urban PHC sites in Pakistan, particularly for training sites attached to medical and nursing schools. For this reason the project linkages/interactions were examined for linkages at the following levels:

- Local
- District
- Provincial
- National

## **LOCAL LEVEL LINKAGES**

Regarding government agencies, in all project areas there was useful collaboration with the Expanded Programme for Immunization (EPI). Vaccines used by the PHCs were obtained from EPI. The clinic at Azam Basti started a training programme in collaboration with Minister of Special Education to train mothers in taking care of their handicapped children. Presently the activities are suspended as funds available with the project have run out.

Collaborative linkages with the Karachi Municipal Council, which eventually will be essential if local government is to participate in sustaining the UPHC service patterns developed, failed to materialize in the 5 Katchi Abadis. Examples of linkage with other government health services were missing except in the Macro Project, which is still being developed. At Baba Island, the link up with Karachi Municipal Corporation (KMC) and the District Health Office for referral appears to have been entirely on the initiative of the community.

The linkages being explored for the Macro project are an encouraging move. Here the project team is actively engaged in setting up a Community Health Management Team bringing

together a number of groups working in the community and different Government agencies at the Municipal, Provincial and Federal levels.

Unfortunately, UPHC has failed to identify and influence the practices of the numerous other providers of health services in the 5 Katchi Abadis. They provide something in the order of 80%, and probably a recently increasing %, of the curative care received in the project areas. This has mortal implications for such conditions as diarrhoea and respiratory infection, and appears to be an important constraint on the extent to which the UPHC services can further lower mortality. The designer of the original health services model for UPHC, Dr. J. Bryant, acknowledges that it was a deficiency in the model to attribute only passing interest to this critical component of the health ecology of the squatter settlement populations. He noted that preliminary work on this neglected problem was initiated by Dr. Inayat Thaver, now at Baqai U.. However, the evaluation team saw neither Dr. Thaver nor his work, and the subject of the relative roles of providers of care other than UPHC does not appear among the papers published or presented at meetings, 1991-1994.

### DISTRICT

Linkages with public sector health services--municipal and Sindh government--have not been developed. No explanation for this was available. However, in the Macro project, the District Health Officer of Sindh government and the Medical Officers of the Zonal as well as the Central Municipal Corporation appear to be actively associated with the planning of the project. Unfortunately, the evaluation team did not have time and was not scheduled to meet these authorities. The Macro PHC project is also linked with the Family Health Project (FPH) of the Government of Sindh.

### PROVINCIAL

The CHS department has worked closely with the Department of Health, Government of Sindh in developing a collaborative health systems research and development programme in Thatta District. In Talking with the staff of this project it was noted that though the Urban PHC project and the Thatta project have no direct links with each other, the experiences gained from the Urban PHC work have helped in the planning and implementation of the PHC services in the Thatta project. This is a very important spinoff as the Thatta project is now being used as a model for other districts of Sindh.

Again, the experiences gained by the department in Urban PHC and the Thatta project led to the development of the Family Health Project funded by the World Bank. The department has been appointed as the Technical Advisors to the Family Health Project by the Sindh Government.

In our meeting with the NGOs there was a representative of Pakistan Voluntary Health and Nutrition Association (PAVHNA) a consortium of NGOs which had been working with some of the field sites in providing education about nutrition. Unfortunately, the evaluation team obtained no contact with nor information about the AKF funded NGO Support Group, which was mentioned subsequently by a reviewer of the draft evaluation report. The extent of the

collaboration of UPHC with NGOs could not be evaluated adequately as the time for discussions was too short, there were no direct interviews of NGO personnel and the self assessment documents make no mention of it.

### NATIONAL

The most significant and valuable interactions that the project staff have had is at the Federal level. Members of the staff have been included as part of the government delegation to the WHO Assemblies where they got an opportunity to present their Urban PHC experiences.

The new pictorial MCH card developed from the experience in the project field sites has formed the basis of the MCH card now in use all over the country.

The project staff also took the lead in conceptualizing and arranging two meetings at the national level. The first was organized in association with the Pakistan Medical Research Council and was on Health System Research (HSR). The second meeting was in association with the Pakistan Medical and Dental Council, the organization which regulates medical and dental educational standards and practice. The topic of this meeting was National Priorities in Health Sciences Education. Aga Khan Medical College (AKMC) was the first to introduce community based training as part of undergraduate medical and nursing education. The focus of the meeting was on the prime importance of community based teaching and to share the AKMC experience with the other 18 medical colleges of Pakistan. So far only Baqai Medical College, which has recently been set up as a private institution, and perhaps Dow, has a meaningful community oriented training programme. Both these meetings have used the experiences of the AKMC Urban PHC field sites in training and HSR research as models for use by other institutions in Pakistan.

Members of the PHC team have also participated in the meetings of the National Steering Committee for Health which is charged with the implementation of the National Health Policy.

In summary, the linkages that the project and its staff have established at the Provincial and Federal level have been very strong and important, but the linkages with other service providers at the local level have been poor. The opportunity of interacting with the same vigor with the local health providers as was demonstrated with provincial and federal authorities was only noticeable in the planning of the Macro project.

#### **I. PROJECT RELATIONSHIP TO RNP**

(Please see section IV)

#### **J. PROJECT RELATIONSHIP TO PHC MAP**

From the time of the field testing of prototypes of the PHC MAP modules in 1991, there have been multiple contributions of these materials to the UPHC program and the mission of CHS. Most of these have been described in other sections:



-module 1 promoted analysis, rethinking and revision of the UPHC program in all sites in 1991

-module 2 prompted survey and analysis of mothers' retention of child growth cards at Chanesar Goth: 85% of mothers could show card, while 87% correctly knew the change in weight of their child, contrasting with CHW impression that mothers lost the cards. This led to abandonment of double records and to a single mother-retained record.

-modules 1 and 2 used in Azam Basti leading to a survey on and then promotion of a program to reduce acute respiratory infection mortality

-several modules used to develop Quality Assurance Checklists for the work of community health nurses and community health workers

-module 5 used to develop a verbal autopsy system in the PHC services in Chitral

-a number of modules, and modifications of them, being used in ongoing education of medical students and nurses by CHS staff

-prototypes of modules 8 and 9 were pretested in Karachi. Module 8 was partly based upon methods already in use in UPHC.

## **K. OVERALL IMPRESSION AND SUMMARY OF BRIEF RECOMMENDATIONS**

### **1. Overall Impression**

The reputation of AKU and the CHS are generally excellent in Pakistan. Thanks to the UPHC program, and the AKU Scholars program, AKU CHS was recognized in 1993 by the Pakistan Medical and Dental Council as a leader in and model of population-based training of doctors. Along with Dow and Baqai universities, AKU has become an important resource to the many other health educational institutions in Pakistan for development of their faculties. The Community Health Nursing program is a unique pioneer, and remains an important asset in Pakistan. The CHS model for training physicians in community health has been formally recognized as a pattern to emulate, and receives trainees--into the UPHC services--from many other institutions.

The UPHC staff is as an excellent, motivated, hardworking team. However, there have been a number of key staff members who have left in the past year. The person responsible for Community Process in UPHC was diverted to a rural project, and has not been replaced. CHS currently does not have on staff a highly trained and competent person responsible for community process despite the current main emphasis on community planning and management in the macro project.

Increases in community planning and management for PHC--recommended in the 1990 MG Evaluation and planned as a major output in the 1991 MG application logframe--have been

very limited. UPHC efforts to improve community process in the katchi abadis seem to have been limited. An important difficulty in mobilizing public support in UPHC has been the tenuous role of women in decision making. Although services are primarily directed at children and their mothers, few women are active participants on the Community Management Team. In Essa Nagri, for example, women are unable to attend meetings because they are held at night, and thus do not have active roles in decision making.

Collaborative linkages with the Karachi Municipal Council, essential if local government is to participate in sustaining UPHC service patterns, failed to materialize in the five *Katchi Abadis*. In addition, it does not appear that the project has created solid and sustained linkages with most of the other NGOs that would be critical for integrating development and health activities.

In the service areas, unreplaced personnel, cutbacks in community outreach, and continuous decline in clinic visits over the past three years in the UPHC gave the evaluation team a general impression of progressive decline of the UPHC endeavor.

The MIS has led to important spin-offs, such as modifications in the National maternal/child card, and continuing CHS input into development of a National Management Information System.

An excellent verbal autopsy system has been further developed. This has led to useful insights on adult, as well as child, mortality such as the excessive burn death rates of women. However, patterns of infant and childhood mortality during the past three years vary among the different service areas, for reasons the project has yet to explain.

UPHC produced a detailed and thoughtful self assessment report which pointed out most of the program weaknesses identified in this evaluation report.

Detailed cost analyses of the UPHC project have been conducted by CHS since 1990. However, they have been little utilized as tools to improve managerial decision-making in the project. A number of specific ways to accomplish this are suggested in the Cost Analysis section.

As in the other two PHC projects, no follow-up population survey was conducted for comparisons with the baseline survey or to validate current morbidity assessments made by CHWs during house visits. Morbidity estimates derived from the latter are presumed by project staff to be considerably and irregularly underestimated. Thus there is no reliable tracking of morbidity, and there have been few validations of CHW reporting.

Below are listed the evaluation team's recommendations, briefly stated. For rationales, qualifications and details of the fully expanded recommendations, please consult the text above.

## 2. Summary of Brief Recommendations

1. The project should examine, in a scientific manner, the reasons for the steady decline in utilization of clinic services and develop strategies to overcome this problem.
2. Communities should be given the opportunity to take greater responsibility in operating the PHC programmes.
3. UPHC should identify and develop a systematic program to upgrade the practices of the numerous other providers of health services in the 5 field sites.
4. Greater effort should be addressed to the tasks of computerizing, analyzing, interpreting, writing up, and sharing the data and findings of the UPHC project.
5. UPHC should use the reports of the house visiting CHWs to estimate selected morbidity rates of a few key conditions, and discuss the results and their implications with the CHWs, to improve program management, data quality, and CHW morale.
6. The GM/P Projects should re-analyze their results by disaggregating their data according to age.
7. UPHC should formulate specific hypotheses and protocols to determine whether the children increasingly not weighed are those in most or least need of it, i.e. whether it is preferentially the poor and high risk children who are not registered, not brought to weighing posts, thus improving overall statistics of those weighed by dropping from sight. UPHC should also consider the necessity of carrying out representative household surveys to determine which children are not being seen away from their homes.
8. A reasonably comparable population, but without GM/P, should be identified for examination at the start and end of a period of interest to compare changes in relative proportions of malnourished children with the changes that resulted from the GM/P activities in the project area.
9. UPHC should consider increasing maternal participation in the GM/P programs, perhaps in collaboration with the other projects through the RNP.
10. The apparent spikes of diarrhoeal deaths that appeared in both 1990 and 1992 should be investigated further, including examination of other Karachi statistics to confirm whether there were similar rises in other areas of the city at the same times.
11. UPHC should use its data epidemiologically to:
  - 11.1 calculate and track a selected number of cause-specific infant mortality rates, based on livebirths of the same year, and 1-4 death rates, based on average 1-4 olds present, using its population figures to form denominators, and its counts of deaths by cause from verbal autopsies to prepare matching numerators.

- 11.2 investigate the patterns of morbidity and mortality among adults and children in 1990, 1991, 1992, and 1993 to determine if there is evidence of an epidemic disease in that period
- 11.3 examine the pattern of diarrhoeal main cause deaths among the clinics to see to what extent they may explain the differing patterns of child and infant mortality trends among them.
- 11.4 do periodic household surveys to determine whether mothers know, value, make and use ORT correctly for diarrheic children
- 11.4 consider creation of an independent, trained surveillance team to measure and track morbidity in the catchments.
12. A follow-up population based survey should be conducted to validate morbidity and mortality reporting in the MIS, and to provide a point of comparison with the population survey of 1986.
13. Produce a written plan of action for dealing with ARI in all current UPHC and in the MACRO catchments.
14. CHS should provide technical assistance to the Essa Nagri CMT and CIT in developing an evaluation plan that will help them assess their progress, estimate effectiveness, and revise strategy for their service programs.
15. CHS should accord high priority to acquiring in-house, qualified professional expertise in community process and qualitative research methodologies.
16. Protocols should be designed to scientifically determine the costs and effects of the different ways of organizing community and CHW outreach services with which UPHC is experimenting.
17. Greater effort should be addressed to the tasks of computerizing, analyzing, interpreting, writing up, and sharing the data and findings of the UPHC project.
18. A follow-up population based survey should be conducted to validate morbidity and mortality reporting in the MIS, and to provide a point of comparison with the population survey of 1986.

#### Costing, Financial Management, and Financial Sustainability

19. The project is encouraged to continue using total and unit cost analysis as a management tool. It is recommended that future analyses include trend in unit costs by year, evaluation of unit costs by level of output for each level of health activity, and comparison of growth rates of costs by line item for each field site and the project overall. Further, the project could explore

additional ways of organizing and presenting cost analysis results in order to maximize their use for management.

20. In addition, the project is encouraged to develop a series of management indicators to assist in identifying areas where costs could be conserved and effectiveness improved, such as: 1) the number of contacts per health worker per day; 2) the average duration (minutes) for a clinical contact or house visit; 3) vaccine and drug wastage rates; 4) plots of unit costs over time and graphs of average costs by field site; 5) ratio of vehicle costs to vehicle depreciation costs; 6) ratio of field staff costs to all other staff costs; 7) per capita drug expenditures; and 8) the distribution and range of time spent by different types of health workers per site per activity. It is recommended that project staff review a recent UNICEF manual entitled, Cost, Resource Use and Financing of Primary Health Care, A Practical Manual for further elaboration and ideas.

21. The project should re-evaluate the distribution of health workers' time to update the total and unit cost analysis performed for this evaluation. Because of the resources and time required for another observation analysis, it is suggested that a diary method be used over a period of one month to collect base information.

22. The evaluation team recommends adding a section on conclusions and recommendations for health project management in the 1991 Cost Analysis report and submitting it for publication. In addition, the project needs to have more written documentation of how costs were constructed to make assumptions clearer, and to leave a written legacy of cost analysis for the project.

23. In order to determine whether the Pakistan UPHC field sites represent a cost-effective way of providing PHC services, it is important to compare the findings of the cost analysis with cost estimates of government services or those provided by other NGOs.

24. The project should continue to explore reasons for differences in unit costs among the field sites, to identify areas where project costs reduced and program outputs increased. In this manner, the project will be able to determine which delivery modalities are the most cost-effective.

25. The evaluation team strongly recommends that revenue reporting be conducted on a weekly basis at a minimum. This practice is consistent with that for other PHC projects. In addition, the receipt book system needs to be enforced in practice at the field site level.

26. It is strongly recommended that financial management of field site activities be decentralized to the greatest extent possible, in order to reduce dependency upon AKU, to strengthen the skills of field site workers in financial management, thereby increasing the potential for sustainability of health services in these communities. To accomplish this task, it is suggested that the project a) develop a manual or guidebook for the field sites which describes the project's system for managing revenues collected, petty cash disbursements, and drug supply, as well as the roles and responsibilities of the administrative assistants and other field site personnel in this system; b) conduct formal refresher training of all administrative assistants in double-entry bookkeeping and a ledger system instituted at the field site level for monitoring the petty cash account; c) develop a standardized quarterly reporting format for the field-site level in order to decentralize

reconciliation; d) provide routine feedback to the field sites on the types of expenditures made, trends in revenues collected, and drug utilization patterns; e)

27. In order to strengthen project management, the project needs to verify that information reported to the MIS which have financial consequences, such as drug consumption and patient load, match data reported to the financial management system.

28. The effectiveness of the drug inventory system instituted at the field site level needs to be evaluated.

29. The project needs to explore giving a larger oversight and management role to the Community Health Nurse who is present on a daily basis in the field site.

30. In order to conserve resources, reduce project costs, and improve the overall probability of sustainability and cost sharing, it is prudent that the department review its use of vehicles for the project vis-a-vis other activities, and appropriately allocate a limited number of vehicles to share in the required level of supervision and logistics for the field sites. The team recommends that resources could be conserved by sharing one vehicle for several sites.

31. The project needs to examine and document reasons for the variability in community contributions among the field sites and by year.

32. The lack of a coherent policy and action plan for community contributions represents a major oversight of the project, given that the primary goal of Matching Grant was sustainability of services. The evaluation team strongly recommends that a policy position be developed and action be taken on this issue immediately.

33. The project should place all community contributions into an interest-bearing account.

34. The evaluation team would like to suggest that the department needs to know its communities better in order to change perceptions that the health services are owned and run by AKU. The project should evaluate the affordability of clinic services in these communities in order to judge better cost recovery and community financing potential.

35. The project needs to explore alternatives for cost recovery and for generating resources to sustain the project. It is strongly recommended that the project learn from the Dhaka Urban Community Health Programme in these matters, perhaps through a future RNP.

36. A re-analysis of drug consumption patterns should be conducted in order to arrive at drug prices which are competitive with other alternatives in the communities, and which will provide the maximum cost recovery potential for the field sites. Charging a flat rate for groups of drugs may not be the optimal strategy, particularly if the unit prices of some of these drugs are higher relative to the rest of the group. Further, since the price of drugs may be cheaper outside the AKU system, the project needs to develop alternatives.

37. The project should consider expanding the range of drugs provided at the centers as well as the range and hours of service. This approach could attract more patients and improve perceived quality of care.

38. The evaluation team believes that instituting health insurance schemes would be premature. In addition, the declining trend in utilization rates is a prime threat to sustainability of any insurance scheme, and until the underlying reasons for this decline are identified and steps taken to reverse this trend, a prepayment or insurance system will not improve chances of financially sustaining health services.

39. Finally, the evaluation team recommends strongly that the project conduct a Sustainability Analysis using Module 9 of the PHC MAP Module series, based on the trends in project costs over time. The project needs to conduct both a worst and best case scenario, in order to have a realistic picture of the probability of sustaining services and to identify threats and opportunities for sustainability. Based on the results of the Sustainability Analysis, the project needs to outline a detailed plan which would contain a list of 1) the types of analyses which need to be performed; 2) strategies for overcoming obstacles for sustainability; and 3) indicators of sustainability, such as cost recovery ratios. The plan needs to be action oriented with time lines and roles and responsibilities assigned to project staff members.

40. The project needs to develop long-term working relationships with other NGOs and organizations to tackle the inter-disciplinary nature of the health and development work of the project. Rather than utilizing NGOs in a time-limited and activity-specific manner, the project should explore ways to bring about lasting partnerships within the communities it serves.

## VII. MOMBASA PRIMARY HEALTH CARE PROJECT, MPHC KWALE DISTRICT, KENYA

### Project Description

The MPHC project area--the three Locations of Mwavumbo, Kasemeni, and Mtaa in Kwale District--were identified for support by Kenya's District Health Management Team (DHMT) and AKHS, Kenya in 1987. The approximately 49,000 persons in these locations are quite poor, mostly farmers working at a barely subsistence level. All suffered unexpected hardships during the past two years because of severe drought and inflation.

The population in this area was judged to have especially poor health status, limited health-service provision and accessibility.

There are four government clinics in the project area, each manned by a nurse, and two of them with a public health technician for limited outreach and promotion in the immediate area around the facility. A number of hospitals operate in Mombasa, at a distance of 15 to 50 miles from the 58 villages in the MPHC catchment, or in Mnango at about 30 miles.

The goal of MPHC is to achieve improvements in the health status of people in the project areas with emphasis on young children and women of child bearing age. Its means of achieving that goal are to expand coverage, increase effectiveness, and test new organizational models for Community Based Primary Health Care (CBPHC). MPHC states its three basic objectives to be:

- i) establish CBPHC in the three locations
- ii) improve maternal and child survival through PHC
- iii) establish a practical, accurate, reliable MIS for PHC

MPHC staff have not undertaken to provide direct health services in fixed health facilities to this population, as UPHC and AKCHP have done in their catchments. Rather, MPHC has mainly relied upon the government clinics and programs, and other existing providers, such as TBAs, to provide the basic services, including immunizations, curative drugs and contraceptives. In addition, however, MPHC has run a decreasing number of mobile clinics--5, 3, 2--respectively, in the each of the past three years, in which health education, growth monitoring and promotion, and curative services with paid drug distribution are provided.

The special mission of MPHC has been to try to increase the capacity for health maintenance and self-reliance of villages, villagers, families, and community organizations through discussion, self-discovery, education, and training plus assistance in mobilizing certain basic minimum needs such as producing food, obtaining water, having safe home deliveries and establishing community based essential drug sellers. MPHC has also labored to improve the quality and availability of the services of those other providers, by assisting them with training, some transportation, some equipment, health education in the villages, and some follow up of defaulters.



As project implementation progressed, MPHC observed that lack of access to safe water and adequate food was one of the major factors that continued to impede the communities' ability to improve their health status. The continued efforts of MPHC's water development projects and farmer "demonstration plots" have been designed to overcome these obstacles by improving the economic and food production potential of these communities.

The extremely poor Duruma population in these drought prone locations is well known to be suspicious, insular and especially difficult to mobilize. The team that evaluated the work of MPHC in 1990, at the end of the previous matching grant, noted how well the MPHC had done in beginning to mobilize these communities, several using community process skills they had acquired in the earlier Kisumu project in Western Kenya.

The MPHC project goal has been to increase self reliance by continuing to raise Primary Health Care awareness in all 58 villages and thereby maintain active participation of about 70%, with emphasis on the passive/slow 20 villages. In so doing, MPHC have attempted to develop and use indicators to measure their progress in the qualitative work of community mobilization.

The MPHC program has emphasized the following:

- The creation of health awareness in the community and the empowerment of the community to demand acceptable health services.
- Strengthening of the government of Kenya and local Health Sectors management capability for them to assume responsibility for a more efficient and effective delivery of health care and to respond supportively to community demand.
- Focusing intersectoral action and inputs on community development priorities of the project area.
- Promoting low cost approaches of CBH-PHC organization and management and channelling scarce resources to priority health needs; this included maximizing community participation and exploitation of local resources.
- Creating capacity at village level for management of PHC activities through training community members, group leaders, TBAs, THs, and other community based workers or resource people.
- Applying innovatively the lessons learnt from the Kisumu PHC Programme.

## **A. ACHIEVEMENTS COMPARED TO ORIGINAL OBJECTIVES AND TARGETS**

### **1. Tables**

Objectives and targets set in the 1991 MG application are shown in the following tables, as well as the results actually obtained, followed by brief comments on the progress evidenced. If different indicators were used subsequently by the project, they are shown in parentheses.

### ACHIEVEMENTS IN THE MOMBASA PRIMARY HEALTH CARE PROJECT, 91-94

AREA FOR IMPROVEMENT IN MPH	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
<b>COVERAGE:</b> PHC/MCS PROGRAMS ACCESSIBLE TO MORE PEOPLE	-PHC/MCS coverage of target population: 40-->80%	-unknown	-no follow-up of 1990 demographic survey -4/94 annual HH survey not yet analyzed
	-population covered constant at 48,500	-44,435	-7-10% HHs not covered as no one home on repeated visits
<b>HEALTH STATUS:</b> LOWER DEATH & DISEASE RATES; HIGHER PROTECTION	-IMR: '91 122/1000 LBs -MMR: '91 6/1000 Bs	- unknown - unknown	-source of '91 estimate not cited: ?'90 survey? -not measured in project
	-cause-specific death rates (measles, diarrhoea, ARI): not specified	-not available	-not measured
		-(av. # ann. diarrhoeal episodes per child) '89 6.2 '92 5.6 '93 5.7 '94 10	-'94 rise in drought -this indicator is not changeable by the program in the short term
	-% 12-23 mo. children within normal wt./age: 42-->80%	-(% 0-59 mo. who are low wt./age): '89 35% '92 41% 6/93 36% 4/94 .not asked	-indicator changed -no progress, due to drought & economics -not asked 4/94
<b>PROVISION &amp; USE OF KEY SERVICES</b>	-% <3 y.o. weighed regularly: 40-->80%	-(% <2y.o. weighed 4+ per year): '90 62% '92 41% 6/93 64%	-indicator changed -recovery of earlier weighing coverage

AREA FOR IMPROVEMENT IN MPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
	-	-(% children not weighed): '92 37% '93 33% '94 12% mid-94 5%	-new indicator -good progress in weighing coverage
	-% <5 y.o. immunized: 62-->85%	-FIC 84% in 6/93	-rest of Division only 48%
		-(% 12-23 mos. fully immunized, [crude data]): '89 80% '90 80% '92 82% 6/93 84%	-high levels of immunization achieved and maintained -other data [COSAS] shows some problems with timings
		-(% parturients immunized against tetanus): '89 85% '92 78% '93 77% '94 87%	-new indicator -high initial levels due to accelerated EPI program prior to MPHC project
	-% pregnant attending PNC classes 3+/yr: '90 79%-->90%	-(% preg. who got ANC at least once): '87 87% '92 98% 6/93 97% 4/94 97% -(%preg. who got ANC 4+/yr): 6/93 81%	-indicators changed  -ANC use high in target population
PROVISION & USE OF KEY SERVICES		-(% deliveries by trained attendant): '89 18% '92 22% 6/93 45% 4/94 13% -(% deliveries unassisted): '92 24% '93 9% '94 4%)	-indicators followed that were not in MG application  -good progress in coverage of home deliveries through training of TBAs

AREA FOR IMPROVEMENT IN MPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
	-current users of family planning: 9.8%-->15%	-(% WRA using reliable FP method): '89 10% '92 17% 6/93 23% 4/94 27%	-rapid progress in FP use, much exceeds original objective
TRAINING	-train/retrain: CHOs 8 HDC members 18 CHWs 125 TBAs 60 shopkeepers (for CBDD) 20 Trad.Healrs. 10 school teach.96	-total trained by end 1992:  -information not available to team by original categories: CBHWs 431 TOTs 59 teachers 53	-training targets exceeded -categories trained changed with changing strategy of program -training done for HWs from other areas, sponsored by UNICEF
HEALTH PRACTICE & KNOWLEDGE IN FAMILIES	-methods for better nutrition encouraged	-(%mothers breast feeding >18 months): '89 65% '92 84% 6/93 93% 4/94 98%	-new indicator -good progress in lengthening duration of breast feeding
HEALTH PRACTICE & KNOWLEDGE IN FAMILIES		-(%babies given supplementary foods by 6 mos.): '89 31% '92 81% 6/93 93% 4/94 98%	-new indicator -rapid rise in supplementary feeds <u>reported</u> by mothers (?has it been observed?)
		-(% mothers aware of all 6 immunizable diseases): '89 1% '90 10% '92 8% 6/93 20% 4/94 16% reported by a reviewer	-good progress, but usefulness of this indicator unclear; 4/94 survey does not appear to be coded to yield this indicator
		-(% newborns with sibling <2 yrs.): '89 10% '92 4%	-pertinent indicator, good past progress, but not updated

AREA FOR IMPROVEMENT IN MPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
		-(%WRA naming at least one FP method): '89 37% '92 78% 6/93 66% 4/94 54%	-knowledge of FP methods increased in prior MG period, but declined in current period
		-(% HH with water supply >30 minutes walk): '89 35% '92 28% 6/93 29% 4/94 27%	-slight progress from '89 to '94
		-(% HH with pit latrines): '89 33% '90 40% '92 61% '93 66% 4/94 57%	-good progress reported, but unusually heavy rains in 1994 led to collapse of latrines
<b>HEALTH PRACTICE &amp; KNOWLEDGE IN FAMILIES</b>	<p>-% mothers who can demonstrate proper preparation and use of ORT</p> <p>-% mothers who can interpret growth monitoring info.</p> <p>-recognition and treatment of ARI</p>	<p>-(%mothers who would treat child with diar. at home with ORS or more fluids or SSS or breast feeding): 4/94 78%</p> <p>-correct responses: 4/94 46% if UP " 36% if DOWN " 27% if ZIGZAG " 18% if STATIC -unknown</p>	<p>-these indicators were cited in logframe, but apparently not measured in MPHC until 4/94 household survey</p> <p>-borderline GM curves are harder for mothers to interpret</p>
<b>RESPONSIBILITY OF COMMUNITIES FOR HEALTH ACTIVITIES INCREASED</b>	-villages that formed health committees: '91 26/51=51%	'92 40/51=78%	-good progress despite dropouts

AREA FOR IMPROVEMENT IN MPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
		-(villages with active health committees): '93 27/51=53% -(villages reached and mobilized): '94 58/58= 100% -(villages mobilized who are actively participating): '94 44/58= 76%	-current data from MPHC Self Assessment report; the multiple criteria developed to assess participation are innovative; the evaluation mission was too brief to permit confirmation of the reported results
		-(community leaders remaining active in MPHC over the number trained): 47/78=60%	
		-(no. of Project Implementation Committees meeting regularly) '94 3/3 = 100%	
		-(schools active in child-to-child program): '91 19 '92 26 '93 "all 26 primary and 3 secondary schools mobilized and participating"	-innovative program; well done in difficult area
<b>RESPONSIBILITY OF COMMUNITIES FOR HEALTH ACTIVITIES INCREASED</b>		-(Community Based Distributors of Drugs [CBDDs] functioning): '94 40	-important rise in access to drugs of dispersed householders
<b>LOCAL FINANCING OF PHC</b>	-please see section G below	-please see section G below	-please see section G below

AREA FOR IMPROVEMENT IN MPHC	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
PHC IMPLEMENTATION CHANGES DUE TO RNP AND PHC MAP	-increases in innovation; knowledge exchange; availability and use of information; planning and management capabilities; quality of plans, schedules, budgets, guidelines; supervisory skills; monitoring and evaluation procedures	-impacts of RNP or PHC MAP were not identified in the MPHC Self Assessment report; evaluator interviews with MPHC staff yielded some insights	-for further specifics, please see sections E, F, I, and J below
INCOME GENERATING ACTIVITIES	-feasibility studies of, and technical assistance to, Income Generating Activities (IGAs)	-(farmers trained in land preparation): '94 175 -(farmers trained in ox plowing): '94 131 -(pairs of oxen prepared): '94 49 -(ox plows loaned to farmers): '94 50 -(average maize production): '92 2500kg/hct. '93 482 kg/hct. '94 unknown	-these project indicators correspond to major utilization of MPHC staff time  -fall in '93 maize production due to drought and wrong seed; non-participants got 1550kg/hct.

## 2. Comments on Tabulated Comparisons

There has been an impressive increase in use of reliable family planning methods.

Targets have been achieved for immunization of children against EPI diseases and mothers against tetanus, as well as for deliveries by trained attendants, contact with and mobilization of villages for PHC activities, and of schools for the child-to-child program. However, there has been no progress in reducing malnutrition. Chronic shortage of food has driven the MPHC staff to promote agricultural innovation, hence the last indicators, developed by MPHC staff, to monitor progress in food production.

It is evident that there is no tracking in the MPHC of mortality or morbidity of any kind, including those due to malaria, diarrhoea or ARI, the main infectious causes of death. The reasons for this are discussed in section F (MIS) below.

The large number of indicators of community processes and of family knowledge and practices used by the MPHC team reflects their focus and close working relationships with their beneficiary communities.

It is notable that a number of the indicators used in the MG application logframe and the "Country-specific Program Activities" section have not been measured in the MPHC project, at least as indicated among the 'key indicators' in the April 1994 MPHC "Self Assessment". Also, that most of the indicators that were measured in MPHC did not appear in the MG application; these are indicated by being enclosed in parentheses in the third column of the table above. This discordance, between what was ostensibly targeted and what was actually measured, was also noted in the 1990 evaluation of the previous matching grant. Further, most of the 20+ indicators specifically identified in the MPHC Quarterly Review Meeting reports do not correspond to the indicators tabulated above. These discordances are commented on further in section F (MIS) below.

It should also be noted, however, that MPHC did include several new questions in its household survey of April 1994 that permit determination of several of the crucial maternal KAP indicators posited in the logframe:

"How would you treat a child with diarrhoea at home?"

"What does this {show successive growth cards with up, down, zigzag, and static growth patterns} tell you about the growth of your child?"

In adding data to obtain indicators on mothers' home treatment of diarrhea and ability to interpret growth charts, MPHC eliminated questions to obtain the formerly tracked nutrition indicators on % of children <2 years weighed 4+ times a year, and % of children under 5 years who are low weight for age.

## **B. PHC/MCS SERVICE DELIVERY**

MPHC regards its main role to be that of education and of facilitating development and capacitating others for direct health services, and working as a liaison and catalyst with other organizations and resources that can be mobilized to the benefit of its target population. Most of the direct health services are provided by Ministry of Health personnel based in four dispensaries. A limited number of direct services are provided by MPHC staff from 2 mobile teams (which were 3 in 1992 and 5 in 1991), including growth monitoring, sale of medicines and distribution of contraceptives. One reviewer of the draft of this evaluation report stated that the MPHC outreach services cover about 30% of the population in areas far away from the government dispensaries, providing immunizations, curative services, antenatal care, growth monitoring and promotion and counseling, health education, family planning, and referral. However, the project did not provide, nor did the evaluation team obtain, a complete description of the services nor objective measures of the current coverage of the mobile teams. Below are the program objectives listed by MPHC. Progress towards these objectives is followed by their staff in quarterly meetings, using more than 20 indicators which they have devised (please see



Annex \_\_\_ for details). Indicated also are the sections of this report in which these objective are reviewed.

1. **Ten MPHC Program Objectives**

		Please see Section:
Objective 1.	Community Process	C
Objective 2.	Training	D
Objective 3.	Food Production	B & C & E
Objective 4.	Family Planning	B
Objective 5.	Immunization	B
Objective 6.	Water	B
Objective 7.	Sanitation	B
Objective 8.	School Health	D
Objective 9.	Community Based Drug Supply	B
Objective 10.	Information Gathering and Utilization	F

Objective 3 **Food Production, Nutrition, and Growth Monitoring** - is the longer designation used in the MPHC 4/93 Quarterly Report (QR). The food production is so technically complex that it is dealt with below, in both section C on Community Process and in section E on Project Management, which it periodically dominates. The objective stated in that QR was "to achieve sustainable improvements in the nutrition status of children 0-35 months of age (weight for age) by improving food quantity and variety. The way they state the objectives shows that MPHC staff clearly think of nutrition promotion primarily in terms of the necessity of increasing food production.

Malnutrition of children is a grave problem in this poor area of unpredictable drought and great food insecurity. From 1989 to mid-1993 little progress was shown in the malnutrition indicator drawn from annual household surveys. This was not the indicator suggested in the MG application, i.e.

% 12-23 mo. children within normal wt./age,

but the indicator devised by MPHC, i.e.,

% 0-59 mo. who are low wt./age), with the following results:

- '89 35%
- '92 41%
- '93 36%

In the 4/94 survey this question was dropped, so the only continuing estimations of malnutrition will be from growth monitoring records. The opinion of the MPHC staff is that no

progress has been made against child malnutrition. Notably, the same conclusion was reached in both of the other PHC projects evaluated.

High prevalence of malnutrition seems intractable despite much nutritional education effort and considerable progress in such nutrition program intermediate indicators as % of mothers breastfeeding over 18 months (98 % in 4/94) and % of babies being given supplementary foods by 6 months of age, which has progressed as follows:

'89 31%  
'92 81%  
'93 93%  
4/94 75%

The weighing coverage indicator, % of children under 2 years weighed at least 4 times a year, reached about 64% in 6/93, but was also excluded from the 4/94 survey.

However, nutrition indicators cited in the logframe, but apparently not measured in MPHC until the 4/94 household survey concern mothers' ability to understand the growth monitoring chart. Mothers were shown a series of four GM charts, and asked, "What does this tell you about the growth of your child?" Results are shown below.

-% mothers, shown GM card, who interpreted correctly:

4/94 46% if pattern UP  
" 36% if pattern DOWN  
" 27% if pattern ZIGZAG  
" 18% if pattern STATIC

Hence, about 40% of mothers could correctly interpret a clearly rising or falling growth curve, but considerably fewer if the pattern were in between. As this is the first measurement, we can not say what the trend is in this cognitive ability of mothers to understand the growth chart.

In any case, nutrition education avails little when there is no food and very little money to buy it. This explains why the MPHC staff has subsumed nutrition and growth monitoring under the heading of food production, and why they have made heavy use of staff time in it.

Given the growing PHC literature which questions the effectiveness of growth monitoring, and the lack of progress in decreasing child malnutrition in the MPHC, and in the other two PHC projects, the evaluation team suggests that AKHN would be wise to review, together with the staff of these projects, their experiences in order to rethink the strategy for growth promotion.

**Objective 4 Family Planning** - This MPHC objective is "to improve the health of women 15-48 years by increasing awareness and practice of family planning. By end of 1994, at least 35% of the women will be using a modern method of family planning."

Rapid progress toward this objective, which is considerably higher than the objective of 15% set in the MG application logframe, has been made. In the annual household survey of April 1994, reliable method contraceptive prevalence rate (CPR) among interviewed women with children under 5 years was 27%, up from 23% in the previous survey made 10 months earlier, and 60% higher than it was in 1992. Of those using some method of family planning in the 4/94 survey, 52% were using oral contraceptives, 33% "injection", and 7% "coil", while 5% had had a tubal ligation.

MPHC staff has conducted many focus group discussions with men, and with different groups of women, to learn their knowledge and points of view about family planning, in order to plan and to develop FP educational modules for community level. These focus group discussions have been an important vehicle for informing men about the benefits of spacing births, and providing them with an opportunity to discuss their concerns.

Family planning services were introduced into the mobile clinics, whereas prior supply had been only from the four government clinics or private pharmacies or practitioners.

At the time of this evaluation, contraceptives were not yet made available through the 40 community based drug dealers (CBDD). It was the impression of the evaluation team that communities in several of the villages visited, in particular Mtaa, were ready for and eager to have this service. Since there is obviously a latent demand for greater control over their fertility, increasing the availability and convenience of contraceptives by providing them through CBDDs is liable to increase CPR sharply, perhaps to the ambitious objective level of 35% targeted. The evaluation team therefore recommends that MPHC oral contraceptives and condoms be included in the essential drug distribution scheme in all communities where this would not cause a backlash. Further, the evaluation team recommends that the GOK MOH and MPHC develop workable logistics, protocols, referral and supervision systems for the development of a Community Based Distribution of Contraceptives (CBD). Initiatives of this type already exist in the coast through FPAK and the Pathfinder funded project MKOWANI.

Contraceptive supplies have been a continuing problem for MPHC, and this is one area in which they should obtain a formal commitment from the Ministry of Health for reliable supplies.

**Objective 5. Immunization** - This MPHC objective is "To maintain immunization coverage in the second year of life above 80% (crude data) and to raise valid coverage from 42% to 50% (valid data) and to maintain TT coverage above 80%."

MPHC has achieved and maintained high levels of immunization among children in their second year of life and in pregnant women (with tetanus toxoid). These achievements have been consistent with the objective levels set in the MG logframe, and almost to the stringent levels it has more recently set for itself. There have, however, been some problems with immunizations being given within the recommended age intervals. MPHC is working to improve the timeliness of immunizations. The satisfactory progression of immunization coverage is shown below:

Percent of 12-23 mos. fully immunized, [crude data]:

'89 80% --> '90 80% --> '92 82% --> 6/93 84%

Percent of parturients immunized against tetanus:

'89 85% --> '92 78% --> 6/93 77%

The high maternal TT levels in 1989 were due to an accelerated EPI program early in the MPHC project. MPHC has continued to collaborate closely with the Kenya Expanded Program of Immunization, diffusing motivational education in communities and schools for the government's immunization sessions.

The fact that MPHC does not do surveillance for immunizable diseases, nor for any types of morbidity or mortality, means that the effects of missed timing of immunizations, and of defective government cold chains or vaccines may pass unapprehended. The evaluation team therefore offers two recommendations. First, that MPHC should obtain commitment from the Ministry of Health to furnish MPHC early (before it makes a return trip to Nairobi) information on cases of immunizable diseases identified in its catchment. Second, that MPHC continue to utilize the COSAS program to track, in parallel with crude results, progress in the growing prevalence of immunizations given at the recommended ages.

Objective 6. **Water** - MPHC states this objective as "to work with community towards improving water quality and accessibility to 75% of population within 30 minutes walking distance during the dry season by:

- Mobilizing local resources
- Strengthening community groups and individuals for water maintenance
- Extending major and smaller pipelines to approximately 55% of the population
- Desilting Mtaa dam and developing 5 smaller dams to cover approximately 30% of the population
- Encouraging improvements of water pans to cover 15%"

MPHC staff have made Herculean efforts to overcome the many problems that have arisen from this extremely complex constellation of undertakings, including: inadequate transport, long delays in communities arranging for local financing and resource mobilization, slow and daunting technical feasibility studies, many physical obstacles (silting, evaporation, jurisdictions traversed by pipelines, etc.). It has had a good working relationship with the Provincial Water Engineer's office, and whole-hearted support from the Provincial Ministry of Health regarding the prime importance of improving water supplies in the MPHC catchment area.

Results from the 4/94 household survey showed continuation of the slight progress noted since the '92 survey. The percentage of households reported to have water supply more than a 30 minutes roundtrip walk away decreased as follows:

'89 35% -->'92 28% -->6/93 29% -->4/94 27%

Hence, MPHC appears to be approaching its stated objective of 75% accessibility within one half hour roundtrip walk from home. Reviewers of the draft of this evaluation report, however, questioned the validity of these figures because the survey was conducted during the rainy season and because of doubts about the accuracy of time estimations by women who do not wear watches.

The evaluation team, having witnessed the strong, #1 priority felt need expressed for water by many persons during our field trips, believes that the project provides a unique opportunity to link health and water development activities. For this reason, the project should remain actively engaged in assisting communities to become self-reliant in water. However, it needs to enlist technical assistance for water and sanitation activities from other NGOs during the next phase.

**Objective 7. Sanitation** - This objective is "to improve sanitation status in homesteads and public institutions by increasing latrines coverage from 57% to 75% by end of December 1994, and by digging compost pits and general cleanliness of the living environment."

It is instructive, also, to consider the somewhat different way in which the objective for this component of the MPHC program was stated in its report of the 13th Quarterly Review meeting on 6 April 1993: "To reduce morbidity due to diarrhea, bilharzia, and intestinal worms by improving human and household waste disposal." The indicators noted in that report for this objective were:

1. % of households having access to and using pit latrines
2. diarrhea disease prevalence
3. number of VIP latrines constructed

That 1993 objective is appropriately focused on prevention of enteric diseases, but the approach is not operationally functional because MPHC lacks the laboratory backup and the clinical protocols to measure prevalence of these major, or any other, diseases.

The activities described for improving the levels of the indicators and for attaining the objective were 1) setting and communicating criteria that individuals must meet to receive assistance in latrine construction, 2) providing technical assistance and limited, specific materials (lining materials, slabs and vent pipes), 3) specifying how much an assisted individual must pay, and 4) training communities in techniques of VIP latrine construction.

The evolution of the proportion of households that have pit latrines, by observation of the household surveyors, has been as follows:

'89 33% -->'90 40% -->'92 61% -->'93 66% --> 4/94 57%

This shows that generally good progress has been reported from 1989 to 1994. However, there was a modest decline in 1994, which was explained as being due to unusually heavy rains that led to collapse of some latrines.

Since the sanitation program was clearly aimed against diarrheal morbidity and prevalence, and presumably diarrheal mortality, but since MPHC lists no other program component or objective for control of diarrheal disease, and does not try to measure any mortality, this appears to be an appropriate place to call attention to an important question that MPHC added to its household questionnaire in 1994: Q 16c. "How would you treat a child with diarrhoea at home?"

The answers to this question permit MPHC to approximate the indicator stated in the MG logframe, but not addressed in earlier household surveys: "% of mothers who can demonstrate proper preparation and use of ORT."

The answers to question 16c showed that about 52% of mothers said they would give ORS, while 24% said that they would give more fluids, and 78% said that they would treat with ORS, or giving more fluids, or giving salt/sugar solution, or breast feeding. Such high prevalence of correct maternal responses may reflect success of MPHC's educational messages to push all liquids available in cases of diarrhea.

When asked who had taught them about diarrhea treatment, 17% of mothers mentioned MPHC staff, while 37% mentioned clinic staff alone. Hence, with allowances for the large margin of error in such an estimation, it may be inferred that perhaps half again as many mothers in the catchment know how to treat diarrhea as would have if their only source of information had been the staff of the 4 government clinics and the small corps of health technicians that provide outreach and education from them.

**Objective 8. School Health** - "To develop Community Based Health Care among school pupils and teachers in all the 26 primary schools within the project areas."

As of 1993, all 26 primary and 3 secondary schools were mobilized and participating in this excellent, but difficult program.

The MPHC School Health program is excellent because it goes beyond passive education, i.e. telling students what they should look out for. Through collaborative planning health activities are identified that students and teachers then actively carry out. For example, older students in some schools weigh babies in growth monitoring sessions and instruct mothers for growth promotion. Some schools take part in the Improved Farming Program. Minor ailments were treated in about a dozen schools in 1993. Bilharzia education and treatment is carried out in some schools. The excellence of this program was recognized by MPHC staff being invited to facilitate workshops on school health for other AKHN projects. However, the school health programs visited in Karachi and Dhaka seemed to be of a more traditional, passive nature.

The MPHC school health program is difficult because of high turnover in principals and teachers, too busy curricula, understaffing of schools, negative attitudes in some communities, and disappointments following unrealistic expectations.

Although the evaluation team had little contact with this component of the program, it was impressed by what has been accomplished and recommends that MPHC maintain support to its school health program, and that it try to make time to write up specifics of what it has found to be effective over time.

**Objective 9. Community Based Drug Supply** - The objective here is "to improve Home Case Management of common diseases by improving accessibility of information and common drugs at village level."

As expanded in the 4/93 Quarterly Report, the program aims to improve accessibility of information as well as drugs at village level, and therefore includes many village health education sessions as well as trainings for potential drug distributors. As of 5/94, about 112 persons had been trained as drug distributors, but only about 40 were active, in about 20 villages. This was about the same level, or a little less, as was reported one year earlier.

The 8 drugs, supplied by UNICEF, were selected for treatment of malaria (chloroquine), worms (piperazine), diarrhea (ORS), anemia (ferrous sulfate/folic acid), eye infections (tetracycline ointment), allergy (piriton), indigestion (anti-acid), and aches and pains (paracetamol). These drugs are furnished from UNICEF free initially, but must be purchased on the third replenishment. There have been considerable problems with pricing and management of funds. MPHC staff point out that access to banking services is difficult in most areas, drug prices are rising steeply, and so far only about 30% of the area is covered. One important community-wide use of these drugs occurred after a field survey in March 1993, in 2000 people in all 3 locations, showed very high malaria prevalence rates, around 40%. Some had very heavy infection rates. Positives were treated with chloroquine.

A particularly serious threat to this program, which MPHC reports has strengthened community collaboration for PHC, is uncertainty about the reliability of continued support from UNICEF.

The evaluation team recommends that AKHN provide technical assistance in community financial management to the CBDD component of the MPHC program, and liaise with UNICEF to ensure its continuation.

## 2. Coverage

Gaps still exist in coverage, although the project has been innovative in trying to fill these. One cause is the voluntary nature of the community resource people. The Community Based Health workers observed that they are unable to cope with distances and demands. Moreover, the homesteads in some areas are very sparse. House-visiting requires CBHWs to

walk long distances from their neighborhoods. Some observed that, although they're supposed to work 3 times a week, the demand makes them work full time, which makes it difficult for them to tend to their own needs.

### 3. Referral

There appears to be no agreed upon referral protocol between the community MPHC based workers and government clinics. At times this causes confusion to clients. In one instance the clinic staff could not immunize children simply because CBHWs had weighed the children in the community.

Referral needs to be worked out in order to provide a strong link between the health facilities and the CBHWs. An agreed upon protocol, that would facilitate linkages between CBHWS and clinic staff, needs to be worked out. A simple form could be devised and discussed by all parties concerned. This would reduce waiting time by clients and increase information flow between key actors at clinic and village.

## C. COMMUNITY PROCESS

This part of the Evaluation examines the MPHC COMMUNITY PROCESS, which includes community mobilization, sensitization, organization and community initiatives.

Community process is the mechanism by which the community's awareness is raised. They become sensitized to their problems, needs, resources and potential. Eventually they become motivated to participate actively in matters that affect their lives. This process hopefully should lead to community empowerment to make decisions, and to own and take full responsibility for strategies aimed at improving their lives.

MPHC organization/mobilization is well developed. The project team has had training for community based health and development. The front-liners are trained Trainers of Trainers (TOTs). The Acting Project Manager is a graduate of the Pan African Training of Facilitators offered by AMREF.

The team has put in a lot of effort to raise awareness, sensitize, mobilize and educate the community. This process has motivated a number of villages to actively take actions towards their priority needs/problems. A sense of confidence is evident and communities can debate issues on their health and development including reproductive health and family planning apparently few cultural barriers. We had the opportunity to discuss family planning in a community meeting which included both men and women of different ages. Discussion was lively and everyone appeared concerned about access to family planning services within the community.

The Duruma community is underserved. The majority of households are very poor and are distant from adequate health services. Kninango District Hospital is over 50 kilometers away. Transportation is unreliable. People walk long distances to health facilities. The roads are made worse during the rainy seasons. Food security is unreliable due to frequent spells of drought.



Water is a priority need. Given this gloomy picture, one wonders how the project managed to realize some of its results. It is definitely a very difficult project. The team has used very innovative mechanisms to ensure that the process of community sensitization, mobilization, and education has permeated to the remotest pockets of the catchment area.

As the MPHC staff note in their Self Assessment report, this community process has taken a lot of time, patience and commitment on the part of the project staff, up to 1 year or more in some villages.

The project utilized community seminars, meetings, orientation and training of community leaders, training of community based trainers, and the training of community resource people for a variety of community needs. This is definitely a very innovative approach and an excellent step towards sustainability at the village level. Communities have been so motivated in some villages that they have contributed money and time to projects like water, health center construction, and income generation activities.

There are some very active communities and villages within the project area. The evaluation team recommends that some activists from such villages like Mtaa, and others, could be identified and prepared to assist in sensitizing the inactive villages. This could be complemented by regular exchange visits among villagers to active programmes within or outside the project area, to stimulate and motivate them for action. This would eventually increase active participation by all villages within the project area.

There is the potential to create a model CB MIS. Already simple statistics on deaths and births exist at the Chief's Office. This information could be used to start the development of simple Community Based Indicators easy to track down, such as deaths of children by age. To do this by cause, e.g. measles deaths, would require greater expertise. It is innovative and needs careful processing and active participation of community resource people.

Participation of women in decision making is weak, from the village committee level up to the Project Implementation Committee (PIC). Women begin to feature actively at the operational level. This forces the project staff to go further down and take more time to articulate women issues. This is time consuming and not sustainable in the long run as there is no structure in place to ensure continuity. The team recommends that a female officer conversant with gender issues be recruited to strengthen this component.

Remuneration, whether in kind or by whatever means has not been addressed. Given the low economic levels of the households, people find it difficult to volunteer for this challenging project. This means that the workload must be challenging to the few volunteers working. Voluntarism is already threatened by the low socio-economic conditions. Some poorer communities might be left behind completely, and maintaining the motivational levels of community based workers can be undermined.

1. Community organization

The Project Implementation Committee (PIC) arrangement, which is headed by the Locational Chief who has undergone orientation/training for CBHC, is an excellent strategy which commits the Chief to provide backup support of village initiatives. The PIC is also an excellent forum for:

- (i) Information flow between the Chief and the villagers
- (ii) Sharing of ideas and experiences among villagers
- (iii) motivating and learning, and enabling the leaders to articulate village needs/problems and achievements
- (iv) Assisting the Chief and the community to track down initiatives on actions planned by the villages.

PIC meetings are held monthly. CBDD agents or other community representatives bring information from village level to the PIC, and also carry information back. The presence of the extension workers from the government sectors in this meeting is a means to harness their expertise/resources. All meetings are minuted, so decisions can be reviewed by interested parties for follow-up.

In order to disseminate lessons learned from the PIC, and to influence supportive leadership throughout the district, exchange visits with the aim of sharing experiences, sensitizing and motivating leaders from other locations would be a worth while undertaking.

## 2. Income generating activities

MPHC helps community groups obtain drug kits to set up a community drug based distribution center. These kits are distributed free from UNICEF. Each group is given 3 kits free of charge. The goal is for the groups to sell the drugs to community members. After obtaining the third drug kit, the group should have saved enough money to resupply themselves. MPHC was providing training to groups on these drug kits, the use of the drugs and information on cost recovery. Normally, if more than one group sells in an area, the groups meet to determine the price they would all charge.

In principal this scenario is good, and the drugs and the drug kits are needed. However, there are a few flaws in the design. People were selling the drugs way below market price. If they continued selling so low with all three drug kits they would not have adequate money saved to replace their drugs when they had to buy on the open market. After talking with a few groups, it seemed this type of information was not being stressed adequately in the training. In addition, there was some question on the continued availability of these drug kits. UNICEF is, to our understanding refocusing it efforts in Kenya, and Kwale district is not likely to be one of its top priority areas.

The same can be said of mosquito nets. UNICEF originally promised mosquito nets and dipping chemicals, free of charge, to a women's group in Mkilo. They have started a business selling dipped mosquito nets and employ 10 people. Now however there is a question whether they will continue working with this group. UNICEF has promised them 3000 mosquito nets but only delivered 300.

Although drug sale and bednets are motivating and exciting to the communities (please see box below for example), the supply of nets appears irregular. If this trend continues, and supply fails, it will demotivate community participation. Strong input for financial management is demanded for this intervention. It is not clear whether this expertise exists in the project. How the community will cope when UNICEF supply, which is currently free, will come to an end is not clear. Although a member of MPHC staff has been recently trained, financial management was not built in this intervention and the project started without this important expertise. If UNICEF fails to provide these essential materials, other sources of funding to stimulate community participation will need to be identified.

### **Bednets and Income Generation**

The Kudzecha Mwavumbo Women Organization (KMWO) is an active income generation group located in the village of Mkilo. It was founded in March of 1993. The group's aim is to help their communities, especially women, grow in the areas of health and economics.

Group members participated in a CBDD training in Kanamai that was sponsored by MPHC. They immediately started distributing drugs to the community. In August of 1993 they attended a workshop on malaria control with people from five other villages (Gwasheru, Maweu, Mavarata, Kafuduri, and Mwasuarga). This workshop focused on the utilization of bednets. Each village was given so many bednets to sell. The KMWO sold 36 nets to other community members immediately. They have continued selling bednets, 280 to be exact. In addition, KMWO now dips the nets to sell for the region. UNICEF has promised to help them in this endeavor. They promised the group 3000 bednets and the chemicals to dip them at no cost. The group sells the bednets at a discount price and keeps the money so they may eventually buy bednets after they have received all the free ones from UNICEF. The women have hire 10 other people to work with them on Saturdays when they dip the bednets.

With sales increasing, KMWO saw the need for savings groups and ways to help women obtain funding to start their own small businesses. KMWO thus created Akiba Investments which is currently comprised of 8 savings groups with a total of 135 savers. The savings groups have arranged themselves in groups of five. They send their money each week to the bank where KMWO has opened an account. As of yet, no loans have been given. MPHC is helping KMWO identify someone who can teach the group about village banking.

### 3. Food production and Farming

Some communities requested help from the MPHC in food production. Because there does not seem to be a feasible alternative for reducing chronically high malnutrition rates in children, MPHC started working with the Kenyan Agriculture Research Institute (KARI) to try to obtain help for the farmers. KARI does research in crops and livestock. KARI came in and provided technical guidance on corn varieties and demonstrations on oxen plowing to some of the project communities.

However, working in food production raises many complex rural development questions. The question of equity among village members comes to mind first. Would only the better off villager, who already had oxen, be able to obtain a plow? They in turn would then be able to make money off people without such resources and thus exploit a less fortunate group. There is also the question of the capability of the current staff in this area: are they able to judge adequately the risk of success or failure of a particular agricultural intervention? It appears to the evaluation team that the project staff lacks sufficient rural development expertise. Even though staff collaborate with Agriculture Extension Workers at project sites, the farming challenges in the project area require a higher level of technical assistance. They require researching and developing technology appropriate to that particular terrain and its weather conditions. Also, the team is concerned that time spent on food production may be taking time away that should be spent on priority PHC activities. Lastly, there is the whole issue of whether KARI is the appropriate group for the project to be in collaboration with since they are first and foremost a research institution.

Throughout the visit the team did not see outlets for farm supplies, e.g. seeds, seedlings-- particularly for Agro-forestry, fertilizers, etc. Even though a few farmers have ox ploughs, unavailability of the farming essential could hamper food production.

Providing liaison between communities and local resources, like KARI, has been well done by MPHC, but is time consuming, and requires constant input. AKHS may have to look for a donor or technical assistance from some experts to address this issue.

## D. TRAINING, COMMUNICATIONS, AND HEALTH EDUCATION

### 1. Training

A large number of people have been trained by MPHC, including:

- 431 Community Based Health Workers (CBHWs)

- of these, a remarkably high 87% are active, a tribute to the sense of ownership MPHC is able to develop in its volunteers

- 59 Trainers of Trainers (TOTs)

.7 of these are from the project areas, including 2 Chiefs; others have been trained from other jurisdictions, with payment from UNICEF

- 53 Teachers trained in PHC/CBHC and Child-to-Child approaches

The training of a variety of resource people from the community to address different needs is commendable. This includes the Community Based Health Workers, diarrhoea task force, water committees, and those working on income generating activities through Bamako initiative. This diversity is an excellent innovative strategy which allows as many people as possible to participate. This reduces the workload on just a few individuals. It opens a variety of communication channels between the villages, community members and project staff.

There will be need to train more CB workers in order to increase coverage, and to allow more community members to participate. Likewise more CB Training of Trainers needs to be done to ensure a sufficient number of trainers for the close supervision and training required. And more technical Trainers Of Trainers from different sectors need to be trained to contribute their technical skills to the CB TOTs. An adequate corps of technical trainers is needed to enhance a shared understanding of the project needs, to increase collaboration among sectors and community and to ensure adequate backup support from the extension workers.

The project staff need regular upgrading of their skills to deal with challenges in their program. For example, at the moment they do not have a trained Community Based Distribution of contraceptives TOT to help start CBD initiatives. They will have to rely on technical assistance either from the Ministry of Health or FPAK, which are the only options they have at the moment. This could cause delay. One staff member should be trained on CBD soon, as the community seems ready for this service.

Continuous sensitization of community workers is essential in this project. The CBTOTs, the CBHWs, the Diarrhoea Task Force require technical updates on health issues. Therefore management should consider relocating project office closer to the project area. This would bring project staff closer to the community, and to their counterparts at the district level. This would facilitate the maintenance of relationships between them and their counterparts.

At the District level, increased participation is needed. A number of key actors need to be trained as facilitators (THIGH - management of PHC). A course on this is offered by AMREF CBHC Support Unit three times a year. It draws participants from all over Africa. Training is an important tool in this project. It is expensive but very important.

MPHC staff have been encouraged by the acknowledgement of their competency in UNICEF paying them to train TOTs for PHC in other areas. They feel that, if properly staffed, they could raise revenue by doing more training for payment. In particular, they foresee that there may be demand for training in use of the PHC MAP materials, and some are desirous to become capacitated to do such training.

## 2. Health Education

Many health education sessions were held at village level in order to impart knowledge and skills to as many people as possible. As the Self Assessment report notes, "A total of 83 sessions have been held with an attendance of 7458 adults (78.7% females) for the years 1991/1992...A total of 74 sessions have been held between January-November 1993, with an attendance of 2166, 79.3% of whom were females."

All 26 primary schools and 3 secondary schools were mobilized and are participating in CBPHC. Nevertheless, a deficiency in mother's knowledge was observed among women bringing their children for growth monitoring. In talking to some of them, we found that they all were aware of why it is important to growth monitor. But they could not tell which diseases were prevented by immunization or how they would prepare ORS. This could be due to lack of continuous community education or lack of adequate communication between the health facility, project staff and CBHW.

The team feels that a health education opportunity is being missed in the growth monitoring sessions. These sessions capture groups of women with the same interest; they all have young children up to 2 years of age, and similar reproductive health needs. There is opportunity for them to form a group. A few activists could be identified among them and given further training to educate other women on Reproductive Health, Family Planning, Child Health, and other women issues.

#### **E. PROJECT MANAGEMENT**

To achieve its goals and objectives, noted in the introduction above, MPHC uses seven major strategies, for which it excellently describes "experiences gained", in its Self Assessment (SA) report:

1. Community Participation or Participation of Beneficiaries
2. Inter-agency Collaboration
3. Use of Appropriate Technology, for example:
  - Home Available Fluids for diarrhea
  - Oxen plowing instead of tractors
  - Ferro cement roof catchments water tanks at schools
  - Ventilated Improved Pit (VIP) latrine construction
  - Food mixing for weaning diet
  - Community based information systems
4. Promotion of Self Discovery
5. Self Reliance
6. Detailed Planning

## 7. Periodic Self Assessment

It is the impression of the evaluation team that the MPHC staff have pursued each of these quite appropriate strategies with great skill and documented results.

The project has well developed procedures, instruments, and schedules for planning, implementing, and evaluating its program. The Self Assessment report describes the MPHC cycle as follows:

"Quarterly project reviews are held to look at progress against the Work Plan and targets set for the year. The last review in the year...lasts for two days and is used to plan for the subsequent year as well. The plans for the subsequent year are based on the achievements of the current year, the problems, constraints and enabling factors, as well as resource availability. The final plan, called the "Central Level Plan" is drawn from the village level plans."

Weekly and monthly MPHC staff meetings are held to track performance and plan activities, and monthly meetings are held with the Project Implementation Committees in the three Locations. Every four months there is a Quarterly Review Meeting in which progress against indicators is reviewed for each of the 10 major program service components.

While the basic management approach is very well designed, the evaluation team observed several weaknesses in actual project management which should be addressed soon by AKHS,K. The project manager position has remained vacant since October 1993. Delay in hiring a replacement has left a noticeable gap. Therefore, AKHS,K needs to hire soon a project manager with leadership capabilities and competencies in primary health care and administration.

One major problem with the MPHC has been the status of management at the project level and above. With the departure of two key figures, the project has not had a fully empowered leader. It appears that most of the management control has been left to the Aga Kahn Hospital, Mombasa (AKH,M). The hospital controls the PHC budget, apparently without much sympathy for or understanding of the project. The focus of the hospital is not in primary health care. It's focus is on curative care in the hospital, and there is no one on staff at AKH,M with expertise in PHC or community health.

There are a number of indications that the needs of the project, both financially and administratively have been marginalized. This is reflected in the underspending of the project budget occurring simultaneously with the project officer feeling obliged to curtail activities because of a perceived lack of funds, the unavailability of vehicles for the staff to get to the field, and the length of time it has taken to obtain replacement vehicles, and, especially, to fill the open vacancies within the project. Low priority for the MPHC project may also be reflected in the fact that the hospital administrator did not attend any of the meetings with the evaluation team.

### 1. Staffing

In addition to the management, there are also some staffing issues raised by our evaluation. These include: monetary remuneration, staff development, the paucity of females on staff and the lack of an MIS expert.

It was evident that the project has collected much data which it has not been able to process or analyze. The evaluation team judges that the project currently lacks sufficient skills in epidemiology, financial management, and data analysis. Skills which may be needed by all cadres of staff should be identified and strengthened systematically. Staff below the level of managers need to be given opportunity to benefit from workshops and seminars on technical issues.

Having observed the dynamics of male staff dealing with women during growth monitoring sessions, the team feels that the presence of a female 'frontliner' (field supervisor responsible for a Location) is important for mobilization of village women.

As mentioned above, the project currently needs staff with appropriate skills in data analysis and should hire an MIS specialist on either a permanent basis or as a longer-term consultant, preferably, but not necessarily, a Kenyan national. There is also consensus among the team that women should be considered a priority for all positions, especially for the frontline position.

It was the impression of the team that project staff salaries were below competitive market rates. This could explain recent staff turnover and inability to fill current vacancies. The team recommends that AKHS,K conduct another market survey to determine if current staff salaries and benefits are equivalent to those offered by other NGOs providing similar services.

## 2. Transportation

Difficulty of transportation is another major obstacle in this project. The team's self-assessment report highlights this. Their section on 'Limited Transport' is the first and longest in the chapter on "Problems, Issues, Solutions, and Outcomes". Only after traveling with the staff to their field sites could the evaluation team appreciate just how much time, effort and energy they must use just to get to their target populations.

The furthest location, Mtaa, is approximately 50 miles from the MPHC office in Mombasa, while Mwavumbu is at about 25 miles, and Kasemeni is the closest, at about 15 miles. In bad weather, like the early rain of the day we set out, it is very problematic maneuvering the slippery dirt back roads even to get to the villages. It took us just under two hours to do so; another vehicle got stuck in the mud, as had another of our vehicles the day before. The vehicles were thrown around by the deeply rutted roads, and had to ford numerous just-passable rivers. Although these conditions were unusually difficult because of the rains, which are infrequent, it was clear that a considerable portion of a front-liner's work day would be spent in usual travel to and from the work sites.



One frontliner said that he habitually left for the field about 8:30 a.m., and returned between 5:30 and 7:00 p.m. Thus approximately 3 hours, or roughly 35%, of his work day would be consumed in transportation. Add to this the numerous difficulties and delays that the field staff have recounted in obtaining transportation from the hospital administration, whom they perceive to have low priority for PHC activities. The difficulties of transportation to distant field sites were further complicated by theft of two project vehicles in the past three years, and a wait of more than one year to obtain a replacement. Hence, in addition to a sizable proportion of staff time being lost to travel, there must have been numerous occasions when it was not possible, given the scarcity of transport, to get to scheduled community meetings.

The project is currently headquartered at the Aga Khan Hospital in Mombasa, far away from its target communities. Originally this location may have been prudent, but now, since the only role of hospital in the MPHC is administrative, it should be reconsidered. The distance between the project office and the communities it serves not only diminishes opportunities for project activities and responsibilities to be assumed and sustained by the community, but it also increases the overall operating costs of the project for travel, supervision, and staff time.

The team believes that sustainability of project activities would be more achievable if the office were located nearer to its beneficiaries. The team therefore recommends that AKHS,K conduct a study to determine the feasibility of relocating the project office nearer to the locations it serves, and of providing laboratory support.

In the future, a new role for the AK Mombasa hospital could be to provide crucial laboratory support to project activities. The evaluation team notes that the project had difficulty trying to obtain laboratory support from the AKH,M Hospital Director, either for direct support from that hospital or for using project budget, for a field survey of one of the most prevalent diseases in its target population, malaria. Finally, the project was able to obtain laboratory backstopping from a GOK agency.

#### **F. MANAGEMENT INFORMATION SYSTEM**

Although the 1991 MG application noted that MPHC had adopted "33 of the original 47 Standardized Indicators for monitoring and evaluation", MPHC staff emphasized that they had developed their own project indicators. This was similar to what the evaluation team would see again in the other two PHC projects, a normal pride of ownership in locally crafted indicators, and rejection of what had been perceived as an imposed, top-down and "spying" approach in the MECA effort of the preceding matching grant project.

MPHC was obviously using internally the 20 indicators noted on the Quarterly Review reports for periodic examination of progress. Those reports indicate intelligent use of indicator tracking to refocus effort.

In addition, MPHC field staff were working on collaborative development with Project Implementation Committees of community-derived indicators for a Community Based Management Information System. The evaluation team was told that these CBMIS were being

established in all 3 locations, with 32 villages involved in collecting and using information. A few of the leaders were negative about the CBMIS, and the large area in Mvumbo location made operation of the PIC difficult. The MPHIC team felt strongly that the CBMIS approach was worth the effort and time required to develop it because it promoted more informed local self-discovery, informed decision making, and stimulation of community action.

On field visits, the evaluation team was able to view the information system at two Chief's Camps, site of the PIC meetings. The Camp of Chief Samuel Tuku, who was once a teacher but had been Chief for 19 years, was in a small one room building at Kasemeni location. There were charts on walls with the kinds of information shown in the box below.

## INFORMATION POSTED ON WALLS OF KASEMENI CHIEF'S CAMP

- Resources:
  - 2 govt. dispensaries with MCH/FP and immunization
  - 9 primary and 2 secondary schools, participating in AIDS aware.
  - extension workers for agriculture, etc.
  
- Main health problems:
  - Malaria
  - Fiarrhoea
  - ARI
  - Anemia
  - Malnutrition
  - Bilharzia
  - Intestinal works
  
- Sources of treatment
  - 2 govt. dispensaries
  - Traditional medical healers
  - Hospitals at Kinango, Mombasa and Mariakari
  - MPHC mobile team
  - Community based drug distribution in 10 villages
  
- Water
  - 9 villages with piped water
  - 6 " " water pans
  - 3 villages with water tanks
  
- Demographic Table showing population, households, births, deaths
  - 16 villages in 3 sub-Locations, 14,382 pop., 1874 HHs, 443B, 137D
  - Info from 1992, when last 100% HH survey done for demographics
  
- Chart: in which villages health education talks had been held, # atten.
  - # households with and without pit latrines in each village
  
- List of names and designations of all persons on Provincial Administration (Chief plus 5 aides) and in Departments, e.g. agriculture, forest, livestock, health (public health technician from each of the 2 dispensaries plus one family health educator), social services, NGO (PHC){S.Ndurya E.C.N. & Henry Mbizah P.H.T of MPHC}, etc.

Much of the information posted was useful for helping discussants remember what activities were needed, what had been done, etc., although there had been very little updating of

the information in the last 6 months. However, there did not appear to be any information available to help monitor improvements in health status

Chief Tuku was asked if he felt that the PHC effort was making any progress. When he replied in the strong affirmative, he was asked how he could tell. The Chief replied promptly, with a response that was repeated almost identically by two other Chiefs later, "Because fewer of our small children are dying." When asked to see a listing of the child deaths, there was none available. There was only the A3 tablet of forms on which deaths are supposed to be reported. Although age is asked on the form, there is no tabulation of number of deaths by age. Thus the most obvious indicator to monitor program progress, death rates of small children, springs spontaneously from community leaders, but no mechanism to collect, display and track this information had been created.

At Bofu, Location Office of Mtaa, in the Camp of Chief Ngumuta, there was a very large blackboard on one wall of one of the two small rooms. It contained 13 columns for villages, and 23 rows--for 6 health conditions (e.g. malaria, scabies, worms, anemia, stomach ache, eye infections), for 3 sanitation objectives (latrines, trash pits, dish racks), etc. The board had been put up just the month before and the many entries were in unsmudged new chalk on a clean new slate. When Chief Ngumuta said that his main measure of their progress was fewer deaths of young children, he was asked how many had died last year. "About 5", he replied, according to the A3 tablet. However, in that population of 12,000 persons, there must have been at least three times that many deaths. The Chief acknowledged that there was considerable under-reporting of deaths in their system, echoing what MPHIC staff had told the team. When asked what the PIC would do next year to track progress, once the blackboard was filled up, the Chief and the "frontliner" said that that would have to be worked out later .

Unfortunately, due to muddy roads, the evaluation team did not have time to see CBMIS at the new Mtaa dispensary, which are the best developed according to the former director of MPHIC.

Current development of Community Based MIS through the Project Implementation Committees is an excellent start. However, while acknowledging that collection of vital statistics by CBDDs, or other villagers, is a very difficult and inexact undertaking, and acknowledging as well the MPHIC imperative that indicators not be forced upon communities lest backlash result, the evaluation team judges that more specific assistance to communities in formulating their indicators for health status progress would be constructive and timely. Frontliners need to learn how to help PICs to formulate, present and track their information. The evaluation also notes that this is a difficult frontier area in information management, one not addressed in the current PHC MAP modules. The team therefore recommends that the AKHN provide the project staff with appropriate technical assistance to help them upgrade their skills in helping communities to define, quantify, and display a few measures of health status which could be used to monitor progress.

Thus, a crucial, very complex task that the project must accomplish early in its next phase is development of a managerially useful, lean management information system which supports

a dialogue and decision-making at community as well as at project, MOH, AKHS,K, and AKF levels.

Similarly, at project level, little tracking and surveillance of mortality of specific important diseases, such as measles, malaria, or bilharzia, has been accomplished largely because the staff need additional analytic and epidemiologic skills and technical assistance in this area, as well as diagnostic support from the hospital. The team also notes that the backlog of epidemiologic data needs to be entered on the project's computers, analyzed, and interpreted in a timely fashion.

## **G. COST, FINANCING, AND FINANCIAL SUSTAINABILITY**

### **1. Mombasa Primary Health Care Project Cost Analysis**

#### **a. Methods Utilized**

The Mombasa Primary Health Care Project was the only project in this evaluation to utilize the PHC MAP Module 8 in its entirety, for all three levels of analysis: project expenses, expenditures by area, and expenditure by project component. In addition, some attempt was made to estimate the unit costs of project activities and to provide graphical analysis to the evaluation team. The MPHC also was involved in the development and pre-testing of PHC MAP Module 8 on Cost Analysis in 1992. During pre-testing, difficulties in adapting the module to the current project accounting system arose. This problem persisted in the implementation of the present cost analysis.

The cost analysis was conducted in several stages. In September 1993, the previous Project Director estimated the total cost of the project based on an older version of the PHC MAP Module framework. Calculations were entered into self-designed Lotus 1-2-3 spreadsheets. In the second case, the Hospital Finance Officer, in collaboration with the previous project director, the present acting director, and the information officer, estimated the revenues and costs of the project and produced a 47-page document which was ready days before the evaluation in early May 1994. The cost analysis was reconducted in order to examine Matching Grant funds exclusively, rather than project funds as a whole. In addition, the budget for water efforts included in the previous cost analysis was postponed until Phase III. This analysis was performed with the assistance of AKF, Aiglemont and AKF USA, and the findings are presented below.

In order to estimate the cost per project component, an evaluation of the distribution of personnel time among various project activities was conducted by the project. Data from staff time sheets and Saturday meetings over a six-month time period were used to apportion total costs among components, including community process, CBHW training, health education, inter-agency collaboration, antenatal and postnatal care, immunization, growth monitoring, school health, communicable disease control, and food production.

Allocation of line items to each of the three project areas and to the different project components was accomplished by using the following rules-of-thumb:

**TABLE M1: ALLOCATION RULES-OF-THUMB: MPHC COST ANALYSIS**

CATEGORY	ALLOCATION RULE to AREAS	ALLOCATION RULE for COMPONENTS
Personnel	Population proportions	Distribution of time
Consultancy	Population proportions	Mostly for water and sanitation work
Training	Beneficiary ratios	Based on activities
PHC Supplies	Actual use by area	Actual use by component
Water and Sanitation	Population proportions	100% to Water and sanitation
Vehicle Operating Costs	Distance to the project area	Distribution of personnel time adjusted for variations
Administrative Costs	Population proportions	Divided equally and adjusted for differences among components
Depreciation of vehicles	Distance to the project area	Distribution of personnel time adjusted for variations

Capital costs were depreciated on a percentage basis using a straight line method. Vehicles were depreciated at 20%, mechanical and electrical items at 15%; computer equipment at 20%; other equipment at 10%; and, water and sanitation equipment over 20 years. Buildings were not depreciated in the cost analysis.

**b. Main Findings**

*i) Level I analysis*

Total income, cash expenditures, and project costs are provided in Table M2 for Phase II. Project costs were calculated as recurrent cash expenditures plus the depreciated value of equipment, vehicles, and water and sanitation equipment. The total level of expenditures for Phase II (recurrent cash expenditures plus depreciation) was KSh 24,756,000 which translated into \$484,538, using exchange rates of KSh 33 per dollar in 1991; 35 in 1992; 69 in 1993; and 80 in 1994. The budgeted exchange rate was Ksh 25 per U.S.D for a total budgeted expenditure of \$483,800 representing current cash expenditures and capital expenditures (USAID \$285,200 and AKF 198,600).<sup>22</sup> The year 1991 in Table M3 represents figures for July to December only. Similarly, for 1994, the results reflect activity from January projected to June.

<sup>22</sup> These figures are based on the Addendum to the Proposal for a Matching Grant from the Agency for International Development, May 7, 1991.

Revenues came from Matching Grant funds (99%), interest income (1.2%) and other donations (0.1%).<sup>23</sup> For Phase II, total revenues were Ksh 24,074,500 and USAID/AKF revenues amounted to approximately KSh 23,764,300. In 1991 and 1993, expenses were greater than revenues for that year so that there appeared to be a deficit for the project in those years. Overall, total *cash* expenditures for the project exceeded total *cash* revenues (by \$5,101 or KSh \_\_\_\_\_), although this may not have been felt by the project since there were other sources of income into the project account. Because of exchange rate fluctuations in 1992 between KSh 38 to KSh 69 per USD the exact dollar amounts are those reflected in the annual reports to USAID.

**TABLE M2: TOTAL REVENUES, EXPENDITURES, AND PROJECT COSTS  
BY YEAR: MPHC (000s Kenyan Shillings)**

CATEGORY	1991	1992	1993	1994
Personnel	807.6	1,440.6	1,938.1	1,301
Supplies	26.54	170	536.9	50.8
Vehicle Operating Costs	380	840.1	1,332.6	479
Training	83.19	378.28	408.99	727.5
Evaluation & Consultants	453.3	38.1	168.2	200.3
Administration	811.7	1,076.2	1,364.8	796
Recurrent Expenditures	2,562.3	3,943.3	5,749.6	3,554.6
Capital Expenditures	1,380.4	1,669.3	1,623.3	4,273.2
Total Expenditures	3,942.7	5,612.6	7,372.9	7,827.8
Total Expenditures \$	119,477	160,359	106,854	97,848
Total Cash Revenues	3,342	6,858	4,408	9,466
Total Revenues \$	101,285	195,940	63,884	118,326
Revenues-Expenditures	-600.3	1,245	-2,965	1,638
Revenues-Expenditures \$	-18,192	35,581	42,970	20,479
Capital Depreciation	376.4	593	714.8	456.3
Total Cost	2,938.7	4,536.3	6,464.4	4,010.9
Total Cost \$	89,052	129,608	93,687	50,136

NOTES: Supplies and training figures have been revised based on an allocation of training manual costs to training category. Sale of motor vehicle (capital gain or loss) was removed from the analysis of cash revenues.

<sup>23</sup> Revenues from UNICEF grant management were excluded from this analysis of the Matching Grant and are not reported here.

Table M3 provides a breakdown of the cost profiles for both project expenditures (cash flows) and project cost (economic costs) as defined above. Cost profiles are calculated as the ratio of a particular line item to total expenditure or total cost, whichever is relevant.

From this table, one can see that recurrent expenses account for 64% of total expenditures, but 88% of total economic costs (which allows for depreciation of capital items). Out of recurrent expenses, personnel represents the greatest share of expenditures (22%) and 31% of total costs. Generally, personnel costs account for at least 50% of the total cost of primary health care projects. In the other projects included in this evaluation, personnel costs accounted for nearly 85% of total costs. In this sense, the MPHC has a much different profile than the other PHC projects implemented under the Matching Grant. The difference for the MPHC Project is the expenditures incurred during the grant for water and sanitation supplies, which accounts for large capital expenses and shifts the cost profiles toward capital rather than recurrent cost categories. Reasons why personnel costs represent a smaller share of total costs and expenditures stem from higher capital costs, lack of full staff complement throughout Phase II, and, secondment of a full-time Public Health Technician by the Ministry of Health.

**TABLE M3: COST PROFILES FOR PHASE II MPHC: 1991-1994**  
(Percent of total economic costs or Percent of total expenditures)

CATEGORY	BUDGET	EXPENDITURES	COSTS
Personnel	34	22	31
Supplies	22	3	4
Vehicle Operating Costs	13	12	17
Training	7	7	9
Evaluation & Consultants	2	4	5
Administration	22	16	23
Recurrent Expenses	na	64	88
Capital	see supplies	36	12
Total	100	100	100

NOTE: For the USAID budget, supplies and capital items were combined into one line item for procurement.

Administrative costs are the second largest recurrent cost category at 16% of total expenditures. Vehicle operating costs are the third largest category at 12% of total expenditures and 17% of total cost. Supplies, training, and evaluation represent much smaller shares of project costs.



When examining capital expenses, these expenditures accounted for over one-third of total project expenditures. Usually capital costs represent less than 5% of total PHC project costs. When capital is depreciated, capital costs account for 12% of total costs. These figures again illustrate the different nature of the MPHC Project compared with other primary health care projects, particularly with respect to expenditures on water and sanitation supplies.

When compared with the approved budget categories, total expenditures are lower for personnel, supplies, and administration. However, total costs are lower for supplies and capital, but higher for administration and vehicle operating costs. There is some degree of line item flexibility in the budget except with respect to capital purchases.

Table M4 provides a breakdown of the growth rate of project expenditures between July 1991 and June 1994. Overall, expenditures grew positively, although there were marginal declines for the total period in administration costs and significant declines in evaluation and consultant costs. Inflation, which was 29.6% in 1991-1992, and 45.8% in 1992-1993, probably accounts for the rise in other project expenditures. In addition, this pattern could reflect changes in the demand for services, changes in the composition of project activities, or some inefficiencies in the provision of services. Inefficiencies could be due to unavailability of transport at critical service delivery periods or lack of the full complement of project staff.

**TABLE M4: GROWTH RATE OF EXPENDITURES FOR MPHC: 1991-1994**  
(in percent)

CATEGORY	GROWTH RATE of CASH EXPENDITURES
Personnel	38%
Supplies	48%
Vehicle Operating Costs	21%
Training	89%
Evaluation and Consultants	-126%
Administration <sup>24</sup>	-2%
Recurrent Expenditures	28%
Capital Expenses	68%
Capital Depreciation Costs	18%
Total Expenditures or Costs	27%

<sup>24</sup> While overall administration costs declined slightly over the three-year period, increases in administrative costs were experienced in the first two years of the project: 1991-1992, and 1992-1993, with declines occurring in later years.

Among the individual line items, capital, personnel, and administrative expenditures and costs grew the most over this period of time. Capital expenditures grew at a rate of 68%, while depreciated capital costs rose 18%. Personnel and supplies expenses grew 38% and 48%, respectively. Vehicle operating costs also rose at 21%. Analyzing the rate of growth of expenditures and costs can help identify areas where costs can be reduced in the future. It is recommended that the project look carefully at how resources are utilized and whether there are ways to conserve funds.

Because administrative costs represented a large share of total project costs, a separate analysis of administrative costs was performed for 1992, 1993, and the first three months of 1994 to determine patterns of overhead expenditure.<sup>25</sup> The project pays which includes electricity and water and which is highly subsidized by the hospital. In addition, administrative costs include upkeep, cleaning, telephone, printing, photocopying, and other administrative costs. Nearly half of administrative costs was for an AKHS,K management fee, which covers the cost of technical assistance, project monitoring, and logistical support to the project.

Printing and telephone costs take up the next largest share of administrative costs at approximately 10% each. Photocopying costs increased 69% over this period. Printing and stationery were among the fastest rising administrative cost (50% between 1992 and 1994). Growth rates for telephone charges were negative between 1993 and 1994 (-128%), dropping from KSh 11,130 to KSh 4,881 per month. However, this drop in monthly costs was concurrent with new policies by the hospital to charge the project for local calls. It is interesting to note that rent for the project office is less than telephone charges for each year. In 1992, telephone charges were greater than printing and photocopying costs, entertainment fees, and miscellaneous expenses.

In reviewing patterns of administrative costs for the project, it appears that some administrative costs associated with hospital residence could be reduced if the project was located nearer to Kwale District. The evaluation team is aware that there may be opportunity costs to relocation, as well as some initial start-up costs. However, a feasibility study on this option is highly recommended in that the value of benefits for project recipients, the population, may outweigh these initial moving costs.

#### *ii) Level II analysis*

The second level of the cost analysis aims to allocate the total cost of the project to each of three project areas: Mwavumbo, Kasameni, and Mtaa. Since the assumptions used to allocate most of the line items were on the basis of the proportion of total population in each area, real cost differences tended to wash out. This problem could be averted in the future by evaluating costs by area in a prospective, rather than retrospective manner.

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<sup>25</sup> International travel was removed from the administrative line item for this analysis.

Allocation by population proportion would also mask differences in resource intensity, as not all activities are implemented equally in each area. For instance, water activities were much more prominent in Mtaa, though the final cost analysis distributes water and sanitation costs on a population proportion basis. Thirty-six percent of the total cost was for Mwavumbo area at Ksh 6,389,000 (\$129,450); 35% of the total cost was for Kasameni at KSh 5,891,000 (\$119,175); Mtaa was KSh 5,670,000 (\$113,870), or 32% of total cost.

### *iii) Level III analysis*

The third level of the cost analysis examines total costs by project component. The cost analysis subdivided total costs into costs for community process, training of community-based health workers, health education, inter-agency coordination, antenatal and postnatal care, immunization, growth monitoring, school health services, communicable disease control, water and sanitation, and food production. For some of these activities, the project plays a facilitation and motivation role, whereas, in other areas, the project focuses on service delivery through mobile team and fixed facility strategies.

In order to determine whether unit costs varied over time by area, total component costs for Phase II were subdivided by the evaluation team by year of the project based on the fact that 17% of total costs were for six months of 1991; 25% was for 1992; 36% was spent in 1993; and the remaining 22% of total costs are attributable to 1994. This was a rough method of allocating total component costs by year, but a more thorough analysis was prevented because of time constraints.

Table M5 presents the unit cost analysis for the MPHIC for Phase II for 1991 to 1993 by area. Data on project activities came from the computerized MIS. Activities for 1991 arbitrarily were divided in half in order to compare activities with costs for July through December of that year. On the whole, the unit costs of the MPHIC Project appear to be low relative to the costs of other PHC programs. However, since many of the donated supplies and time were not included in the cost analysis, and since most of the denominators represented outputs rather than qualitative measures of impact on health status, these results provide a only an approximation of the project's costs per unit of health outcome.

The cost per capita was the lowest of all of the AKF PHC projects evaluated at KSh 142 in 1993 or \$2.05. Mwavumbo had the lowest costs per capita and Mtaa area had the highest (up to KSh 269 per person). Other activities for which the project had low unit costs include the cost per communicable disease contact, the cost for school health contacts, and the cost per child weighed for growth monitoring.

**TABLE M5: UNIT COST ANALYSIS MPHC, 1991-1993**  
**BASED ON FINANCIAL ANALYSIS OF THE PROJECT**  
(in current Kenyan Shillings)

INDICATOR	1991	1992	1993
<b>Cost/Capita:</b>			
Total	72	102	142
Mwavumbo	56	74	99
Kasameni	66	100	137
Mtaa	137	195	269
<b>Cost/CBHW Trained:</b>			
Total	1,787	944	1,058
Mwavumbo	1,628	1,425	1,448
Kasameni	1,587	737	1,003
Mtaa	2,337	870	849
<b>Cost/ANC Visit:</b>			
Total	430	250	220
Mwavumbo	1,025	503	881
Kasameni	469	238	157
Mtaa	345	165	154
<b>Cost/New ANC Visit</b>	<b>938</b>	<b>3,083</b>	<b>2,522</b>
<b>Cost/Dose:</b>			
Total	237	130	115
Mwavumbo	219	189	340
Kasameni	155	132	199
Mtaa	85	78	134
<b>Cost/FIC (&lt;1 year of age)</b>	<b>427</b>	<b>1,357</b>	<b>1,924</b>
<b>Cost/Child Weighed:</b>			
Total	126	86	106
Mwavumbo	159	106	118
Kasameni	144	87	119
Mtaa	141	70	85
<b>Cost/Child Gaining Weight</b>	<b>234</b>	<b>439</b>	<b>918</b>
<b>Cost/School Contact:</b>			
Total	41	28	34
Mwavumbo	23	15	18
Kasameni	38	38	43
Mtaa	77	101	126
<b>Cost/Comm Disease Contact:</b>			
Total	51	16	15
Mwavumbo	23	31	11
Kasameni	38	11	16
Mtaa	56	16	21

INDICATOR	1991	1992	1993
Cost/Water & Sanitation Beneficiary:			
Total	51	25	28
Mwavumbo	138	74	36
Kasameni	24	12	17
Mtaa	98	40	53
Cost/Farmer	NA	NA	3,458
Cost/Kg/Acre of Maize Produced	NA	127	938

NOTE: Effectiveness data are from the computerized MIS as of May 1994 and the Self-Assessment Report.

The cost per contact for treatment of communicable diseases was the lowest unit cost of the project at Ksh 15 in 1993 (\$0.22). Mtaa had higher than average unit costs, and Mwavumbo had lower than average unit costs. The cost per water and sanitation beneficiary (those individuals who could potentially benefit from water and sanitation efforts) was Ksh 28 in 1993 (\$0.41). However, many of the inputs donated in-kind by the government were not factored into this analysis. In addition, the distribution of water and sanitation costs, as mentioned previously, was done on a population basis, rather than to the areas directly benefitting. Thus, this figure needs to be interpreted as the rough cost per beneficiary of the project's role as facilitator, and in rare cases, implementor.

The cost per school health contact was KSh 34 (\$0.50) in 1993, ranging from KSh 126 in Mtaa to KSh 18 in Mwavumbo. Because school health programs are one of the more innovative aspects of the project, these unit cost results demonstrate that the project is being relatively efficient in their approach.

The cost per child weighed for growth monitoring also was low at KSh 106 or \$1.54. In contrast to other indicators, Mtaa had the lowest unit costs among the areas at KSh 86. This was due to higher rates of activity and lower component costs in Mtaa.

The cost per antenatal visit ranged from KSh 154 (\$2.23) in Mtaa to KSh 881 in Mwavumbo in 1993 (\$12.77). These figures are within the range of international figures found for other PHC programs. Perhaps a better measure of the effectiveness of the project is its ability to enroll new women in antenatal activities and follow-up. Dividing antenatal costs by the number of new women results in a figure of KSh 2,522 or \$36.55 which is rather high. This pattern suggests that the project is good in following women once they have been enrolled in ANC activities, but that the project is less efficient in enrolling newly pregnant women into these activities.

The cost per immunization dose of KSh 115 is within the range of international figures of between \$1 to \$2. However, Mwavumbo has a higher average cost at \$4.92 (KSh 340) which is a function of both higher immunization costs and much lower numbers of doses administered

(524) in 1993 compared to the other areas. In fact, immunization activity in Mwavumbo was half that in Mtaa. The cost per fully immunized child less than one year of age was high at KSh 1,924 or \$28. Since the average cost per FIC internationally is approximately \$15, the project does less well at combining resources to follow children through to their last doses.<sup>26</sup>

The cost per community-based health worker trained was \$15 or KSh 1,058 in 1993. Unit costs were higher for Kasameni at \$21 or KSh 1,448. Since the project focuses on a community-based approach, these high unit costs are likely to affect the sustainability of the project's efforts. Therefore, the project should attempt to find ways to measure the cost per worker trained as well as to monitor these costs and find ways to reduce them. In addition, these figures should be used as a basis for estimating charges for training to outside donors and other organizations so that opportunity costs can be recuperated.

A preliminary analysis was performed on the cost per farmer involved in food production (131 in 1993) and the cost per kilogram of maize produced in 1992 and 1993. These results indicate that the cost per farmer in 1993 was \$50 (KSh 3,458). The cost per kilogram per acre of maize was \$3.34 in 1992 rising to \$14 in 1993.<sup>27</sup> These findings suggest that the project became less efficient in using its scarce resources to provide assistance to farmers between 1992-1993. Activities should continue only if costs can be reduced and output or yield increased.

Figure M1 illustrates trends over time in unit costs by component. From this graph one sees that the nominal cost per capita has increased over this period; whereas, the cost/ANC visit and cost/immunization dose have declined. The cost per child weighed, cost per school health contact, and cost per water and sanitation beneficiary declined between 1991-1992, but have increased slightly between 1992 and 1993. Declines in unit costs, concomitant with increases in the level of output for each of these indicators suggest that the project has become more efficient for certain activities. However, the rise in unit costs on a per capita basis suggests that the project could make efficiency gains by reducing or containing total project costs while increasing output levels.

For the review, the cost of operating the mobile team for immunization services was estimated by using an "ingredients" approach: a list of all the personnel, supplies, equipment, and mileage used to provide services was made and their unit prices applied in order to derive costs. From this exercise, it was found that the annual operating cost of mobile immunization services

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<sup>26</sup> In order to compare immunization costs for children with number of fully immunized children, a portion of immunization costs for tetanus toxoid for women must be removed from the analysis. It was estimated that 25% of total immunization doses were for TT vaccine, and the rest were for the childhood vaccines.

<sup>27</sup> These calculations were based on a total cost of KSh 1,256,500 for food production between July 1991 and June 1994. The total food production cost was allocated to each year of Phase II in which data were available on effectiveness of the program: 25.3% of the total for 1992 and 36% of the total for 1993. These figures were divided by 131 farmers in 1993 resulting in a cost/farmer for that year. The number of kilograms per acre was 2,500 in 1992 and 482 in 1993.

was KSh 1,611,487 for 1993, or \$23,355 (using an exchange rate of KSh 69 to 1 USD). The cost per immunization dose was KSh 93 and cost per FIC, KSH 1,937 or \$28. These figures compare with those generated for the project as a whole.

c. Areas for Improving the Cost Analysis

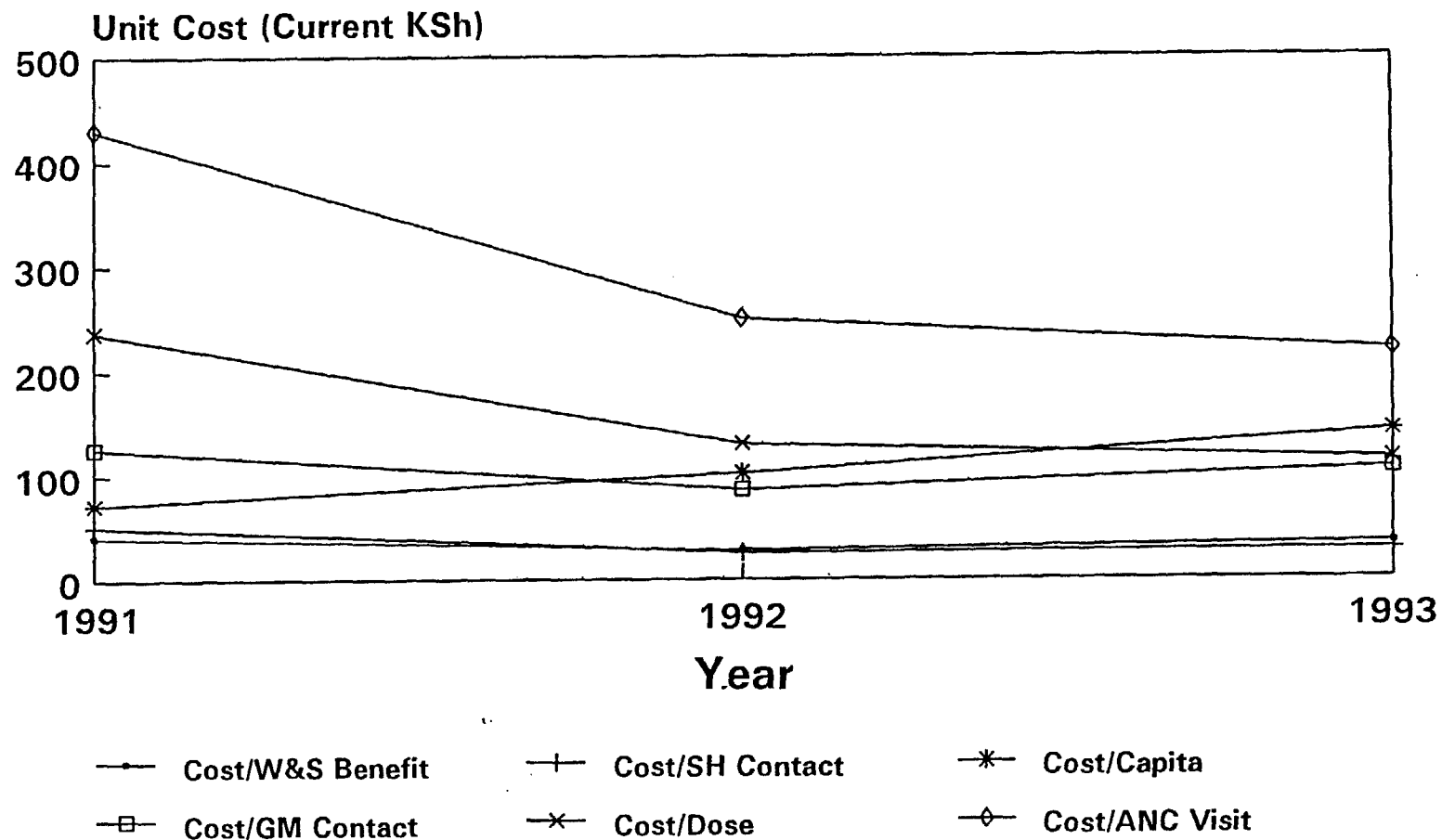
A significant amount of effort by AKHS,K and AKF went into analyzing the costs of the project. Although project staff were involved in the more qualitative aspects of the analysis, such as defining allocation rules, they did not have the benefit of actually performing the final cost analysis themselves. This is a missed opportunity for the project. Therefore, the evaluation team feels strongly that self-sufficiency in cost analysis is important for sustaining the project, and the team recommends that the project staff be trained and guided through the next exercise.

Some of the limitations of the MPHIC cost evaluation pertain to drawbacks in Module 8 of the PHC MAP series. There are several simple adjustments which can be made to the approach which will provide the project with a more accurate understanding of project costs. The evaluation team recommends the following:

- 1) Non-cash contributions made for project activities, such as donations of vaccines, supplies, mosquito bed nets, water and sanitation supplies, donated time of volunteers, and other health development workers, need to be valued and included in the cost analysis. The evaluation team recommends the project examine the approach recommended by UNICEF in Cost, Resource Use and Financing Methodology for Basic Health Services, a Practical Manual (1993).
- 2) While significant effort went into developing rules for allocating costs to areas and components, the approaches presented in table M6 are recommended for the next cost analysis to increase the accuracy of allocations.

# FIGURE M1: Unit Costs for the Mombasa PHC Project, 1991-1993

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**TABLE M6: RECOMMENDED ALLOCATION RULES-OF-THUMB**

CATEGORY	ALLOCATION RULE to AREAS	ALLOCATION RULE for COMPONENTS
Personnel	Actual distribution of time by frontliners and other staff	Distribution of time
Consultancy	Population proportions OK	Actual subject of consultancy and evaluation
Training	Proportion of beneficiaries	Based on activities
PHC Supplies	Actual use by area	Actual use by component
Water and Sanitation	Proportion of beneficiaries	100% to Water and sanitation
Vehicle Operating Costs	Actual mileage	Distribution of personnel time adjusted for variations
Administrative Costs	Proportion of beneficiaries	Personnel time distributions
Depreciation of vehicles	Same as for vehicle operating costs	Same as for vehicle operating costs

- 3) Depreciation rates for vehicles and equipment need to reflect actual use. The useful life of a piece of equipment or vehicle is defined as the number of years of use until which time the replacement value is less than the actual value plus the cost of ongoing repairs.
- 4) Divide costs into capital and recurrent cost categories. Recurrent costs include all line items except depreciation of capital costs. Evaluate cost profiles accordingly.
- 5) Estimate actual cash expenditures against cash income from the grant for the project.

In addition, the presentation of the results has illustrated that much information about project management and operations can be gleaned by comparing costs over time, examining growth rates in costs by components, and in evaluating unit costs by year. In addition the evaluation team recommends the following type of analyses to complement any cost analysis performed in the future:

- 1) Conduct a detailed analysis of the distribution of personnel time by area and by component. This can be accomplished using a daily time sheet over a period of one to two months. The analysis should examine the range of time spent per area, per component, and by type of personnel.

- 2) The amount of time spent per component can be divided by estimates of project output, such as the number of ANC visits or water and sanitation beneficiaries. This ratio provides an indication of the productivity of project staff. Such ratios could be monitored on an annual or biannual basis to identify which components and staff members are being more or less productive over time.
- 3) It is recommended also that project staff review the recent UNICEF manual entitled, Cost, Resource Use and Financing Methodology for Basic Health Services, A Practical Manual, to develop management and efficiency indicators would be useful to monitor. For example, ratios of personnel to administrative or vehicle operating costs could be analyzed on an ongoing basis to examine trends; comparisons of the number of kilometers traveled per year per area with activity levels can be revealing about project management.
- 4) In order to determine whether the project's strategies are cost-effective, their unit costs per service need to be compared with those of the government or other NGO providing similar services in the same area.
- 5) It would be useful to compare unit cost results in the future for each health activity at different levels of scale of operation of the project, in order to assess whether the project is becoming more or less efficient. In addition, the evaluation team strongly recommends that cost analyses be conducted in the future on an annual basis since this will allow the project to plan toward sustainability of project activities.

## 2. Financial Management

### a. Description of the Financial Management System

AKF, Nairobi receives transfers of Matching Grant funds from AKF, Geneva into an interest-bearing, foreign currency account. Funds are then converted to local currency (Kenya Shillings) based on prevailing exchange rates. Local currency funds are transferred to an interest-bearing, current bank account for the project in Mombasa based on a request for payment for reimbursement of expenses. Requests for payment are submitted on a quarterly basis by the Finance Officer of the Aga Khan Health Services Hospital in Mombasa. It usually takes between one to two weeks for reimbursement of project expenses from AKF, K.

A trial balance of project accounts is prepared on a monthly basis by the Chief Finance Officer of the Aga Khan Hospital, Mombasa. In addition, he prepares quarterly and yearly reports, and accounts are audited on an annual basis. These reports are transmitted to AKHS,K and then passed along to AKF,K, which uses them to prepare financial reports to AKF USA on the Matching Grant. Financial accounts are not computerized at the hospital level, though the general ledger is computerized at AKF,K.

None of the project staff are signatories on the project bank account so that approval and control of all expenses ultimately comes from the AKH,M.

The project office has an accounts clerk who maintains a manual ledger, general journal petty cash, and receipts and disbursements cash books. The petty cash account has a float of KSh 10,000. In addition, he maintains a purchases book, creditors ledger and a fixed asset register.

Besides the accounts clerk, and given current staff vacancies, no other current project staff member has training in financial management or is knowledgeable in the project accounts. The acting project manager is familiar with annual budgets and copies of the monthly, quarterly, and annual financial reports are sent to project staff.

The project is experimenting with community-based drug distribution as part of a collaborative effort with UNICEF under the Bamako Initiative. Once a community is able to come up with a deposit of KSh 500, the community is awarded three free drug kits by the project. The community then decides the fee schedule for each of the drugs in the essential drugs kit (see below for an example). Villages are allowed to operate without paying for drugs for a full year while their revenues are built up.

Revenues generated by user charges are also held in the project account in 40% of the CBDDs, with the remaining drug fund monies being placed in independent community accounts. Approximately 40 Community-Based Drug Distribution sites (CBDDs) have been established under the project, and 113 individuals have been trained in CBDD management (78 remain active according to the project).

The initial deposit of Ksh. 500 is held in trust in the project bank account. The accounts clerk issues the community a receipt for deposits into the project account. This is the only record the community has of their funds in the account. Usually, the frontliners act as conduits, transporting community resources to the project and returning a receipt once credited into the account.

**TABLE M7: EXAMPLE OF UNIT PRICES OF DRUGS  
FOR THE CBDDs**

DRUG	CBDD UNIT PRICE (KSh)	MARKET PRICE (KSh)
Chloroquine tablet	1.00	
ORS packet	1.50	10
Iron tablet	1	
Panadol tablet	1.50	3
Actol tablet	1	

Piriton tablet	1	
Piriton syrup	1.50	
Eye ointment (tube)	10	

**b. Assessment of the Financial Management System**

The Chief Finance Officer of the Aga Khan Hospital, Mombasa is the person responsible for reporting and analysis of project expenditures. However, there was some concern during the evaluation that control over disbursement of funds is not entirely within the purview, de facto, of the project manager, and that the hospital plays a large role in this function. Separation of functions of planning, financial management, and budgeting within the project have resulted in instances where activities had to be postponed or canceled. This situation also makes it difficult to allocate resources in the most effective fashion. The evaluation team was made aware that the hospital has been reluctant at times to spend project monies despite the needs dictated by project activities, and wonders whether such control over project resources has been detrimental.

Furthermore, this strategy has increased the reliance of the project on the hospital for administrative services, rather than expanding the role and responsibilities of the project to meet its own bottom line. The potential of hospital services to become linked with project activities may depend upon whether the hospital can view its role with a wider perspective.

The financial management system could provide more feedback and information for stronger project management. Therefore, the evaluation team recommends the following actions to improve the current system:

- 1) Hire a project accountant who will be responsible for financial management of the project and who will function as a full member of the project team. This person would report to the project director and liaison with the Finance Officer of the hospital.
- 2) Computerize the project accounts at the level of the project office. Since the project office has two computers, it makes sense to have a user-friendly program which would assist in documenting receipts and expenses and which could be used to summarize the project's financial position at any one point in time.
- 3) While the project has relied traditionally on accrual accounting procedures in order to balance project accounts, the project also needs the ability to track cash revenues and expenses for the matching grant, exclusive of depreciation costs and other conventions. This will allow the project manager to know the current cash balance on hand at any particular time in order to plan and budget activities more effectively. A simple system, such as the "One-write System" could assist the

project staff in becoming more facile with tracking resource flows for the matching grant.

- 4) Computerize the hospital project accounts to increase effectiveness and efficiency of the management system.
- 5) Allow the project to function on both a local and U.S. dollar budget in order that the project director have a more accurate view of available resources.
- 6) Allow the project manager to become a signatory on the project account.

During the evaluation, it was discovered that the MPHC had received grants from other funding agencies for additional and related activities, such as TOTs/TOFs. In addition, the project bank account also held monies from other organizations in trust. Thus, income from several different sources, including the Matching Grant, UNICEF, the Ministry of Health, community contributions from revolving drug funds and income-generating activities, and other donor agencies, were merged into a single, interest-bearing bank account. This merging of funds had the advantage that cost over-runs could be covered by the additional resources available. The following recommendations are made regarding the interest-bearing project account:

- 1) USAID/AKF Matching Grant monies under Phase II should be separated from other grants and funds held in trust.
- 2) If the Phase III Matching Grant is awarded, AKHS,K will need to open another separate account for these funds.
- 3) The project should keep community funds generated through the CBDDs and community fund raising activities separate from other sources of income. In fact, the project should be encouraging communities to open their own bank accounts and to manage their own resources, rather than creating a dependency on the project.

Economic factors influencing the MPHC include devaluation of the Kenyan shilling and rapid inflation during Phase II of the Matching Grant. Devaluation of the shilling has meant that there was a larger pool of local resources available than originally budgeted. However, the project has operated on the original budget translated into Kenyan shillings at a rate of KSh 25 per USD. The project manager has been unaware of the exact funds available, and the project has been taken by surprise when told that there was underspending.

High inflation has affected the purchasing power of the project under a cost-reimbursement system. This has resulted in several project training activities being postponed or canceled due to lack of sufficient funds.

The evaluation team recommends the following:

- 1) More thorough sharing of project accounting information with the project staff by AKHS,K and AKF. The problem of access to financial information will be resolved by hiring a project accountant to work as an active team member.
- 2) Develop a strategy by which the purchasing power of the project would not be eroded by high inflation. Could additional or contingency funds be transmitted as an advance to the project on a routine basis?

Finally, the evaluation team felt there was not enough attention paid by the project toward the handling of funds generated through the CBDDs and community fund-raising. First of all, despite the fact that community funds were held in trust in the interest-bearing account, these communities received no documentation as to how much interest their contributions were earning. Second, training of communities in financial management has not received priority from the project. Third, there has not been a movement by the project toward having more communities with independent bank accounts. Four, the project lacks an inventory management system for drugs and equipment necessary for ensuring continual supply of stocks for the CBDDs. The evaluation team recommends the following steps be taken by the project:

- 1) At least two other frontliners should be trained in basic financial management so that they can assist communities in learning about financial management of the CBDDs.
- 2) An inventory system needs to be created and maintained within the project office so that communities are ensured of a continual drug supply.
- 3) A passbook system needs to be developed whereby communities which hold money in trust by the project receive updated information on the amount of their account and interest accrued.
- 4) Additional research needs to be undertaken to assist communities to adopt realistic prices for drugs in order to be able to recover costs.
- 5) The project needs to develop better indicators for the CBDDs besides total numbers, utilization rates, and number of individuals trained. The purpose of the CBDDs is to generate revenues to keep a continual drug supply in place in the communities. Therefore, the project needs to calculate the percent of cost recovery generated by each CBDD on a quarterly and annual basis: ratio of revenues to drug costs.
- 6) The project needs to document cases where CBDD money is "eaten" by the communities to find out ways of preventing this from happening and to identify

factors which contribute to the success and/or failure of revolving drug funds in the project area.

- 7) Since UNICEF no longer considers Kwale district a high priority district, and because the drug kits and mosquito nets were donated originally by UNICEF, the project needs to develop an action plan for ensuring a continuous supply of these items to the project, and therefore, the community.

### 3. Financial Sustainability of Project Activities

AKHS,K and the project recently defined sustainability as the willingness and ability of the community to maintain and improve upon the project's health benefits indefinitely, including after active financial support from AKHS,K ends. Therefore, the focus is on sustaining project benefits after external funding ends. This definition will be used to evaluate progress of the project in this domain.

#### a. Efforts to Ensure Sustainability

Of all the projects included in this evaluation, the MPHC has worked the hardest to engender community support and participation. The sense of ownership by communities and the level of their activities toward primary health care is impressive, given their meager resources and harsh living conditions.

The project has also taken steps to begin a process of garnering additional resources from the community for PHC activities, which include Community-Based Drug Distribution sales; sales of drugs in schools for Bilharzia treatment; community fund raising, such as for Mtaa Dispensary; focusing on the link between health and development activities, as in the case of water and sanitation efforts; and, income-generation activities through assistance in food production. Further, the project relies heavily on volunteers to spread essential health messages and to serve as liaisons with the communities. All of these activities are designed to improve the self-reliance of the communities in primary health care.

#### b. Progress to Date

Despite these initial efforts to improve the probability of financial sustainability, the funds generated through the CBDDs cover less than 1% of total project costs, and this percent cost recovery has been declining since 1992. However, CBDD revenues covered 7% of drug costs in 1992 and 10% in 1993. When all community contributions through CBDDs, drug sales in schools, and harambees are taken into account, 27% of drug costs could be recovered in 1992.

28

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<sup>28</sup> This percent does not consider the funds raised to construct the Mtaa Dispensary.

These figures suggest that the project is a long way from sustaining activities through the financial participation of the community. These ratios would decrease further if the full costs of donated drug kits from UNICEF were included in the cost analysis. Since CBDD operations are not widespread within the communities of Kwale District, it is difficult to draw definitive conclusions about the willingness and ability of individuals to offset the costs of PHC activities. The project needs to focus on strengthening the CBDDs in operation and expanding into new communities.

The project operates in very poor communities which are often without adequate water and food for part of the year. A recent study by TechnoServe states that,

a major constraint faced during the implementation of the PHC programme is the limited or non-existent beneficiary income. Low income levels in the programme area have made it difficult for the participating beneficiaries to afford even the basic health and nutritional requirements. It is therefore believed that 'an economic development initiative must take place either before or parallel to any PHC programme, if the activities of the PHC programme are to be financially sustainable'. (page 2)

Thus, the project cannot ignore the potential difficulties in raising additional resources necessary to sustain all project activities without improvements in the standard of living of these communities.

c. Prospects for Financial Sustainability

It is probably unreasonable to expect communities to assume full financial responsibility for the project given the socio-economic status of these communities. However, there are several steps which the project could take to have a better grasp of the potential for financially sustaining some portion of project activities. The evaluation team recommends the project:

- 1) Conduct a Sustainability Analysis as outlined in Module 9 of PHC MAP in order to identify threats and opportunities to sustainability. The results of the cost analysis should be used in projecting future levels of expenditures and revenues.
- 2) Develop a strategy for securing donations of key resources into the project from the government or other donor organization. For instance, if the government will assure a continuous supply of vaccines, then the project need not worry about funding for these inputs.
- 3) Identify and focus on effective and time-efficient revenue generating ideas which could be used to cross-subsidize or offset some project costs. Has the project ever considered fundraising through the tourist industry in Mombasa?

The idea of developing a regional training center in Kwale or Mombasa has been discussed with the evaluation team. Since the project has some expertise in



training, their skills should be exploited for the benefit of income generation. However, the evaluation is concerned that training activities could overwhelm the original mandate of the project to focus on PHC service delivery. Therefore, any progress towards utilizing training skills for revenue generation needs to be balanced against the larger mandate of the project to strengthen communities in PHC.

- 4) Find effective ways to reduce and streamline the cost of the project, particularly vehicle operating and administrative costs. To do this, the project will need to monitor costs on a continual basis.
- 5) The project needs to focus on strengthening CBDDs, including financial management, stocking and resupply, banking, pricing of drugs, and perhaps expanding the kit to include contraceptives.
- 6) The project needs to identify incentives for volunteers to continue their association with the project and how their involvement could be maintained. The project could consider finding ways for communities to financially support volunteers through the CBDDs or other fund raising activities.
- 7) The project needs to develop some financial sustainability indicators which are monitored through their MIS. These indicators could include a) the proportion of drug expenditures recuperated through the CBDDs and other community fund raising; b) changes in per capita income; and, c) level of additional resources secured by the community.
- 8) Based on the results of the Sustainability Analysis, the project needs to outline a detailed plan which would contain a list of 1) the types of analyses which need to be performed; 2) strategies for overcoming obstacles for sustainability; and 3) indicators of sustainability, such as cost recovery ratios. The plan needs to be action oriented with time lines, roles and responsibilities assigned to project staff members. Evaluation of the accomplishments of the action plan will assist the project in determining the degree of sustainability for project services.

The TechnoServe report clearly states that PHC activities need to take place within a context of economic development in the project communities if sustainability is to be achieved. The report found that, on average, 50% of annual household income comes from off-farm employment from wages and salaries in Kwale. Poorer households rely more on home-produced foods to make ends meet. In addition, households meet only half of their food requirements through farming.

The report found that household incomes could improve through increased production of maize, cassava, and vegetables; as well as from poultry and goat farming, and the copra industry. The report outlines a four-phase plan for increasing agricultural production.

While the report highlights the division of labor between men and women (men tend to have salaried employment and women work on farms), and the low levels of nutrition in households, the report does not examine how these factors are integrated into the household economy and the household production of health.

Perhaps the focus of economic development needs to be more in the wage earning sector than in agricultural production, since it is clear that many farmers may not be capable of benefiting from agricultural extension and cannot afford the inputs needed for increased productivity.

Although the evaluation applauds the project's efforts to integrate economic development and PHC, the evaluation team recommends that the project slowly devolve its responsibilities for food production and other activities to another NGO. The project could maintain a facilitation role.

#### 4. Overall Sustainability

The project needs to put in place a framework which will increase the probability of its becoming self-sustaining. The evaluation team identified the following activities which the project could do during the next phase to form such a framework:

- 1) Actively seek to formalize a collaborative relationship with the Provincial and District levels of the Ministry of Health, that specifies mutual obligations, including sharing of service statistics and morbidity and mortality data. The MOH currently does not recognize MPHC sufficiently to invest any of its resources in it.
- 2) Consider relocating the office to Kwale in closer proximity to the community.
- 3) Improve and strengthen the management and financial skills of the community. This can be done as part of Community-Based Drug Distribution (CBDD) efforts. The project has missed an opportunity to educate the villagers in banking and financial management. The project also can help communities, which have kept their money in the project's account, to open their own interest-bearing account.
- 4) Conduct cost and sustainability analyses annually in the future since this will allow the project to plan toward sustainability of project activities through a closer examination of flows of funds and expenditures.

## H. POLICY DIALOGUE AND WIDER IMPACTS OF PROJECT

Although the project is free standing, it has attempted to link up with the District Health Management Team, both at the District and at project site. MPHC has tried to ensure adequate backup support through the clinics and outreach services to respond adequately to demands generated from community awareness and education by the community resource people. While it is evident that the MPHC staff have developed good working relations with the Ministry of Health, the evaluation team saw no evidence that MPHC has had an important impact on the thinking about how to manage PHC at District, Provincial, or National levels.

The evaluation team was unable to meet with Ministry of Health representatives at national level. At the provincial level office, the team was able to discuss various aspects of the MPHC project with both Provincial and District medical officers. Although both appeared positive in their regard for the work, services and resources provided by MPHC, there was no evidence that MPHC had had any special impact on MOH thinking about how to develop or run PHC services.

MPHC principally promotes health education and oversees the delivery of direct health services by community agents of various kinds, including drug treatment of selected basic complaints by villagers taught to dispense essential drugs. For immunizations, contraceptives and other treatments, it relies upon the four Ministry of Health Dispensaries in the three Locations. The Ministry of Health staff have been cooperative, and seem to appreciate the efforts in water development and the additional outreach services (beyond the limited services already provided by its 2 Primary Health Technicians working out of dispensaries in the same area) provided by MPHC. However, the MOH has not assumed any obligation to help make MPHC work.

The Ministry of Health (MOH) has not made any formal commitments to the plans, management information systems, or pattern of services being developed by MPHC. This is of particular importance because of the high rate of turnover in MOH staff. There have been 5 different District Medical Officers (DMOs) in Kwale since the MPHC project began. Typically, the average DMO is in place for a little less than 2 years. He already has his eyes on his next possible spot in his second year. The current incumbent has been in office since August 1993, but much away in various training programs, 5 in the past 5 months. He declared that he was just beginning to understand the various programs in Kwale district, including MPHC. This unsettling dynamic is further complicated by a very uneven process of implementation of a basic policy of decentralization in the Kenyan Ministry of Health. One consequence is that the relative roles of the Province, District and Headquarters are unclear, and vary considerably between districts.

One indication of the lack of true partnership between the MPHC and the MOH is that MPHC staff do not obtain notification or statistics on the morbidity or mortality registered in the dispensaries in their areas. Thus, MPHC staff are not privy to the number of diarrhoeal or respiratory deaths in their area, or the number of measles cases that are cropping up, though they

work to reduce them. As the former MPHC manager said, "we provide them with our data, but they don't provide us with theirs."

This lack of sharing of clinic data was confirmed at the provincial medical office, where it was explained that the data from the dispensaries was not accurate, anyway. If donors to MPHC are to invest in the longer term sustainability of basic life-saving services for a poor population, they might reasonably request from the Kenya Ministry of Health a collaborative partnership regarding services for and information about the populations concerned. If engagement of reasonably limited resources by the two sides in a commonly agreed plan of development could be negotiated (perhaps at the Provincial-District-AKHS,K level), the chances of continuity, of continuing government support for locally developed MPHC services would be higher.

**I. PROJECT RELATIONSHIP TO RNP**

(Please see section IV.C.1)

**J. PROJECT RELATIONSHIP TO PHC MAP**

(Please see section V.K.1)

**K. OVERALL IMPRESSION AND SUMMARY OF BRIEF RECOMMENDATIONS**

**1. Overall Impression of MPHC**

The Mombasa Primary Health Care Project (MPHC) has devoted staff. The strength of the project stems from its commitment to community process. This includes training of a variety of cadres of volunteers who act as catalysts within the community to bring about change in health status. The project helps facilitate interdisciplinary relationships between communities and government health workers, rural agriculture development officers, extension workers, water and sanitation workers, and other donor agencies, such as UNICEF. The project also provides health services for a variety of child survival and disease control strategies through mobile clinics.

It should be noted that, as commented on by a reviewer of a draft of this evaluation report, the evaluation team did not attempt to directly examine nor analyze the role of AKHS,Nairobi in MPHC management and decision-making processes. This had not been programmed, nor was there was there time in the schedule for it.

**2. Summary of Brief Recommendations**

Below are recapitulated the evaluation team's recommendations, briefly stated. For rationales, qualifications and details of the fully expanded recommendations, please consult the text above.

- As the project manager position has remained vacant since October 1993, AKHS,K needs to hire soon a project manager with leadership capabilities and

competencies in primary health care and administration. The evaluation team encourages AKHS,K to consider hiring of a competent, experienced female professional for this post.

- Additionally, three new positions should be created and filled immediately: another 'frontliner' (field supervisor responsible for a Location), an MIS specialist (#11 below), and a fully qualified accountant (#12 below). A woman should be considered a priority for all positions, especially for the 'frontliner'.
- The project currently lacks sufficient skills in epidemiology, financial management, and data analysis, thus staff below the level of managers need to be given opportunity to benefit from technical workshops and seminars.
- AKHS,K should conduct another market survey to determine if current staff salaries and benefits are competitive with those offered by other NGOs providing similar services.
- The project needs to hire a qualified accountant to assume responsibilities for tracking and monitoring the project budget and expenditures within the project office itself. In addition, a computerized financial management system should be introduced. Further, AKHS,K and the project need to physically separate Matching Grant funds and community funds entrusted to them from other sources of income in the bank account.
- The project being headquartered at the Aga Khan Hospital in Mombasa, far away from its target communities, should be reconsidered. AKH,M should provide crucial laboratory support to project activities. AKHS,K is advised to conduct a study to determine the feasibility of relocating the project office nearer to the locations it serves, and of providing laboratory support.
- Mechanisms by which project staff can obtain timely technical assistance need to be explored.
- The project needs to develop a managerially useful, lean community-based management information system (CB MIS) which supports a dialogue and decision-making at community, project, MOH, AKHS,K, and AKF levels. To strengthen current development of a CB MIS through the Project Implementation Committees, frontliners need technical assistance on how to help PICs to formulate, present and track their information.
- As very little tracking and surveillance of mortality of specific important diseases, such as measles, malaria, or bilharzia, has been accomplished, the staff need additional analytic and epidemiologic skills and technical assistance in this area, as well as diagnostic support from the hospital. Also, the backlog of epidemiologic

data needs to be entered on the project's computers, analyzed, and interpreted in a timely fashion.

- As staff with appropriate skills in data analysis are needed, the project should hire an MIS specialist on either a permanent basis or as a longer-term consultant, preferably, but not necessarily, a Kenyan national.
- As the over-stretched staff's ventures into food production and income generation have led to missed opportunities to integrate health project activities more effectively, the project should refocus on what it does best: helping people to help themselves using their community-based PHC approach. The project should gradually identify ways to turn more and more responsibility for food production and IGAs over to other NGOs and government agencies better qualified and experienced in these efforts.
- Nevertheless, the project should remain actively engaged in assisting communities to become self-reliant in water. However, it needs to enlist technical assistance for water and sanitation activities from other NGOs during the next phase.
- The project should participate in gender sensitization, utilizing in-house capabilities, but recruitment of a woman strong on Gender Issues should also be considered. Strategies should be developed within the project to engage participation for women in non-traditional roles.
- The project needs a framework to increase the probability of becoming self-sustaining. The following activities (recommended separately elsewhere) could form key parts of such a framework.
  - Formalize a collaborative relationship between the project, and the Provincial and District levels of the Ministry of Health, that includes sharing of service statistics and morbidity and mortality data
  - Seriously consider relocating the office to closer proximity to the community
  - Improve and strengthen the management and financial skills of the community
  - Conduct cost and sustainability analyses on an annual basis
- The potential role of MPHC staff to teach the PHCMAP modules regionally should be considered by AKHS,K and AKF.

- Evaluate the feasibility of a regional training center, which could technically and financially support the activities of the project in a balanced manner.
- Follow-up on the promising approach for productive use of the PHC MAP modules proposed in a Nairobi PHC MAP workshop in April 1994 (see Annex 9).
- Re-instate use of the quality control checklists for field supervision of PHC services, and of the form for periodic self-analysis and monitoring by project staff of their management of planned activities, that were developed using the PHC MAP modules.
- Oral contraceptives and condoms should be included in the essential drug distribution scheme in all communities where this would not cause a backlash.
- MPHC should obtain commitment from the Ministry of Health to furnish MPHC early information on cases of immunizable diseases in its catchment.
- Continue to utilize the COSAS program to track progress in the growing prevalence of immunizations given at the recommended ages.
- AKF should assure that technical assistance in community financial management to the CBDD component of the MPHC program is provided, and should liaise with UNICEF to ensure its continuation.
- MPHC should maintain support to its school health program, and try to write up what it has found to be effective over time.
- AKF should assure that MPHC project staff are provided with appropriate technical assistance to help them upgrade their skills in helping communities to define, quantify, and display a few measures of health status which could be used to monitor progress through their CB MIS.
- Examine ways to become more cost-efficient in providing health services. We recommend that project staff be trained and guided through the next costing exercise.
- The project needs to quantify strategies for sustainability, and the evaluation team recommends that Module 9 be conducted as a starting point. In addition, strategies for ensuring financial sustainability of the project and community efforts need to be devised.

## **VIII. AGA KHAN COMMUNITY HEALTH PROGRAMME (AKCHP), DHAKA (now the DHAKA URBAN COMMUNITY HEALTH PROJECT, DUCHP), BANGLADESH**

### **Project Description**

AKCHP was established in 1984 in Dhaka by the Silver Jubilee Commemoration Society. This PHC/MCH project has operated since 1985. It currently covers two wards of Dhaka (60 and 62) with a total population of 23,707, including 10,208 in slums and 13,499 in Mohallah (working class) area. These are provided with essential primary health care services by a team of 2 doctors, 10 paramedicals, 13 community health workers, and about 150 volunteers out of one central and 6 satellite clinics, plus quarterly home visits. The program has consistently surpassed most of its operational targets. Although mortality rates have dropped sharply in the project area, infant mortality is still at a high level in the slums.

AKCHP has continued to expand its services, to seek improvements in their quality, variety and efficiency, to improve the quality and ease of use of the information system, and to develop increased community collaboration and support for the program. It has tried a variety of approaches to maximize the role of volunteers as providers of services, and has developed several small income generating projects.

AKCHP has successfully diversified its funding resources beyond AKF and USAID. It will be supported by the Danish International Development Agency (DANIDA) with project funding for at least the next three years. AKCHP has developed strong collaborative relationships with scores of other local and international NGOs and Private Voluntary Organizations (PVOs), as well as the government health officials at city and higher levels.

### **A. ACHIEVEMENTS COMPARED TO ORIGINAL OBJECTIVES AND TARGETS**

#### **1. Tables**

Objectives and targets set in the 1991 MG application are shown in the following tables, as well as the results actually obtained, followed by brief comments on the progress evidenced. If different indicators were used subsequently by the project, they are shown in parentheses.



AREA FOR IMPROVEMENT IN AKCHP	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
<b>COVERAGE:</b> PHC/MCS PROGRAMS ACCESSIBLE TO MORE PEOPLE	-PHC/MCS coverage of target population: ?-->80%	-??	-no follow-up survey in 1994 to show changes in coverage, or to validate rates estimated from service system -baseline survey was in '86 -"midterm" survey was in '90
	-population covered 62,000-->70,000	-23,707	-about 40% of slum families registered -net outmigration from these 2 wards
<b>HEALTH STATUS:</b> LOWER DEATH & DISEASE RATES; HIGHER PROTECTION	-IMR: reduce by 40% -MMR: reduce by 70%	-IMR in slums: '91 113/1000LBs '92 114 " '93 92 "  -IMR in mohallas: '91 94 '92 45 '93 35  -(maternal deaths): '87 8 '88 6 '89 5 '90 4 '91 1 '92 0 '93 0	-excellent progress in reduction of infant mortality rates and in maternal deaths  -IMR dropped 19% in slums, 63% in mohallas; 37% both areas  -maternal deaths is a better indicator than MMR at such low frequency of deaths
<b>HEALTH STATUS:</b> LOWER DEATH & DISEASE RATES; HIGHER PROTECTION	-malnutrition reduced by 50%- ??	-huge data of NSP not compared between years nor interpreted in annual reports	-probably little progress

AREA FOR IMPROVEMENT IN AKCHP	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
<b>HEALTH STATUS: LOWER DEATH &amp; DISEASE RATES; HIGHER PROTECTION</b>	-cause-specific death rates (measles, diarrhoea, ARI): ???	-(ann. # measles deaths in <5y.o.): '91 1 '92 1 '93 1  -(ann. # diarrhea deaths in <5 y.o.): '91 ? '92 10 '93 6  -(ann. # pneumonia deaths in <5y.o.): '91 ? '92 14 26%T '93 23 49%T	-C.S.D. rates not calculated nor presented by project -the measles deaths WERE investigated for cause; cold chain examined-->OK  -drop in IMR and child death rates mainly due to drop in diarrhea deaths, which are quite low  -pneumonia is the major child killer; rates rising? better reporting?
<b>PROVISION &amp; USE OF KEY SERVICES</b>	-% <3 y.o. weighed regularly: 70-->80%	-??	-weighing coverage not reported
	-% <5 y.o. immunized: 50-->85%	-% of 12-23 m.o. immunized: '92 88% '93 92% 12/93 slum 100%	-excellent coverage -starting COSAS
<b>PROVISION &amp; USE OF KEY SERVICES</b>	-% 2TT immunizations in pregnant women: 65-->85%	-% women covered with TT during last pregnancy: '92 96% '93 96%	-excellent coverage
	-% 2TT immunizations in all women 15-49: 51%-->75%	-??	-not reported

AREA FOR IMPROVEMENT IN AKCHP	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
		-(% eligible couples using a FP method): 1stQtr92: ~50% 5/94 47%	-FP not in 92-93 annual report -AKCHP started FP only at end '91, found slightly higher contr. prevalence than Natl. level. ?maintaining it?
	-% pregnant attending 4+ PNC classes per yr: -->80%  -% pregnant with 5+ PNC visits with AKCHP trained medical officer	-?? -(# pregnant women seen in clinics): 7/92-6/93 1,868  -6,304 visits made to 1,316 pregnant, 3,844 by CHWs & 2,260 by CHO & FS	-annual report gives volume of visits, but does not report ANC coverage as % of pregnant women in target population
<b>PROVISION &amp; USE OF KEY SERVICES</b>	-deliveries conducted by trained birth attendant	-(%home deliveries by trained TBA): '93 73%  -(%TBAs trained in wards 60 & 62, Dhaka)= AKC trained/totTBA 6/93 293/625= 47%	-not given in annual report  -good progress in coverage of home deliveries through training of TBAs
<b>TRAINING</b>	-train/retrain: CHOs 8 CHWs 40 CHVs 100 TBAs 150 CMVs 100 school teach.85	-total trained 7/91-6/93: CHOs ? CHWs 240 CHVs ? TBAs 293 CMVs 402 sch.teach. 130 trainers 1827 HEd.by CMVs9859 intrnl.TOT 44 appl.epi. 15	-training targets greatly exceeded -categories trained changed with changing strategy of program -training done for pers. from other orgs.; first advanced course--epidem. & biostatistics

AREA FOR IMPROVEMENT IN AKCHP	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
<b>HEALTH PRACTICE &amp; KNOWLEDGE IN FAMILIES</b>	-% mothers aware of basic treatment for dehydration and knowledgeable about proper preparation -->80%	-(ORT use in diarrhea patients) in AKCHP area: 7/91-6/92 50%	-neither diarrhea prevalence nor ORT are mentioned in 7/92-6/93 annual report, except for diarrhea point prevalence figures in NSP tables: 1.1-7.5%
	-% mothers who can interpret growth monitoring info.  -recognition and treatment of ARI	-?  -?	-cited in logframe, but apparently not measured in AKCHP - " "
	-% of all teachers trained in primary health intervention techniques: -->80%	-??	-training coverage of teachers not mentioned in annual report
<b>RESPONSIBILITY OF COMMUNITIES FOR HEALTH ACTIVITIES INCREASED</b>	-approximately 18-19 of the CHWs hired and paid by the communities, not AKCHP	-15 CHWs, all paid by AKCHP	-AKCHP unable to get communities to pay except through registration & use fees
<b>RESPONSIBILITY OF COMMUNITIES FOR HEALTH ACTIVITIES INCREASED</b>	-% of schools within project area that conduct health education classes for children once a month: -->60%	-20/24 schools in project area cooperating in health education with 10 messages	-though inspired by MPHC presentations, program is standard teacher-to-child health ed., not active Child-to-Child

AREA FOR IMPROVEMENT IN AKCHP	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
<b>LOCAL FINANCING OF PHC</b>	<ul style="list-style-type: none"> <li>-# fee-for-service schemes, pre-paid insurance or alternative local financing mechanism</li> <li>-total amount of local resources generated annually</li> <li>-amount of these resources available &amp; used for health</li> <li>-level of community contributions</li> <li>-level of community involvement in management of local resources</li> </ul>	<ul style="list-style-type: none"> <li>-failed commercial clinic</li> <li>-paid pregnancy tests</li> <li>-paid laboratory services</li> <li>-paid registration tokens</li> <li>-paid A/N &amp; P/N pregnancy cards</li> </ul>	-please see section G below
<b>PHC IMPLEMENTATION CHANGES DUE TO RNP AND PHC MAP</b>	<ul style="list-style-type: none"> <li>-increases in innovation; knowledge exchange; availability and use of information; planning and management capabilities; quality of plans, schedules, budgets, guidelines; supervisory skills; monitoring and evaluation procedures</li> </ul>	<ul style="list-style-type: none"> <li>-positive impacts of RNP included: <ul style="list-style-type: none"> <li>-school health educ. programs</li> <li>-ethics guidelines</li> <li>-mental health programs</li> <li>-community participation initiatives</li> <li>-traditional healers initiatives</li> <li>-staff development</li> </ul> </li> <li>and PHC MAP: <ul style="list-style-type: none"> <li>-cost analysis</li> <li>-sustainability analysis</li> <li>-materials for major training project in urban health management</li> </ul> </li> </ul>	-for further specifics, please see sections E, F, I, and J below

AREA FOR IMPROVEMENT IN AKCHP	CHANGE PLANNED IN OBJECTIVE/TARGET INDICATORS BY -->MID-1994	RESULTS ACTUALLY OBTAINED	COMMENTS
INCOME GENERATING ACTIVITIES	-feasibility studies of, and technical assistance to, Income Generating Activities (IGAs)  -# communities with income-generating schemes, prepaid insurance or other local financing  -TA to women's groups involved in IGAs	FOR COMMUNITY: -pilot project in Bagicha: empowerment of women through functional education, PHC training, and credit scheme for IG -small (2 women) garment factory	-AKCHP has moved cautiously but imaginatively into IGA area, for which it has identified the need for outside technical assistance, which it has sought from local groups experienced in IGA

## 2. Comments on Tabulated Comparisons

AKCHP appears, as of mid-1994, to have surpassed the objectives and targets set in 1991 for reduction in both infant and maternal mortality, and for immunization of children against EPI diseases and mothers against tetanus. The program has also done very well in maintaining surveillance of EPI diseases and doing follow-up case investigations, in raising the proportion of deliveries by trained traditional birth attendants, in achieving low diarrhea mortality, and in maintaining a high contraceptive prevalence rate.

Although there has been active periodic weighing of children in the Nutritional Surveillance Project, the Annual Report does not present the coverage of children with regular weighings, nor track and comment on whether malnutrition--which is shown to be very high--has been declining. Other critical indicators lacking from the '92-'93 Annual Report, which is otherwise an excellent presentation of the numerous undertakings of an obviously intelligently led and productive organization, are: diarrhea prevalence, proportion of mothers who use ORT when their children have diarrhea, and whether mothers can interpret the growth chart or know when ARI is serious enough to require medical treatment.

Pneumonia appears to be the major killer of young children, and its rate increased between 1992 and 1993. In the same period, diarrhea deaths declined to a level much lower, relatively, than that seen in Karachi. Unfortunately, no cause specific death rates were calculated in either city; they would probably have shown that diarrhea death rates in the AKCHP target population are 1/2 to 1/4 those in the UPHC target population, while ARI/pneumonia death rates, in contrast, are 2-3 times higher. This striking contrast merits analysis.

Some indicator levels are not available because no population survey has been carried out during this period to follow-up the baseline survey of 1986 or the subsequent follow-up survey in 1990.

The large difference between the recently registered population of about 24,000 and the population of 70,000 originally projected to be covered is in large part due to AKCHP purposely registering primarily the poor, those in the slums and those earning less than 2000 thaka in the working class areas. Thus, while the population covered in the target area may be less than anticipated, the resulting equity may be higher. Both AKCHP and UPHC have gathered socioeconomic markers in their populations, as in the Nutrition Surveillance Project, but have used them little in analyzing program impacts. The evaluation team recommends to both projects that these are valuable control variables for analyzing equity effects of the projects. Further, the concept of coverage needs redefining as it turns out to be more complex than it may have appeared originally, in view of the apparent presence of numerous curative care providers competing in the targeted areas of both projects. Of these practitioners, only the TBAs appear to have been inventoried, and only by AKCHP.

The contraceptive prevalence rate of about 50%, impressively high. Community financing or "leading" of PHC services has not been achieved, despite numerous imaginative attempts to accomplish this. AKCHP has learned a number of lessons from hard experience about the complex challenges of using volunteers. From a variety of skillfully managed fees, AKCHP is able to recover enough money to cover costs of drugs and supplies. Although doubling of the very low user fees in 1992 caused a dip in utilization this redressed itself by 1993, and total receipts never declined.

AKCHP has developed a reputation for superb training in the past two years: outstanding in quality, quantity, variety and generation of revenue.

A number of benefits resulting from the Regional Network Program and the PHC MAP program are documented by the AKCHP Director.

Numerous other accomplishments--vitamin A capsule distribution, development of an integrated health information system, research on practical problems of services, survey on water and sanitation, staff development, etc.--are presented in the AKCHP annual report

Although there are no control or comparison trends by which one might confidently estimate impacts of the project, health effects appear impressive: maternal deaths and neonatal tetanus in the project areas (almost half are slums) have both dropped to zero in the past two years. Under 5 diarrhoeal mortality has dropped to very low levels. Measles morbidity and mortality are within Government of Bangladesh and UNICEF goal levels, and the infant mortality rate has dropped below the national average. However, pneumonia deaths in under 5's have inexplicably risen sharply in the past year, prevalence of low birth weight remains high, and levels of malnutrition do not seem to have improved.

Infant mortality rate has been reduced substantially. By 1993 the IMR is much lower than the national average. It is 62/1000LB in the project area, whereas the national average is 86/1000LB. But if analyzed further, it is seen that the reduction in the slums (rather than in the Mohallahs) is to a level not lower than the national average.

The reduction in the maternal mortality rate is more than satisfactory. There was no maternal death in 1992 or 1993 in the project area.

There appear to have been impressive declines in maternal death, in child mortality due to diarrhea, tetanus and measles, and in infant mortality. However, malnutrition has not improved, female anemia and low birth rates remain high, and there is an apparent recent rise in pneumonia deaths in children.

Of course, mortality will appear to decline if under-reporting of deaths increases. As there have not been any population surveys, to the knowledge of the evaluation team, to validate the reporting of deaths, it is not possible to comment on the probable degree of under-reporting or its trend.

An apparent anomaly in the death reporting is the absence of deaths attributed to malnutrition, and no reporting of secondary or contributory causes of death.

## **B. PHC/MCS SERVICE DELIVERY**

### **1. Eleven Services provided**

AKCHP has attempted to improve the health status of its target populations through health education in the community by CHWs, community mother volunteers (CMVs), community health volunteers (CHVs), Community Health Organizers (CHOs), Traditional Birth Attendants (TBAs), school teachers, as well as by providing the following basic services:

- i) immunization of infants and children
- ii) child and maternal nutrition promotion
- iii) management of diarrhoea
- i) antenatal/postnatal care  
immunization of women against neonatal tetanus
- vi) family planning
- vii) maternity care: referral to maternities & TBA training
- viii) curative treatment for those who come to seek care
- ix) acute respiratory infection program (ARI)
- x) water, sanitation, and environment initiatives



xi) vitamin A capsule (VAC) distribution

i) **immunization of infants and children**

AKCHP has consistently attained high immunization coverage in 12-23 month old children, over 90% recently.

CMVs, CHOs, CHWs and TBAs motivate mothers to attend immunization sessions conducted by the clinic team. Sentinel surveillance of EPI disease was introduced in April 1992, and gets monthly review by the Director and clinical team. Detected cases are investigated, with follow-up of problems identified. In-house training was given to field workers on cold chain, and case definitions for EPI surveillance. A poliomyelitis prevalence survey is being conducted.

Immunization activities are being updated with recent reference materials. Algorithms have been developed for immunization of children and pregnant women. The program has begun to analyze its data using the COSAS software to track immunizations achieved at recommended ages.

Immunization coverage is higher than GOB and UNICEF targets, as of 1992. AKCHP even received an award for this. Measles morbidity and mortality reduction was better than GOB and UNICEF targets by 1992. There have been no neonatal tetanus and only 2 poliomyelitis cases since 1991.

In June 1991, AKCHP received a certificate of merit from the Mayor of the Dhaka City Corporation for its success in immunization.

ii) **child and maternal nutrition promotion**

Child malnutrition is very prevalent, has been under intensive study in a special Nutritional Surveillance Project (NSP), and has been the object of several interesting initiatives by AKCHP. Unfortunately, the malnutrition status of the population has not been documented well enough in the AKCHP annual reports, or in the materials provided to the evaluation team, so that one can interpret trends in malnutrition during the MG period. The AKCHP annual reports do not comment on time trends in malnutrition, nor do they interpret the data tables presented.

In the 91/92 Annual Report, figure 4 showed that, of children 6-59 months old in the slum areas in 1991, 7% were severely malnourished (Gomez III) and 50% were moderately malnourished (Gomez II). In Annual Report 92/93, the NSP tables show that batches of children of unspecified ages weighed from February through December in wards 60 and 62, showed the following ranges of malnutrition:

### Malnutrition among Children Weighed in NSP, Feb.-Dec. 1992

Dhaka Ward #	Wt/A <60% Gomez III = Severe	Wt/A 61-75% Gomez II = Moderate
60	8.7 to 12.7%	53 to 56%
62	5.8 to 12.5%	43 to 61%

The evaluation team does not know how comparable the estimations are between 1991 and 1992, but it sees no evidence that there has been any improvement in the high levels of malnutrition in the target population of AKCHP. It also notes that these levels are much worse than those recorded in Karachi in the UCHP.

Another important difference from the Karachi program is that AKCHP in its reports of causes of child and infant death does not include malnutrition as a category. Although there may be few deaths to which malnutrition is ascribed as a main cause, there are likely to be many, in reality, in which it is a secondary or contributory cause. The evaluation team recommends that AKCHP analyze and report, with conclusions, the "main plus associated" major causes of death.

Actions that AKCHP has undertaken during this MG to deal with the grave malnutrition problem include: field testing and then adopting new growth cards from the National Nutrition Council and UNICEF; creating visual board displays to indicate all severely malnourished children to facilitate follow-up by workers; instituted a series of meetings, interviews, and counselling for mothers of malnourished children; development with PIACT of a booklet on nutrition and breast milk, based in part on the messages and flip chart developed by AKCHP, and to be used throughout Bangladesh by Ministry of Health and Family Welfare health workers; and research projects on breast feeding patterns, mothers' perception of color and curves to interpret childrens' nutritional status, and low birth weight.

Maternal nutrition is being studied by having CHWs measure upper arm circumference.

Achievement in the reduction of malnutrition is not substantial.. More emphasis should be given on this. In the form of health education on low cost nutrients and processing of food. 27% of children were found in 1993 to be born with weight under 2.5 kilograms. However, this is better than the National average, which is about 49%.

#### iii) **management of diarrhoea**

There were 10 diarrhea deaths reported among 3595 <5 y.o. children in 1992, for a annual diarrheal death rate of 2.8 diarrheal deaths per 1,000 children under five years of age. In 1993, the diarrhea deaths were reported as having dropped to 6 among 3231 children <5 y.o., for a rate of 1.9, a decline of 33%. These are much lower than the annual diarrheal death rates of 5 to 8 per 1,000 that we calculate to have occurred based on deaths reported in Karachi.

More appropriate use of mid-year rather than end-of-year populations for the denominators, or person-years-at-risk, will change the calculated rates very little. In view of the water problems reported and the heavily contaminated environments viewed in the service area, these seem like remarkably low levels that have been achieved in Dhaka. Unfortunately, no estimates of diarrheal morbidity have been made by AKCHP.

The program has followed WHO guidelines with promotion of ORT use in the home since November 1991, and with cereal based oral rehydration solution (ORS) since January 1992. The strategy was changed from just advising and instructing the mother in the clinic to one of retaining her in the clinic where she can prepare and use under observation. Children with persistent diarrhea are referred to the ICDDR,B hospital. AKCHP receives the relevant publications from the WHO and Bangladesh Government CDD programs in order to keep its technology up to date.

Achievement in the field of ORT use and correct case management by providers still lags the national target, 65% by 1993 against a target of 80% by 1995. But there are 2 more years to catch up.

i) **antenatal/postnatal care (ANC/PNC)**

AKCHP has introduced numerous activities in the past three years to improve antenatal and maternity care. These are documented in its Annual Reports which, unfortunately, do not provide reports on coverage, i.e. on what proportion of pregnant women are covered with ANC.

In 91/92 AKCHP's antenatal program was thoroughly reviewed and upgraded. The old clinic service data form was modified, and a new antenatal card was developed and field tested. Monthly meetings were instituted to discuss high risk pregnancies and any pregnancy leading to death. The taking of pregnant women's height and weight was introduced into the clinics. The referral network was strengthened. The clinic team was given refresher training on maternity care by obstetricians from one of the hospitals. It is reported that 577 expectant mothers visited the clinics, and 25 of them were referred to the maternity hospitals as high-risk pregnancies. As the number of livebirths reported for 1992 was only 565, coverage seems rather high.

In 92/93 a register was created to track the visit schedules of pregnant women, with feedback to field workers. A referral form was developed, and the reasons for referral were analyzed. Although referrals were made to 7 different hospitals, more than 80% were sent to two large hospital maternities.

50-60% of babies receive post neo-natal services and are monitored for growth for 3 years.

## **immunization of adults**

Coverage with two doses of tetanus toxoid during the last pregnancy had reached levels of about 70% when they were addressed with a special program in January 1992. The results were evaluated, using the Lot Quality technique, and found to have moved up to the mid-90% range. No cases of tetanus have been detected in the target area since 1991.

Hepatitis B vaccine has been given to all members of the AKCHP staff and has been made available to any others who can pay for it. AKCHP has made an information leaflet about this disease and distributed it to various institutions.

### **vi) family planning**

AKCHP began providing family planning services only after the new Director arrived in late 1991. A few months later a contraceptive prevalence rate (CPR) of about 50% was reported. In the 91/92 Annual Report, the distribution of the contraceptives utilized was: pills 62%, condoms 13%, tubectomy 12%, injection 6%, IUD 5%, others 2%. Surprisingly, the number of women taking family planning methods on motivation by TBAs, according to the TBA quarterly reports between July 1991 and June 1993 was 1,024.

A CPR of 47-52% is quite high in comparison to the national figure of 40%. Achievements in this field appear impressive, although CPR is always higher in towns and cities. However it is probable that much of that high rate of utilization pre-existed, and has been supported by AKCHP subsequently, as a more convenient substitute source.

The 91/92 Annual Report notes the following about family planning:

"At present the AKCHP does not have any system to give active door-to-door family planning service to the couples. Women's demand to family planning methods at the clinics is also low. Since the volunteer training started in January 1992, the volunteers have been teaching the community people how to plan their families. The family planning component of the PHC strategy will be strengthened in the future."

In the 92/93 Annual Report, however, there is no mention of family planning nor of contraceptives that the evaluation team could find. The reported contraceptive prevalence as of 5/94 was slightly lower, at 47%.

The AKCHP Director told the evaluation team that family planning was not a very strong component of the program, although it had gradually been introduced over the past three years. Counseling is provided on pills, condoms, and Depoprovera injections. IUD insertion is not offered by AKCHP, and is relatively expensive. Patients are referred to good clinics at the Concerned Women for Family Planning, the Family Planning Association of Bangladesh for IUD insertions or permanent methods, the International Center for Diarrhoea Disease Hospital, or the Mohammadpur Fertility Center.

The evaluation team was informed that the SJCS committee was not very supportive of family planning, and can only conjecture whether that can explain the very modest development of FP services by AKCHP in comparison with the vigorous improvements it has made in immunizations, maternity care, and treatment of diarrhea.

vii) **maternity care: referral to maternities & TBA training**

Quality of maternity care has been improved by strengthening detection of high risk pregnant women and referral to maternities, and by training TBAs.

Analysis of the referral form that was developed showed, for the 6 months of April-September 1992 that 31 pregnant women had been referred to one of 4 government hospitals or 3 private clinics. The largest percentage of referrals was to the Dhaka Medical College Hospital (48%), then the Azimpur Maternity Hospital (35%), followed by the private Rawshan Ara Clinic (16%). Most frequent reasons for referral were:

-absent foetal heart sound	6 women	(19% of referrals)
-severe edema	5 "	16% " "
-breech presentation	4 "	13% " "
-history of stillborn	4 "	13% " "

AKCHP has vigorously pursued training of TBAs to upgrade the safety of home deliveries. Studies have been undertaken to determine the number of TBAs in the target areas and how active they are, and a number of high quality, practical 3 week training courses for TBAs have been conducted following the Government of Bangladesh guidelines.

A study in March 1993 showed that 50% of 210 TBAs working in the AKCHP area were non trained, but that 92% of those trained were trained by AKCHP. It was estimated, as of 6/93, that 293 TBAs had been trained in Dhaka wards 60 & 62 out of approximately 625 working there, or about 47%. In consequence, the % of home deliveries by trained TBAs in 1993 was about 73%. This is a very impressive improvement. The national figure, in this regard, is about 25%.

The decline in maternal mortality has been outstanding, as can be seen in the following table.

**DECLINE IN MATERNAL DEATHS IN AKCHP AREA, 1987-93**

	'87	'88	'89	'90	'91	'92	'93
MATERNAL DEATHS	8	6	5	4	1	0	0

Hence the AKCHP project has made outstanding progress in improving the safety of maternity.

**viii) curative treatment for those who come to seek care**

Fee for service curative care is provided to those presenting at the Central Health Clinic, or at one of the six satellite clinics which are in the target area. Seventeen essential drugs are available for purchase.

Utilization has risen progressively from 1991 through 1993, as shown in the following table. The average number of consultations per habitant has risen progressively, as has the % of non-registrants despite their higher fees, which indicates good acceptance of these services by the population. However, it only reached 0.34 in 1993, low enough to indicate that most of the curative care in this population is probably obtained from sources other than AKCHP.

**CURATIVE CONSULTATIONS AND AVERAGE NUMBER OF CONSULTATIONS PER CAPITA, AKCHP, 1991-1993**

	1991	1992	1993
population	23,712	25,042	23,307
consultations	6,207 [6919?]	7,147	7,849
av. ann. no. consultations per person	0.26 [0.29?]	0.29	0.34

A referral network of 10 places for secondary and tertiary care has been defined and evaluated. A referral form was developed. These seem like very commendable efforts of AKCHP, but its staff is still not satisfied with its referral system.

The satellite clinics are community donated facilities in very modest premises, tiny buildings or shacks, and they have been moved around several times in search of more

satisfactory sites. Most do not have water or toilets, which is especially difficult for waiting pregnant women. The services provided in these clinics include:

- immunization, with portable cold boxes and equipment
- treatment of common illnesses
- MCH-FP services
- health education
- growth monitoring
- laboratory activities (urine test for pregnancy, for a fee)

The morbidity pattern seen in the clinics for children under five years of age is:

- ARI 42%
- skin 23%
- diarrhea 17%
- other 14%
- parasites 5%

This corresponds, roughly, to the pattern seen in the Karachi UPHC clinics, although ARI appears more predominant in Dhaka.

AKCHP has introduced laboratory services, first in its central facility (which is outside the 2 targeted wards), and since April 1994 in its Bijoy Nagar clinic. Laboratory services have been requested by clinic staff. They have been done in a simple way, with a fee schedule (non-registrants pay more), and found to be money-making. Laboratory services offered include: total blood count, differential blood count, erythrocyte sedimentation rate, hemoglobin, stool examination, urine examination, blood group, pregnancy test, malarial parasite, and TB skin test (Mantoux).

The curative services of AKCHP appear to be well managed, quality controlled, very efficient, and well accepted in the target population. The AKCHP notes that their setting is too modest to appeal to wealthier potential clients in the target areas, so they are probably quite equitable as well. The evaluation team feels that AKCHP has done an excellent job of managing its curative services in a manner consistent with the basic objectives of the project.

**ix) acute respiratory infection program (ARI)**

ARI is now the main cause of consultations for illness and of deaths in the targeted infants and children. The number of pneumonia deaths in <5y.o.s rose as shown below:

'91 ?  
'92 14 26% of deaths; or (14/3595)(1,000) = 3.9 o/oo ARI DR  
'93 23 49% " " ; or (23/3231)(1,000) = 7.1 o/oo " "

The annual ARI death rate in children and infants under five years of age thus rose from approximately (N.B.: end-year, rather than mid-year at-risk population denominators were used) 3.9 pneumonia deaths per 1,000 children, to just over 7. This is an inter-year rise of over 80%.

Hence, the observed drop in IMR and child death rates must have been due mainly to drop in EPI and in diarrhea deaths, which are quite low. Pneumonia is thus the major child killer in AKCHP, and rates appear to have risen recently.

In the UPHC in Karachi, in contrast, the 1993 ARI Death Rate in under 5's was considerably lower, about 2.4 per 1,000. One wonders if the considerably higher malnutrition rates in AKCHP than in UPHC populations contribute to this differential.

AKCHP staff received training in ARI case definitions, patient management and use of essential drugs in 1991. Training on the signs and symptoms of ARI was provided to CHVs, CMVs, and TBAs. In January 1992 AKCHP staff began applying the WHO and GOB algorithm on ARI in their clinics. From July 1992 the Government of Bangladesh Health Directorate on ARI began providing Cotrimoxazole for treatment of acute lower respiratory infection, and updating materials on ARI were brought from WHO for use in training the clinic team. Standardized ARI interventions have been made available in all AKCHP clinics since January 1993. Cotrimoxazole is one of the five systematic antibiotics on the AKCHP essential drugs list.

AKCHP staff have called attention to the very young ages at which pneumonia death is occurring. Of the 14 ARI deaths in 1992, 10 (71%) had occurred under the age of 4 months, and 12 (86%) under age one year. Of the 23 deaths in 1993, 8 (35%) were under 4 months, while 19 (83%) were in infants. In Karachi, in the UCHP in 1993, there were 12 ARI/pneumonia deaths in the 18 deaths in children under five years of age, or 67%. Thus, last year the pneumonia death rates in children were about three times as high in the DUCHP as in the UCHP populations, and they occurred at younger ages. Such specification will help field staff to focus their efforts.

Among the approximately 20 research projects of AKCHP noted in its 92/93 Annual Report is one on ARI interventions, undertaken using WHO Guidelines and in collaboration with UNICEF and the ARI Directorate of GOB. Of 664 under five year children seen in AKCHP satellite clinics, 255 had come for ARI problems. As shown in the following table, 69% of these children were found to have pneumonia, and 9% had either severe or very severe pneumonia. The Annual Report notes that only 20% of mothers having children with pneumonia returned to the clinic for follow up.



### ARI cases attended in satellite clinics Jan-March '93

Type of ARI	n	Percent
No pneumonia	80	31%
Mild or Moderate Pneumonia	152	60
Severe Pneumonia	18	7
Very severe Pn.	5	2
Total	255	100%

It appears that the AKCHP team has been working vigorously to lower its main cause of child mortality, ARI, whose incidence is liable to vary considerably from year to year and season to season. The evaluation team congratulates AKCHP for the activities and the research it has undertaken, and encourages them to continue both. As the key to lowering case specific death rates in ARI is precocious identification of illness followed by early and appropriate antibiotic therapy, the evaluation team wonders whether AKCHP has involved the CMVs, CHVs and TBAs in helping mothers of infants with early detection of dangerous ARI.

#### x) **water, sanitation, and environment initiatives**

A survey of all AKCHP slum households was conducted between April and June 1992, to serve as a baseline for future interventions. The results were presented at a workshop organized by UNICEF and the Center for Urban Studies, Dhaka University. They were shared with CARE for future development of a joint sanitation programme in slum areas.

A protocol has been prepared by AKCHP in collaboration with ICDDR,B to study the KAP of children and their primary caretakers regarding children's defecation in slum communities of Dhaka.

AKCHP had a chastening experience in water projects reminiscent of those seen in the other projects. Just prior to the present MG period it had started 2 tubewells in slums in collaboration with another NGO, ADRA. But then they would not work properly because the water level went down. The lesson drawn by AKCHP in its 92/93 Annual Report was, "This time emphasis is given to community participation and for sustainability and long term maintenance of the tubewells."

Application of that lesson was apparent when, after long discussion and involvement to establish the felt need of the community, a tubewell was installed in Hussain's bastee in Ward 60 of the AKCHP area. The community raised money for installation, while ADRA gave the

hardware. Two persons nominated by the community received training on maintenance of the tubewell.

A flipchart linking environmental conditions with personal hygiene was developed and field tested by AKCHP, then used to educate teachers and children in the school health program.

The evaluation team feels that environmental sanitation is an area where substantial improvement is warranted. This can be done with the help of other donor agencies such as UNICEF.

xi) **Vitamin A capsule (VAC) distribution**

Despite repeated delays in supply from the GOB, the AKCHP has distributed 200,000 i.u. capsules to children aged 1 to 6 years through its CHWs and clinic teams and reaching impressive coverage rates of 97 to 99%.

AKCHP works with the logistics and formats provided by the Civil Surgeon, with distributions in April/May and in October/November. In conjunction with the Helen Keller International NGO on nutritional surveillance, AKCHP has documented the decrease to no night blindness in the past three years, compared to 0.5% in 1991, and a range of 0.2-0.5% earlier.

AKCHP have also introduced giving of VAC to mothers within two weeks after delivery, with the help of the GOB, attaining coverage of 78%. All children under one year of age receive 25,000 i.u. when they attend immunization sessions; this amounted to 2872 doses, 7/92-6/93.

Vitamin A coverage has been higher than National and UNICEF targets since 1991. Night blindness cases have dropped to less than 1% since 1992.

AKCHP's performance in VAC distribution appears exemplary.

2. **Provision of services**

The services described above are provided in either the central health clinic (CHC) [which is actually not central, but outside the targeted areas of Wards 60 and 62], or at one of the 6 satellite clinics, or from home visits. All registered households are visited once every 3 months by paid CHWs, or oftener as needed. They are also visited in an irregular manner by unpaid mother health volunteers (MHVs), one of whom is selected from every 15 houses.

Each paid CHW is responsible for about 1830 people divided into "units" of 250-300 people. The first half of each month is devoted to routine services, and the second half for follow-up and nutritional surveillance. One household is visited each 3 months. The CHW visits about 15 households daily. There are about 15 volunteers for each CHW.

It appears that about 40% of the population in the project area is covered with AKCHP's curative service and 90-95% with preventive service. The curative coverage could be increased. There was a feeling among clients that, instead of 2 days per week, clinics could be organized more frequently. But, in order to do that, more manpower and more initial expenditure would be required. Medicines are being procured either free or at subsidized rates by AKCHP. If these opportunities dry up, then it may create problems. Steps should be taken to forestall such a situation.

There is no other NGO in the project area. There are two hospitals in the project area, Police and Railway, but they mainly provide services to their employees.

The total AKCHP staff consists of the following:

**Central**

Doctors	2
Paramedic	3
H.Asst.	3
Midwives	1
CHWs	2
Nurses	2
Med.Asst.	1

**Field**

Doctors	2
CHO	2
CHW	13

**Volunteers**

active	72
partially active	24
non active	28
Moholla mothers	27

**Service providers**

From 1991 to 1992, AKCHP paid CHWs and TBAs to come to the clinics to provide health education and to assist clients. When it tried to stop those payments, most stopped coming. The management has concluded that it is better limit the size of the paid staff, and to recruit and train a larger number of unpaid volunteers.

**Referral**

Although AKCHP has developed forms and lists of institutions to which the field staff can refer clients, the project needs more formal linkage with referral institutions such as

ICDDR, Shishu Hospital, Azimut Maternity, PG, Nutrition Centers of SCF that would permit more follow-up.

### C. COMMUNITY PROCESS

Efforts were undertaken and are still underway to hand over the responsibility of organizing health care delivery for the people by the people. A number of community process activities undertaken have not been successful in getting communities to make financial contributions for the PHC program, except to help in providing of facilities for the satellite clinics. Similarly, after many meetings and trainings of various kinds of volunteers, AKCHP staff have learned much about the ways in which volunteers can and can not perform in support of PHC. These lessons learned are listed below.

As related in the Annual Report of 91/92, AKCHP undertook a pilot project in a small area adjacent to that serviced in the first MG phase. The three localities in this area of about 4,500 people are South Khilgaon, Bagicha, and Indrapuri. The goal was to frame a local organizational infrastructure to manage PHC activities in its community, with assistance from AKCHP.

In South Khilgaon, seven community health volunteers were mobilized through a local cooperative society, the Hilful Fuzul Samabaya Samity. They completed construction of an office, mapped the households of their locality, and (with assistance of AKCHP personnel) developed household family cards for registering vital events, immunizations, and reception of VACs.

A number of women and girls in South Kilgaon could not receive their Tetanus Toxoid immunizations because of social and religious prohibitions about being exposed to male vaccinators. Therefore, the CHVs motivated their sisters and women neighbors to receive a 10 day training in PHC from AKCHP, and then to participate in immunization and VAC distribution.

The CHVs also began vaccinating the chickens of local families against poultry diseases to raise money for their PHC program. However, they then had to stop this program because of insufficient response from the community. Then they went on go run a grocery store, in which they made a profit. During 7/91-6/92, the CHVs organized 11 immunization sessions in South Kilgaon, including 8 immunizations against measles and 48 TTs.

In Bagicha locality, during 91/92 PHC activities were run by 8 CHVs in the premises of their club, Bagicha Nasir Smrity Sangshad. In September 1991 they received a Taka 20,000 donation from AKCHP and planned to raise Taka 30,000 themselves to renovate their center for PHC services. Before this could be finished, 6 of these CHVs had to go elsewhere to work for their livelihood, leaving only 2 CHVs active. In this period the CHVs managed to hold 23 immunization sessions, including 20 immunizations against measles and 200 TTs against tetanus.

During this same 91/92 period, AKCHP trained 133 Community Mother Volunteers, 95 Community Health Volunteers, 86 School Teachers and 22 Traditional Birth Attendants in PHC.

In February 1993 a workshop was held to review the status of community participation in Khilgaon and Bagicha, to identify problems face by volunteers and solutions found, and to make an action plan for the year. The Visualization in Participatory Program (VIPPP) method was used to ensure visualization and participation by all. Among the problems identified were need for money without which volunteers could not continue working at length, views of elders that voluntarism is a waste of time, and criticism of female and male volunteers working together.

Volunteers' recommendations were to give them payment, recognition, frequent contacts and support, and promotion of the acceptability of voluntarism among their elders. In response, AKCHP gave certificates of recognition, frequent contacts, and visits to another NGO, the Gonoshastha Kendra (GK). Volunteers continued support of EPI and VAC distribution activities, organized a rally carrying EPI placards and distributed car stickers, and distributed VAC to all 1-6 year olds in their localities. Female volunteers targeted and visited women to promote tetanus immunizations.

Described in the Annual Report 92/93 is a growing realization of the limits and of the personnel-time costs to support community contribution and voluntarism. Some of the main conclusions offered in this report, and in the AKCHP self assessment presented to the evaluation team, are that:

- voluntarism in the present socio-economic situation in Bangladesh is getting harder
- creating new volunteers for replacement and re-enforcement is a difficult problem
- extending PHC activities beyond immunization and VAC distribution by CHVs was not possible
- female volunteers are reluctant to work in the community actively on their own, but female and male volunteers can not, culturally, work together
- volunteers can mobilize community resources for PHC infrastructure buildings and activities, but only to a limited extent
- volunteers with support from the NGO can continue as a local health awareness building agent and perform minimum preventive health care activities like immunization, VAC distribution, periodic social mobilization activities related to health like organizing rally, street campaign, attending workshops etc. without any remuneration

- although not very strong, it is possible to develop an organization around which some PHC activities can continue in a locality, but these need to be supported actively by the NGO

The evaluation team was able to obtain the following account by interviewing a group of the student volunteers during a field visit. Elites and responsible people were approached. They could not accept volunteer responsibility. Instead, they presented their University and College-going children as volunteers.

These youths were trained. They were provided with some in-country study tours to some innovative health care organizations, e.g. Gonoshastha Kendra, BRAC, etc. A club house was built for them by AKCHP and the local community. They undertook motivational work for immunization, administer vitamin A capsules, do demographic, epidemiological and nutritional surveillance, identify health problems, arrange referral of patients and provide health education.

Every six months these volunteers report back to AKCHP. There are two problems with this system. One, that the community does not share financial responsibility; logistics are supplied by AKCHP or GOB. The second is that of drop out. Replacement by new generation of youths is frequent and tedious.

The certificate given by AKCHP is useful. Parents are happy to keep these volunteers busy in good work. Housewives could be involved. An action plan could be developed by these volunteers and logistics could be sought by them.

In view of the limited results of its earlier efforts at promoting community participation, AKCHP undertook a different, more in-depth type of pilot project which is called "sustainability of PHC through women empowerment." Also in Bagicha locality, the project took as objective the empowerment of women through functional education (as used in BRAC), training in PHC, and access to credit for income generation activities. From 7/92-6/93 AKCHP held 33 functional and health education sessions were held, Taka 3660 (\$91.50) had been raised and three loans had been made. Further details about this project are given in section G.

Work with the main body of volunteers in the principal target areas of Wards 60 and 62 has continued with monthly meetings with Community Mother Volunteers to discuss problems and achievements, and for continuing education. Training of volunteers has been tracked so that all received basic training and refresher training six months later.

Reviewing its experience with CMVs, AKCHP found that volunteer selection was a major issue in sustainability and community participation. Assembling all staff from field, clinic, and training attending, AKCHP held sessions with the VIPP method to use the personal working experience accumulated to determine criteria for selecting CMVs, to define CMV tasks, and to classify CMVs by their levels of participation and activity. The results are shown below.

Criteria for CMV selection

1. Must be married
2. Age 18-35 years
3. Resident of that area for at least one year
4. Willing to work spontaneously
5. Shouldn't be working outside
6. Age of last child should be more than 2 years
7. Should have leadership qualities
8. Should have her husband's consent

CMV tasks

1. Provide formal & non formal health education in her unit
2. Report events to CHWs
3. Help CHWs in the field
4. Attend training and meetings
5. Refer to clinic for sickness

Criteria to Classify CMVs by participation/activity levels

1. Attends meetings regularly
2. Provides health education
3. Helps CHWs in the field
4. Does motivational work

VERY ACTIVE:	1+2+3+4
ACTIVE:	1+ any two of 2,3,4
PARTIALLY ACTIVE:	1 at least every 6 mos. + 2 or 3
INACTIVE:	neither 1 nor 2 in last 6 months

A profile and a map of volunteers working in the AKCHP areas was to have been prepared using these results, but these were not seen by the evaluation team.

The evaluation team notes that the AKCHP project, like the UCHP project, concentrated its main efforts to develop community financing and management of PHC during this MG period in an experimental area adjacent to the areas in which PHC services had been developed during the preceding MG period.

However, AKCHP also documents the manner in which it has maintained support of volunteer work in its main target population, while trying to draw empiric lessons from its accumulated experience in ways that can be used to strengthen community participation there. Thus AKCHP has explored in an intelligent manner the possibilities and limitations of community volunteers in its main project and in its experimental areas, and has drawn

managerially appropriate conclusions. The main conclusions are that volunteers are important for promoting community awareness and acceptance, can be counted on for only a limited number of special tasks, require much maintenance and support, and can not be expected to mobilize much community money for support of ongoing PHC activities.

#### D. TRAINING, COMMUNICATIONS, AND HEALTH EDUCATION

AKCHP has done an outstanding job in training. It has sought quality in training by doing assessments of skills needed, by developing and using pre- and post- tests, and by employing active participation methods for trainees.

Its success with these methods has produced a local reputation that has brought requests for AKCHP to do paid training of personnel from other organizations. Revenues from such training have grown so rapidly in the past two years that they now are about equal to those from fees for use of the PHC services.

Despite the attainments in quality of education, quantity of training has been very high, as can be seen in the following table, provided by the training section during presentation of self-assessments to the evaluation team. It shows that the variety and number of sessions as well as the number of health workers affected have all increased over this period. It also illustrates increase in the use of participatory methods, those in which learning results from sharing and discussing of field experiences.

**TRAINING FOR THE PROJECT BY AKCHP, 1991-1994**

Intervention	Dur.	1991		1992		1993	
		sess.	atds.	sess.	atds.	sess.	atds
CMV basic	7 days	14	154	13	143	2	24
CMV refresh.	3 "	1	8	9	99	6	60
TBA basic	21 "	3	22	3	38	8	103
TBA refresh.	5 "	2	11	4	32	7	73
CHO/CHW In House Tr.	1 "	-	-	6	72	20	287
InHouse Pres	1 hr.	-	-	-	-	46	1184
Studytour (staff)	1 day	-	-	-	-	3	27
TBA meetings	1 "	-	-	20	326	29	556
CHV meetings	1 "	3	31	2	23	4	29



CMV workshop	1 "	-	-	-	-	1	13
Teacher wkp.	1 "	-	-	1	44	1	17
MMV basic tr	7 "	-	-	-	-	1	15
CMV meeting	1 "	-	-	11	229	27	494
study tour (CHVs)	1 "	-	-	-	-	1	16
Totals		23	226	69	1006	157	2898

The following table shows the kinds and volumes of paid training for personnel of other organizations (6 national and 4 international) outside the AKCHP project that were undertaken during the MG period. It shows the rapid increase in types of courses, numbers of trainees, and training revenues since such paid training was begun in 1992.

#### TRAINING SOLD OUTSIDE AKCHP, 1991-1993

Trainings	Dur.	1991		1992		1993	
		crs.	atds.	crs.	atds.	crs.	atds
TBA basic	21 "	-	-	1	16	4	50
Health Educ.	6 "	-	-	-	-	1	3
Comm. Nursing	6 "	-	-	-	-	1	3
Immunizations	3 "	-	-	-	-	1	3
TOT: Training of Trainers	12 "	-	-	-	-	1	18
Epidemiology/ Biostat. for PHC managers	18 "	-	-	-	-	1	12
<b>TOTALS</b>		-	-	1	16	9	89
Income, Taka	-	0		7,310		122,445	

Plans for greatly increased training activities in the near future have been prepared.

Another indication of the reputation AKCHP has acquired is that Holy Family Nursing School has sent several students to AKCHP to learn community based nursing care, and plans to use it as a site for this objective in their curriculum.

An impressive number of attractive health education materials have been developed, with pre-testing and revisions, within the project. These include flip-charts convenient for educators, portable posters, games, and leaflets. However, the evaluation team saw few of these materials during its limited field visits, and questions the adequacy of the distribution of these excellent materials. In the school visited, the classroom walls were bare of any visual materials (although the principal's office was decorated with the hanging poster with 10 health messages), and one satellite clinic had only two posters, both aids in identifying the symbols of political candidates.

The school health program was partly inspired by the experiences in the MPHC in Kenya, originally communicated through the RNP. In 7/91-6/92 a curriculum was developed with ten key messages and teachers from the 24 schools in the AKCHP area were trained. In August 1992, 3 AKCHP trainers attended a workshop on school health organized by RNP, held at the AKU in Karachi. Then a workshop was held in December 1992 for 44 teachers from the 24 schools and a wide range of possible activities were discussed, including examinations of school children and assurance of safe water and clean latrines for use in the school.

The evaluation team had one brief visit to one selected school and insufficient time to review the achievements of the school health program in any detail. It appears that health education has been introduced into most of the schools, although it was not possible in several kindergarten schools because of unwilling principals.

Our impression is that the nature of the health education being conducted in the schools consists mainly of the teachers informing students about the key health messages, but not in students carrying out active health tasks for other children, as in the child-to-child program visited in Kwale District, Kenya. AKCHP staff note that the school health program has been useful in the difficult area of promoting community participation and PHC in the community through interaction of teachers-students-family members.

These efforts undertaken through the school health programme aim to improve environmental and personal hygiene. This can create demands but there should be provision to meet the demands. Also school health programme should be strengthened further. One of the avenues would be to provide more health educative materials to the school authorities.

On our field visit, school authorities were found only mildly enthusiastic for the project activities. But they appreciated audio-visual shows provided by the project. They thought that two shows in two years is not good enough. They thought that bimonthly visits of the project staff to the schools is good enough. Students' knowledge on the causation and prevention of disease should be further improved.

AKCHP has done an outstanding job of communicating its mission, methods, advice about improving health, findings, and needs to communities, to collaborating organizations in and outside government, and to technical assistance and donor agencies. It has done this through a very large number of meetings with individuals and organizations, through detailed documentation of most of its activities in its Annual Reports, through a Monthly Newsletter (from January 1993), through ready sharing of its findings in numerous research projects and from its

Dhaka Urban Surveillance System (DUSS) (since April 1993), through its school education program, and through a very large number of training sessions conducted for many different kinds of people, categories of

The evaluation team recommends that the school health and the PHC programs be strengthened through use of more visual materials in classrooms and on the walls of satellite clinics. Training tools need to be produced in greater number and used more frequently, especially in outreach sites--clinics, schools, and community. We also recommend that AKCHP review its school health program to see whether more involvement of school children in active child-to-child tasks, as in the MPH program, would be feasible with existing resources and responsibilities.

Knowledge of the beneficiaries (mother volunteers and TBAs) that were trained by AKCHP on related issues such as causes of diarrhoea, how to prevent diarrhoea, vaccines, signs of at-risk pregnancy, etc. seemed very good among attendees at a women's club. During a slum visit it was reported that there had been no diarrhoea cases in any family (of the 19 mothers attending) in the project area in the last one month despite it being a peak period.

#### **E. PROJECT MANAGEMENT**

As mentioned in the Cost Analysis section below, the evaluation team feels that AKCHP has been impressively well managed. However, the project entered the current MG period in a bit of disarray, as it floated without firm leadership, from August 1990, when the previous Director left for MPH training, until the arrival of the current Director in late October 1991.

After some initial negotiations to obtain adequate office space and control over personnel, the new director soon thereafter launched vigorous efforts to assess and improve the quality and the efficiency of services, of data, of use of personnel, of efforts to mobilize community participation, of training and of research. The working environment of AKCHP employees were improved through a number of actions, including streamlining of office procedures, and of store and stock management.

Monthly staff meetings were inaugurated in November 1991, with recorded and circulated minutes. The Director also started weekly meetings with the different sections. The leave pattern was reviewed, and the records simplified.

The central and satellite clinics were reorganized to improve the working environments and use of space. Fans, furniture, bulletin and notice boards were procured for clinics and different sections of the administration. A more functional vehicle, photocopier and computer were obtained. A Staff Common Savings Fund was initiated. A concerted program of staff development through training was initiated.

Other actions undertaken were the selection of one community mother volunteer (CMV) for every 15 households in the target area, and the training of 133 of these CMVs.

The demographic, morbidity, and service indicator surveillance system was reviewed and changes were made to reduce workload and improve data quality. This led to redesign and computer reprogramming of the information system using a relational database in the following year.

Clinic activities were reviewed and 3 additional satellite clinics were started. Clinics were moved and modified in timely response to changing conditions and needs. Clinic fees were doubled from 5 to 10 Taka, and the resulting changes in utilization were monitored and analyzed. Quality of services was subjected to regular field checks, and in house training was instituted.

All training programs were reviewed and upgraded. A volunteer curriculum was developed, as were 8 teaching flipcharts, which were pre-tested, then used with volunteers in the field. TBA training was reviewed in collaboration with the national TBA training program, and strengthened. An internal research cell was formed with the Director as head, and problems of importance to improvement of services were targeted. Collaboration with a large number of other organizations (listed in the Annual Reports) was strengthened.

Many other actions that strengthened project management could be mentioned, but these, hopefully, convey the continually questioning, "can do better" management style developed within AKCHP. New ideas and appropriate innovations seem to have been introduced continuously into the various components of the program.

The performance of the headquarters based staff is commendable. Clinic based staff are also performing well. But there are a few areas where improvement is advisable, e.g. some of the CHWs must be monitored more carefully. The setting of the satellite clinics may require some improvement. Communities should be brought to contribute to this end; 10% to 20% of patients come from non-project areas.

In summary, AKCHP has benefitted during 1991-1994 from a vigorous managerial approach to improving the working environment, the staff and service providers, the services and the data--all through continuous team problem-solving. The evaluation team wishes to commend the director and his staff for an exemplary job of managing their project, and recommends to the AKHN that the Director and some of his Section heads be considered as sources of technical assistance for strengthening management in its other PHC projects.

#### **F. MANAGEMENT INFORMATION SYSTEM (MIS)**

The evaluation team regards this unique HIS as an outstanding accomplishment of the AKCHP project.

Under the leadership and with the technical assistance of the current director, the original MIS, designed with technical assistance from AKF, VITA and CHS/AKU, was simplified, completely redesigned, reprogrammed, and computerized to produce the new Health Information System (HIS).

This is an integrated, computerized demographic, morbidity, and service indicator surveillance system which can quickly and flexibly produce reports on the various activities of the AKCHP program. The software package which produces these reports is "PHC Manager". This innovative management information system, based in Foxpro and programmed by the AKCHP director and his computer specialist, integrates together demographic with health status with health services information. A large range of different, managerially useful reports can be generated quickly.

The DUSS (Dhaka Urban Surveillance System) reports, show basic demographics of the target populations by age, sex and selected areas, as well as causes of death, pregnancy outcomes, fertility and other basic demographic rates, such as migration and marital status, and basic vital statistics, such as Infant Mortality Rates. These DUSS reports are updated quarterly.

These locally designed and programmed, innovative management information systems [Health Information system (HIS) and Clinic Information system (CIS)] integrate demographic and service information in a way to make them useful managerial tools.

At the clinic level, the paperwork required of health workers seems to have been minimized.

However, some areas for potential improvements in interpretation and managerial use of the reports from the HIS were identified by the evaluation team. Improvements in its use can be made, as in any new system, especially in scrutinizing reports carefully in order to judge the credibility of figures reported by house-visiting CHWs and to monitor the quality of staff performance. Some tables can be made more self-explanatory. Some minor duplications can be avoided. The information produced could be more need based and focused on objectives.

A limitation of the mortality data is that no follow-up population based survey has been done to compare with the baseline survey to estimate progress or to validate the ongoing collection of data by field workers. A follow-up population based survey should be conducted to validate morbidity and mortality reporting in the MIS, and to provide a point of comparison with the population survey of 1986. The evaluation team recommends that the absence of malnutrition from the reported main causes of death be reviewed, and suggests that AKCHP undertake technical consultation with those in UCHP who are developing the well refined verbal autopsy and analysis program for CHS/AKU.

The patterns of morbidity and mortality among adults and children in 1991, 1992, and 1993 should be investigated to determine if there is evidence of a superimposed epidemic disease in that period. More emphasis should be put on finding ways to reduce malnutrition, low birth

weight, and maternal anemia as these have responded little to program efforts so far. Reasons should be sought for high mortality rates due to respiratory infection in children under 5 years of age, and effective program measures to lower them should be developed.

## **G. COST, FINANCING, AND FINANCIAL SUSTAINABILITY**

### **1. COST ANALYSIS**

#### **a. Methods Utilized**

The AKCHP, was the only project to conduct both a cost and sustainability analysis using the PHC MAP Modules 8 and 9 as part of their self-assessment. These analyses were found to be of good quality for first-time users: the Project Director, Executive Secretary, and the Finance Officer. The sustainability analysis will be discussed in further detail in Section C. The cost analysis focused on differences between actual and budgeted revenues and expenditures between 1991 and 1993, as well as on the distribution of expenditures by line item, such as personnel and travel. The analysis also included a breakdown of PHC revenues by source during this phase of the Matching Grant. A break-even analysis was also performed.<sup>29</sup>

Project staff felt that they had learned much from the costing exercise and plan to conduct similar analyses the following year. The cost analysis was thought to be useful for project management, as well as for lobbying for additional donor resources. For instance, project staff were able to evaluate trends in expenditures from one year to the next in order to identify areas where costs could be reduced. In addition, comparison of revenues and expenditures were utilized to garner additional donor funding for the project from DANIDA through 1996 and perhaps beyond.

Project expenditures and revenues tracked through the computerized accounting system (Z) were utilized for the cost analysis. However, computations for the cost study were made manually in order to correspond to the categories recommended in the cost analysis framework.

#### **b. Main Findings**

Figures from the self-assessment cost analysis were modified slightly during the evaluation team visit, based on updated information and suggestions by the health economist. The figures presented in this section reflect the most up-to-date cost information for the AKCHP between 1991 and 1993. An exchange rate of Tk 38.4 was utilized for 1991, and Tk. 38.9 was used for 1992 and 1993 to convert U.S. dollars into local currency equivalents.

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<sup>29</sup> These analyses constitute Level I assessments as recommended in PHC MAP Module 8.

**TABLE B1: TOTAL COSTS OF THE AKCHP, 1991-1993**  
(in 000,000s Tk)

CATEGORY	1991	%	1992	%	1993	%
Administration	1.13	28	1.4	26	1.8	33
HIS	.395	10	.819	15	.677	12
Training	.237	6	.829	15	.782	14
CHC	.856	21	.241	4	.232	4
Field	1.23	30	1.19	22	1.15	21
S Clinic	.009	.2	.520	10	.444	8
NSP	.191	5	.433	8	.478	9
<b>TOTAL</b>	<b>4.051</b>	<b>100</b>	<b>5.430</b>	<b>100</b>	<b>5.584</b>	<b>100</b>
<b>COSTS BY LINE ITEM</b>						
Personnel	2.618	65	3.177	59	3.434	62
Consultants			.125	2		
Travel	.340	8	.526	10	.500	9
Supplies	.303	8	.438	8	.394	6
ODCs	.273	7	.344	6	.672	12
IDCs	.481	12	.648	12	.672	12
Equipment	.036	1	.182	3	.240	4

**NOTES:**

Administration = salaries, benefits, travel, supplies, direct and indirect costs associated with project management staff.

HIS = salaries, benefits, consultants, travel, supplies, direct and indirect costs associated with development and maintenance of the Health Information System.

Training = similar costs associated with the training unit

CHC = similar costs associated with the Community Health Clinic

Field = costs associated with the outreach services

S. Clinic = costs associated with the Satellite clinics

NSP = costs associated with the Nutrition Surveillance Project

ODCS = Other direct costs

IDCS = Indirect costs

Total costs were estimated for each year by line item (e.g., personnel and supplies) as well as by section (e.g., training, administration, or field activities). The results are presented in Table B1. The total cost for 1991 in Thaka was 4.05 million (\$105,500); this figure increased to Tk. 5.4 million (\$139,600) and Tk. 5.58 million (\$143,650) in 1992 and 1993, respectively. Between 1991 and 1992, the rate of increase of total project expenditures was 25%, although growth in expenditures slowed between 1992 and 1993 to 3%, with an overall rate of increase of 27% for the three-year period.

Personnel costs accounted for the greatest share of total cost at 65% in 1991, falling to 59% in 1992 and increasing again to 62% in 1993. Indirect costs, such as rent, utilities, insurance, telephone, housekeeping, and entertainment expenses were the second most important cost category at 12% for each of the three years. Travel costs, which reflected the cost of fuel and conveyance, ranked third in overall significance at 8%, 10%, and 9% in 1991, 1992, and 1993, respectively.

Equipment expenditures were depreciated based on 10 years of useful life, following the procedures recommended in the PHC MAP Module 8 manual. Equipment expenditures increased from 1% in 1991 to 3% in 1992, rising further to 4% of total costs in 1993.

The most interesting type of analysis compared the costs of each section within the AKCHP by year. In 1991, field costs represented 30% of total costs, but this figure declined to approximately 21% of total costs in 1992 and 1993. By contrast, administrative costs grew to



represent the greatest share of total costs at 26% in 1992 and 33% in 1993. The growth rate for administrative costs for the project was 38% from the first to the third years. Similarly, training costs increased 70% from 1991, and costs for development of the health information system rose 42%. From this analysis, one sees that project costs not directly associated with service delivery (administration, training, and HIS) grew 46% overall during this period, reflecting increased activities in those areas.

By contrast, service delivery costs, including the cost of the Community Health Clinic (CHC), the satellite clinics, field work, and the Nutrition Surveillance Project (NSP) remained constant during this period. A large decline in total costs was seen for the CHC (down 269%) and a much smaller decrease was observed for field work (down 7%). On the other hand, the costs of running the satellite clinics rose 98%, and NSP costs increased 60%. The significant declines in CHC costs and increases in the costs of satellite clinics are partly attributable to changes in methods of tracking expenditures between 1991 and 1992 rather than actual changes in expenditure patterns. However, there were some attempts by the project to streamline implementation and improve efficiency.

**TABLE B2: BREAKDOWN OF REVENUES, 1991-1993**  
(in 000,000s Tk)

SOURCE	1991	%	1992	%	1993	%
SJCS	2.937	84	5.572	90	4.506	85
HKI	.389	11	.317	5	.274	5
UNICEF			.027	.4		
Contributions	.04	1	.061	1	.173	3
Fees	.098	3	.119	2	.113	2
Training			.007	.1	.111	2
Transport	.051	1.5	.06	1	.08	1.5
Others	.002	.04	.004	.1	.029	.6
Total Revenues	3.517	100	6.167	100	5.286	100
Total Expenditures	4.051		5.430		5.286	
Variance	-.534		+.737		-.298	
Donor funds		96		97		94
Community Contribution		3.7		3.5		6

Community Contribution of Field		7.2		9.8		18.25
NOTES: SJCS = Silver Jubilee Commemoration Society HKI = Helen Keller Institute Contributions = Revenues from user fees						

Revenue information is presented in Table B2. Total revenues for 1991 were Tk. 3.5 million (\$91,593), followed by an increase in revenues to 6.2 million (\$158,545) in 1992 and 5.3 million (\$135,895) in 1993. Revenues for the project came from a variety of sources, including the Silver Jubilee Commemoration Society (SJCS), through which donor funds such as the USAID/AID Matching Grant and MISEREOR resources were transferred, Helen Keller International, UNICEF, fees for services, training income, and other income-generating activities. The largest source of income was from the SJCS, ranging from 84% of total income in 1991 to 90% of total income in 1992, for a total of Tk. 13,015,682 (\$335,577). This is twice what was budgeted for the Matching Grant of \$162,200 for the three-year period. Some of this difference (\$48,308 or Tk. 1,862,518) was derived from contributions by MISEREOR, a German aid organization. The rest must have been financed from donations and contributions to the SJCS.

The total funding from the Matching Grant through USAID and AKF was \$162,200, or approximately Tk. 6,302,232. In 1991, a total of \$27,300 was received by AKF,B and transferred to the Silver Jubilee Commemorative Society (SJCS) for use by the project. In 1992, \$82,985 was received, and in 1993, \$51,915 was received for the project. USAID Matching Grant funding accounted for 30%, 52%, and 38% of total income in 1991, 1992, and 1993 respectively.

HKI contributions for the NSP amounted to between 5% and 11% of total income. Fees for services represented between 2% and 3% of total income; whereas, total donor contributions accounted for 96%. Thus, the AKCHP was heavily donor-funded throughout the life of the project, and community contributions and revenues from income-generating activities only accounted for a small proportion of total revenues.

Figure B1 illustrates the difference between revenues and costs by year of the project. This figure illustrates that the project was running a deficit in 1991 and 1993, with a positive balance in 1992. Overall for the period, expenditures were slightly ahead of revenues. However, since many of the costs included in the cost analysis represent non-cash accounting conventions (such as write-offs for depreciation and loss on sale of assets), this deficit is somewhat artificial.

In reanalyzing total cash receipts and cash expenditures for 1992 and six months of 1993, Table B3 shows that the project was never short of cash for its operations. From this table, one can estimate that total payments in 1992 were 14% greater than total costs analyzed through the cost analysis; whereas, total payments were 40% less than costs in 1993. These discrepancies

arose from differences between real cash expenses and accounting procedures, and represents one of the major limitations of the use of the PHC MAP Module 8.

**TABLE B3: CASH RECEIPTS AND PAYMENTS, 1992-1993**

Indicator	1992	1993
Balance Forward	696,305.45	314,824.65
Total Receipts	6,644,701.41	3,681,041.68
Total Cash Expenditures	6,329,876.76	3,303,848.10
Balance on Hand	314,824.65	377,192.98

As mentioned previously, the cost analysis focused on a basic evaluation of expenses and revenues, without comparing the costs of operating different clinics (Level 2) or the costs of implementing specific health activities (Level 3). In addition, a cost-effectiveness analysis was not performed for the self-assessment.

It was impractical during the three-day evaluation of AKCHP costs to undertake a specific evaluation of clinic costs; however, a rough attempt was made to evaluate the costs and effectiveness of different health activities of the project using the cost information presented above, as well as estimates of the distribution of personnel time among activities, and reports on program outputs from the health information system.

A meeting was held with the medical officer, 10 out of 13 community health workers (CHWs), the two community health organizers (CHOs) and one field supervisor (FS) to estimate the distribution of their time spent on immunization, family planning, VAC distribution, antenatal and postnatal care, and growth monitoring activities. Table B4 presents the percent of time spent on these activities as an average of the three different types of community health workers. The remaining time would be allocated to meetings, record-keeping, follow-up activities, health education, and other non-service efforts.

Growth monitoring and VAC distribution time was calculated by estimating the total time (minutes) per contact, multiplied by the number of estimated contacts, all divided by 60 minutes per hour. A total of 160 full-time working hours per month was used to estimate percentages. The results of the meeting on time allocation need to be regarded as rough estimates. It is recommended that a more thorough evaluation be conducted by project staff using a monthly diary or logbook of daily activities and time spent, validated by observations of daily activities when possible. The framework proposed by UNICEF in its costing manual entitled, Cost, Resource Use and Financing Methodology for Basic Health Services, A Practical Manual, could be used to collect this information (see the Bibliography).

**TABLE B4: ALLOCATION OF COMMUNITY HEALTH WORKER TIME**

Type of Activity	Percent of Time
Immunization	4.4%
Antenatal and Postnatal Care	25.7%
Growth Monitoring	10.1%
Family Planning	2%
VAC Distribution	18.4%
Other, Non-Service Activities	39.4%

Each percentage was multiplied by the total cost of field work for each year to determine the cost of each activity. For antenatal and postnatal care, CHOs and the FS also have contact with women at the satellite clinics, so that a portion of clinic costs (14.1%) was added onto field site costs to be more complete. The analysis could have added a proportion of total administrative and support costs (administration, training, and HIS costs) to estimate the "full" cost of all of these activities. From interviews with the Project Director, it was determined that approximately 9% of his time would be devoted to each of these activities, so that one could inflate the direct costs by 9% to arrive at the full cost. This type of analysis will not be presented in this report.

**TABLE B5: COST AND COST-EFFECTIVENESS OF THE AKCHP, 1991-93 (Tk)**

INDICATOR	1991	1992	1993
Total Cost	4,051,243	5,430,451	5,584,002
Population	23,712	25,042	23,307
Cost/Capita	171	217	240
Clinic Cost	1,304,808	1,439,869	1,425,140
Patient Consultations	6,207	7,147	7,849
Cost/Patient	210	201	182
EPI Cost (<1 year)	54,367	52,446	50,800
Number FIC		100	113
Cost/FIC		525	450
Number of Immunization Doses		8,490	9,214
Cost/Dose		6.18	5.51

ANC/PNC Cost	436,820	339,175	328,242
Total Contacts			5,553
Cost/Contact			59
FP Cost	24,513	23,651	22,905
Couples Protected		5,473	7,114
Cost/Couple		4.32	3.22
GM Cost	315,010	552,308	593,469
Weighings		2,650	1,586
Cost/Weighing		208	374
Children Gaining		124	127
Cost/Child Gaining		4,454	4,673
VAC Cost	226,770	218,795	211,892
VAC Capsules Distributed			2,824
Cost/Capsule Distributed			75
NOTE: Measures of effectiveness derived from HIS statistics available May 1994.			

Table B5 contains the total cost and cost-effectiveness by activity. The cost per capita served by the AKCHP increased 28% from Tk. 171 to Tk. 240 (\$4.45 to \$6.16) between 1991 and 1992. This is due to rising total costs (27%) and declines in the population served from 23,712 to 23,307 (-2%).

The cost per clinic visit was calculated by adding the cost of the CHC and 86% of the cost of satellite clinics together and dividing by the total number of clinic visits for each year.<sup>30</sup> The cost per patient dropped from Tk. 210 to Tk. 182 due to increases in the total number of patients seen of 21% compared to a 14% decline in total costs. Dividing the total cost of satellite clinics by the number of clinics in operation in each year (5 in 1992 and 6 in 1993) provides an idea of the running cost of health clinics through the project. In 1992, a satellite clinic cost approximately Tk. 104,000 to operate compared to Tk. 74,000 in 1993. Therefore, the project has become more efficient in providing clinic services to its population.

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<sup>30</sup> This approach was used in an effort not to double-count costs between sections and activities. Fourteen percent of satellite clinic costs were attributable to ANC/PNC visits and this proportion of their costs would be allocated to the ANC/PNC activities.

Immunization costs for children were approximately Tk. 50,000 per year or \$1,300, and the cost per fully immunized child less than one year of age declined from Tk. 525 (\$13) to Tk. 450 (\$12) between 1992 and 1993. These figures are less than international averages of \$15 per FIC. The cost per dose was approximately \$0.15.<sup>31</sup>

ANC, VAC distribution, and family planning services were found to be cost-effective relative to other services. The cost per ANC/PNC visit was Tk. 59 in 1993, or \$1.52. In addition, the cost per couple was Tk. 3 or \$0.08. If one considers only those couples using contraceptives with nearly 100% efficacy (the oral pill, vasectomy, and tubectomy), the cost per couple protected was Tk. 5.60 in 1992 to Tk. 4.21 in 1993. The low family planning costs are a reflection of the time allocation patterns which need to be verified in future studies. The cost per dose of VAC was estimated to be Tk. 75 in 1993, or \$1.50.

The cost per number of weighings of children for growth monitoring purposes was estimated by adding the proportion of field costs and the costs of the NSP, and dividing by the total number of weights taken. This resulted in a cost per weight of Tk. 208 in 1992, increasing to Tk. 374 in 1993 (\$10). The rise is due to an increase in the total cost of growth monitoring activities as well as a decline by 61% in the number of weighings. Perhaps a better indicator of the effectiveness of the growth monitoring and nutrition components is the number of children gaining weight from severely malnourished to malnourished, and from malnourished to normal weights. The cost per child gaining weight increase slightly from Tk. 4,454 to Tk. 4,673 between 1992 and 1993.

The cost-effectiveness results suggest that the direct, service delivery aspects of the project are being run efficiently. However, the full cost of each of these field components would be approximately 9% greater due to activities in support of these services. There still remains 40% of overhead costs which are not related to direct service provision, which could be the focus for further cost reduction in order to increase the chances of sustaining project activities in the future. These costs were not included in the cost-effectiveness analysis.

c. Areas for Improvement

Although the cost analysis conducted for the self-assessment used the methodology outlined in the PHC MAP Module, there are several recommendations for strengthening the analysis. First, many of the essential supplies and pharmaceuticals used in the delivery of services are donated either by the Government of Bangladesh or by donor agencies, such as UNICEF. The value of these donated items were not included in the analysis as "costs", and therefore, the cost analysis underestimates the true value of implementing its activities. Further, the program relies on mother volunteers, and it would be useful to estimate the value of their donated time to the project. Estimating the full economic cost of the program would be useful for assessing

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<sup>31</sup> Immunization costs represented a fraction of total costs for all immunizations since the cost for administering TT to women was removed on a proportion of doses basis (19% in 1992 and 16% in 1993).

sustainability of project activities. It is suggested that the program draw upon the approaches presented in other costing manuals for a full cost analysis.

In addition, it is suggested the project evaluate each program activity separately as outlined in the Level 3 analysis in the PHC MAP Modules or as described in other costing manuals for the next costing exercise. One of the drawbacks to the approach used for 1991 through 1993 costs is that the distribution of personnel time was used as a basis for allocating personnel as well as other costs. One could use the time distribution to allocate personnel costs only, and then directly assign other costs, such as a cost of vaccines to immunization, or the cost of drugs to clinic services.

Further, it is highly recommended that the program conduct an analysis of the average cost per type of contact, or cost-effectiveness analysis, using data on costs by activity and information reported to the health information system.

The project staff could also analyze Level 1 data more in-depth, such as time trends, rates of growth, and cost and revenue profiles. These trend analyses should then be incorporated more into the preparation of the financial aspects of the sustainability analysis.

In order to determine if the AKCHP services are cost-effective, it is important to compare unit costs with those for government services or other NGOs. BRAC recently underwent a cost-effectiveness analysis, and it would be useful to compare AKCHP results with the findings of the BRAC evaluation.

Finally, the opportunity of a cost analysis could be used to identify, develop, and evaluate other types of management indicators, such as productivity of personnel (number of contacts per day per worker), and vaccine wastage rates.

## 2. FINANCIAL MANAGEMENT

### a. Description and Assessment of the System

The financial management system of the AKCHP is well-documented and there appears to be adequate controls in place from the field level up to the project office. Feedback to the project office and AKF, B is timely. However, less information is known about financial management and controls between the project office and SJCS and between SJCS and AKF because of limited time for evaluating this aspect.

Of all of the projects reviewed for this evaluation, this is the only case where a project manager/director had some control over project resources; he skillfully manages the project in order to make ends meet. The project should be commended for its use of financial information in program budgeting and planning. However, it is the case that the project director does not have full information on available revenues, since the SJCS is used as a conduit for project resources. As the director is merely a

joint-signatory on the project account, control over resources remains with the Management Board.

The next paragraphs briefly describe the financial management system of the project. AKF, B receives transfers in U.S. dollars from AKF, Geneva and converts these into local currency (Thaka) based on prevailing exchange rates. Disbursements are made to the Silver Jubilee Commemoration Society (SJCS) on approximately a quarterly basis. In turn, the SJCS disburses funds in local currency to the AKCHP project account.

Reporting of project expenses and receipts is made on both a quarterly and annual basis from the project office directly to AKF, B. At this point, AKF,B uses cost information to seek reimbursement from AKF, Geneva and AKF USA. Bank reconciliation is performed manually on a quarterly basis at the project office. All project accounts are audited annually. Formal financial reporting between the SJCS and AKF did not exist between 1991 and 1993.

Funding under the Matching Grant was terminated in June 1993 as per the revised budget. Because the project receives funds on a reimbursement basis, the books were closed in June 1993 and income from the grant was treated as receivables.

Funds are managed at the project by the Finance Officer, Mr. Benjamin Rakshan using a computerized accounting system known as "Z". The accounting system was reorganized in 1992 to reflect expenses by project section, including the health information system, training, administration, the CHC, field activities, the satellite clinics, and the NSP. This has allowed the Project Director to manage more closely the allocation of resources to project activities.

The project charges fees for services at the Community Health Center and the satellite clinics. A Tk. 10 charge is levied to individuals in their registered population, whereas, unregistered patients pay double this amount for a visit (Tk. 20). Patients also pay market replacement value for drugs prescribed during visits. A charge of Tk. 1 is also levied for household visits by CHWs for registered patients (the price is Tk. 2 for non-registered patients). Therefore, the project has been fairly sophisticated in attempting to cross-subsidize the costs of their registered population with non-registered patients.

There are cases when patients are not able to pay, although it was estimated that free care represents 1% of total care provided in these clinics. Thus, the fees and charges levied appear to be affordable to the community.

When fees are collected, each patient receives a receipt from a receipt book. The money collected each day from each site is brought to the project office and locked up until the end of the week, when cash on hand is reconciled with the receipt book by the Finance Officer. Another receipt is given to each site once cash is passed to the level of the project. In this way, the project has maintained tight control over the flow of receipts from patients to the project. Since the project operates on a tight budget, there is every effort and incentive to prevent leakage from this system.



**b. Areas for Strengthening**

Since SJCS was used as a "pass through" for matching grant funds, it would have been prudent for AKF, B to have requested quarterly and annual documentation from them. In future, AKF, B could request SUH to submit quarterly or bi-annual financial statements on their receipts and disbursements in order to create a more complete and air-tight financial feedback system.

The Finance Officer has mentioned the heavy workload involved in tracking and processing financial information for the project. During the evaluation, it was apparent that the project would benefit from hiring a financial assistant, perhaps on a part-time basis at first.

Finally, it is strongly recommended that AKF utilize the skills of the Finance Officer in establishing and/or upgrading the financial management systems of the other projects included in this evaluation. He would be an excellent person to train the recommended project accountant in the Mombasa PHC on computerized financial management. In addition, he could provide guidance in order to improve the financial management of revenues collected from field sites in both the Karachi UPHC Project and the Mombasa PHC Project.

**3. FINANCIAL SUSTAINABILITY**

**a. Efforts to Ensure Financial Sustainability**

The AKCHP has taken several steps to ensure the sustainability of the project. First, the project conducted a sustainability analysis using PHC MAP Module 9. During this analysis, staff identified donor funding and inflation as two financial factors affecting the project's sustainability. Inflation was viewed as a negative threat to the project, although it is only 2% per year; while, reliance on donor funding was viewed as an opportunity to maintain project activities.

The sustainability analysis showed that in the best possible case, revenues would barely keep up with the pace of expenditures (see Figure B2). Revenues would grow because of increases in contributions by philanthropic organizations, government subsidies, grants and contracts, as well as revenue from income generation, from \$133,000 to \$932,000. In this scenario, expenditures would grow from \$143,000 to \$924,000, as a result of doubling of personnel expenditures, slight increases in indirect costs, and declines in supplies and equipment expenditures. Within the first two years, the project would be running at a deficit, although this turns around in the third through fifth years of the projection to a slight positive balance.

In addition to performing a sustainability exercise, project staff have made strides to improve the efficiency of project operations by reducing service delivery costs through tight internal financial and project management. The project relies on a cadre of mother volunteers to implement key activities, as well as a limited number of paid community health workers.

Because matching grant funding of the project terminated in 1993, project financing was uncertain. Through a series of creative and innovative income generating measures, including co-financing of drugs by communities, charges for services, hiring of the project vehicle for transportation services, creation of a small diagnostic laboratory competitive in price with other alternatives in Dhaka, women's income generation from clothing manufacture, and upgrading of the community health clinic, the project was able to establish alternative sources of financing.

Yet, community contributions still represent a small proportion of total project revenues and expenditures (between 2% and 3%). If one examines the cost of field activities, satellite clinics, and the CHC, contributions cover a declining proportion of these costs, from 4.7% in 1991 to 2.3% in 1993. The picture looks somewhat brighter when revenues from other income generating activities are added to patient fees. In this case, the trend increases from 7% in 1991 to 18.25% in 1993. This represents a 59% rise in revenues from alternative sources besides donor agencies and contributions, which is a remarkable achievement of the project.

In addition, there was excellent marketing of the project to other donor organizations in order to sustain funding. It was stated that the transparency and organization of the financial management system of the project were key factors in obtaining funding from DANIDA through 1996.

The project also is experimenting with a women's savings group. Women contribute Tk. 5 on a weekly basis into a common pool. These women can then borrow funds from this pool under pre-specified conditions of repayment in 40 equal weekly installments. In addition, the women receive some education on primary health care, basic literacy training, and information on financial management. Out of this pool of funds, five percent is set aside: three percent for PHC activities for the children of women in the program, and 2% for community improvement activities. Between April and December 1993, the savings groups have had 100% loan repayment, and high coverage rates for immunization, VAC distribution, and health education. However, the total funds raised for PHC were limited to Tk. 510 so that financing other types of health activities probably could not become the responsibility of these groups.

There has been a new initiative to enhance income generation in the form of a small scale garment factory with two sewing machines and four workers. The evaluation team believes that this type of activity needs to be conducted with the assistance of other local NGOs, since the project has a comparative advantage in health and not IGAs.

The project has also conducted a study on the costs of deliveries performed within the project area, using TBAs and other service providers. This study was performed in order to determine the feasibility of expanding into maternity care for the project and to assess how much the population pays for delivery services. It was found that the total cost for home delivery was Tk. 251, though there was a wide range in cost for the sample. TBAs trained earn some cash and kind contribution from the community. This is however, very negligible. Benefitted families could be asked to pay the TBAs as a routine within their capability.

Finally, the Society for Urban Health (SUH) recently gained legal and official NGO status by the Government of Bangladesh, which represents a step toward independence from AKF, which wishes to maintain a supportive role only.

b. Prospects for Sustainability in the Future

Donor funding will be necessary to sustain project activities into the future, since donor resources represent 96% of the total resources available to the project over the past three years. Donor resources will be necessary to cover administrative, training, HIS, and other aspects of the project not directly related to service delivery.

However, the impressive gains in cost sharing from the community through user charges and other innovative strategies cannot be overlooked. It may be possible to increase the role for cost recovery at community level, though probably not to exceed 30% of service delivery costs. This figure is based on experience of other primary health care projects worldwide. The project could experiment with charging slightly higher fees, although utilization (who continues to come and who drops out) needs to be carefully monitored to assess whether fee increases are causing substitution away from AKCHP services, particularly the very poor.

Cost recovery should never be viewed as a panacea for financing primary health care projects, simply because there are key aspects of project activities which are financed with a large share of foreign exchange, such as vaccines and drugs. Donor resources and/or subsidies from the government are two strategies which can be continued to offset these costs to the project.

Because cost recovery from user fees will not likely exceed 30% of total project costs in the future, the project could consider some type of prepayment or health insurance scheme for families living in the slum areas and for those who utilize the clinic services. One scheme developed in Thailand utilizes a health card which entitles a family access to a prescribed number of prenatal, well-baby, and basic curative care visits based on family size. Additional visits are then financed through user fees. This system has three advantages: first it allows the project to collect revenues at the beginning of the year and to plan according to a specified budget. Second, the entitlement to preventive care at primary health care centers encourages utilization of these services and discourages shunting of health conditions to more costly clinics. Third, it allows for development of some form of a sliding scale, whereby "wealthier" families help offset the costs of caring for poorer families. It is recommended that the project obtain more thorough documentation of this and other financing schemes, as well as establish a study-tour of an area in Thailand where this is being implemented.

Further income generating activities should be encouraged. The project could consider charging higher clinic prices to the non-registered population in an effort to cross-subsidize population groups and generate more revenue. However, this strategy needs to be pursued with caution in that the project should not be driving patients away by charging prices higher than the patient population can afford. A pre- and post-fee change evaluation is recommended to assess the affordability of this type of strategy.

Other alternative financing strategies could be to consider providing some other type of service which is inexpensive to provide, but which will help generate revenues, such as eye care or maternity services. The project or SUH could consider expanding services into another type of population base in order to cross-subsidize care provided to poorer populations from those which may have a greater ability to pay, such as university students or local union groups. Community pharmacies may show additional promise as income generating strategies. Before launching into any other type of financing strategy, it is recommended that a thorough feasibility study be conducted. It is recommended that the project steer away from any new non-health income generating activities in the near future because there is a lack of in-house expertise and such efforts will be a drain on scarce professional time.

The project should continue to exploit its expertise in training, particularly of the PHC MAP Modules. Continued selling of training courses will be an extremely important aspect of project financing in the future.

One threat not identified for the sustainability analysis is the declining population base in the slum areas served by the project. Drops in population will affect the projects' ability to generate revenues through user fees, and could shift the distribution of illness, thereby affecting the cost of providing services. The project needs to examine whether declines in target populations will be a continuing trend and what the implications will be for financing of project activities.

Finally, although not clearly specified in the PHC MAP Module 9 on Sustainability Analysis, it is important to link the cost data with assumptions made on trends in revenues and expenditures. In this manner, the project will have a more accurate financial picture. It is also recommended that both a best and worst case scenario be conducted so that the project has a clearer sense of what the possible threats to sustainability might be.

#### **H. POLICY DIALOGUE AND WIDER IMPACTS OF PROJECT**

Outstanding, in terms of policy dialogue and wider impacts of the projects, is the working relationship between the AKCHP project director and the Bangladesh Director of PHC. The latter uses both the AKCHP results and the PHC MAP materials as training and guidance tools. This is probably based, in part, on the excellent reputation of AKCHP as one of the best working models for urban primary health care in Bangladesh.

Figure 1. Total revenues & expenditures, 1991-1993

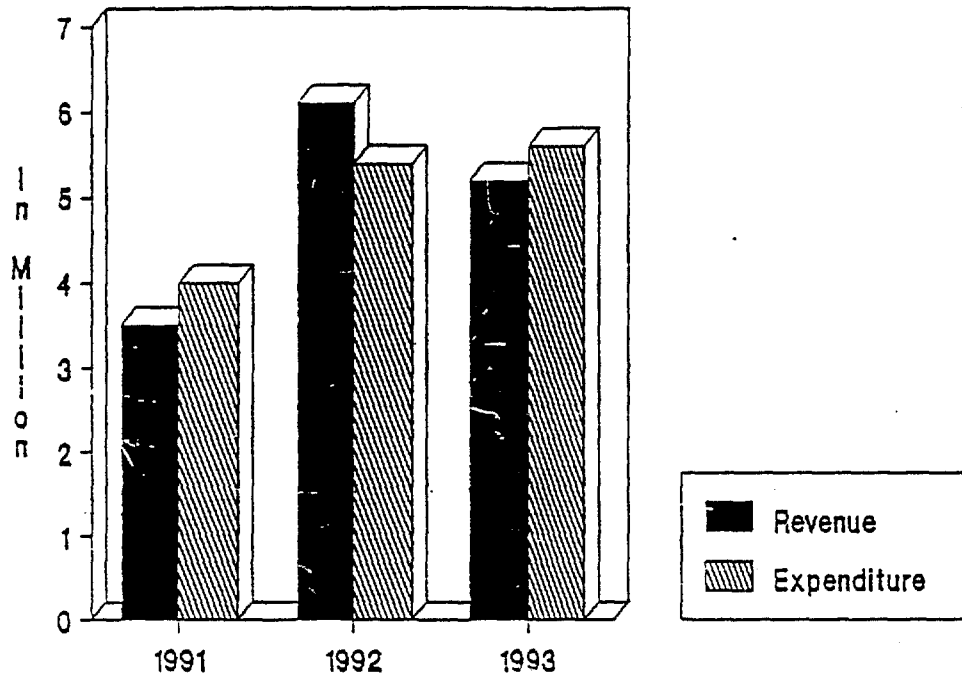
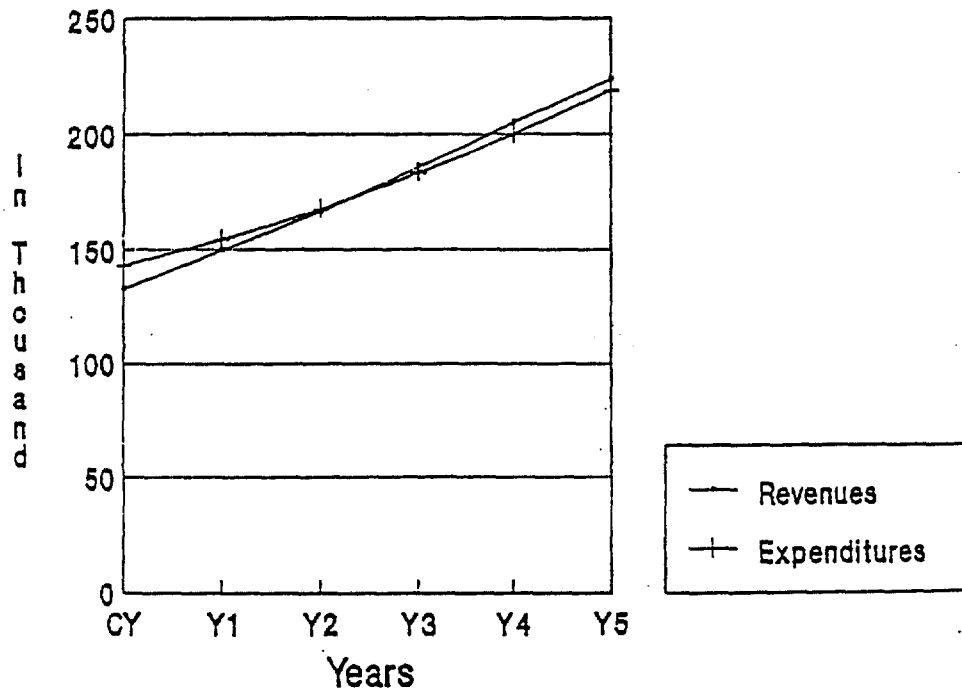


Figure 2. Adjusted projections Revenue and Expenditures: 5 years



AKCHP collaborates with numerous other GOB health organizations including EPI, TBA training, VAC distribution, etc. and is often seen as a lead agency in terms of the excellence of its work and the innovation of its approaches. Similarly, it works with many NGOs, and has begun to train the staff of some of them. AKCHP's innovative Health Information System has caught the attention of a number of health agencies in Bangladesh, some of whom are likely to wish to adapt it to their needs.

The AKCHP Director participated with the GOB Director of PHC in revising and adapting PHC modules for a major initiative in upgrading management of urban health services in Bangladesh. This would be accomplished through the Primary Health Care Management Training Program PHC (MTP). MTP intends to train 400 urban health services managers, follow up with technical assistance and evaluate impact on managerial practices, if funded.

The evaluation team acknowledges that AKCHP is regarded as a lead organization in exploring and developing efficient ways to increase urban health in Bangladesh, and that it has influenced the thinking of many other organizations, both governmental and non-governmental.

**I. PROJECT RELATIONSHIP TO RNP**  
(Please see section V. Regional Network Program)

**J. PROJECT RELATIONSHIP TO PHC MAP**

As noted in the Cost Analysis section, G, AKCHP was the only program visited by the evaluation team that used module 9 to do its own sustainability analysis.

Out of PHC MAP's 9 modules, module numbers 1, 5, 6, 7, 8, and 9 were field tested. As 2 and 4 were late additions, they could not be field tested.

In Bangladesh a group known as University Research Corporation (URC) conducted this field testing. About 20 NGOs were selected by this group. AKCHP was one of these NGOs. Some of the NGOs were related to the Asia Foundation.

The exact nature of the field testing is not clearly understood. Presumably the concerned NGOs administered these modules among their trainees. AKCHP also used its own field data to fit into the modules. The detailed report, however, is not available at this time. URC has sent them to headquarters of AKF and to Dr. Jack Reynolds.

Following the course that was organized in August 1993 near Bangkok, Thailand, a group of Bangladeshi participants from GOB and AKCHP revised the modules to suit the Bangladeshi context. Almost all of the modules were trimmed and made more concise. Duplications were reduced. Terminologies were changed and some confusions were clarified. Words such as input, output, outcome, effect, impact, process, monitoring, evaluation, survey and surveillance, etc. have been described in more specific terms. Examples given against these terms were also more

specific. New information and explanations were incorporated. Many worksheets were dropped, and replication of tables under different rubrics and in different sections was avoided.

The revised modules were introduced among a group of GOB and AKCHP health care managers over a period of 2 weeks. Half of the participants were willingly selected to be females. The trainees were sent to a Thana health complex--Dhamrai, Dhaka--about 30 kilometers from the city, and to the AKCHP project area to work on the worksheets and consider other data in the field situation. Based on this experience and comments from the participants, a final revision was made and submitted to UNICEF for final printing so that formal training can be arranged for urban PHC managers.

It was AKCHP, in collaboration with the PHC Division, Directorate of Health Service, Govt. of Bangladesh, and the Management Development Unit, that revised, adapted, and field tested the PHC MAP modules. The resulting materials are to be used in a Primary Health Care Management Training Program (PHC MTP) in the three largest cities of Bangladesh. The PHC MTP is to be undertaken collaboratively by the Society for Urban Health (SUH), the Dhaka Urban Community Health Programme (DUCHP, formerly AKCHP), and UNICEF/Bangladesh in 40 wards of Dhaka, Chittagong, and Kulna for two years from July 1994.

It has been felt during the MTP training modules 3 and 4 could be put into one group, modules 1, 2, 5, 6, and 7 into another group, and modules 8 and 9 into a third group with suitable changes in the numbering of the modules.

## **K. OVERALL IMPRESSION AND SUMMARY OF BRIEF RECOMMENDATIONS**

### **1. Overall Impression**

Outstanding, in terms of policy dialogue and wider impacts of the projects, is the working relationship between the AKCHP project director and the Bangladesh MOH Director of PHC, and the latter's use of both the AKCHP results and of the PHC MAP materials as training and guidance tools. This is probably based, in part, on the excellent reputation of AKCHP as one of the best working models for urban primary health care in Bangladesh.

There appear to have been impressive declines in maternal death, in child mortality due to diarrhea, tetanus and measles, and in infant mortality. However, malnutrition has not improved, female anemia and low birth rates remain high, and there is an apparent recent rise in pneumonia deaths in children.

Attractive health education materials have been developed, with pre-testing and revisions, within the project. Although family planning services were started only in 1993, achievements are impressive, with a contraceptive prevalence rate of approximately 50% compared to a national figure of about 40%.

The locally designed and programmed, innovative management information systems [Health Information system (HIS) and Clinic Information system (CIS)] integrate demographic and service information in a way to make them useful managerial tools. However, no follow-up population based survey has been done to compare with the baseline survey to estimate progress or to validate the ongoing collection of data by field workers.

## 2. Summary of Brief Recommendations

Below are listed the evaluation team's recommendations, briefly stated. For rationales, qualifications and details of the fully expanded recommendations, please consult text above.

- Further improve the already commendable management information system: make tables more self-explanatory and scrutinize reports carefully to monitor the quality of staff performance.
- A follow-up population based survey should be conducted to validate morbidity and mortality reporting in the MIS, and to provide a point of comparison with the population survey of 1986.
- Investigate patterns of morbidity and mortality among adults and children in 1991, 1992, and 1993 to determine if there is evidence of a superimposed epidemic disease in that period.
- Seek reasons for high ARI mortality rates in <5 y.os, and develop effective program measures to lower them.
- AKCHP should analyze "main plus associated" causes of death, report conclusions, and include malnutrition as a category in its reports of causes of child and infant death.
- Find ways to reduce malnutrition, low birth weight, and maternal anemia as these have not responded to program so far.
- There should be follow-up and more formal linkages with referral institutions.
- Strengthen the school health program through use of more visual materials in classrooms.
- Efforts should continue to mobilize communities to support and to manage portions of the PHC program.
- The training program should be expanded boldly as it is the most likely way to expand PHC revenues for sustainability.



- Increase curative coverage and drug prices to increase revenues, and study possibility of clinics >twice a week.
- Socio-economic markers gathered in the population, as in the Nutrition Surveillance Project, should be used as control variables for analyzing equity effects of the projects.
- The concept of coverage should be redefined in view of the apparent presence of numerous curative care providers in the project area, who should be inventoried.
- Review the AKCHP school health program for feasibility of more involvement of school children in active child-to-child tasks, as in the MPHIC program.

#### COST, FINANCING, AND FINANCIAL SUSTAINABILITY

- It is highly recommended that the project continue to conduct cost analyses of the project overall and of specific health activities. Estimating the full economic cost of the program, including the value of donated supplies and labor, will be useful for assessing sustainability of project activities. It is suggested that the program draw upon the approaches presented in Module 8 and other costing manuals for a full cost analysis.
- An analysis of the average cost per type of contact, or unit cost analysis, should be conducted on a regular basis using data on costs by activity and information reported to the health information system.
- In order to determine if the AKCHP services are cost-effective, it is important to compare unit costs with those for government services or other NGOs. It would be useful to compare AKCHP results with the findings of the BRAC evaluation.
- The project should consider hiring an assistant to help with tracking and processing financial information for the project.
- AKF could utilize the skills of the AKCHP Finance Officer in establishing and/or upgrading the financial management systems of the other projects included in this evaluation.
- The project should consider some type of prepayment or health insurance scheme, further income generating activities, and charging higher clinic prices to the non-registered population. However, a pre- and post-fee change evaluation is recommended to assess the affordability of the latter.

**Evaluation Report of the 1991-1994 AKF/USAID Matching Grant  
"Strengthening the Effectiveness, Management and Sustainability  
of Primary Health Care/Mother and Child Survival Programs  
in Asia and Africa"**

**VOLUME II  
ANNEXES**

May-October, 1994

Submitted to the Aga Khan Foundation U.S.A.

and the

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Cooperative Agreement Number: PDC-0158-A-00-1102-00

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**ANNEXES**

**Annex 1**  
**Evaluation Terms of Reference**

(Revised: March 18, 1994)

**EVALUATION OF PROJECTS SUPPORTED BY THE AID/AKF USA-MATCHING GRANT  
ON STRENGTHENING THE EFFECTIVENESS, MANAGEMENT AND SUSTAINABILITY  
OF PHC/MOTHER AND CHILD SURVIVAL PROGRAMS IN ASIA AND AFRICA**

Cooperative Agreement Number: PDC-0158-A-00-1102-11

JULY 1991 - JUNE 1994

**TERMS OF REFERENCE**

**INTRODUCTION**

By policy of the Board of Directors of the Aga Khan Foundation USA (AKF USA), an external evaluation is conducted on every major program or project funded by the Foundation. This evaluation will be performed to meet the requirements of the Aga Khan Foundation U.S.A. and its partner in this grant, the United States Agency for International Development (AID). The Matching Grant agreement requires that an evaluation be conducted prior to the end-of-project. This evaluation will help both AID and the Foundation to assess the effectiveness of their grants and will help the Foundation to refine its development strategy, guide future Board decisions, and meet reporting and evaluation requirements.

Evaluation of health care programs funded by AKF and its partners (such as AID) are particularly important, as the AKF Board has expressed its strong interest in learning generic lessons from major grants in the health sector which collectively aim to improve the effectiveness, management and sustainability of health care programs of the Aga Khan Health Network (AKHN). The AKHN comprises the Aga Khan Foundation (AKF), the Aga Khan Health Services (AKHS), and The Aga Khan University (AKU) Faculty of Health Sciences.

**PROGRAM GOAL AND PURPOSES**

In 1991, AID awarded AKF USA a three-year (July 1991 - June 1994), \$1.2 million Matching Grant to support five AKF-sponsored health projects. Three of these projects provide Primary Health Care / Mother and Child Survival (PHC/MCS) services directly to needy populations in Kenya, Pakistan, and Bangladesh: the Mombasa Primary Health Care Programme (MPHC),

the Urban Primary Health Care Programme (UPHC) and the Aga Khan Community Health Care Programme (AKCHP), respectively. Two additional projects, the Regional Network Programme (RNP) and the Primary Health Care Management Advancement Programme (PHC MAP) operate as regional and international programs.

The goal of this Matching Grant program is to contribute to improving the equity, effectiveness, efficiency and sustainability of PHC/MCS programs in developing countries of Asia and Africa.

The program has three main purposes:

- 1) To expand coverage, increase effectiveness and test new organizational models for community-based PHC/MCS services in three projects serving the health needs of more than 200,000 urban and rural residents by strengthening the capacities of local communities and NGOs to deal with their own problems.
- 2) To strengthen management information systems, and the social, organizational and financial sustainability of 10-12 PHC/MCS programs involved in the RNP and PHC MAP activities.
- 3) To produce, distribute, and promote the use of several field-tested PHC management information modules and related training and resource materials.

### PROGRAM DESCRIPTION

The three institutions of the Aga Khan Health Network (AKF, AKU, and AKHS) are implementing the five projects under this Matching Grant as follows:

- 1) AKF is implementing PHC MAP in collaboration with the University Research Corporation/Center for Human Services (URC/CHS) (based in Bethesda, Maryland), AKU, AKHS, the Somboon Vacharotai Foundation (SVF) and the ASEAN Institute for Health Development (AIHD), Mahidol University, in Thailand.
- 2) AKU is implementing and serving as the secretariat of the RNP which provides a mechanism for regional networking and sharing of information between management teams of 10-12 participating PHC programs in Bangladesh, India, Pakistan and Kenya.

- 3) AKU is also implementing the UPHC in several areas of Karachi to develop various models of urban-based PHC/MCS projects and provide field laboratories for its community-oriented physician and nurse education, training and research activities.
- 4) AKHS, Kenya is implementing the MPHC, a rural-based PHC/MCS project in Kwale District which was planned in collaboration with the Ministry of Health and UNICEF, based in part on the experience gained in the AKF-sponsored Kisumu PHC Project.
- 5) The Silver Jubilee Commemoration Society in Bangladesh, has implemented the AKCHP, an urban-based PHC/MCS project serving the priority health needs of low-income residents of selected slum and peri-slum areas of Dhaka. Management of the project will be turned over to the newly-formed NGO, SUH, as anticipated in AKCHP's sustainability plan.

The three community-based PHC projects in Kenya, Pakistan, and Bangladesh have all aimed to: 1) strengthen community participation in management of community-based health care activities; 2) enhance the overall management, effectiveness and sustainability of their projects; and 3) test new approaches and strategies for organizing and financing PHC/MCS programs to help promote the long-term financial and organizational sustainability of these PHC/MCS programs.

The other two programs under this Matching Grant Program, RNP and PHC MAP, are multi-country projects. The RNP, which was established under a previous AID Matching Grant to link five projects in three countries, has expanded to ten PHC programs in four countries (Bangladesh, India, Pakistan, and Kenya). This has enhanced its catalytic role in the stimulation of field-based innovation and exchange of experiences on important issues concerning PHC/MCS programs. The RNP has played a key role in providing technical exchanges for strengthening the effectiveness, management and sustainability of participating PHC and child survival programs.

PHC MAP has developed and field tested practical tools to help PHC/MCS management teams to collect, process, analyze and use management information more effectively to improve the management, effectiveness, and sustainability of their PHC programs. PHC MAP has involved substantial interaction with a range of PHC programs in Asia, Africa and Latin America, operating in a variety of settings (urban, rural, remote) with different levels of expertise and various collaborative arrangements. PHC MAP Modules have been field tested in more than a dozen countries of Asia, Africa and Latin America, including: Bangladesh,



Chile, Colombia, the Dominican Republic, Guatemala, Haiti, India, Indonesia, Kenya, Pakistan, Senegal, Thailand and Zaire.

The five projects and their objectives are described in detail in AKF USA's proposal to AID for a Matching Grant dated September 14, 1990 and the Amendment dated May 7, 1991. Both documents are attached as Annex 5. Annual reports for 1992 and 1993 are attached as Annex 6, including updates to the program's logical framework.

### **EVALUATION OBJECTIVES**

The overall purposes of the evaluation are to: 1) assess the progress made to date by the various projects; 2) document improvements in the projects' performance and the health infrastructure for delivering services (in the case of the PHC/MCS projects); and 3) evaluate the overall accomplishments of the Matching Grant.

The evaluation will address the following general areas of interest to AKF USA and AID: 1) the primary focus and use of funding; 2) the NGOs' organizational development; 3) the project design and implementation plans; 4) effectiveness and impacts of services; 5) PVO/NGO-host government cooperation; 6) sustainability strategies; 7) project finances; and 8) lessons learned by the Matching Grant projects.

The major objectives and scope of work of the external evaluation are to:

- 1) Assess and document the level of achievement of each of the projects, and the overall program's, planned objectives, targets, outputs, and improvements in the health status of the target populations, identifying, where possible, the strategic and operational factors which facilitated these achievements (or constrained progress resulting in the lack of certain achievements).
- 2) Assess and document improvements in the availability, accessibility and utilization of priority health services and their effectiveness, paying particular attention to each project's organization, management and management practices;
- 3) Assess the utility, timeliness and accuracy of each of the project's management information and monitoring systems and the quality of their data sets, including the completeness and accuracy of key indicators.

- 4) Assess if the health information collected through the monitoring and evaluation system is used by field-level administrators and managers to redirect resources, staff time, etc., and the extent to which this information has been used to provide feedback to the project staff and community.
- 5) Assess and document the overall costs of each of the projects by: a) total population; b) target populations; and c) actual beneficiary populations in the project areas, based on the cost analyses.
- 6) Assess the relative costs and effectiveness of various service providers, levels of service, and the long term financial and organizational sustainability of: a) the current service program; and b) one or more alternative program options which could potentially improve sustainability.
- 7) Assess the grantees' plans for program sustainability in light of the experience gained to date, the results of the basic cost analyses, community organization and participation, and the observations and conclusions of the management team. Draw conclusions and make recommendations for the grantees' future plans giving emphasis to each project's: a) strategy; b) organization; c) management practices; and d) operations. In the recommendations, particular focus should be given to factors which could achieve greater effectiveness and efficiency, reduce costs and/or improve program income, and lead to long-term financial and organizational sustainability.
- 8) Assess the major outcomes and impacts of the following major foci of the Matching Grant: a) to support the delivery of health outreach services from established sites; b) to support and improve local service delivery through training, monitoring, and supervision; c) to increase community awareness of health needs and demand for health services; and d) to change health behaviors.
- 9) Assess what actions the PHC/MCS projects took at the community and household level to improve health behaviors.

## EVALUATION METHODOLOGY

### Evaluation Process

The evaluation team will conduct an objective evaluation of the five Matching Grant component projects, draw conclusions and make recommendations based upon their findings.

The evaluation process will include review of available project reports and other relevant documentation, review of project records, visits to the program areas, and discussions with program staff, collaborating groups, local officials, community leaders and others concerned, and through community meetings where relevant and as time allows.

Additionally, prior to the evaluation team's visit, the project management team from each service component of the program will prepare a self-assessment of their progress to date, including a cost analysis and the development of a sustainability plan (see next section on "Project Self-Assessments" for details). These self-assessments will be provided to the evaluation team prior to the commencement of the evaluation, and will provide the basis for the team's discussions with the project management. For MPHIC, AKCHP and UPHC, the team should also review progress in terms of the quantitative indicators being used by the program. This information should be utilized in the evaluation process to assess changes during the project period, as well as using other qualitative and quantitative information provided to the team or gathered during the course of the field review.

The team will finish their work within 3 weeks, including oral feedback on each component to the project staff concerned at a debriefing meeting scheduled before their departure, and preparation of a draft report. The report should include an executive summary of findings, a description of the team composition and evaluation methods, discussion of each of the areas indicated in the purpose and scope of work, including the findings and conclusions drawn, and recommendations for further action to strengthen program effectiveness and sustainability. The final draft of the report will be due on June 10.

Following receipt of the complete draft report, it will be reviewed by the concerned implementing agencies, AKF and AID/BHR/PVC/MGD, who will have the opportunity to comment on the accuracy and validity of the findings and recommendations of the evaluation team. The final version of the evaluation report may be modified appropriately, at the discretion of the team leader, to take cognizance of these views. In the event that there are significant differences of opinion between the evaluation team and the institutions concerned at the end of this process, the final version of the report may include a supplement which presents the views of the latter.

### Project Self-Assessments

In preparation for the evaluation, project directors of each of the five component projects shall be responsible, in consultation with the project management team, to prepare a formal report to the evaluation team based on a self-assessment of progress achieved, problems encountered,

solutions attempted, experience gained and lessons learned to date. The project-generated, self-assessment narrative reports should contain, as a minimum, the following sections, not to exceed 25 single-spaced pages:

1. Executive Summary.
2. Goals, purpose, objectives and targets. Highlighting any changes, and reasons for those changes, of the goals, purpose, objectives and/or targets given in the original project proposal and Matching Grant application.
3. Strategies applied to achieve project objectives and experience gained.
4. Progress towards achievement of the goals, purpose, objectives and targets. Such a summary should include supporting data showing any changes over a 2-3 year time-frame (1991, 1992, 1993, and 1994 to date).
5. Problems encountered, issues identified, solutions attempted and outcomes of solutions attempted. In particular, in the context of the project's stated objectives and strategy.
6. Major lessons learned, conclusions, and plans for future action.

For each of the three PHC/MCS projects, the narrative reports should include four attachments, as follows:

1. Key indicators generated from the project's service statistics reports and management information system (MIS). Preferably containing a matrix showing changes in the key indicators over a 2-3 year period.
2. Key indicators generated from the project's baseline and mid-term community health surveys. Preferably presented in a matrix to easily compare baseline and mid-term survey data, and the degree of changes of these indicators over time.
3. A cost analysis and relevant financial information on project expenditures. If the project management chooses, the cost analysis may be based on the methods given in the PHC MAP Module 8 User's Guide on Cost Analysis.
4. A well-thought-through strategic plan for achieving financial and organizational sustainability of the health-care program. This strategic plan should be derived, in part, based on an analysis of the financial and strategic factors leading to sustainability,

which may be completed using the methods given in the PHC MAP Module 9 User's Guide on Sustainability Analysis, if the project management so chooses.

The evaluation was previously scheduled for September 1993, but was rescheduled because of logistical problems. Consequently, these reports were originally submitted to AKF USA in the late summer/autumn of 1993. Therefore, each of the projects should update or submit an addendum to their self-assessment reports, as needed, and provide final versions to AKF USA, with a copy to AKF Geneva and the local AKF office, by March 31, 1994. AKF will review, copy and provide these reports to the evaluation team before it begins its work in May. Copies will also be provided to AID/BHR/PVC/MGD.

### The Evaluation Team

The evaluation team will include three international health consultants and one local health consultant from each of the three countries (Kenya, Pakistan and Bangladesh). In each program country, the evaluation team will be facilitated by the local AKF program officer or CEO and one or two AKF Geneva health program officers. A representative from AKF USA may also join the team. At its option, AID/BHR/PVC/MGD may send a representative.

International Health Consultants. The three international health consultants will form the "core" of the overall Matching Grant evaluation team. They will be responsible for continuity in the evaluation process and for preparing a high-quality, well-written Matching Grant evaluation report. Two of these consultants should have special skills in PHC/MCS program planning, management and evaluation, one of whom will serve as the Team Leader. The third international consultant should have special skills in cost analysis of PHC/MCS programs and in the local financing of health care programs, and will evaluate the projects' cost analysis documents and sustainability strategies under the supervision of the Team Leader.

Local Health Consultants. In each of the three countries (Kenya, Pakistan and Bangladesh) one local consultant will join the evaluation team, working under the supervision of the team leaders. AKF has consulted AKF officers and the grantees in each of the three countries to derive the list of candidates given in Annex 1.

**Annex 2**  
**Evaluation Schedules**

MGIII EVALUATION SCHEDULE - MOMBASA PHC  
9TH - 14TH MAY, 1984

SUNDAY, MAY 8TH

Evaluation team arrives Nairobi takes best connecting flight to Mombasa - checks in at the Hotel Intercontinental Mombasa.

MONDAY, MAY 9TH

- 0830 - Dr. Hugh Annett, Dr. Nizar Verjee, Dr. David Fraser, Mr. Murdin Ajanja and Mr. Farid Mohamed arrive at Moi International Airport from Nairobi - Pick up and proceed to Intercontinental Hotel.
- 08:00 - 09:30 <sub>2 penine</sub> -
- 0900 - 1030 - AKF briefing of Evaluation Team at Hotel Intercontinental.
- 1030 - 1100 - Coffee/Tea
- 1100 - 1230 - Aiglemont/AKHS(K) briefing of evaluation team at Intercontinental Hotel.
- 1230 - 1345 - Lunch with AKF and AKHS representatives
- 1345 - 1400 - Travel to PHC Unit, Aga Khan Hospital (Mombasa)
- 1400 - 1500 - Evaluation team briefs AKHS & MFHC team on evaluation scope, approach(es) methods requirements, allocation of tasks.
- 1500 - 1700 - MFHC team presentation, discussion, resource and reference materials etc.
- 1700 - 1730 - Evaluation team returns to Hotel, read materials etc.

TUESDAY, MAY 10

- ~~0730~~ - Breakfast.
- 0745 - Depart Intercontinental Hotel.
- 0830 - 0930 - Visit to Provincial/District Water team for meeting
- 0930 - 1000 - Meeting with FMO - Coast Province.
- 1000 - 1030 - Courtesy Call to PC - Coast Province.
- 1030 - 1100 - Meet Kwale DHT & FMO at FMO's Office.
- 1100 - 1145 - Meet Mombasa Municipality team at PHD.
- 1200 - 0100 - Lunch at PHC Unit.

Group Divides into 2 teams for field visit.

TEAM 1 *THORNE*

	<u>Site</u>	<u>Activity</u>
0100 - 0330	i) Chiefs Camp ii) Muzche iii) Mnyenzi	CEMIS Food Production CEMIS

TEAM 2 *Lojon*  
*Cathy*

	<u>Site</u>	<u>Activity</u>
0100 - 0330	i) Mazeras Women Group ii) Mazeras - Youth Group	FRA/Malaria Control & IGA Health Education & AIDS
0330 - 0400	- Travel to KARI	
0400 - 0500	- Discussion at KARI.	
0500	- Evaluation team travels back to Intercontinental Hotel.	

*~ 6:00 pm. Tea & Intergration*

WEDNESDAY, MAY 11TH

0740 - Evaluation team departs from Hotel Intercontinental.

Evaluation team visits two locations of Mavumbo and Mtaa in two groups.

TEAM 1: MNAVUMBO LOCATION *Cathy*

	<u>Site</u>	<u>Activity</u>
0830	- Depart from FRC Unit.	
1000 - 1100	- Matumbi Primary School	School Health
1100 - 1200	- Goba village	Safe Motherhood
1200 - 0100	- Gwasheni Primary School	School Health / Sanitation
0100 - 0130	- Mariakani Roadside	(SNACK / LUNCH)
0130 - 0215	- Mavirivirini Village	Water
0215 - 0330	- Mkilo Village	Malaria Control and women activities.
0400	- Return to Intercontinental Hotel	



MGIII EVALUATION SCHEDULE - MOMBASA PHC  
9TH - 14TH MAY, 1994

SUNDAY, MAY 8TH

Evaluation team arrives Nairobi takes best connecting flight to Mombasa - checks in at the Hotel Intercontinental Mombasa.

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- 1230 - 1345 - Lunch with AKF and AKHS representatives
- 1345 - 1400 - Travel to PHC Unit, Aga Khan Hospital (Mombasa)
- 1400 - 1500 - Evaluation team briefs AKHS & MPHC team on evaluation scope, approach(es) methods requirements, allocation of tasks.
- 1500 - 1700 - MPHC team presentation, discussion, resource and reference materials etc.
- 1700 - 1730 - Evaluation team returns to Hotel, read materials etc.

TUESDAY, MAY 10

- 07~~25~~ - *Breakfast.*
- 0745 - Depart Intercontinental Hotel.
- 0830 - 0930 - Visit to Provincial/District Water team for meeting
- 0930 - 1000 - Meeting with FMO - Coast Province.
- 1000 - 1030 - Courtesy Call to PC - Coast Province.
- 1030 - 1100 - Meet Kwale DDMT & FMO at FMO's Office.
- 1100 - 1145 - Meet Mombasa Municipality team at PHD.
- 1200 - 0100 - Lunch at PHC Unit.

Group Divides into 2 teams for field visit.

TEAM 1 THORNE

	Site	Activity
0100 - 0330	i) Chiefs Camp ii) Muzche iii) Mvonzeni	CEMIS Food Production CEMIS

TEAM 2 Lejon Cathy

	Site	Activity
0100 - 0330	i) Mazeras Women Group ii) Mazeras - Youth Group	FPA/Malaria Control & IGA Health Education & AIDS
0330 - 0400	- Travel to KARI	
0400 - 0500	- Discussion at KARI.	
0500	- Evaluation team travels back to Intercontinental Hotel.	

~ 6:00 pm. Tea & Intergroup

WEDNESDAY, MAY 11TH

0740 - Evaluation team departs from Hotel Intercontinental.  
 Evaluation team visits two locations of Mwavumbo and Mtaa in two groups.

TEAM 1: MWAVUMBO LOCATION Cathy

	Site	Activity
0830	- Depart from FIE Unit.	
1000 - 1100	- Mavumbi Primary School	School Health
1100 - 1200	- Gohwe village	Safe Motherhood
1200 - 0100	- Gwasheni Primary School	School Health / Sanitation
0100 - 0130	- Mariakani Roadside	(SNACK / LUNCH)
0130 - 0215	- Mavirivirini Village	Water
0215 - 0330	- Mkilo Village	Malaria Control and women activities.
0400	- Return to Intercontinental Hotel	

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TEAM 2: MTAA LOCATION *THORNE*

	<u>Site</u>	<u>Activity</u>
0830	- Depart from FHC Unit.	
1000 - 1100	- Gona Village	CCDD/EM/CEM's
1100 - 1230	- Eofu Centre <i>Disp.</i>	CLMIS/CEM E
1230 - 0100	- Undertree on Roadside	(SNACK)
0100 - 0200	- Mtaa Dispensary	See Dispensary
0200 - 0245	- Mtaa Dispensary	Diarrhoea Control
0245 - 0300	- Mtaa Dispensary	CEM/FHC Committee discussion
0300 - 0330	- Mtaa Dam	Water
0330	- Return to Intercontinental Hotel.	

*9-10 Lobby*

THURSDAY, MAY 13TH

A.M.	- Evaluation team meets and discuss final debriefing(s) at Hotel.
0130	- Lunch
<del>0130 - 0200</del>	- Evaluation team departs to Aga Khan Hospital (FHC Unit)
<del>0300</del>	- De-briefing with AHS(K) and AKF at Mombasa FHC Unit.
0330	- Evaluation team travels to Hotel
	- Draft report writing
	- <i>UNICEF</i>

FRIDAY, MAY 13TH

0530	- Evaluation Team checks out of Hotel Intercontinental proceeds to Moi International Airport for Nairobi.
0930 - 1030	- Visits <i>UNICEF</i> <i>Jonathan Quick + Sam Munga</i>
<del>1330 - 1400</del>	- Visits USAID

SATURDAY, MAY 14TH

0730 - 1200	- Evaluation Team de-briefing (AHS(K) and AKF in Nairobi at AKF Offices in Nairobi.
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THE AGA KHAN UNIVERSITY  
THE DEPARTMENT OF COMMUNITY HEALTH SCIENCES  
URBAN PHC AND RNP - MG III EVALUATION

ITINERARY FOR MG III EVALUATORS  
May 16 - 21, 1994

<u>May 16th (Monday)</u>	Arrival of Team	
<u>May 17th (Tuesday)</u>		Venue
08:00 am - 09:00 am	Meeting with AKUH representatives: (CV, JBM, MH, ML, KH)	FHP Wing Room 98
09:30 am - 11:00 am	Urban (including Macro)	CHS Conf. Room 74
09:30 am - 09:35 am	Objectives (ML)	
09:35 am - 09:40 am	Activities & Progress (ML)	
09:40 am - 09:45 am	Problems and lessons learned (KH)	
09:45 am - 09:50 am	New directions (KH)	
09:50 am - 10:00 am	NGO Scene (MAM)	
10:00 am - 11:00 am	Discussion (JBM, MH, ML, KH, GP, MAM, BI, PN, SAR)	
11:00 am - 12:00 noon	RNP/RTP + MAP	CHS Conf. Room 74
11:00 am - 11:05 am	Objectives and activities (KH)	
11:05 am - 11:10 am	Future Plans (KH)	
11:10 am - 11:15 am	RTP (JBM)	
11:15 am - 12:00 noon	Discussion (JBM, MH, ML, KH, SAR)	
12:00 noon - 01:00 pm	Lunch (JBM, MH, MSK, ML, KH, PN, AK, GP, MAM, BI, SAR)	CHS Conf. Room 74
01:00 pm - 4:00 pm	Visit to Essa Nagri (MH, ML, KH, GP, NuR)	
01:00 pm	Departure from CHS	
01:30 pm - 01:45 pm	Briefing about program	
01:45 pm - 02:15 pm	Meeting with staff	
02:15 pm - 03:30 pm	Meeting with CMT	
03:30 pm - 04:30 pm	Debriefing	
04:30 pm	Departure for Hotel	
06:00 pm	Outing - Crabing	Kemari

RNP = Regional Network Programme    RTP = Regional Training Programm

- Invitees:
- |                           |                              |                         |
|---------------------------|------------------------------|-------------------------|
| Dr Camer Vellani (CV)     | Dr Joseph B. McCormick (JBM) | Dr Mumtaz Husain (MH)   |
| Dr Mehtab S. Karim (MSK)  | Dr Melven Lobo (ML)          | Ms Khatidja Husein (KH) |
| Dr Amanullah Khan (AK)    | Dr Ghazala Parveen (GP)      | Dr Parvez Nayani (PN)   |
| Dr M. Afzal Mahmood (MAM) | Dr Bazmi Inam (BI)           | Dr Nuzhat Rafiq (NuR)   |
| Mr Sammy A Ray (SAR)      |                              |                         |

**May 18th (Wednesday)**

9:00 am	Pick-up from Hotel	
09:30 am - 01:00 pm	Field Visits:	
<b>Group A</b>	<b>Azam Basti (ML, SJ)</b>	
09:30 am - 09:45 am	Presentation	
09:45 am - 10:15 am	Discussion with Staff	
10:15 am - 11:00 am	Visit to Bakht Bari Hospital	
11:00 am - 12:00 noon	Household Visit	
12:00 noon	Departure for CHS	
<b>Group B</b>	<b>Baba Island (GP, KO)</b>	
10:30 am - 10:45 am	Presentation	
10:45 am - 12:00 noon	Discussion with FWA and Volunteers	
12:00 noon	Departure for CHS	
01:00 pm - 02:00 pm	Lunch with Field Directors	CHS Conf. Room 74
02:00 pm - 03:00 pm	MIS/Studies (DM, ML, KH, SJ, RS, BSK, MMK, SJJ, AA) - Death Analysis (Adult & Child) - Malnutrition Study	FHP Wing Room 98
03:00 pm - 04:00 pm	Meeting with representatives from other NGOs & Government - Past experience of linkages	CHS Conf. Room 74
04:00 pm - 05:00 pm	Discussion on MAP	CHS Conf. Room 74

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FDs = Field Directors  
FWA = Fishermen Welfare Association  
MAP = Management Advancement Programme

**Invitees:**

Dr David Marsh (DM)	Dr Melvyn Lobo (ML)	Ms Khatidja Husein (KH)
Dr Ghazala Parveen (GP)	Dr Rehana Siddiqui (RS)	Dr Sarah Jamil (SJ)
Dr Khalid Omer (KO)	Ms Bilqees Sana Khan (BSK)	Mr Mushtaq M. Khan (MMK)
Ms Safina Javid John (SJJ)	Ms Anjum Ara (AA)	

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May 19th (Thursday)

09:00 am	Pick-up from Hotel	
09:00 am - 01:00 pm	Visit to Field Sites	
	<b>Group A</b> <i>THORNE</i>	<b>Chanesar Goth + Macro (JBM, KH, GP, MAM, RS)</b>
09:30 am - 09:45 am	Presentation (Chanesar Goth)	
09:45 am - 10:30 am	Discussion with Staff	
10:30 am	Macro Field Site visit	
10:45 am - 11:05 am	Presentation	
11:05 am - 12:30 pm	Discussion and meeting with community members	
12:30 pm	Departure for CHS	
01:00 pm - 02:00 pm	Lunch with CHNs	CHS Conf. Room 74
	<b>Group B</b>	<b>Orangi + Grax (ML, SRA, FR, NR)</b>
	<i>CATLY</i>	
09:40 am - 09:50 am	Presentation (Orangi)	
09:50 am - 10:30 am	Discussion with Staff	
10:30 am - 11:30 am	Home visits	
11:30 am	Departure for Grax	
12:00 noon - 12:45 pm	Visit to Sub Centre	
12:45 pm - 02:15 pm	Meeting with community members (lunch included)	
02:15 pm	Departure for CHS	
03:00 pm - 04:00 pm	Presentations of Research Studies in Urban Field Sites	CHS Conf. Room 74
04:00 pm - 05:00 pm	PHC Human Resource Development (Medical Students, BScN, Preceptors and Scholars)	CHS Conf. Room 74
	<i>MIS - MT</i>	<i>ARI - ML</i>
PM	Dinner by CHS	

CHNs = Community Health Nurses

Invitees:

Dr Joseph B. McCormick (JBM)  
Dr Ghazala Parveen (GP)  
Dr Fouziah Rabbani (FR)

Dr Melven Lobo (ML)  
Dr M. Afzal Mahmood (MAM)  
Dr Nargis Rizvi (NR)

Ms Khatidja Husein (KH)  
Dr Rehana Siddiqui (RS)  
Ms Shireen Ramzanali (SRA)

May 21st (Saturday)

10:00 am - 12:00 noon

Debriefing by Evaluation Team  
(JHD, CV, JBM, MH, KSK, ML, KH, MAM)

Sr. Admin Conf. Room

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Invitees:

Dean John H. Dirks (JHD)  
Dr Mumtaz Husain (MH)  
Ms Khatidja Husein (KH)

Dr Camer Vellani (CV)  
Ms Kausar S. Khan (KSK)  
Dr M. Afzal Mahmood (MAM)

Dr Joseph B. McCormick (JBM)  
Dr Melven Lobo (ML)

**Schedule for PHC MAP Evaluation in Bangkok**  
**May 24-26, 1994**

<<<<<<<<<☉>>>>>>>>>>

**Tuesday May 24**      **Arrival and Briefings of AKF/USAID MG-III Evaluation Team**

- 0045            MT/INA arrive Bangkok on PK760 from Karachi
- 0130-0230      MT/INA depart BKK Airport - Arrive River Side Plaza Hotel
- 0230            MT/INA check in at River Side Plaza Hotel, 755/45 Radwithi Road, Bangkok, Tel: (662)-434-0090 or -435-1641; Fax: (662) -435-1642
- 0930-1230      RW/JR meet at River Side Plaza (RSP) Hotel to discuss MAP briefings and issues for consideration by evaluation team
- 1130-1230      MT/INA/DM meet at RSP to discuss evaluation objectives and allocate responsibilities for assessments and report writing
- 1230-1400      Lunch at RSP (MT/INA/DM, RW/JR and JM/TS)
- 1400-1430      Depart RSP - Arrive Somboon Vachrotai Foundation (SVF)
- 1430-1500      AKF Briefing on MAP, giving background, overview, results to date, and current issues (RW)
- 1500-1530      URC Briefing on MAP, giving emphasis to development/field tests/revisions of Modules, field tests in Srisaket, Thailand, and potential for use in Indonesia (JR)
- 1530-1600      Coffee/Tea break
- 1600-1700      SVF Briefing on production and distribution of MAP Modules; review of distribution and of any feedback received to date (Dr.Jumroon Mikhanorn/Thongchai Sapaunchart)
- 1700-1800      MT/IND/DM/JM/TS/RW/JR discussions at lead of evaluation team
- 1800-1830      Depart SVF - Arrive RSP



Wednesday May 25

Evaluation Team Visits to American Refugee Committee  
(ARC): ASEAN Institute for Health Development (AIHD)

- 0930-1000 Depart RSP - Arrive ARC, near USAID on Phetchburi Road, Soi 15
- 1000-1115 Briefing by and interview(s) with Mr. Gary Dahl, ARC Deputy Country Director, who have introduced MAP Modules in ARC activities in Thailand, Cambodia, and elsewhere in the region
- 1115-1200 Depart ARC - Arrive AIHD, Salaya, Nakorn Pathom
- 1200-1300 Lunch at ASEAN House, AIHD
- 1330-1530 Discussion of 1993 PHC MAP Master Trainer's Courses at AIHD, including evaluation by students and any feedback received since their return home (Dr. Yawarat Porapakham, Dr. Som-Arch Wongkhomthong, etal.) *Dr. Khainj Sabai Watt, Public Health Technical Officer, AIHD.*
- 1530-1730 Discussion of 1994 PHC MAP Master Trainer's Course at AIHD, including likely composition of class and any revisions of such as the one-year course leading to a Masters degree in PHC management; interviews with AIHD faculty, students and trainees. (Dr.Som-Arch Wongkhomthong, etal.)
- 1730-1830 Depart AIHD - Arrive RSP Hotel

Thursday May 26

Visits to Ministry of Public Health (MOPH) and  
UNICEF/EAPRO

- 0900-0930 Depart RSP - Arrive Ministry of Public Health (MOPH), at Office of the Permanent Secretary of State for Public Health
- 0930-1130 MOPH presents plans for introducing and using MAP Modules in Royal Thai Government's Health Care System (Dr. Jumroon Mikhanorn, Dr.Banpot Tantirawong and Dr. Mongkol Na Songkla etal.) *CRAPIN, from Information*
- 1130-1200 Depart MOPH - Arrive Wiangtai Hotel, Banglumpoo for lunch
- 1200-1400 Lunch at Wiangtai Hotel
- 1400-1430 Drive from restaurant to UNICEF/EAPRO Office



Dhaka Urban Community Health Programme  
5, Eskaton Garden Road  
Dhaka - 1000

Schedule for Evaluation Team

Date	Time	Agenda
30.5.94	09:00 - 10:00	School visit
	10:00 - 10:30	Visit Mitali club to meet TBAs, MMVs, Club leader
	10:30 - 11:00	Visit Sikander's slum to see women empowerment project and meet CMVs
	11:00 - 11:30	Clinic visit (B.Nagar) and meet TDP leader
	11:30 - 12:30	Meeting with S.Khilgaon volunteer
	12:30 - 13:00	Visit Laboratory/IGA

Dhaka Urban Community Health Programme  
5, Eskaton Garden Road  
Dhaka - 1000

Schedule for Evaluation Team

Date	Time	Agenda
29.5.94	12:00 - 13:00	Presentation of DUCHP activities
	13:00 - 14:00	Meeting with national project directors - CDD - ARI - TBA - CS - DCC - EPI
	14:00 - 16:00	Presentation continues - Field - Clinic/Lab - Training & Development - HIS/Research - Achievements - PHC MAP - RNP - Slide presentation
	16:00 - 17:00	Discussion

**Annex 3**  
**Persons Contacted**

## PERSONS CONTACTED

Washington, D.C., U.S.A.

Mr. Iqbal Noor Ali	CEO, AKF, USA
Ms. Lori DiPrete Brown	Senior Scientist, URC
Ms. Pam Homan	Project Assistant, URC
Ms. Sally Jones	Chief, PVC, USAID
Mr. David Mashiter	Health Economist, AKF, USA
Dr. David Nicholas	Director, URC
Ms. Pat Scheid	Program Officer, AKF
Mr. Wayne Stinson	Associate Director, URC

Nairobi and Mombasa/Kwale District, Kenya

Mr. Nurdin Ajania	Chairman, AKHS, K
Dr. Hugh Annett,	Director of PHC, Aiglemont
Mr. Clement Chibamba	HEO, Mombasa Municipality
Mr. Fred Donde	Provincial Water Engineer, Mombasa
Dr. David Fraser	Head, Soc. Welf. Dept., Aiglemont
Ms. Eva Gacheru	Research Officer, KARI
Mr. Mirza Jahani	CEO, AKF, Kenya
Mr. Kadzora Joa	CBDD & Chairman VHC, Gona Village
Mr. Anderson Kahindi	PHED, Mombasa Municipality
Mr. Kamau	Subdirector, KARI
Ms. Michelle Kelly	American Refugee Committee
Mr. Kenyatta	PHT, KARI
Dr. King'oo	DMOH, Kwale
Ms. Sandy Krause	American Refugee Committee
Fred Kung'u	Information Assistant, MPHIC
Dr. Lugogo	MOH-PHD, Mombasa Municipality
Mr. Peter Mabonga	Acting Manager, AKCHP
Mr. J. Maithya	SPHO-PHD, Mombasa Municipality
D.F. Malling	PPHO
Mr. Maranga	Dam Construction, PWD, Mombasa
Mr. Henry Mbizah	Primary Health Technician, Mombasa
Mr. Farid Mohamed	Executive Officer, AKHD
Anthony Mondoh	Frontliner, MPHIC
Mr. Daniel Muindi	Asst. Water Engineer, PWD, Mombasa
Anselm Mwan	CHN/Frontliner, Mwavumbo Location
Mr. Anthony Mwathii	PHO, Kwale
Ms. Esther Nagawa	Ex-manager, MPHIC
Eva Nduryaa	CN, MPHIC
Mr. Rodgers Ngutuma	Chief, Mtaa Location
Dr. J. Nyabanda	MO i/c Kwango Hospital
Mr. John Nyae	Community Nurse, Bofu Dispensary
Raphael Ogutu	Kisumu PHC
Ms. Florence Ombaso	Program Officer, Health, AKF, Kenya
Mr. Peter Ouma	Depty. Water Engineer, PWD, Mombasa

Mr. Jonathan Quick  
Mr. Konde Richard  
Ms. Judith Robb-McCord  
Dr. Sharif  
Mrs. Taura  
Mr. Charles Thube  
Mr. Samuel Tuku  
Dr. Nizar Verjee  
Mr. Mbuu Waganagwa  
Ms. Dorothy Wanza

Eighteen men & seven women

Seven women in group

Five youths

Karachi, Pakistan

Ms. Uzma Ahmed  
Mr. Khalid Ahmed

Ms. Anjum Ara  
Dr. Asif Aslam  
Ms. Janice Burns  
Mr. John Dirks  
Dr. Ansari  
Dr. Inamul Haq  
Dr. Mumtaz Husain  
Ms. Khadija Husein  
Dr. Mohammed Iliyas  
Dr. Bazni Inam  
Dr. Kamal Islam  
Dr. Sara Jamil  
Ms. Safina Javid John  
Dr. Mehtab S. Karim  
Mr. Mushtaq M. Khan  
Ms. Bilqees Sana Khan  
Dr. Amanullah Khan  
Ms. Kauser Khan  
Dr. Akhtaar Hamid Khan  
Mr. Rashid Khatri  
Dr. Melvyn Lobo  
Dr. David Marsh  
Dr. Joseph B. McCormick  
Dr. M. Afzal Mehmood  
Dr. Parvez Nayani  
Dr. Khalid Omer  
Dr. Ghazala Parveen  
Mr. Mohammed Yaqub Qureshi  
Dr. Fouziah Rabbani  
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Management Sciences for Health  
PHT, KARI  
USAID  
Provincial Medical Officer  
Health Visitor, M. Municipality  
USAID  
Chief, Kasameni Location  
Ex-Chairman, AKHS, K  
Provincial Chief  
Ag. DPHN

Health., Dis. & Dam Comm. members,  
CBHWs, Diarr. Task Force, Mtaa V.  
Mazeras Village  
Mazeras Village

Network of Enterprising Women  
Theatre (Tehrik-e-Niswa, Women's  
Movement)

Project Officer, UNICEF, Karachi  
Assistant Professor, CHS  
Dean, FHS, Aga Khan University  
Director, Family Health Project  
Instructor, CHS  
Visiting Professor, CHS  
MIS Director, CHS  
Medical Officer, EPI, Sind Govt.

Former Coordinator, UPHC, CHS  
Field Director, CHS, AKU

Study Director, MIMS

Senior Instructor, CHS  
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Urban PHC Program Coordinator, AKU  
Assistant Professor, CHS  
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Health Educator, Sind Govt. HF

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Dr. Nargis Rizvi	
Ms. Laila Salim	
Ms. Salima	
Ms. Shaheda	Mauripur Organization
Dr. Rehana Siddiqi	
Mr. Philip Simpson	Church Project (IKTEDA)
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Ms. Tasneem	Pakistan Association of Voluntary Health & Nutrition Association
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Ms. Shamiun Zaimuddin	

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	DTP Operator, MAP
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Dr. Donna Robinson	MAP Program Director, SVF; &
Mr. Thongchai Sapanuchart	Prod./Distribution Coordinator, MAP AIHD
	Dept. Secty. Gen., FDA, MOPH
Dr. Orapin Singhadej	Dir. Bur. Hlth. Policy & Plan, MOPH
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Dr. Ronald Wilson	
Dr. Som-Arch Wongkhomthong	

Dhaka, Bangladesh

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Mr. Amir Ali	CEO, AKF, Bangladesh
Dr. Mohd. Ashrafuddin	Chief Hlth. Off., DCC, LGRD
Dr. Barkat-e-Khuda	Project Officer, IDDRB
Dr. Sadia Chowdhury	Former Director, AKCHP
Mr. Roshanally M.H. Hirji	Chairman, N.Comm of AKF, B
Dr. A.S.M. Kamal	TBA Tr. Proj. Dir., FP Dir.
Dr. Md. Abdur Rahman Khan	Civil Surgeon, Dhaka H. Dept.
Dr. Saqui Khandaker	PHCP, DUCHP
Dr. Mohd. Mahbubu Rahman	Project Director, ARI, DHD
Mr. Benjamin Raksham	Finance Officer, AKCHP
Dr. Mizan Siddiqi	Director, AKCHP/DUCHP
Mr. Mohd. Zobair	Trg. & Dev. Off., DUCHP



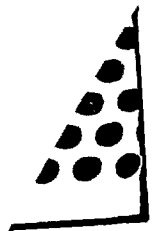
Baltimore, Maryland

Dr. Jack Bryant  
Ms. Maria Francisco  
Mr. Neeraj Kak  
Mr. David Newberry  
Dr. William Reinke

(met, or interviewed by telephone)

Ex-chairman, CHS, AKU  
Associate Scientist, URC  
Senior Scientist, URC  
Technical Specialist, PVO CSSP  
Professor, Johns Hopkins U.

1



**Annex 4**  
**Descriptions of Evaluators**

## DESCRIPTIONS OF EVALUATORS

Evaluation Team Leader

Dr. Melvyn Thorne. Adjunct Professor, Department of International Health, the Johns Hopkins University, School of Hygiene and Public Health, Baltimore, Maryland.

Areas of expertise: Professor for International Health, Health Planning, Family Planning Program Management and Evaluation, Management of Health Services in Developing countries; Research; Methodology Development; Evaluation; Health Planning Management; Project Planning/Programming/Needs Assessment/SIT analysis.

Former Experience: Has held positions with the Health Secretariat of the State of Tabasco, Mexico, UNFPA/Ethiopia, Institut National d'Administration Sanitaire/Morocco, Tunisian Ministry of Health and USAID/DC as the Medical Director of the Technical Division, Near East Bureau.

Health Economist

Dr. Logan Brenzel. An independent consultant, currently working as the Senior Technical Advisor, Health Care Financing, Resources for Child Health Project (REACH II - a USAID funded project, Arlington, Virginia).

Areas of expertise: Public health economics, management assistance to project activities in health care financing, cost-effectiveness analysis, financing and sustainability of EPI and control of diarrheal disease programs.

Former experience: Has worked for REACH I, Johns Hopkins University, School of Hygiene and Public Health, John Snow Inc/Boston Massachusetts, Pan American Health Organization and Harvard University, School of Public Health as a program evaluator and consultant.

USAID Team Member

Ms. Cathy Bowes. Ms. Bowes is a PVO Fellow for the Agency for International Development, Bureau for Humanitarian Resources in Washington, DC. She supports the Bureau's Matching Grants and Child Survival grants programs on issues related to child survival, health, and women in development by giving technical guidance; managing a \$7 million portfolio of health grants; reviewing Matching Grant and Child Survival proposals; and providing policy guidance to the Bureau for strengthening PVO relations. Ms. Bowes has an MPH from the University of North Carolina in Health Education.

## Local Consultant Candidates by Country

### Kenya

Ms. Penina Ochola, MPH, Kenya Registered Nurse and Midwife. Director, PHC/CBHC Support Unit, AMREF. Previously Project Director for: the Rukwa Regional PHC/CBHC Project, Tanzania; The Muka Mukuu CBD/Family Planning CBHC Project, Kenya; and the Urban Slum Child Survival Project, Nairobi, Kenya.

### Pakistan

Dr. Naeem Jafarey. Senior professor at the College of Physicians and Surgeons of Pakistan. Previously held several medical officer positions in Pakistan as well as consultant positions with WHO.

### Bangladesh

Dr. Zakir Hussain. Deputy Director of PHC, PHC Directorate, Ministry of Health and Social Welfare, Bangladesh. Previously worked for WHO/Dhaka in Field Epidemiology.

**Annex 5**

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**Annex 6**

**Infant and Child Mortality Tables & Graphs, UPHC**

## ANNEX 6

## INFANT AND CHILD MORTALITY TABLES AND GRAPHS, UPHC

CAUSE SPECIFIC DEATH RATES IN 5 URBAN PHC SITES, 1989-1993  
Annual Death Rate per 10,000 under five year olds

	1989	1990	1991	1992	1993
Diarrhoea	<52	83	51	82	39
ARI/Pneumonia	<16	24	19	20	24
Malnutrition	?	3	3	3	11
LBW+BrthInj	<44	28	22	22	22
a. sum of 4 CODs		138	95	127	96
b. all causes		209	154	190	138
a/b		0.66	0.62	0.67	70

POPULATION ESTIMATES AND COUNTS OF DEATHS FROM VERBAL AUTOPSI

	1989	1990	1991	1992	1993
pop. <5 y.o.s	8271	7998	7816	7592	7250
Diarrhoea	<43	66	40	62	28
ARI/Pneumonia	<13	19	15	15	17
Malnutrition	?	2	2	2	1
LBW+BrthInj	?	22	15	17	16
a. sum of 4 CODs	?	109	72	96	62
b. all causes	?	167	120	144	99

URBAN PHC IMPACT INDICATORS PER 1,000 LIVEBIR

OVERALL BL		1990	1991	1992	1993
PMMR		58.6	53.7	56.1	44.2
MMMR		38.7	25	31.1	18.7
IMR	126	92.5	64.5	75.8	56.1
0-5MR	176.7	114.8	83.9	99.5	74
1-4MR	50.8	22.3	19.4	23.7	18
CDR	10.5	7.9	6.1	7.1	6
CBR	40.8	33.7	60.5	30.7	27.6

ORANGI July 84		1990	1991	1992	1993
PMMR		43	82.7	78.1	30.2
MMMR		20.3	37.7	64.9	17.7
IMR					
0-5MR	125.9	81.4	86.8	95.4	48.7
1-4MR	19.6	16.9	18.9	15.3	8.8
CDR	9.8	8.3	5.7	7.7	4.8
CBR	43.1	32.4	27.5	27.6	23.9

CHAN.GO Sept 85		1990	1991	1992	1993
PMMR		52.6	51.7	45.9	43.2
MMMR		41.3	15.9	19.7	19.1
IMR					
0-5MR	171.3	168.3	88.9	87.3	114.6
1-4MR	50.4	54	23.2	16.9	35
CDR	12.9	8.8	6.2	6.6	7.1
CBR	40.7	31.3	29.1	31.3	27.7

GRAX Sept 85		1990	1991	1992	1993
PMMR		36.3	48.2	45	68.5
MMMR		16.9	20.8	18	29.5
IMR	170.1	67.6	75	79.1	67.5
0-5MR					
1-4MR	53.9	6.8	16.7	18	4.2
CDR	14.4	6	7.4	7.6	7.7
CBR	35.4	37.6	29.3	33.2	27.9

ESSA NA	OCT. 86	1990	1991	1992	1993
PMMR		81.5	58.8	58.5	46.6
MMMR		65	33	30.6	17.4
IMR	143.6	127.1	63.2	94.7	52.3
0-5MR					
1-4MR	95.7	19.8	24.7	36.2	17.4
CDR	11	9	6	8.2	5
CBR	43.8	34.5	34.2	32.7	31.2

AZAM BA	NOV 87	1990	1991	1992	1993
PMMR	33.5	76.6	23	56.5	27.3
MMMR	56.7	45.5	16.6	26.9	9.3
IMR					
0-5MR	110.8	90.9	62	76.2	60.9
1-4MR	18	11.4	11.6	31.4	18.6
CDR	5	7	5	5.2	4.4
CBR	41.1	33.4	32.5	28.4	26.6

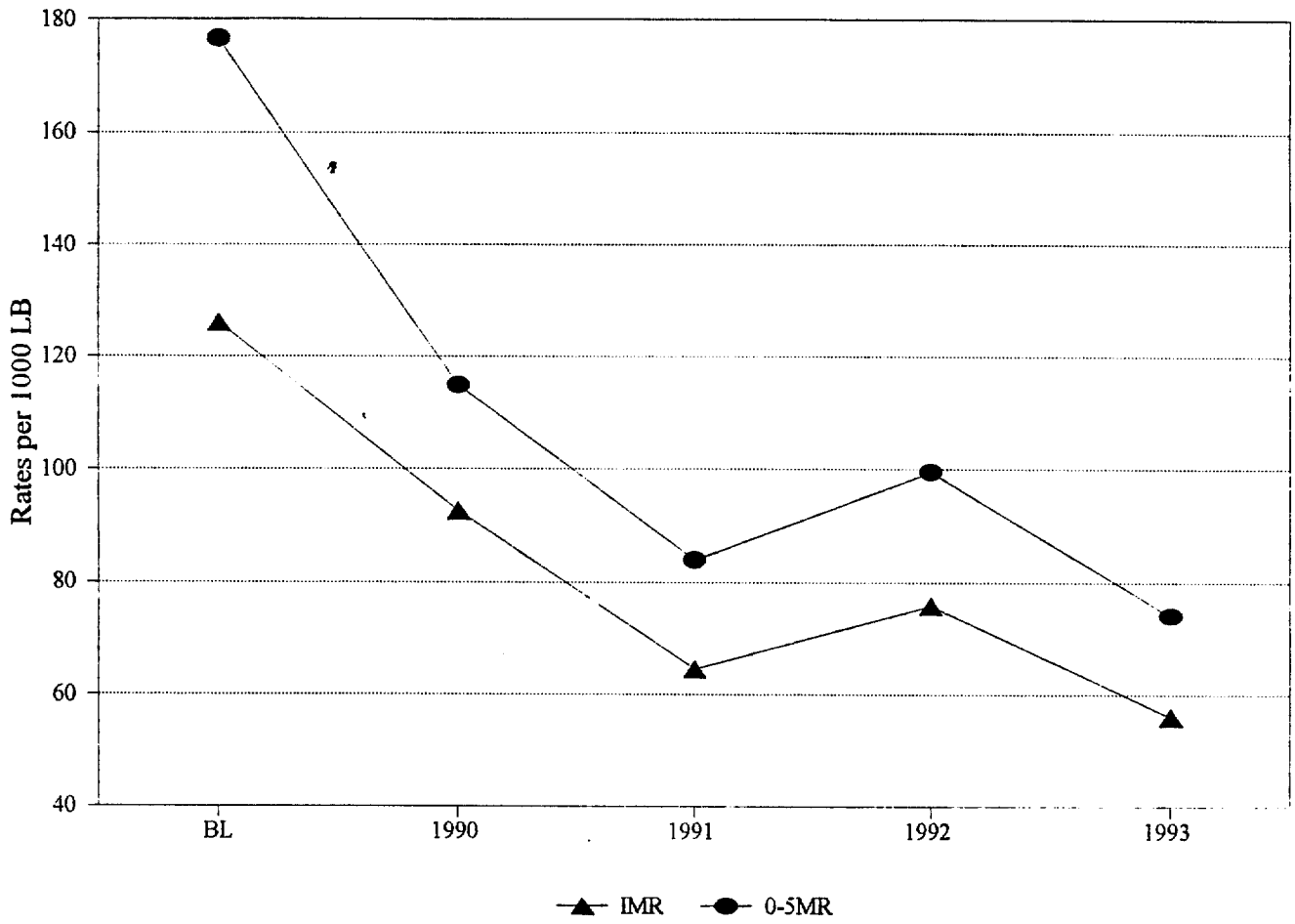
BABA ISL	1988				
PMMR	33.5	76.6	23	56.5	27.3
MMMR	56.7	45.5	16.6	26.9	9.3
IMR					
0-5MR	110.8	90.9	62	76.2	60.9
1-4MR	18	11.4	11.6	31.4	18.6
CDR	5	7	5	5.2	4.4
CBR	41.1	33.4	32.5	28.4	26.6

INFANT MORTALITY RATES IN 5 KATCHI ABADIS OF KARAC

	BASELIN	1990	1991	1992	1993
ORANGI	110.4	64.4	67.9	80.2	39.8
CHAN.GO	120.9	114.3	66.7	70.4	79.6
GRAX	224.1	74.3	91.7	97.1	71.7
ESSA.NA	239.4	146.9	87.9	130.9	69.8
AZAM BA	92.8	79.5	50.4	44.8	32.4

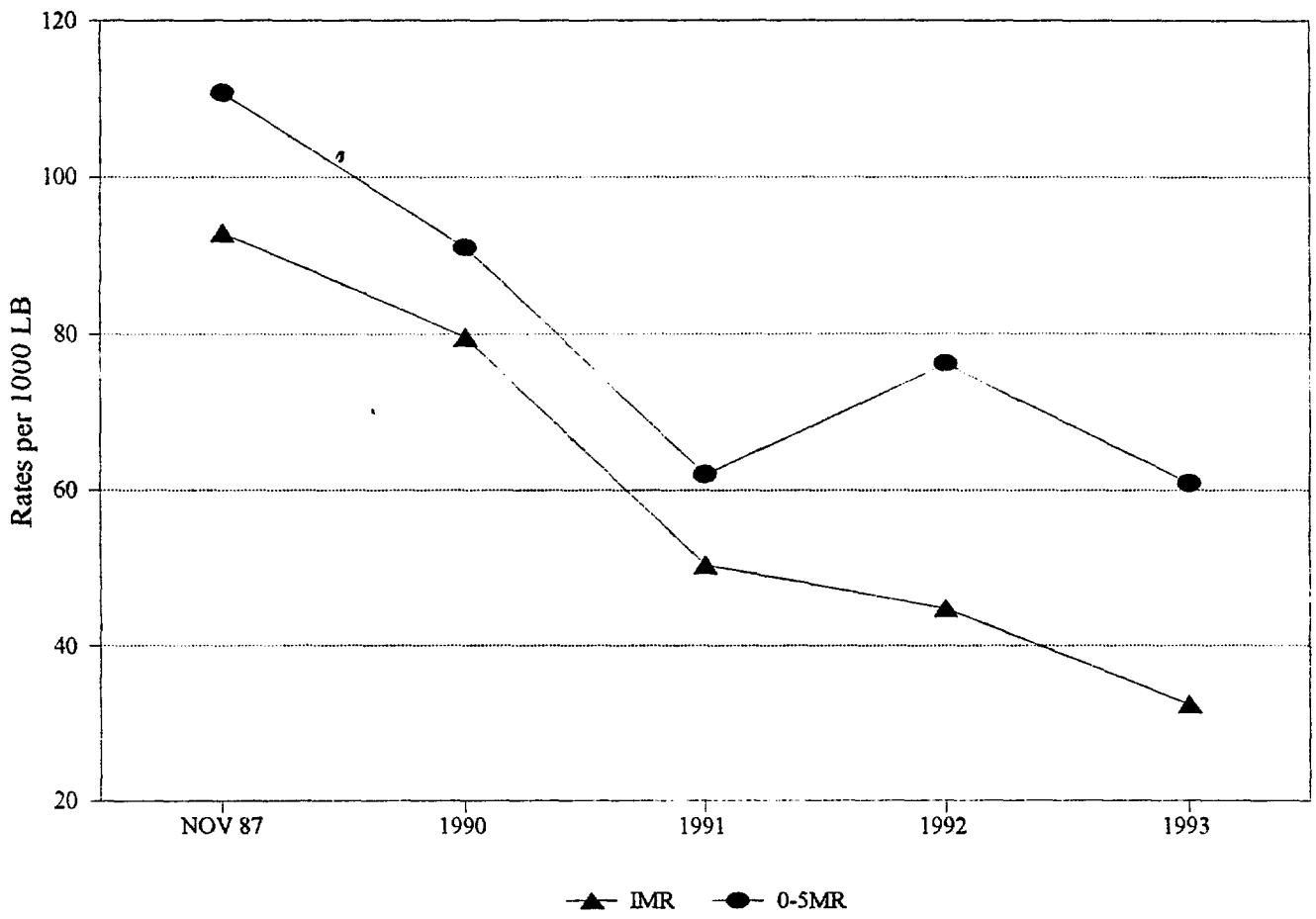
# URBAN PHC Mortality Rates

Overall 1990-1993



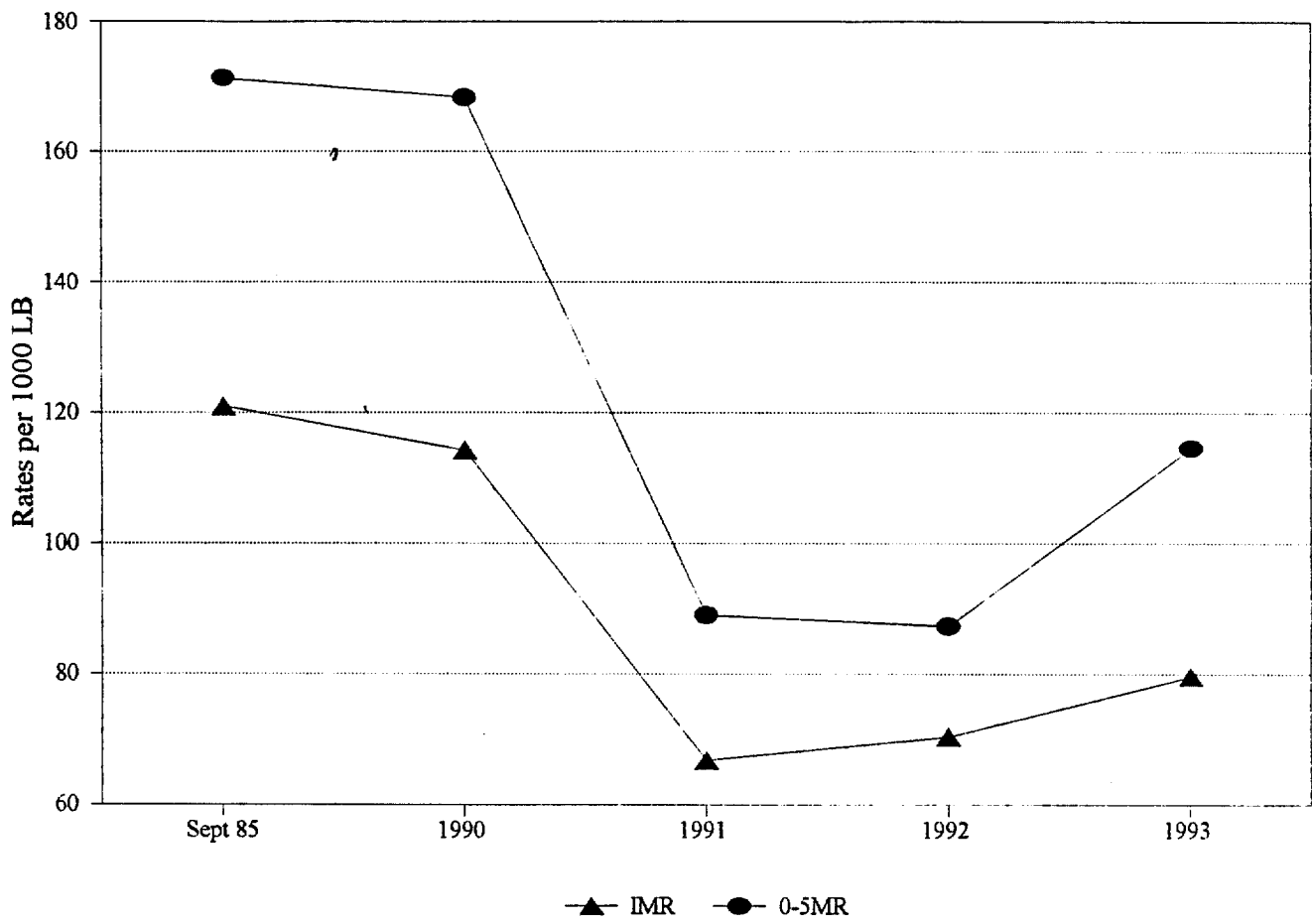
# URBAN PHC Mortality Rates

AZAM BASTI 1990-1993



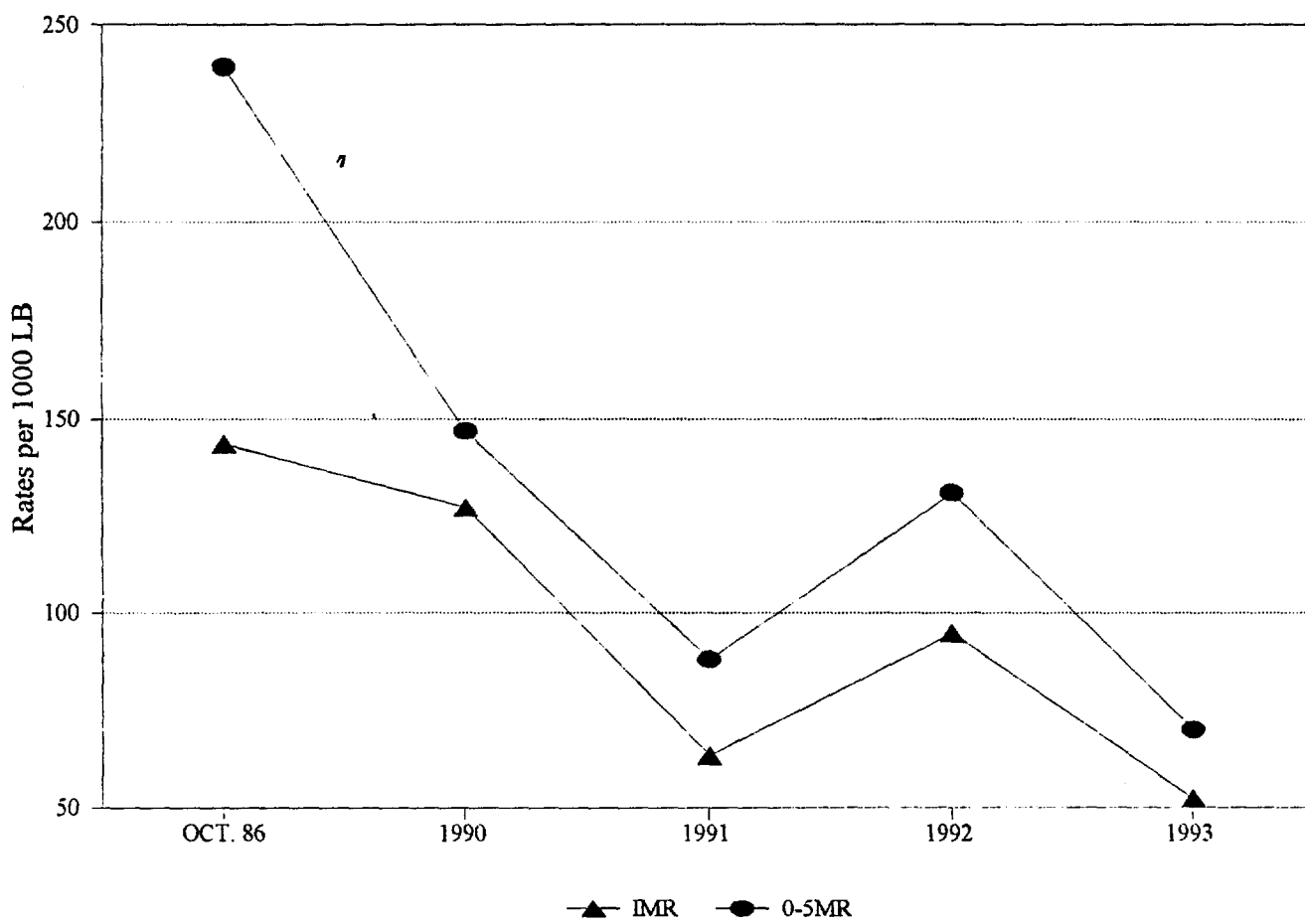
# URBAN PHC Mortality Rates

Chanesar Goth 1990-1993



# URBAN PHC Mortality Rates

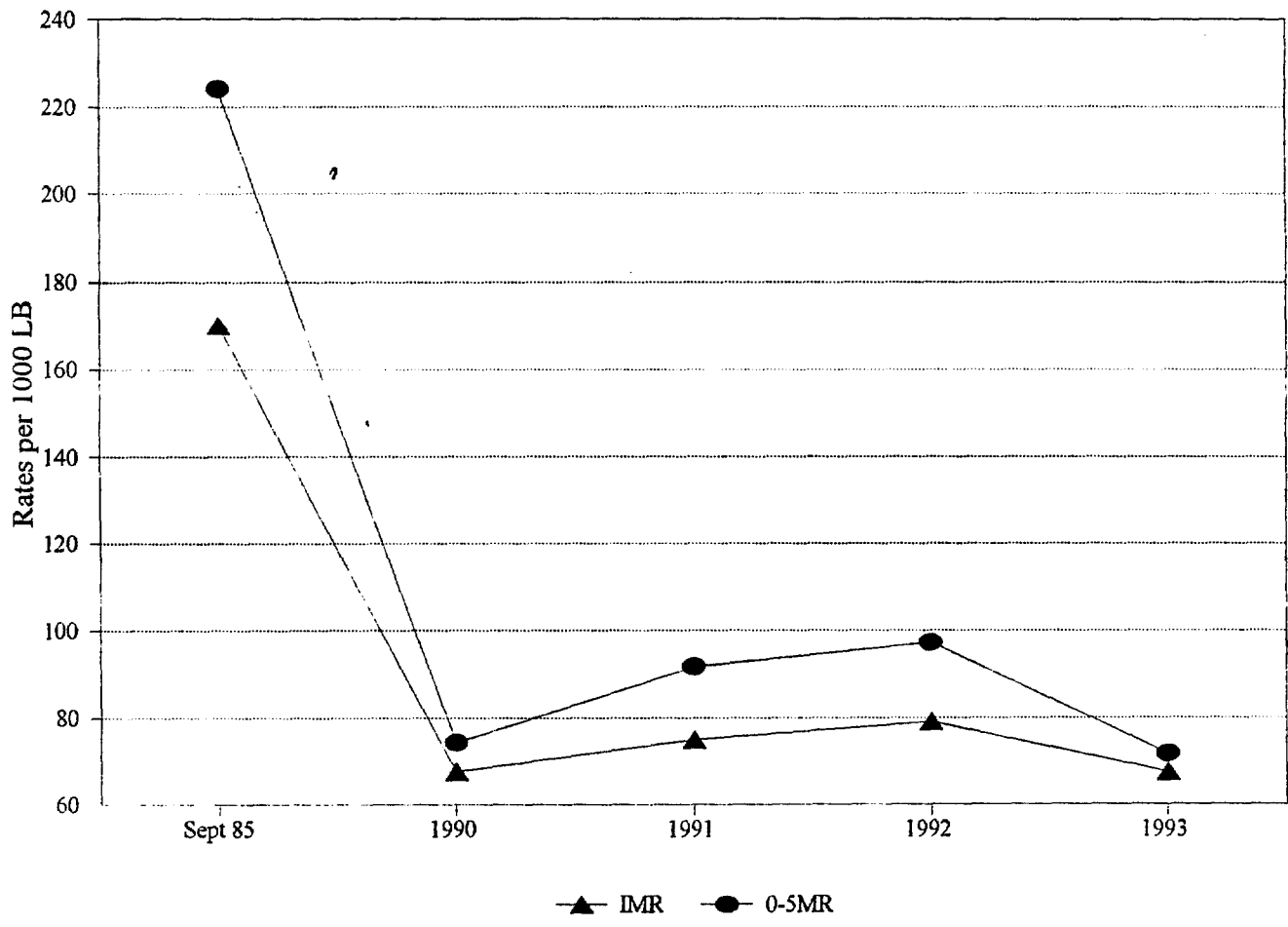
ESSA NAGRI 1990-1993





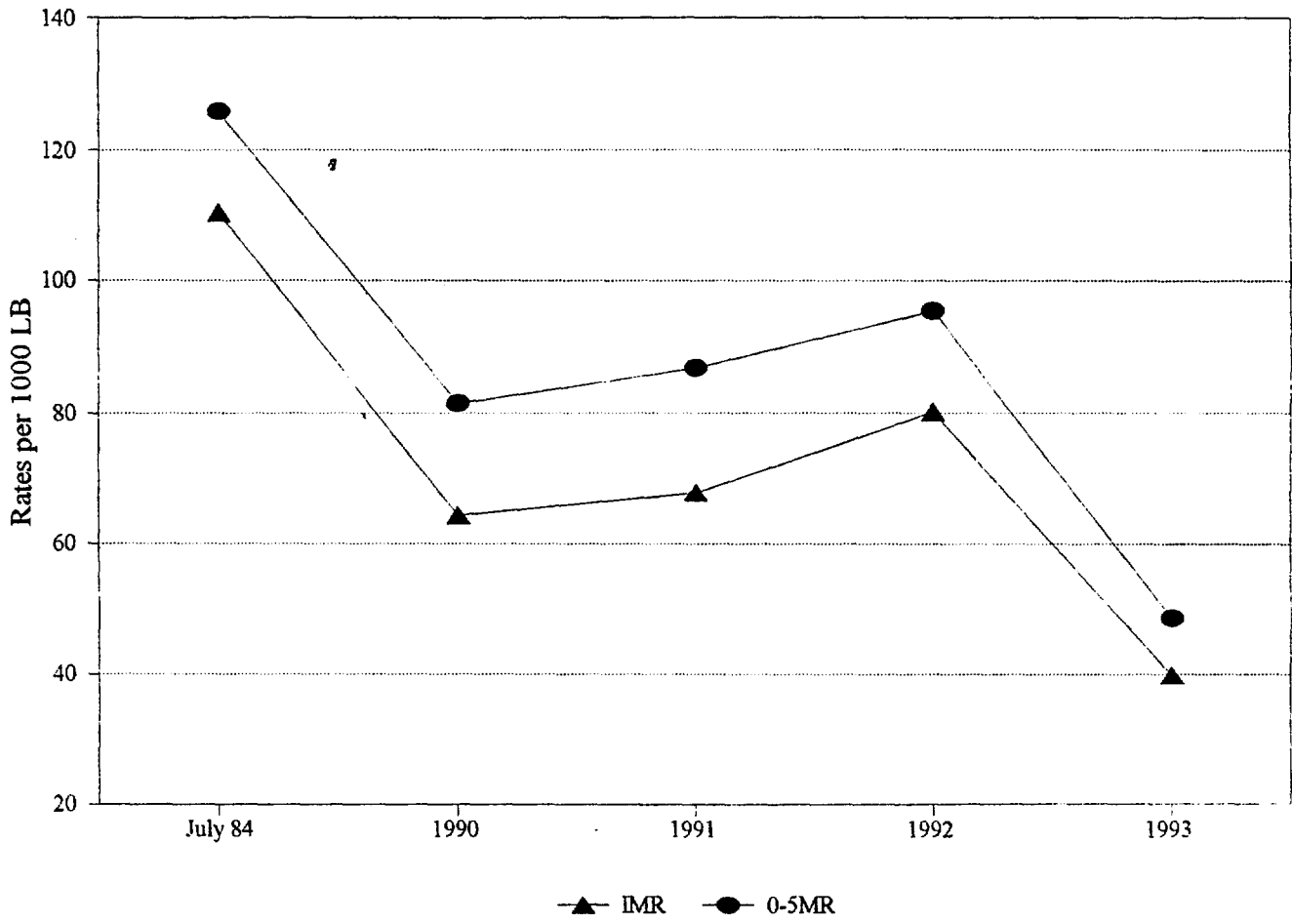
# URBAN PHC Mortality Rates

GRAX 1990-1993

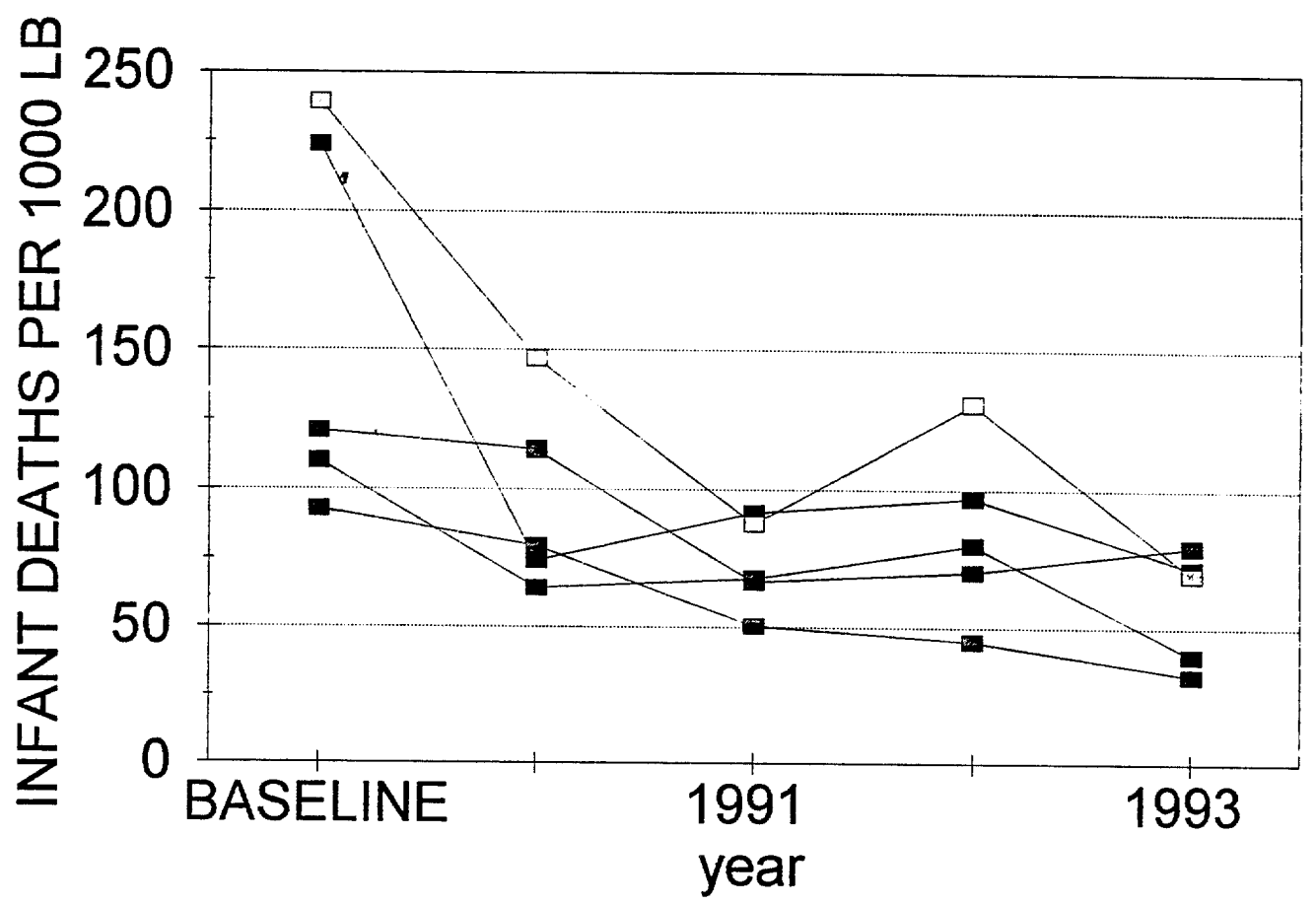


# URBAN PHC Mortality Rates

Orangi 1990-1993



# INFANT MORTALITY IN KAS



**Annex 7**

**Examples of Errors in the PHC MAP Modules**

## EXAMPLES OF ERRORS IN THE PHC MAP MODULES

## THE EXPANDED PHC MAP SYSTEMS FRAMEWORK

INPUTS → PROCESSES → OUTPUTS → EFFECTS → IMPACTS

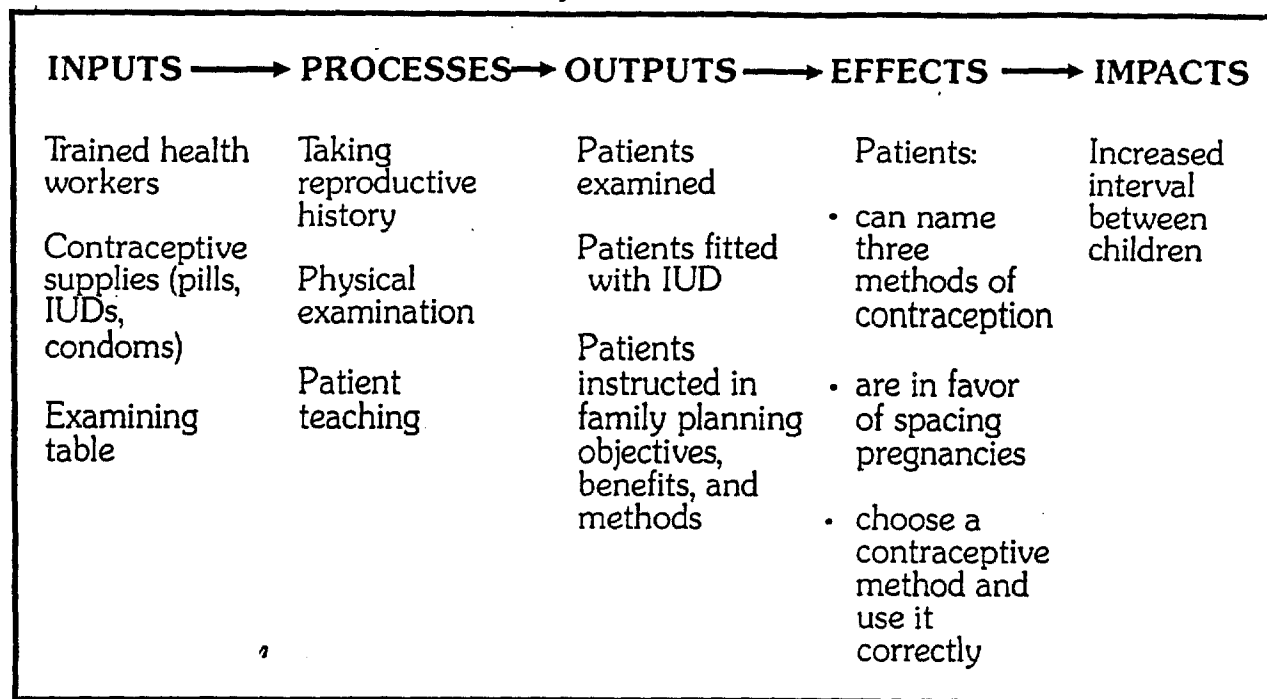
Resources

Activities

Products &  
servicesChange in KAP:  
knowledge,  
attitude,  
practices,  
behaviourChanges in  
health  
status:  
morbidity  
mortality  
fertility  
disability



# A SYSTEMS DIAGRAM OF FAMILY PLANNING

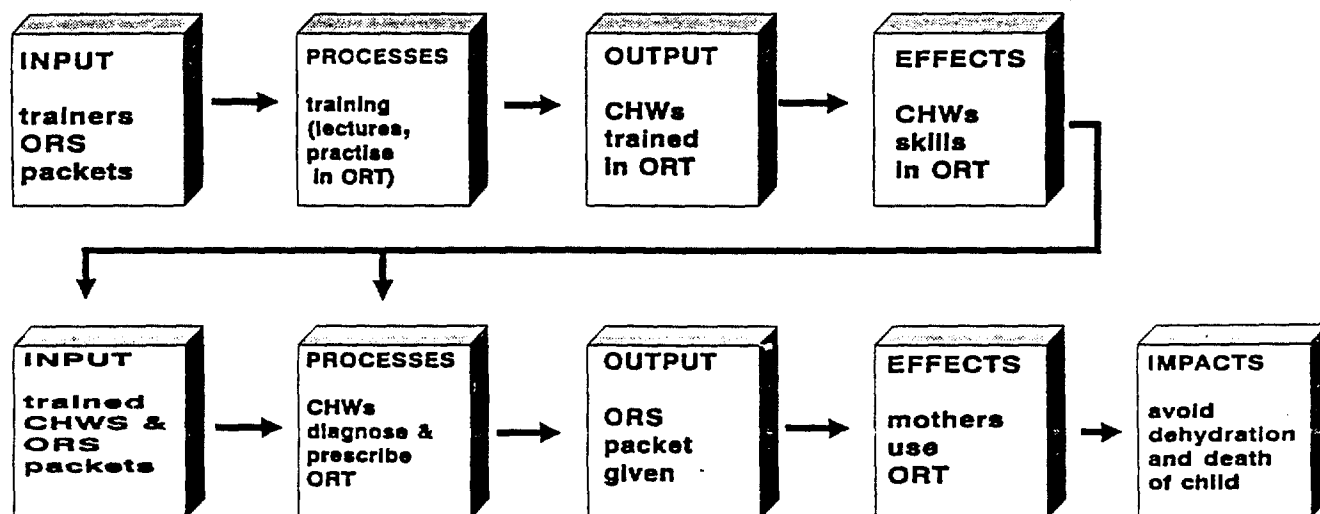


Module 1: FG, session 1: transparency 1-6



# A SYSTEM DIAGRAM OF MANAGEMENT AND HEALTH SERVICES RELATIONSHIP

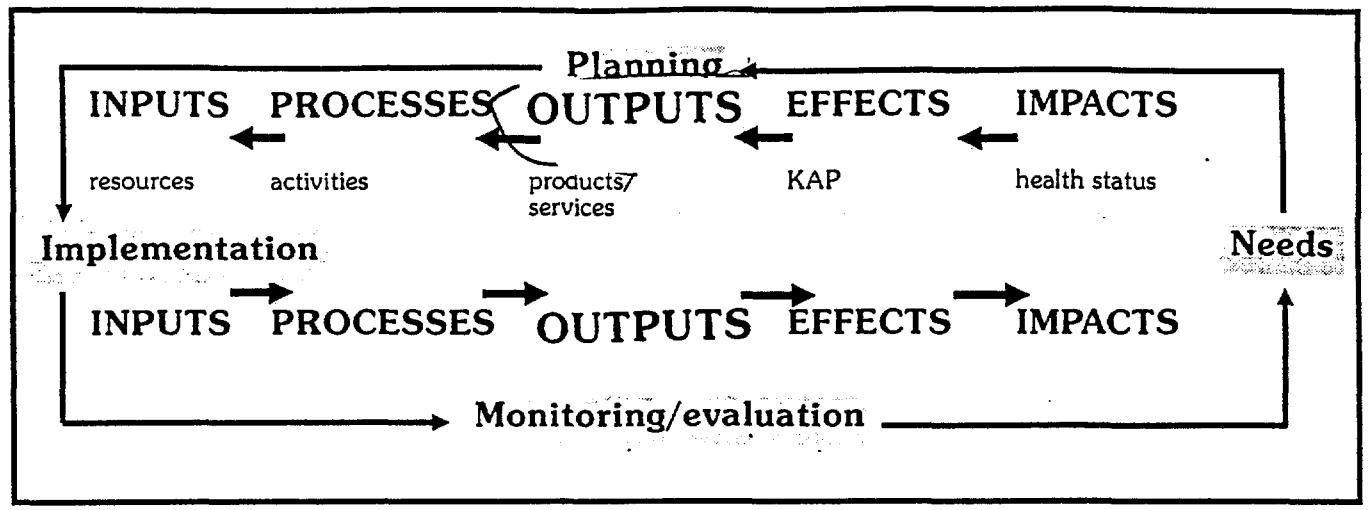
## Management services



## PHC services



# THE SYSTEMS FRAMEWORK AND THE PLANNING-EVALUATION CYCLE



Module 1: FG; session 1; transparency 1-7

## PHC MAP MODULES RELATED TO SYSTEMS ELEMENTS

INPUTS (resources)	PROCESSES (activities)	OUTPUTS (results)	EFFECTS (KAP)	IMPACTS (health status)
3 Work planning	3 Work planning	<b>3 Work planning</b>	<b>2 Community needs</b> 3 Work planning	<b>2 Community needs</b>  4 Surveillance
5 Monitoring	<b>5 Monitoring</b>	5 Monitoring		
6 Service quality	<b>6 Service quality</b>	6 Service quality		
<b>7 Management quality</b>	<b>7 Management quality</b>	<b>7 Management quality</b>		
8 Cost analysis	8 Cost analysis			
9 Sustainability	9 Sustainability	9 Sustainability	9 Sustainability	

*Bold lettering indicates the primary modules and types of data to be collected*

Module 1: FG; session; transparency 1-8

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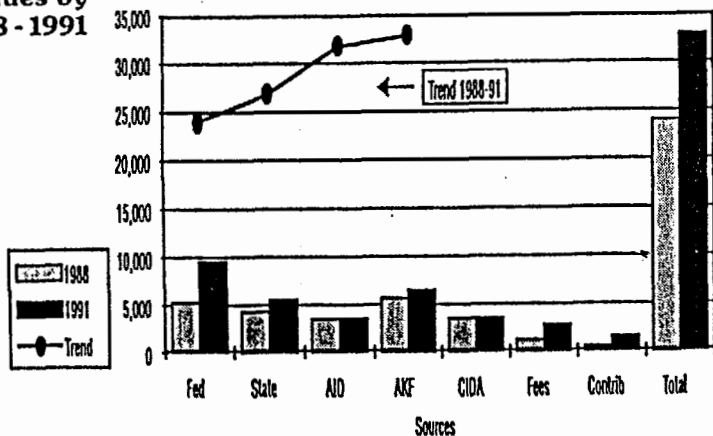
and figure, only with projected dates. This type of analysis is described in Module 9: Sustainability analysis.

Managers and donors are usually very interested in revenues, especially the sources of funds. Table 7 illustrates a hypothetical "trend" analysis of revenue spanning four years (1988-1991). Figure 7 is a graph showing the distribution of revenues by source for these same years.

**Table 7: Trend analysis of PHC revenues 1988-1991**

	1988	1989	1990	1991
Federal	5,310	6,500	9,000	9,500
State	4,294	4,500	5,000	5,500
USAID	3,500	3,500	3,500	3,500
AKF	5,680	6,500	7,000	6,500
CIDA	3,500	3,500	3,500	3,500
Service fees	1,214	1,458	2,500	2,800
Contributions	500	875	1,256	1,580
Total	23,998	26,833	31,756	32,880
Change from previous year		+2,835	+4,923	+1,124
		+11.8%	+18.3%	+3.5%

**Figure 7: PHC revenues by source 1988 - 1991**

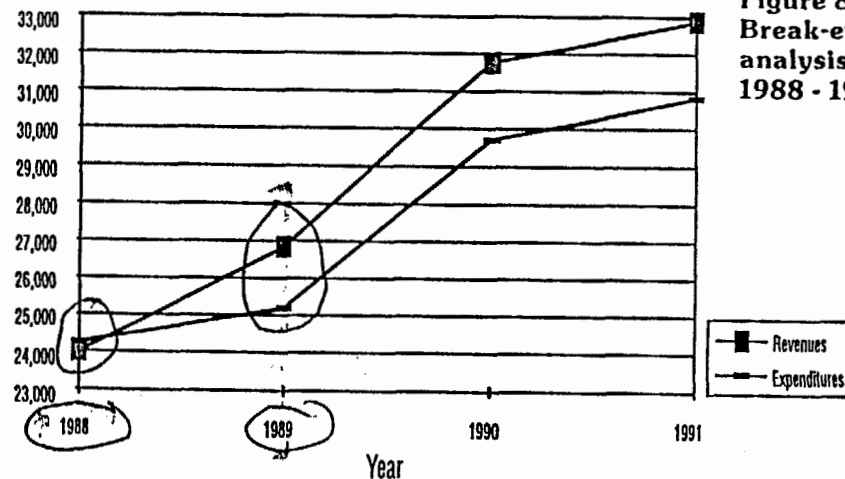


The table shows that total revenue has increased steadily each year. Government support (federal and state) has increased while donor support (USAID, AKF, CIDA) remained fairly steady. Service fees and contributions have increased each year, accounting for a small proportion of overall revenues. The graph shows the differences in funding between the first and last years (1988 and 1991).

The final table (Table 8) compares revenues and expenditures for the past four years. This is often called a "break-even analysis." The table and graph show that expenditures exceeded revenues slightly in 1989 but that the project "broke even" the following year. Although both revenues and costs have increased each year, the project has also made a small corresponding surplus.

**Table 8: PHC programme break-even analysis 1988-1991.**

Source	1988	1989	1990	1991
Revenues	23,998	26,833	31,756	32,880
Expenditures	24,248	25,200	29,700	30,832
Variance (amount)	-2,50	+1,633	+2,056	+2,048
Percent difference	-1.0%	+6.5%	+6.9%	+6.6%



**Figure 8: Break-even analysis 1988 - 1991**

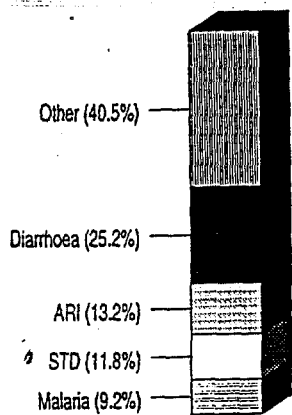




### Disease report 1991: Sentinel centres

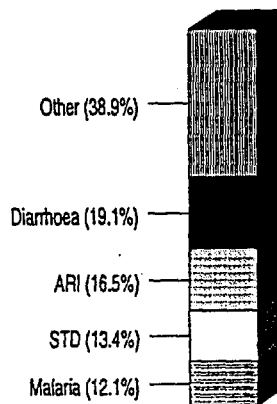
Sentinel centre 1

D-1: Column



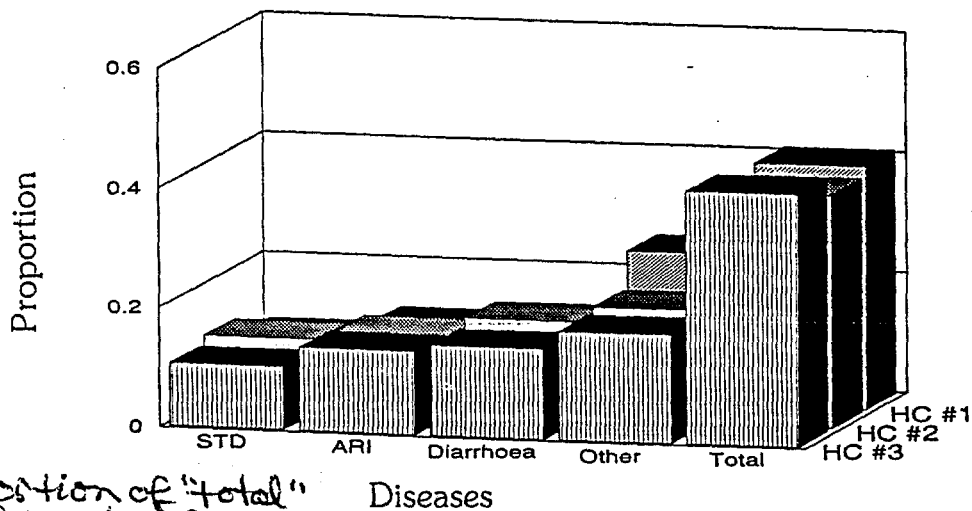
Sentinel centre 2

D-2: Column



Sentinel centres 1-3

D-3: Columns



- Proportion of "total" should = 1.0 for all centres  
 - MALARIA should be in graph

Diseases

- HC #1 should be at front of D-3 graph to compare with graph D-1



**Annex 8**

**List of Distribution of PHC MAP Sets**

## LIST OF DISTRIBUTION OF PHC MAP SETS

Summary of PHC MAP Distribution  
as of 18 May, 1994

	Country	No. of offices	No. of sets
1.	AUSTRALIA	3	3
2.	BANGLADESH	15	82
3.	BHUTAN	1	3
4.	BOLIVIA	2	2
5.	BRAZIL	2	2
6.	CANADA	18	272
7.	CHINA	5	5
8.	CHILE	2	2
9.	DENMARK	1	1
10.	EGYPT	3	7
11.	EL. SAL VADOR	1	1
12.	FINLAND	1	1
13.	FRANCE	4	7
14.	GERMANY	4	4
15.	GHANA	1	1
16.	INDIA	20	1,165
17.	INDONESIA	8	37
18.	ISRAEL	3	22
19.	ITALY	4	4
20.	JORDAN	1	1
21.	KENYA	7	295
22.	MALAYSIA	4	6
23.	MALAWI	1	1
24.	MALDIVES	1	1
25.	MEXICO	1	1
26.	MONGOLIA	2	2
27.	MYANMAR	3	3
28.	NEPAL	4	5
29.	NETHERLANDS	1	1
30.	NIGER	2	2
31.	NIGERIA	3	3
32.	NORWAY	1	1
33.	PAKISTAN	18	270
34.	PAPUA NEW GUINEA	4	5
35.	PHILIPPINES	2	2
36.	PORTUGAL	2	107
37.	SINGAPORE	1	1
38.	SOUTH AFRICA	17	18
39.	SOUTH KOREA	1	1
40.	SRI LANKA	1	1
41.	SWITZERLAND	10	272
42.	THAILAND	157	425
43.	TANZANIA	4	90
44.	TURKEY	2	2
45.	UGANDA	3	4
46.	UNITED KINGDOM	15	135
47.	USA	150	670
48.	VIETNAM	2	3
49.	ZIMBABWE	1	1
50.	YUGOSLOAVIA	1	1
	TOTAL	520	3,951

**Summary of PHC MAP Distribution to institutes  
in Thailand  
as of 20 May, 1994**

Categories	No. of Institutes	No. of Sets
Universities	19	151
MOPH	41	41
Provincial Health Offices <i>3 provinces 45 of</i>	31	31
Individuals	1	2
Hospitals <i>46 Hospital Govt</i>	46	46
NGOs <i>intel - WHO, UNDP, etc. national ~15</i>	19	154
<b>Total</b>	<b>157</b>	<b>425</b>

*request from*  
- Siskamat got 1 public set  
- Siskawit got that version in 6 months  
5 M/par. selected at check-out  
- Not used since testing (Feb).

**Summary of PHC MAP Distribution to AKF**

as of 18 May, 1994

	No. of Orders	No. of Sets
Bangladesh*	7	43
Canada <i>9 states in WHO proj. AIDS USAID</i>	2	79
India <i>240 for AMREF 19. In 3 countries</i>	13	1,144
Kenya <i>AKF for RTP</i>	9	291
Pakistan <i>AKF for RTP</i>	11	231
Portugal <i>AKF/P</i>	4	107
Switzerland <i>To send WHO UNICEF</i>	4	201
Tanzania*	5	88
UK	3	117
USA <i>for workshop in 1995 (WHO, USAID, PSHO)</i>	5	270
<b>Total</b>		<b>2,571</b>

*monthly for UNICEF meet programs NEW*  
- *Canadian Univ. Assoc Prop. 3 cond. with M.B. + Ottawa*  
- *2 to UNW own + 1 in Austria - 20 med. school*  
- *2 - comp. that run + mid/late du. in aug/95 Nov. 93*

*Aspin (UNICEF) ILMAR Helsinki*  
*Air shipped send to hold at AKF*

*Didn't have addresses secure proper & will need to send completion. etc.*

\*MG4

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**Annex 9**

**Recommendations on PHC MAP Training in Kenya**

## RECOMMENDATIONS ON PHC MAP TRAINING IN KENYA

**Introducing PHC-MAP Modules to  
District Health Management Boards &  
Teams (DHMBs, DHMTs) in Kenya**

*Possible Grouping & Sequencing of Modules  
(13 May 1994/JDQ/PHC-MAP.)*

## CONCEPT:

- \* Modules introduced in groups of 3 in provincial-level workshops occurring every six months over an 18 month period to DHMTs & DHMBs.
- \* Modules adapted and/or introduced with "linking" materials (exercises, introductory notes, training approaches) aimed at making explicit the relationship between the content of the modules and the work of the DHMTs, DHMBs.
- \* Between workshops, the content and application of the modules would be reinforced through supervision visits to selected areas.
- \* An operational MOH unit such as the HCF Secretariat and/or PHC Unit would be the major counterpart entity, especially for supervision support.

## POSSIBLE GROUPINGS OF MODULES (based on development needs of DHMB &amp; DHMT):

- A. **THEME: Information Management for Priority-Setting**
  - 1. Assessing Information Needs
  - 2. Community Health Needs & Coverage
  - 4. Surveillance of Morbidity and Mortality
- B. **THEME: Sustainability and Resource Management**
  - 3. Planning and Assessing Health Worker Activities
  - 8. Cost Analysis
  - 9. Sustainability Analysis
- C. **THEME: Monitoring for Quality Improvement**
  - 5. Monitoring & Evaluating Programs
  - 6. Quality of PHC Services
  - 7. Quality of PHC Management

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**Annex 10**

**MPHC Self-Assessment Materials Derived From PHC MAP**





**RANK THE FOLLOWING:**

	<b>RANK</b>	<b>COMMENTS</b>
<b>1. Support from project manager</b>		
Peter		
Eva		
Mwau		
Mbizah		
Anthony		
Fred		
Mariam		
Feisal		
Hosp Admin		
<b>2. Your Team Skills this period</b>		
<b>3. Your general level of efficiency and effectiveness this period</b>		
<b>4. Level of innovativeness</b>		

Other comments:



## MOMBASA PHC - QUALITY ASSESSMENT

### Community Mobilization, Sensitization and Organization

1. Did the meeting start on time Yes/No
2. Was the meeting planned for Yes/No
3. Was the purpose of the meeting clarified Yes/No
4. Did mobilizer involve both sexes Yes/No
5. Was the right message conveyed Yes/No
6. Was action agreed upon Yes/No

### TRAINING

1. Did trainer arrive on time Yes/No
2. Was climate setting done Yes/No
3. Was starter used Yes/No
4. Did starter pose intended problem Yes/No
5. Was there full participation Yes/No
6. Did participants agree on action Yes/No

### ANTE-NATAL CARE

Did the CBHW:

1. Review mothers card Yes/No
2. Take obstetric history Yes/No
3. Was client examined Yes/No
4. Was client immunized against tetanus Yes/No
5. Discuss importance of having delivery attended by health worker Yes/No
6. Explain danger signs during pregnancy Yes/No
7. Refer the mother or give return date Yes/No

## GROWTH MONITORING AND NUTRITION

- |    |  |        |
|----|--|--------|
| 1. | Did the CBHW plot and interpret card correctly?                      | Yes/No |
| 2. | Give nutritional counselling   | Yes/No |
| 3. | Make recommendation about child feeding                              | Yes/No |
| 4. | Refer the sick cases   | Yes/No |
| 5. | Check that the scale was working correctly                           | Yes/No |
| 6. | Ascertain if there is a proper way of tracking malnourished children | Yes/No |

## CHILD IMMUNIZATION

Did CBHW:

- |    |  |        |
|----|--|--------|
| 1. | Use aseptic techniques                 | Yes/No |
| 2. | Give all the vaccination due           | Yes/No |
| 3. | Give right vaccines at the right sites | Yes/No |
| 4. | Observed/maintained the cold chain     | Yes/No |
| 5. | Advise on possible side effects        | Yes/No |
| 6. | Give return date                       | Yes/No |

## FAMILY PLANNING

Did CBHW:

- |    |   |        |
|----|---|--------|
| 1. | Ask medical and reproductive background questions           | Yes/No |
| 2. | Check blood pressure  | Yes/No |
| 3. | Do general examination                                      | Yes/No |
| 4. | Examine patient for anaemia                                 | Yes/No |
| 5. | Recommend method that was free of contradictions for client | Yes/No |
| 6. | Discuss side effects  | Yes/No |
| 7. | Assess client for understanding                             | Yes/No |

**Annex 11**

**UPHC Nutritional Status Table From Self-Assessment**

## UPHC NUTRITIONAL STATUS TABLE FROM SELF-ASSESSMENT

TABLE 2b  
NUTRITIONAL STATUS

CHS LED-FILED SITES	CHILDREN < 5						CHILDREN < 3	
	Dec 1988		Dec 1991		Dec 1992		Dec 1993	
	#	%	#	%	#	%	#	%
Total Children	7635		7816		7592		4074	
Children Welghed	6992	92	6689	86	6290	83	3021	74
Nutritional Status								
Normal (Normal)	3842	55	4046	60	3819	61	1876	62
I (Moderate)	2551	36	2192	33	2049	33	887	29
II (Severe)	509	7	380	6	355	6	258	9
III	90	1	71	1	67	1		

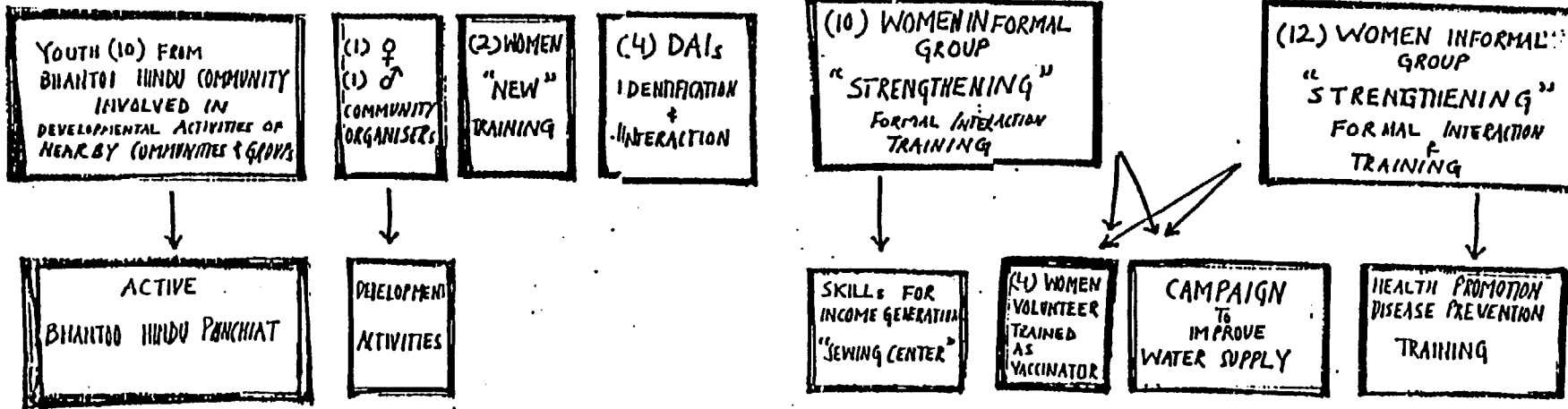
Note: Categories for nutritional status have been changed since Sept. 1993. Dec. 1993 data for Nutritional status is divided into normal, moderate and severe categories of nutrition (see text for more details).

**Annex 12**

**UPHC Macro Model, Diagram of Development Process**

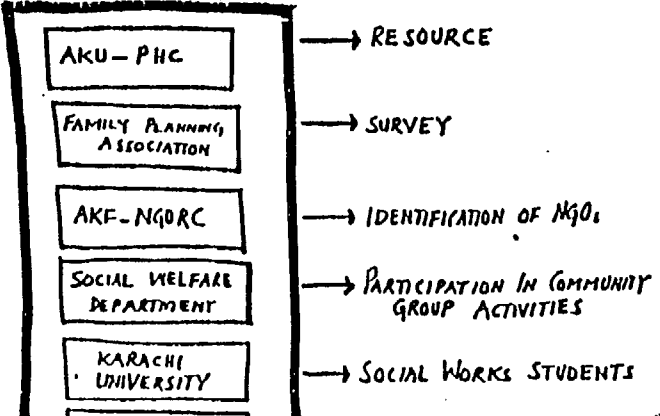
# MACRO PHC PROGRAM

## IDENTIFICATION OF INDIVIDUAL ACTIVISTS AND GROUPS FROM THE COMMUNITY

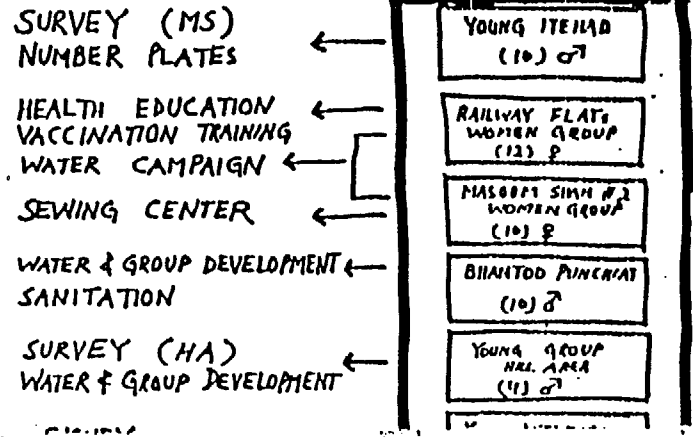


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### INSTITUTIONS



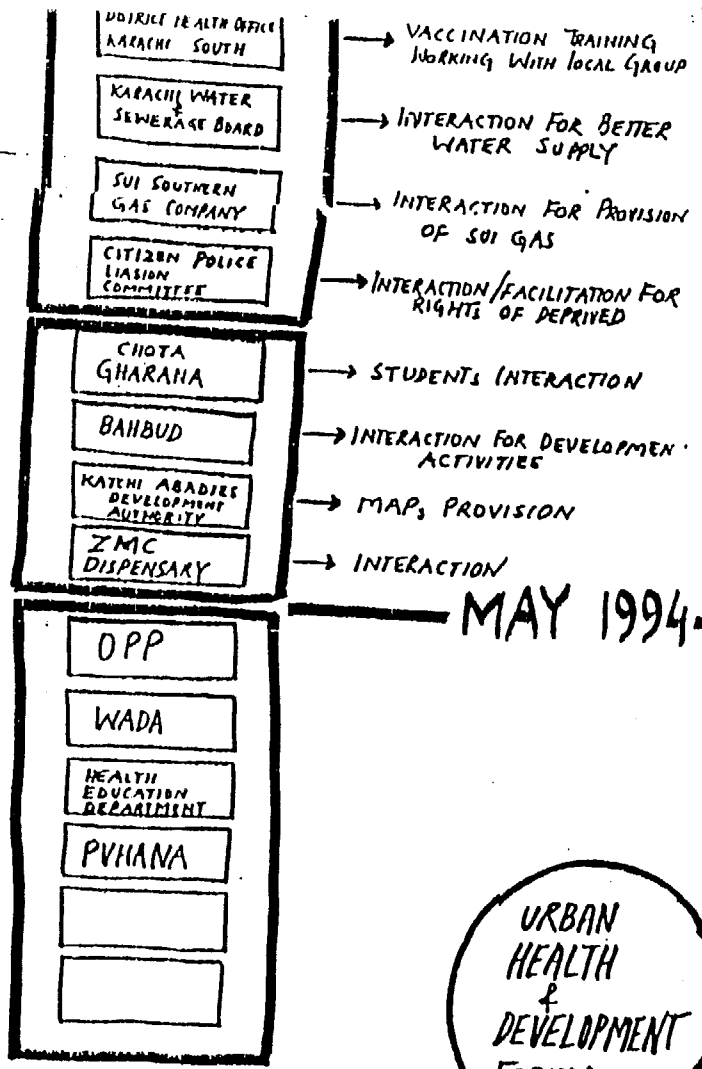
### COMMUNITY



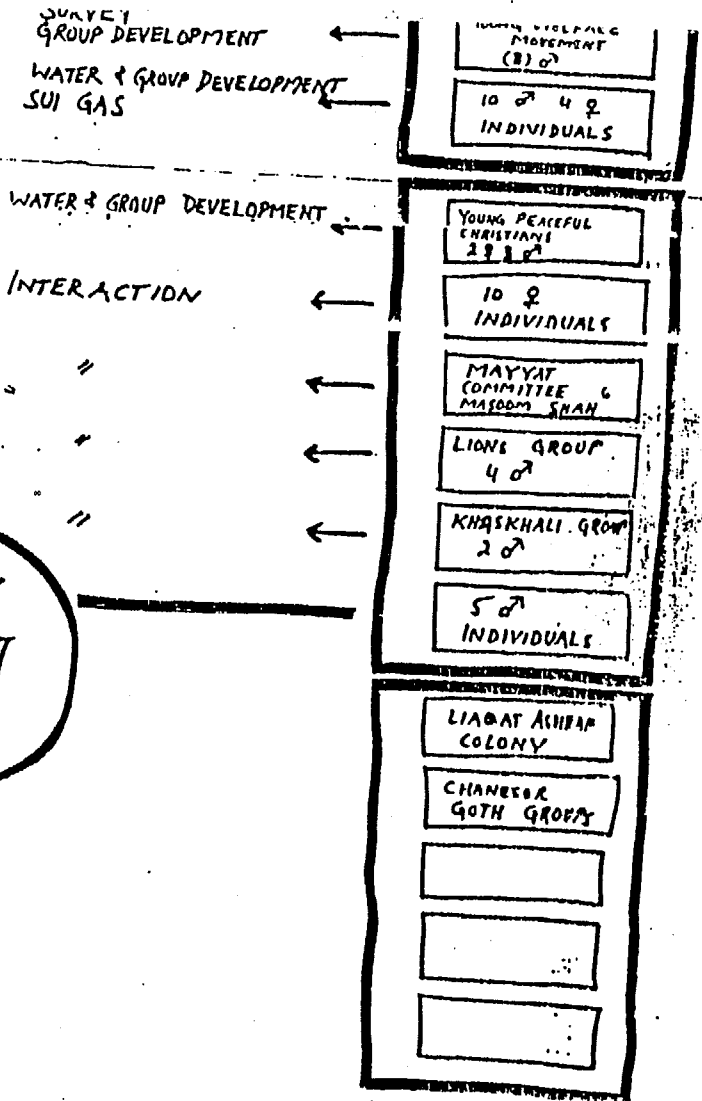
UPHC MACRO MODEL, DIAGRAM OF DEVELOPMENT PROCESS

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MAY 1994



DEVELOPMENT & HEALTH

FAMILY HEALTH PROJECT (FHP)  
District South - Karachi

1993-94  
District Health Office  
DHO

Karachi Metropolitan Corporation  
KMC

Zonal Municipal Corporation  
ZMC

Interaction with KMC, ZMC DHO, PIU	FHP-Concepts Principle/ Strategy.	Facilitate Participation of ZMC
Development of Linkages - KMC, ZMC, DHO (Bringing to One Platform)	Working for Development of Front Line Hospital, Mater- nity Home, Dispensaries	Situation Analysis Health Provision by government departments

Project  
Implementation  
Unit  
Provincial  
Health  
Development  
Center

PHDC/KMC/ZMC/DHO  
Interaction  
concepts of District Health  
System and District Health  
Management Team (DHMT)  
Planning for DHMT Workshop

The  
Aga Khan  
University

1994-95

- \* Front Line Hospital
- \* 2 New BHU/Dispensaries
- \* 2 Renovation Dispensaries
- \* Maternity Home Functional

- \* DHMT Formation
- \* Development of DHO
- \* Trainings on Management
- \* Training on Health Technologies
- \* Strengthening Out-reach Services

MACRO PHC & URBAN FAMILY HEALTH PROJECT

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ACTION PLAN 94

	JUNE/JULY	AUGUST	SEPTEMBER	OCT/NOV	DECEMBER
COMMUNITY (CMT) Management Team.	<p>Planning with Community</p> <p>* Training (Residential Workshop)</p> <ul style="list-style-type: none"> <li>- Working Together</li> <li>- Community Analysis</li> <li>- Steps to Strength Team</li> <li>- Steps to Initiate Development and Health Activities</li> </ul>	<p>* Meeting with NGOs e.g WADA/OPP</p>	<p>* Consolidate (Activity Planning) Water and Sanitation for Activities in Collaboration with NGOs</p>	<p>* Community Management Team's training on needs identification and Working with Government Departments for Development Issues</p>	<p>* Identify issues other than already initiated and start work in the light of trainings and experience from water activity</p>
INSTITUTIONS (UHF) GOs & NGOs	<p>* Interaction (of AKU) with WADA/OPP &amp; other NGOs</p>	<p>* Joint meeting of NGOs/Govt Agencies</p> <ul style="list-style-type: none"> <li>- Objectives and concepts of UHF</li> <li>- Development Strategies</li> <li>- Identification of other Institutions</li> <li>- Steps to work with communities through CMT</li> </ul>	<p>* Workshop to form Urban Health and Development Forum</p> <p>* Develop action plan for activities in communities</p>	<p>* Urban Health Forum responding to the CMTs need</p>	<p>* Urban Health Forum discuss and identify strategies and resources for issue identified by the community</p>
HEALTH SERVICES (FHP)	<p>* Planning</p> <p>* DHMT Workshop (7 steps)</p>	<p>* DHMT Formation (8 steps)</p>	<p>* Management training</p> <p>* Training</p> <p>* Planning with PIU for District South</p>	<p>* DHDC Formation</p> <p>* Trainings</p> <p>* Finalize details for renovation of facilities and building front line hospital</p>	<p>* Start Renovation of dispensaries</p> <p>* Start Building New dispensaries</p>

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**MACRO PHC PROGRAM**  
**QUANTITATIVE INFORMATION OF A QUALITATIVE WORK**

Personnel

Program Coordinator	1
Community Health Nurse	1
Community Coordinator (CHS)	1
Students (AKU)	70 (4 days)
Surveyors	12 (15 Days)
Field Organizer Female	1 (June 1993 - )
Field Organizer Male	1 (June-Dec. 93)
CHW (Field Activists) Male	1 (Oct. 93 -)
CHW (Field Activists) Female	1 (Oct. 93 -)
Students (Karachi University)	3 (Feb. 1994 -)

**MACRO PHC PROGRAM**  
**QUANTITATIVE INFORMATION OF A QUALITATIVE WORK**

Community Capacity Development

Local Groups	12*
Total Strength of Local Groups	84
Meetings with Local groups** (average)	12/month
Individual Activists	24
Meetings with Individuals (average)	8/month
Training Sessions	3
Training sessions days	45
Workshops	1
Workshop Days	1
Intervention planning meetings	10
Civic Authorities	4
Visits to Civic Authorities	10
Activities:	
Sewing Center - Input by # of days	15 (2 Months)
Health Education	
Water Campaign - Input by # of days	9 (3 Weeks)

Numbers of visits and meetings is an underestimation.  
 Non-regular, depending on stage of activity and development.

**MACRO PHC PROGRAM**  
**QUANTITATIVE INFORMATION OF A QUALITATIVE WORK**

Linkages With Outer Resources

**NON GOVERNMENTAL ORGANIZATIONS:**

NGORCC (Meetings)	4
NEW	2
Bahbud	6
FPAP	6
CPLC	3
Chota Gharana	3

**GOVERNMENTAL ORGANIZATION:**

Karachi Metropolitan Corporation	3/month
Zonal Municipal Committee (South)	12
District Health Office (South)	1/month
Karachi University	2
Social Welfare Department	6
Katchi Abadis Development Authority	4
KMC Dispensary	2/month (1992-93)
FHP Implementation Unit	1/month
FHP - PHDC	1/month

**Annex 13**

**Account of PHC/MS Services Visited in MPHC**

## ANNEX 13

### ACCOUNT OF PHC/MCS SERVICES VISITED IN MPHIC, KWALE DISTRICT

The nature of services and of community activities in the MPHIC is illustrated by the following notes of some of the sites visited by the evaluation team.

#### Kasemeni Area

The Mazeras clinic in the Kasemeni area was discontinued in the past. The project started servicing the area with one of their mobile clinics and teams. In February 1994 the MOH resumed providing services to the area. The clinic is currently seeing 70 patients a day. The clinic ran out of drugs in April and will not get restocked again until the next fiscal year for the government begins.

The project has been working over the last three years with a women and youth group in Mazeras. At the beginning their work with both groups was very health based, but they have since expanded into working with the women on IGA projects.

The women group has been active since 1958. There are 27 members in the group. Some group members attended a 10 week course given by the project and were trained as a CBHWS. Afterwards, they conducted a training course for the women in the village on such health issues as malaria and diarrhea.

In addition the women held a 'harambi' to obtain money to construct a building from which they sell food. We met at the building. They presently were not selling food from the building because some women were sick or were away. They had accumulated approximately 15,000 ksh which the project was holding for them. In determining the best location to construct the food building, the women group used a participatory rural appraisal method and drew a village sketch map which identified the physical and economic details of the village.

The women group is also involved in community based drug distribution. Their goal was to raise enough money from the sale of the drugs to build a permanent pharmacy in the village behind the food building.

The youth group consisted of 15 males and 5 females. The major focus of the work by the project with this group has centered around AIDs education. Condoms are available free and, we were told, plentiful. However, availability of condoms does not insure their use. The youth group had just recently created and presented a drama to their village on AIDs.

#### Mwavumbo Area



In Gobwe village the MPHIC project has trained TBAs and is helping some villagers build VIP latrines. There were two TBAs who have attended births since the training. The two are related, Elizabeth and her mother-in-law. We discussed issues surrounding the practice of safe motherhood, including the use of gloves. The women were not using gloves because none were available. Water is also scarce in the area but the TBAs informed me there was always water on hand now. Expectant mothers store water just for the occasion. If TBAs must refer patients they have to get some kind of transport. The nearest hospital is far away. TBAs are paid with shillings, soap or kangas. Elizabeth expressed a need for more courses on health.

The VIP latrine inspected was not completed, it needed a roof still. However it was already being used by the owners.

The Gwasheni Primary school health was not one of the project's strong community based school projects. The school based education component had originally focus on the 'child to child' growth monitoring intervention where older children bring their younger siblings to school over a period of time to be weighed. While it started off with a bang, it was not sustained. There is a health clinic within walking distance which also conducts growth monitoring sessions. Thus, the majority of children were being taken there by their mothers. One young student was asked what she would feed her sister if she was malnourished. She told us meat, corn, milk, and mangos and then laughed. While it was the right answer we both knew she would feed the child whatever was available in the household at that time, and most likely there would only be corn.

In Mavirivirini village we met with the women who were instrumental in getting the pipeline put into their village. Before, these women walked kilometers to obtain water. The nearest water sources were seasonal, water pans. The closest non-seasonal water supply was 4.2 kilometers away, the Mombasa - Nairobi waterline. These women decided to hold a "harambi" to raise money to cover the pipe and installation costs. MPHIC started helping them after it became apparent there was a real commitment by the community.

The meeting was also attended by people from a nearby village who were looking for assistance in obtaining help in laying a waterline to their village. It appeared out to be an opportunity for one group to help the other. But the people from MPHIC tried to make it clear that the new village needed to do be willing to do a lot of the work themselves.

The Kudzecha Mwavumbo Women Organization (KMWO) is an active income generation group located in the village of Mkilo. It was founded in March of 1993. The group's aim is to help their communities, especially women, grow in health and economics.

**Annex 14**

**Account of PHC/MS Services Visited in Karachi**

## ANNEX 14

### ACCOUNT OF PHC/MCS SERVICES VISITED IN UPHC, KARACHI

#### Baba Island

A member of the evaluation team visited the Baba Island UPHC site. The Fisherman Welfare Association (FWA) invited UPHC to work with them in setting up health facilities in 1988. The FWA heard a presentation made by an employee of the UPHC project and invited UPHC into their community. The FWA has a long history of working in upgrading the living conditions on the island. Their previous activities include obtaining grants to bring water and electricity to the island.

Originally the health center started working in EPI. Their goal was to create an awareness in the community concerning health issues. Currently the center provides family planning services, immunization, ante-natal care, rehabilitation, a drug bank and curative care for minor aches and pains. In addition the health center has expanded and is working in the areas of community organization, traditional birth attendants (TBA) training, home schooling to increase the literacy of older women, and health education at schools for children on the island.

The health center is run by an Advisory board which is comprised of representatives from the health center, the FWA and UPHC. FWA sees the function of UPHC/UPHC as one of providing technical support and training and supervision. They see their own role as providing resources when necessary, sponsoring fund raising activities and as the decision maker.

Overall management of the health center rests with the field coordinator. He is responsible for the day to day workings of the health center. Beneath the field coordinator is a male and a female coordinator. The female coordinator is responsible for overseeing the following areas: expanded program on immunization (EPI); family planning (FP); ante-natal care (ANC); and school health education. The male coordinator is responsible for overseeing the following areas: curative clinic; rehabilitation of children; referral to health services in Karachi, resource mobilization; and collection of funds within the community.

The health center is staffed by a field director (FD) who visits every two days, and a Lady Health Visitor (LHV) and the Community Health Nurse (CHN) who come daily. The costs of these three personnel are covered by Matching Grant funds. In addition, the clinic is staffed by volunteer community health workers (CHW). These CHWs reside in the community. Funds derived from the health center cover the cost for 2 older women who accompany the CHWs on their visits and for the transport of the FD, LHV, and CHN from mainland Karachi and back.

The health center appeared clean and well equipped. There were separate entrances for men and women. There was a refrigerator and an adequate supply of drugs. There were numerous health messages on the wall, drawn by a local artist. There was a good system for recording and tracking persons who came to the health center or were visited by the CHWs.

On Baba Island besides the clinic, current health services include 1 government dispensary functioning to capacity 4 days a week for 3 hours, and 3 dispensaries manned by "quacks", unlicensed physicians.

The health center has occasionally encountered problems working within the UPHC sphere which has led to unmet needs on the part of the community. Thus, FWA and the health center have had to develop alternatives beyond UPHC, as described below.

Originally a physical therapist from UPHC was coming out to help with the rehabilitation of the large number of disabled children found on the island. The physical therapist trained some community people but this was not found to be adequate. Then the program almost came to a stand still because the physical therapist stopped coming. The community decided it was necessary to have a physical therapist come so they raised money specifically to pay for the services of a physical therapist and at the same time sent a community member to be schooled in the discipline. The community person has since finished school and now works at the clinic as well as in private practice.

When the relationship started between the UPHC project and the health center, referrals were sent to the UPHC Hospital in Karachi. The community members found the distance to the hospital and its cost to be barriers. Thus volunteers at the health center and members of the FWA developed linkages with other hospitals in Karachi which were closer and less expensive. The health center volunteers have also established a system by which they aid the patients through the ordeal of being hospitalized. The volunteers take the person to the hospital, arrange for any blood transfusions needed and follow up and visit the person in the hospital as well as visiting their family members at home.

Lastly, the FWA and health center are underwriting the costs of schooling for community members in nursing. This they believe will lead to increased availability of health services within their community.

### **Essa Nagri**

Essa Nagri is a Christian community located the closest to UPHC. Essa Nagri provides services in family planning, ante-natal care, immunization, growth monitoring, oral rehydration, child to

child training, family health, and curative care.

The clinic was small and not very clean. The waiting area for the patients at Essa Nagri was not very comfortable. They did not have a working refrigerator. The utilization rates at the clinic have been going down. According to the CHWs and the women I talked with this was due to numerous reasons such as the clinic only being open during the day and not at night, the long waiting periods to see a doctor, the unavailability of drugs and the perception that UPHC is rich, thus why should the population pay for services.

Essa Nagri has a very active Community Management Team (CMT). The CMT is lead by the administrative assistant, an employee of UPHC, who lives in the area. The CMT is comprised mostly of men. The few women members are unable to attend meetings since they are held at night. I asked the administrative assistant about this and he told me the women were too tired from all the other work they did to be active.

The CMT is in charge of a revolving drug fund. A total of 700,000 rupees has been accumulated from this drug fund and costs charged for clinic. The money is sitting in a bank account. The money was not used to replenish the drug supply with regularity, it appears, since we were told they do run out of drugs.

The CMT has identified drug abuse and gambling by the local young males as major health problems. Therefore, the health center has started doing outreach in this area. There is one women who also teaches sewing skills to young women in the area. The CHWs still do house to house visits. They have developed a very good follow-up and tracking system for malnourished children and pregnant women. It appeared that approximately 30% of their time is spent in the field, 30% spent in upgrading skills and 30% in recording patient information.

The CHWs participate in a saving plan in which every month they contribute a set amount of money to a pool. This money is then distributed to a different CHW each month.

In talking with community members it became apparent that they do also utilize the services of the general practioners in the area. Sometimes they even take their children to the clinic and to see a general practioner. On inquiry they said it was because "the clinic is closed at night and they don't give many injections". The clinic is now experimenting with staying open one night a week.

#### Grax

At the Grax Health Center the team had the opportunity to view a lane meeting and meet with the all male Center Management Team (CMT). The health center offers the following services:

growth monitoring; instruction in control of diarrhea, ante-natal care, and training in rehabilitation, home schooling and traditional birth attendants.

To help sustainability, Grax has opened a general store at the front of the clinic. It was staffed and selling small items such as children's candy.

Grax now holds lane meeting because of the lack of CHWs. The lane meeting viewed by the team was attended by about 10 of 15 women with children. The children all seemed quite healthy. When asked questions on health issues the women all responded correctly. There was a group of women at the lane meeting who did not speak Urdu, however, and the CHWs and the team from the health center were not able to translate our questions for them. This made us wonder how health sessions conducted in Urdu at the lane meetings are being interpreted by these women.

The members of the CMT are trying to expand services at the clinic. A CHW, has recently received laboratory training; the health center hopes to be able to perform routine laboratory tests in the near future. Asked why people didn't use the services at the clinic, we were told because the clinic only has morning hours, lacks a woman physician, but also because of the lack of knowledge by the population on health issues, and the habit of the population to use cheaper government services. The CMT also discussed other issues in the community besides health which they would like to have addressed. These included lack of water and sewers and sanitation.

There are a few other active community development organizations in the area. One, developed earlier than UPHC, is the Grax Community Development Organization (GCDO). In 1990, UPHC asked GCDO to participate actively in the management of the PHC project. Grax declined the offer because they felt the UPHC approach was not acceptable to them. They said they did not want the following:

1. sophisticated high tech services;
2. a no fee or low fee service;
3. home to home approach;
4. extensive data collection;
5. paid CHW; and
6. costly staff, vehicles, furniture, etc.

The GCDO has since started their own health program and taken over the immunization and family planning services for the UPHC clinic. A CHW left the UPHC program and runs the GCDO project. The community very actively collaborates. This health program provides immunizations, family planning motivation, and growth monitoring. All services are center based. The volunteers in this center receive training from the government.

## Orangi

This is the oldest UPHC project with a population of 1.2 million. It is also a community which has a lot of in and out migration. Seventy three percent (73%) of the population is literate and 88% of them have sanitation/toilet facilities. The community has a history of civil unrest.

Currently there are 11 CHWs filling 14 positions. The center has had trouble replacing CHWs when they leave. This has necessitated hiring women from outside the community and changing the strategy of reaching the target population, holding lane meetings instead of conducting home to home visits. The CHWs at Orangi are older in age than in some other clinics. They took the position for economic reasons, to cover the cost of child education, marriage of daughters, house construction, etc.

The CHWs participate in a monthly saving plan in which every month they contributes a set amount of money to a pool. This money is then distributed to a different CHW each month. The CHWs wanted to buy the building the health center was housed in and then rent it to the university for the clinic. This was around the time the health center had to move. It appears this did not work out, however we were unable to determine the reasons. It also appears that UPHC did not encourage and facilitate this endeavor by the CHWs.

The health center offers the following services: growth monitoring, immunizations, rehabilitation program for disabled children, family planning, home-based and center based ante-natal services, child to child training, and instruction in control of diarrhea. Training for TBAs was attempted but did not work. The TBAs stated that they had no incentive to be trained. In other areas the 'carrot' was a birth certificate. Some centers obtain this for the TBAs after she reports a birth. The TBAs then give it to the mother. However, in Orangi, the registrar's office is a few blocks from the center and the TBAs or mothers can obtain the certificate with ease.

The clinic is opened 4 mornings a week, 1 day for OB/GYN services and 3 for general services. The community women and CHWs stated these hours were not convenient. Water, needed by all families, is only available in the morning. Thus it is quite probable that, if women leave the house to attend the clinic, they will not be able to obtain the water they need for the day.

Provision of family planning services and utilization have increased in Orangi. They provide Depo Provero to the women. The CHWs talk to the women and explain to the women that they need their husbands consent to obtain the shot. Some CHWs confirmed, however, that there were women who were getting it without their husbands approval. If this is so and it becomes public, it could have repercussions on the project.

**Annex 15**

**UPHC Papers Presented or Published 1991-1994**



## UPHC PAPERS PRESENTED OR PUBLISHED 1991-1994

## LIST OF PAPERS PRESENTED AT MEETINGS DURING 1991-94:

Lobo, M. and Qureshi, A.F. Household Management, and Treatment in Childhood Diarrhoea in a Katchi Abadi. Paper presented at the IXth Biennial International Paediatric Conference in Karachi, February, 1992.

Qureshi, A.F. and Lobo, M. Cultural Perceptions and Dietary Practices in Childhood Diarrhoea. Paper presented at the IXth Biennial International Paediatric Conference in Karachi, February, 1992.

Marsh, D., Husein, K., Lobo, M. et al. Cause Structure of Child Death in Urban Karachi Slums as determined by Verbal Autopsy: Policy Implications. Paper presented at the Annual Meeting of the American Public Health Association, Washington DC, U.S.A., November, 1992.

Bryant, J., Qureshi, A.F., Baig, L., Lobo, M. et al. From Maternal and Child Health to Family Health Care in Developing Countries - Complementary or Competitive? Paper presented at the Annual Meeting of the American Public Health Association, Washington DC, U.S.A., November, 1992.

D'Souza, R., Lobo, M. and Aslam, A. Housing and Environmental Factors associated with Diarrhoea: A Study from a Squatter Settlement in Karachi. Paper presented at the Sixth Asian Conference on Diarrhoeal Diseases, Karachi, 11-13 December, 1992.

Marsh, D., Lobo, M. and Bryant, J. The Aga Khan University and Alternative Health Systems Development. Paper presented at the WHO Consultation on 'Health Futures: Results and methods', Geneva, 19-23 July, 1993.

Baig L., Aslam A, and Khatoon N, "Developing Social Strategies for Women and Development: An Example from Pakistan". Paper presented at the APHA, Annual Meeting, 1991, Atlanta, USA.

Aslam A, Baig L, Haq IU, "Child Mortality Patterns in a Primary Health Care Center in a Karachi Squatter Settlement", presented at the 5th Annual Paediatric Association Meeting, Murree, June 1991.

Alam S, Aslam A, Sohel S, "Reasons for Non-utilization of Community Based Child Health Services" presented at the 5th Annual Paediatric Association Meeting, Murree, June 1991.

Agha Z, Turab A, Sadiq H, Aslam A, and Thaver IH, "Sex Differentials in the Malnutrition Patterns of Children Less than 5 Years of Age: A Case Study from the Squatter Settlements of Karachi" presented at the 5th Annual Paediatric Association Meeting, Murree, June 1991.

Bryant J, Aslam A, de Wit V, Khan KS, Marsh D, "Primary Health Care: A Research Agenda for the Nineties", Paper presented at the meeting of the Consultative Group on Primary Health Care Development, Geneva, November 1991.

Baber SI, Aslam A, et al., "A Descriptive Study of Paediatric Mortality in a Squatter Settlement in Karachi" presented at the 6th Biennial Paediatric Conference, Karachi, February, 1992.

Baig L, Haq IU, Aslam A, "Children and Adolescent Morbidity Patterns in a Karachi Squatter Settlement" presented at the 6th Biennial Paediatric Conference, Karachi, February, 1992.

Inam S N.R. and Hyder A.A. PHC Clerkship at the Aga Khan University. Paper presented in Seminar on Primary Health Care and Maternal and Child Health, Dow Medical College, Karachi, November 28, 1990.

Ali B., Zuberi R.W. and Inam S.N.B. Symbiosis of service and education - The Aga Khan University Experience. Annual Symposium of Dow Medical College, Karachi, March 1990.

Badriddin, S.H. and Inam S.N.B. Constraints to adoption of appropriate breast feeding practices in a squatter settlement in Karachi. Abstract accepted for presentation in XV International Congress of Nutrition, Adelaide, Australia, September 26 - October 1, 1993.

Inam S N B, Badriddin S.H. Impact of Appropriate Breast Feeding Practices on Infants' Growth and Morbidity. Lahore, February 2-5, 1994 (Accepted for presentation).

Qureshi A.F., Jamil S. and Inam S.N.B. Infant Mortality in Pakistan: Current Status, Trends and Strategies. Background paper for workshop on Maternal and Infant Mortality, Karachi, February 1994.

Rabbani F., Shehla Z., Asad A. and Salimah N. Empowerment of Women - Key to overall Health and Development in the Community. Presented at Yogyakarta Indonesia, August 1990

Burns, J. Harner, R. Marshall, P. Karmaliani, R. Community Based Nursing Education, APHA San Francisco, International Conference on Community Health Nursing Research (Canada) 1993.

Burns, J. The Critical Role of Community Health Nursing in Epidemiological and Social Surveillance in Pakistan. APHA San Francisco, International Conference on Community Health Nursing Research (Canada) 1993.

Burns, J. Water and Sanitation Status in Two Karachi Squatter Settlements. South Asian Conference on Diarrhoeal Diseases, Karachi December 1992 (Poster)

Burns, J. Service and Health Promotion Quality Assessment in ORT Among the Vulnerable Populations in Two Karachi Squatter Settlements. International Nursing Research Conference, Kings College, London 1992.

Chandani, N. Service Quality Assessment in Anti-natal Care in Two Karachi Squatter Settlements. International Conference on Community Health Nursing Research, Canada, 1993.

Nayani P, Badruddin S H, Qadir M K. "Health Promotion and Disease Prevention Program, Karimabad: A Community Based Approach" Paper presented at American Public Health Association Conference, at Atlanta, Georgia, 10-14, U.S.A., November, 1991.

Nayani P, Badruddin S H. "Obesity - A Problem Among Women in a Low Middle Class Community of Karachi". Paper presented in International Congress, organized by, College of Physicians & Surgeons, Pakistan, at Karachi, 11-13 December, 1993.

Nayani P, Makadma M S. "How the Growth Chart is used by the CHWs in Grax PHC Program". Paper presented in XII Biennial Conference, organized by Pakistan Paediatric Association & British Paediatric Association, at Lahore, 2-5 February, 1994.

Aslam A, Bryant J H, Qureshi A F, Husein KI, and Islam K. "Looking at the City From Here — Urban Primary Health Care, The Aga Khan University's Experience in Karachi, Pakistan." Paper presented at the annual meeting of the International Health Policy Program, Oct. 1990.

LIST OF PAPERS PUBLISHED DURING 1991-94:

Qureshi, A.F. and Lobo M. Socio-anthropological Determinants and Home Management in Childhood Diarrhoea in a Squatter Settlement of Karachi, Pakistan. (accepted for publication in the Journal of Tropical Paediatrics)

Marsh, D.; Husein, H.; Lobo, M. and Shah, M. A. Cause of Child Death in Karachi Slums by Verbal Autopsy: Implications for Primary Health Care Managers. (submitted for publication to 'Health Policy and Planning')

Qureshi, A.F. and Lobo, M.A. Home management of Childhood Diarrhoea in the Urban Poor: Implications for Policy. PPA, 1993; 17(3):99-113.

Saifullah A. The inhabitants of Baba Island: An excellent example of self-help in "Dawn Magazine Newspaper", 19 Feb. 1993.

Saifullah A. A commitment to long term Community Development in the Aga Khan Health Service. International Newsletter, October 1993.

Saifullah A. "Rehima Need not have died". The News International magazine, Friday, April 8, 1994.

Husein K, Adeyi O, Bryant J. and Cara N "Developing a Primary Health Care Management Information System that Supports the Pursuit of Equity, Effectiveness and Affordability." Social Science and Medicine, Volume 36, No. 5, pp 585-596, 1993.

Bryant J H, Marsh D R, Khan K S, D'Souza R, Husein K, Aslam A, Qureshi A F, deWit V, and Harner R M. "A Developing Country's University Oriented Towards Strengthening Health Systems: Challenges and Results." American Journal of Public Health, November 1993, Volume 83, No. 11.

Thaver I H, Husein K, and Cara N B. "The 'P' in GMP -- A Major Shift in Growth Monitoring Programme of a Primary Health Care Project." Southeast Asian Journal of Tropical Medicine and Public Health. Vol 24, No. 1, March 1993

Karim M S, and Husein K. "Management Information System for Family Planning, its Linkages with Maternal and Child Health Programmes: An NGO's Perspective." Discussion paper for Seminar on Family Planning/Maternal and Child Health Programme's Management Information System in 1990s, June 1990.

Fikree F F. "Crowding - A Risk Factor for Perinatal Mortality"? Journal of the Pakistan Medical Association. Vol 43, No. 11, November, 1993.

Fikree F F, Berendes H W, Midhet F, D'Souza R M, Husain R. "Risk Factors for Intrauterine Growth retardation: Results of a Community Based study from Karachi". Journal of the Pakistan Medical Association. Vol 44, No. 2, February, 1994.

**Annex 16**  
**Cost Analysis Working Files**

## COST ANALYSIS WORKING FILES

10-Jun-94

MPHCC

(ii) PHASE II

EXPENDITURE LINE	TOTAL	COMMUNITY I PROCESS	%	CBHW TRAINING	%	HEALTH EDUCATION	%	ANTENATAL	%	IMMUNISATION	%
MWAVUMBO	6,389.2	939.9	35.6	546.9	35.6	522.6	35.6	403.8	35.6	494.5	35.6
KASEMENI	5,890.6	866.5	32.8	504.2	32.8	481.9	32.8	372.3	32.8	455.9	32.8
MTAA	5,670.0	834.1	31.6	485.4	31.6	463.8	31.6	358.3	31.6	438.9	31.6
TOTAL	17,949.8	2,640.4	100.0	1,536.5	100.0	1,468.3	100.0	1,134.4	100.0	1,389.3	100.0

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MPHCC

EXPENDITURE	6/MONIT. & NUTRITION	%	SCHOOL HEALTH	%	COMMUNIC. DIS. CONT.	%	WATER & SANIT.	%	I/A COLLAB.	%	FOOD PRODUCTION	%
MWAVUMBO	516.2	35.6	651.7	35.6	453.0	35.6	502.8	35.6	910.5	35.6	447.2	35.6
KASEMENI	476.0	32.8	600.8	32.8	417.6	32.8	463.6	32.8	839.4	32.8	412.3	32.8
MTAA	459.1	31.6	579.3	31.6	402.0	31.6	446.2	31.6	808.0	31.6	396.9	31.6
TOTAL	1,450.3	100.0	1,830.9	100.0	1,272.6	100.0	1,412.7	100.0	2,557.9	100.0	1,256.5	100.0

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FINANCIAL COST-EFFECTIVENESS OF THE MOMBASA PHC PROJECT  
1991-1993

INDICATOR	1991	1992	1993	1994	TOTAL	% TOTAL	1991-92	1992-93	1991-1994
TOTAL COST									
Mwauabo	1,085	1,607	2,224	1,474	6,389	35.6%	32.5%	27.7%	26.4%
Kasemani	973	1,500	2,055	1,364	5,891	32.8%	35.2%	27.0%	28.7%
Mtaa	881	1,429	2,186	1,173	5,670	31.6%	38.3%	34.6%	24.9%
Subtotal	2,939	4,536	6,465	4,011	17,950		35.2%	29.8%	26.7%
Percent	16.4%	25.3%	36.0%	22.3%					

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Community Process	432	667	951	590	2,640	15.8%			
CBHM	252	388	553	343	1,537	9.2%			
Health Education	240	371	529	328	1,468	8.8%			
IAC	419	646	921	572	2,558	15.3%			
Antenatal Care	186	287	409	253	1,134	6.8%			
Inunization	227	351	500	310	1,389	8.3%			
Growth Monitoring	237	367	522	324	1,450	8.7%			
School Health	300	463	659	409	1,831	11.0%			
Comm Disease Contrl	208	322	458	284	1,273	7.6%			
Water and Sanitation	231	357	509	316	1,413	8.5%			
Food Production	206	318	453	281	1,257	7.5%			
Subtotal	2,939	4,536	6,464	4,011	16,693	100.0%			
Subtotal Direct	1,594	2,463	3,510	2,178	9,747	58.4%			
Subtotal Support	1,343	2,073	2,954	1,833	6,947	41.6%			

CONTACTS:

Population	41,100	44,261	45,589				7.1%	2.9%	9.8%
CBHMs Trained	141	411	523				65.7%	21.4%	73.0%
Health Education	1996	5463	6058				63.5%	9.8%	67.1%
Community Process	15,200	22,541	32,220				32.6%	30.0%	52.8%
ANC Visits	432	1,146	1,855				62.3%	38.2%	76.7%
Doses	962	2,707	4,366				64.5%	38.0%	78.0%
GM Contacts	1,884	4,258	4,949				55.8%	14.0%	61.9%
School Health	7,335	16,360	19,561				55.2%	16.4%	62.5%
Comm Disease	4,052	19,539	30,468				79.3%	35.9%	86.7%
W/S	4,549	14,144	18,106				67.8%	21.9%	74.9%
FIC	426	207	208				-105.8%	-0.5%	-104.8%
Under weight	1015	835	569				-21.6%	-46.7%	-78.4%
New ANC Visit	198	93	162				-112.9%	-42.6%	-22.2%
Farmers			131						
Maize/Acre		2,500	1,500	482					
Cost/Population	21.50	102.49	141.80				30.2%	27.7%	49.6%
CBHMs Trained	1,784.00	944.77	1,058.01				-88.8%	10.7%	-68.6%
Health Education	120.43	67.92	87.29				-77.3%	22.2%	-38.0%
Community Process	27.55	28.68	28.59				3.9%	-0.3%	3.6%
Cost/ANC Visit	430.39	250.16	220.23				-72.0%	-13.6%	-95.4%
Cost/New ANC	937.96	3,082.62	2,521.81				69.6%	-22.2%	62.8%
Cost/Dose	236.55	129.70	114.60				-82.4%	-13.2%	-106.4%
Cost/FIC	533.91	1,696.14	2,405.43				68.5%	29.5%	77.8%
Cost/GM Cont	126.03	86.08	105.54				-46.4%	18.4%	-19.4%
Cost/Gain Weight	233.92	438.94	917.92				46.7%	52.2%	74.5%
Cost/SH Contact	40.86	28.28	33.71				-44.5%	16.1%	-21.2%

FINANCIAL COST-EFFECTIVENESS OF THE MOMBASA PHC PROJECT  
1991-1993

INDICATOR	1991	1992	1993	1994	TOTAL	% TOTAL	1991-92	1992-93	1991-1994
Cost/CD Contact	51.42	16.46	15.04				-212.4%	-9.4%	-241.8%
Cost/W&S	50.84	25.24	28.10				-101.4%	10.2%	-80.9%
Cost/Farmer			2,175.50	3458					
Maize/Acre		5,432.63	11,360.78	928					

	1991	1992	1993	1994 @69KSh
Cost/Population	\$2.17	\$2.93	\$3.73	\$2.06
CBHWs Trained	\$54.06	\$26.99	\$27.84	\$15.33
Health Education	\$3.65	\$1.94	\$2.30	\$1.27
Community Process	\$0.83	\$0.82	\$0.75	\$0.41
Cost/ANC Visit	\$13.04	\$7.15	\$5.80	\$3.19
Cost/New ANC	\$28.42	\$88.07	\$66.36	\$36.55
Cost/Dose	\$7.17	\$3.71	\$3.02	\$1.66
Cost/FIC	\$16.18	\$48.46	\$63.30	\$34.86
Cost/GM Cont	\$3.82	\$2.46	\$2.78	\$1.53
Cost/Bain Weight	\$7.09	\$12.54	\$24.16	\$13.30
Cost/SH Contact	\$1.24	\$0.81	\$0.89	\$0.49
Cost/CD Contact	\$1.56	\$0.47	\$0.40	\$0.22
Cost/W&S	\$1.54	\$0.72	\$0.74	\$0.41
Cost/Farmer			\$57.25	\$31.53
Maize/Acre		\$142.96	\$298.97	\$164.65
	33	35	38	69

NOTES: Cost data were taken from the five-year cost analysis report.  
Allocation of total costs by component by year was achieved based on the percent distribution of total Phase II costs by year in the following manner:  
1991 = 14.3%  
1992 = 22.8%  
1993 = 25.8%  
1994 = 37%

COST-EFFECTIVENESS BY AREA

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## FINAL MOMBASA PRIMARY HEALTH CARE COST EVALUATION

## EXPENSES AND COSTS (KSh 000s)

69

CATEGORY	1991	% CASH	% COST	1992	% CASH	% COST	1993	% CASH	% COST
<b>RECURRENT COSTS</b>									
Personnel	807.6	20.5%	27.5%	1,440.6	25.7%	31.8%	1,938.1	26.3%	30.0%
Supplies	26.54	40.7%	40.9%	170.0	3.0%	3.7%	536.9	47.3%	48.3%
- Vaccines	26.54	0.7%	0.9%	30.0	0.5%	0.7%	55.3	0.8%	0.9%
- CHW Drug supplies				123.3	2.2%	2.7%	215.3	2.9%	3.3%
- Delivery kits							264.7		
- MCH Nutrition				16.4	0.3%	0.4%		0.0%	0.0%
- Contraceptives				0.3	0.0%	0.0%	1.62	0.0%	0.0%
Vehicle Operating	380	9.6%	12.9%	840.1	15.0%	18.5%	1,332.6	18.1%	20.6%
Training	83.19	2.1%	2.8%	378.28	6.7%	8.3%	408.99	5.5%	6.3%
- Staff Orientation				20.7	0.4%	0.5%	23.6	0.3%	0.4%
- TOT/TDF	14.84	0.4%	0.5%	25.6	0.5%	0.6%		0.0%	0.0%
- ISA Seminar	1.04	0.0%	0.0%	64.0	1.1%	1.4%		0.0%	0.0%
- Sem Mid-lvl DM	38.36	1.0%	1.3%	40.9	0.7%	0.9%	2.0	0.0%	0.0%
- Quarterly Reviews	28.95	0.7%	1.0%	96.6	1.7%	2.1%	67.4	0.9%	1.0%
- Mgmt Training Staff				114.3	2.0%	2.5%	53.1	0.7%	0.8%
- CHW Refresher				3.9	0.1%	0.1%	106.2	1.4%	1.6%
- CHW Workshop							154.8		
- Ed/Training Mats				12.2	0.2%	0.3%	2.03	0.0%	0.0%
Eval/Consults	453.3	11.5%	15.4%	38.1	0.7%	0.8%	168.2	2.3%	2.6%
Administration	811.7	20.6%	27.6%	1,076.2	19.2%	23.7%	1,364.8	18.5%	21.1%
Subtotal	2,562.3	65.0%	87.2%	3,943.3	70.3%	86.9%	5,749.6	78.0%	88.9%
<b>CAPITAL EXPENSES</b>									
Vehicles	0	0.0%		48.0	0.9%		6.4	0.1%	
Equipment	492.7	12.5%		0.0	0.0%		1,273.5	17.3%	
Water & San.	887.7	22.5%		1,621.3	28.9%		343.4	4.7%	
Subtotal	1,380.4	35.0%		1,669.3	29.7%		1,623.3	22.0%	
TOT CASH EXPENSES	3,942.7	100.0%		5,612.6	100.0%		7,372.9	100.0%	
TOT CASH EXPENSES \$	\$119,477			\$160,359			\$194,024 106,854		
CAPITAL DEPREC.	376.4		12.8%	593.0		13.1%	714.8		11.1%
TOTAL COST	2,938.7		100.0%	4,536.3		100.0%	6,464.4		100.0%
TOTAL COST \$	\$89,052			\$129,608			\$170,116 93,697		

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EXPENSES AND COSTS (KSh 000s) <sup>80</sup>

CATEGORY	1994	% CASH	% COST	TOTAL P2	% CASH	% COST
<b>RECURRENT COSTS</b>						
Personnel	1,301.0	16.6%	32.4%	5,487.3	22.2%	30.6%
Supplies	50.8	0.6%	1.3%	784.3	3.2%	4.4%
- Vaccines						
- CHW Drug supplies						
- Delivery kits						
- MCH Nutrition						
- Contraceptives						
Vehicle Operating	479.0	6.1%	11.9%	3,031.7	12.2%	16.9%
Training	727.50	9.3%	18.1%	1,598.0	6.5%	8.9%
- Staff Orientation						
- TOT/TOF						
- IGA Seminar						
- Sem Mid-lvl DM						
- Quarterly Reviews						
- Mgmt Training Staff						
- CHW Refresher						
- CHW Workshop						
- Ed/Training Mats						
Eval/Consults	200.3	2.6%	5.0%	859.9	3.5%	4.8%
Administration	796.0	10.2%	19.8%	4,048.7	16.4%	22.6%
Subtotal	3,554.6	45.4%	88.6%	15,809.8	63.9%	88.1%
<b>CAPITAL EXPENSES</b>						
Vehicles	300.0	3.8%		354.4	1.4%	
Equipment	3,500.0	44.7%		5,266.2	21.3%	
Water & San.	473.2	6.0%		3,325.6	13.4%	
Subtotal	4,273.2	54.6%		8,946.2	36.1%	
TOT CASH EXPENSES	7,827.8	100.0%		<del>21,755.0</del>	100.0%	
TOT CASH EXPENSES \$	\$97,848			484,538		
CAPITAL DEPREC.	456.3		11.4%	2,140.5		11.9%
TOTAL COST	4,010.9		100.0%	<del>17,950.3</del>		100.0%
TOTAL COST \$	\$50,136			302,487		

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GROWTH RATES OF COST-EFFECTIVENESS AND EFFECTIVENESS MEASURES:MPHC

INDICATOR	MVAVUMBO			KASAMENI			MTAA		
	1991-92	1992-93	1991-93	1991-92	1992-93	1991-93	1991-92	1992-93	1991-93
Population	10.8%	2.9%	13.4%	1.6%	4.4%	2.9%	7.7%	2.9%	10.4%
CBHWs Trained	43.3%	28.7%	59.6%	69.9%	71.3%	4.4%	75.9%	31.6%	83.5%
Health Education	12.8%	55.9%	61.5%	75.9%	72.7%	-13.1%	63.1%	4.5%	64.8%
Community Process	36.6%	35.7%	59.2%	27.8%	39.9%	16.8%	33.5%	39.3%	59.7%
ANC Visits	68.2%	-23.0%	60.9%	59.7%	81.4%	53.7%	62.0%	34.5%	75.1%
Doses	44.2%	-26.1%	29.6%	42.6%	39.2%	-5.8%	-24.1%	-20.9%	-50.0%
SM Contacts	56.6%	22.0%	66.1%	50.5%	52.9%	4.7%	19.0%	14.3%	30.6%
School Health	57.1%	15.5%	63.7%	55.2%	64.0%	19.7%	-18.8%	13.0%	-3.3%
Comm Disease	70.8%	73.8%	92.4%	81.4%	80.9%	-2.4%	62.1%	9.4%	65.7%
W/S	65.5%	65.9%	88.2%	66.5%	68.0%	4.6%	47.2%	5.8%	50.3%
Cost/Population	27.4%	27.7%	<del>47.5%</del>	34.2%	52.4%	27.7%	29.8%	27.7%	<del>49.3%</del>
CBHWs Trained	-14.2%	1.6%	-12.4%	-115.5%	-58.2%	26.6%	-168.6%	-2.5%	<del>175.4%</del>
Health Education	25.7%	-59.0%	-18.1%	-168.4%	-66.4%	<del>68.0%</del>	-75.6%	26.6%	-29.0%
Community Process	-2.1%	-9.2%	-11.5%	10.3%	24.3%	<del>15.7%</del>	2.5%	-15.7%	-12.7%
Cost/ANC Visit	-103.9%	43.0%	-16.3%	-97.1%	-198.6%	-51.5%	-109.1%	-7.2%	<del>124.1%</del>
Cost/Dose	-16.0%	44.4%	35.4%	-17.8%	21.9%	33.7%	45.5%	42.0%	<del>68.4%</del>
Cost/SM Cont	-49.2%	10.0%	<del>34.2%</del>	-65.3%	-21.7%	26.4%	-0.9%	18.1%	17.3%
Cost/SH Contact	-50.9%	17.0%	-25.3%	-0.6%	12.1%	12.6%	62.1%	19.3%	<del>69.4%</del>
Cost/CD Contact	-122.1%	-167.8%	<del>494.9%</del>	-247.9%	-138.4%	31.5%	-70.9%	22.5%	-32.4%
Cost/W&S	-87.9%	-105.5%	<del>286.2%</del>	-93.1%	-42.0%	26.5%	-22.7%	25.5%	8.6%

GROWTH RATES OF EXPENDITURES: PHASE II

CATEGORY	1991-92	1992-93	1993-94	1991-94
Personnel	43.9%	25.7%	-49.0%	<del>137.9%</del>
Supplies	84.4%	68.3%	-956.9%	47.8%
Vehicle Op	54.8%	37.0%	-178.2%	20.7%
Training	78.0%	7.5%	43.8%	88.6%
Evaluation	-1089.8%	77.3%	16.0%	-126.3%
Administration	24.6%	21.1%	-71.5%	-2.0%
Subtotal	35.0%	31.4%	-61.8%	<del>127.9%</del>
Capital Expend	17.3%	-2.8%	62.0%	<del>67.7%</del>
Total Expend	29.8%	23.9%	5.8%	<del>119.6%</del>
Depreciation	36.5%	17.0%	-56.7%	17.5%
Total Cost	35.2%	29.8%	-61.2%	<del>126.7%</del>

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## COMPARISON OF COST BY AREA: DRANGI

## CHENESAR GOTH

CATEGORY	CURATIVE			GROWTH			CURATIVE			GROWTH			
	1992	%	1993	%	%	1992	%	1993	%	%	1993	%	%
<b>RECURRENT</b>													
Salaries	163,684	72.3%	58,882	61.6%	-178.0%	111,249	62.0%	79,080	62.9%	-40.7%			
Field	8,611	3.8%	6,605	6.9%	-30.4%	11,652	6.5%	12,078	9.6%	3.5%			
Other	155,073	68.5%	52,277	54.7%	-196.6%	99,597	55.5%	67,002	53.3%	-48.6%			
Supplies	39,362	17.4%	24,211	25.3%	-62.6%	47,431	26.4%	28,741	22.8%	-65.0%			
Drugs	26,001	11.5%	14,649	15.3%	-77.5%	34,311	19.1%	19,432	15.4%	-76.6%			
ORS	6,110	2.7%	1,600	1.7%	-281.9%	6,598	3.7%	4,200	3.3%	-57.1%			
Office	2,807	1.2%	3,393	3.5%	17.3%	3,123	1.7%	3,738	3.0%	16.5%			
Medical/Surgical	4,444	2.0%	4,569	4.8%	2.7%	3,399	1.9%	1,371	1.1%	-147.9%			
Vehicle Running	1,162	0.5%	1,031	1.1%	-12.7%	643	0.4%	658	0.5%	2.3%			
Rent & Utils	17,733	7.9%	9,216	9.6%	-92.4%	15,523	8.6%	13,936	11.1%	-11.4%			
Subtotal	221,941	98.1%	93,340	97.6%	-137.8%	174,846	97.4%	122,415	97.3%	-42.8%			
<b>CAPITAL</b>													
Depreciation	4,318	1.9%	2,312	2.4%	-86.8%	4,698	2.6%	3,390	2.7%	-38.6%			
Furniture	2,843	1.3%	1,606	1.7%	-77.0%	2,851	1.6%	1,945	1.5%	-46.6%			
Equipment	1,475	0.7%	706	0.7%	-108.9%	1,847	1.0%	1,163	0.9%	-58.8%			
Building								282	0.2%	100.0%			
Vehicle		0.0%		0.0%					0.0%				
TOTAL DIRECT COST	226,259	100.0%	95,652	100.0%	-136.5%	179,544	100.0%	125,805	100.0%	-42.7%			
INDIRECT COST													
TOTAL COST													
Beneficiaries	1,914		1,709		-12.0%	3,113		2,054		-51.6%			
Cost/Beneficiary	118.21		55.97		-111.2%	57.68		61.25		5.8%			
Cost/Beneficiary	\$4.41		\$1.84		-140.3%	\$2.15		\$2.01		-7.1%			

## ANTENATAL CARE: DRANGI

## CHANESAR GOTH

CATEGORY	ANC			GROWTH			ANC			GROWTH			
	1992	%	1993	%	%	1992	%	1993	%	%	1993	%	%
<b>RECURRENT</b>													
Salaries: Other	16,148	81.0%	10,654	71.2%	-51.6%	38,021	87.0%	13,316	70.0%	-185.5%			
Office Supplies	1,841	9.2%	1,815	12.1%	-1.4%	1,301	3.0%	2,503	13.2%	48.0%			
Rent & Utils	1,562	7.8%	1,995	13.3%	21.7%	3,833	8.8%	2,626	13.8%	-46.0%			
Subtotal	19,551	98.1%	14,465	96.7%	-35.2%	43,155	98.7%	18,445	96.9%	-134.0%			
<b>CAPITAL</b>													
Depreciation	380	1.9%	501	3.3%	24.2%	559	1.3%	585	3.1%	4.4%			
Furniture	250	1.3%	348	2.3%	28.2%	456	1.0%	366	1.9%	-24.6%			
Equipment	130	0.7%	153	1.0%	15.0%	103	0.2%	219	1.2%	53.0%			

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Building	0.0%	0.0%	0.0%	20	0.1%	100.0%
Vehicle	0.0%	0.0%	0.0%		0.0%	

TOTAL DIRECT COST	19,931	100.0%	14,966	100.0%	-33.2%	43,714	100.0%	19,030	100.0%	-129.7%
INDIRECT COST										
TOTAL COST										

Contacts/Delivered	538	368	-46.2%	555	551	-0.8%
Cost/Contact	37.05	40.67	-8.9%	78.76	34.55	-128.0%
Cost/Contact \$	\$1.38	\$1.33	-3.6%	\$2.94	\$1.13	-159.3%
Total Cost/Contact						
Total Cost/Contact \$						

IMMUNIZATION: DRANGI CHANESAR BOTH

CATEGORY	IMMUN 1992	%	IMMUN 1993	%	% GROWTH	IMMUN 1992	%	IMMUN 1993	%	% GROWTH
<b>RECURRENT</b>										
Salaries:	23,363	32.1%	20,565	17.3%	-13.6%	27,086	35.1%	26,091	22.9%	-3.9%
Field	8,956	12.3%	6869	5.8%	-30.4%	9,939	12.9%	10320	9.0%	3.7%
Other	14,407	19.8%	13696	11.5%	-5.2%	17,147	22.2%	15771	13.8%	-8.7%
Vaccines	36,917	50.7%	56592	47.6%	34.8%	35,835	46.5%	61462	53.8%	41.7%
Medical/Surgical	6,340	8.7%	3552	3.0%	-78.5%	6,276	8.1%	6000	5.3%	-4.6%
Office Supplies	601	0.8%	1,297	1.1%	53.7%	741	1.0%	1,429	1.3%	48.1%
Rent & Utils	4,529	6.2%	13,128	11.0%	65.5%	5,371	7.0%	15,767	13.8%	65.9%
Subtotal	71,750	98.5%	115,699	80.0%	38.0%	75,309	97.7%	110,749	96.9%	32.0%
<b>CAPITAL</b>										
Depreciation	1,103	1.5%	3,292	2.8%	66.5%	1,769	2.3%	3,515	3.1%	49.7%
Furniture	726	1.0%	2,287	1.9%	68.3%	986	1.3%	2,200	1.9%	55.2%
Equipment	377	0.5%	1,005	0.8%	62.5%	639	0.8%	1,315	1.2%	51.4%
Building		0.0%		0.0%		144	0.2%	319	0.3%	54.9%
Vehicle		0.0%		0.0%			0.0%		0.0%	
TOTAL DIRECT COST	72,853	100.0%	118,991	82.7%	38.8%	77,078	100.0%	114,264	100.0%	32.5%
INDIRECT COST										
TOTAL COST										
NUMBER FIC	48	38	-28.2%	32	50	37.5%				
COST/FIC	1,504	3,148	52.2%	2,447	2,267	-7.9%				
COST/FIC \$	\$56.09	\$103.21	45.7%	\$91.27	\$74.33	-22.8%				

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COMPARISON OF COST BY AREA:

GRAX

ESSA NAGRI

CATEGORY	GRAX			ESSA NAGRI						
	CURATIVE 1992	% CURATIVE	1993	% CURATIVE	% GROWTH	1992	% CURATIVE	1993	% CURATIVE	% GROWTH
<b>RECURRENT</b>										
Salaries	105,222	70.2%	49,792	59.9%	-111.3%	78,860	67.1%	35,213	53.3%	-124.0%
Field	8,545	5.7%	6766	8.1%	-26.3%	6,254	5.3%	5,610	8.5%	-11.5%
Other	96,677	64.5%	43,026	51.8%	-124.7%	72,606	61.8%	29,603	44.8%	-145.3%
Supplies	27,310	18.2%	22,936	27.6%	-19.1%	25,588	21.8%	22,877	34.7%	-11.9%
Drugs	16,269	10.9%	14,766	17.8%	-10.2%	12,059	10.3%	15,040	22.8%	19.8%
ORS	6,273	4.2%	2,000	2.4%	-213.6%	8,743	7.4%	4,000	6.1%	-118.6%
Office	2,569	1.7%	3,342	4.0%	23.1%	2,414	2.1%	2,945	4.5%	18.0%
Medical/Surgical	2,199	1.5%	2,828	3.4%	22.2%	2,372	2.0%	892	1.4%	-165.9%
Vehicle Running	783	0.5%	758	0.9%	-3.3%	550	0.5%	473	0.7%	-16.3%
Rent & Utils	12,398	8.3%	7,131	8.6%	-73.9%	9,415	8.0%	5,624	8.5%	-67.4%
Subtotal	145,713	97.3%	80,617	97.0%	-80.7%	114,413	97.4%	64,187	97.2%	-78.2%
<b>CAPITAL</b>										
Depreciation	4,116	2.7%	2,522	3.0%	-63.2%	3,080	2.6%	1,833	2.8%	-68.0%
Furniture	2,406	1.6%	1,615	1.9%	-49.0%	1,725	1.5%	1,075	1.6%	-60.5%
Equipment	1,710	1.1%	907	1.1%	-88.5%	1,355	1.2%	758	1.1%	-78.8%
Building		0.0%		0.0%			0.0%		0.0%	
Vehicle		0.0%		0.0%			0.0%		0.0%	
TOTAL DIRECT COST	149,829	100.0%	83,139	100.0%	-80.2%	117,493	100.0%	66,020	100.0%	-78.0%
<b>INDIRECT COST</b>										
<b>TOTAL COST</b>										
Beneficiaries	2,096		1,658		-26.4%	1,086		1,261		13.9%
Cost/Beneficiary	71.48		50.14		-42.6%	108.19		52.36		-106.6%
Cost/Beneficiary	\$2.67		\$1.64		-62.2%	\$4.04		\$1.72		-135.1%

ANTENATAL CARE: GRAX

ESSA NAGRI

CATEGORY	GRAX			ESSA NAGRI						
	ANC 1992	% ANC	1993	% ANC	% GROWTH	1992	% ANC	1993	% ANC	% GROWTH
<b>RECURRENT</b>										
Salaries: Other	13,457	95.0%	7,499	67.5%	-79.5%	31,055	87.8%	7,499	67.5%	-314.1%
Office Supplies	631	4.0%	1,964	17.7%	67.9%	567	1.6%	1,964	17.7%	71.1%
Rent & Utils	1,310	8.3%	1,212	10.9%	-8.1%	2,836	8.0%	1,212	10.9%	-134.0%
Subtotal	15,398	97.3%	10,675	96.1%	-44.2%	34,458	97.4%	10,675	96.1%	-222.8%
<b>CAPITAL</b>										
Depreciation	435	2.7%	428	3.9%	-1.6%	928	2.6%	428	3.9%	-116.8%
Furniture	254	1.6%	274	2.5%	7.3%	520	1.5%	274	2.5%	-89.8%
Equipment	181	1.1%	154	1.4%	-17.5%	408	1.2%	154	1.4%	-164.9%

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AZAM BASTI

TOTAL

CATEGORY	AZAM BASTI		TOTAL		AZAM BASTI		TOTAL	
	CURATIVE 1992	% GROWTH	CURATIVE 1993	% GROWTH	CURATIVE 1992	% GROWTH	CURATIVE 1993	% GROWTH
<b>RECURRENT</b>								
Salaries	240,931	65.2%	262,091	72.9%	699,946	67.1%	485,058	66.4%
Field	15,543	4.2%	13,570	3.8%	50,605	4.9%	44,629	6.1%
Other	225,388	61.0%	248,521	69.1%	649,341	62.3%	440,429	60.3%
Supplies	71,174	19.3%	56,529	15.7%	210,865	20.2%	155,294	21.3%
Drugs	47,102	12.8%	40,014	11.1%	135,742	13.0%	103,901	14.2%
DRS	8,262	2.2%	1,842	0.5%	35,986	3.5%	13,642	1.9%
Office	5,104	1.4%	6,619	1.8%	16,017	1.5%	20,037	2.7%
Medical/Surgical	10,706	2.9%	8,054	2.2%	23,120	2.2%	17,714	2.4%
Vehicle Running	688	0.2%	643	0.2%	3,826	0.4%	3,563	0.5%
Rent & Utils	43,050	11.7%	32,299	9.0%	98,119	9.4%	68,206	9.3%
Subtotal	355,843	96.3%	351,562	97.7%	1,012,756	97.1%	712,121	97.5%
<b>CAPITAL</b>								
Depreciation	13,505	3.7%	8,106	2.3%	29,717	2.9%	18,163	2.5%
Furniture	4,681	1.3%	4,609	1.3%	14,506	1.4%	10,850	1.5%
Equipment	7,626	2.1%	2,595	0.7%	14,013	1.3%	6,129	0.9%
Building	1,198	0.3%	902	0.3%	1,198	0.1%	1,184	0.2%
Vehicle		0.0%		0.0%	0	0.0%	0	0.0%
TOTAL DIRECT COST	369,348	100.0%	359,668	100.0%	1,042,473	100.0%	730,284	100.0%
INDIRECT COST							730,889	
TOTAL COST							1,461,173	
Beneficiaries	6,586		4,935	-33.5%	14,795		11,617	-27.4%
Cost/Beneficiary	56.08		72.88	23.1%	70.46		62.86	-12.1%
Cost/Beneficiary	\$2.09		\$2.39	12.5%	\$2.63		\$2.06	-27.5%
							125.78	
							\$4.12	

ANTENATAL CARE: AZAM BASTI

TOTAL

CATEGORY	AZAM BASTI		TOTAL		AZAM BASTI		TOTAL	
	ANC 1992	% GROWTH	ANC 1993	% GROWTH	ANC 1992	% GROWTH	ANC 1993	% GROWTH
<b>RECURRENT</b>								
Salaries: Other	29,561	80.4%	12,166	69.8%	128,242	84.6%	51,134	69.4%
Office Supplies	1,583	4.6%	1,923	11.0%	6,023	4.0%	10,169	13.8%
Rent & Utils	4,285	11.7%	2,739	15.7%	13,826	9.1%	9,785	13.3%
Subtotal	35,529	96.7%	16,828	96.5%	148,091	97.7%	71,088	96.5%
<b>CAPITAL</b>								
Depreciation	1,225	3.3%	611	3.5%	3,527	2.3%	2,553	3.5%
Furniture	466	1.3%	391	2.2%	1,946	1.3%	1,653	2.2%
Equipment	759	2.1%	220	1.3%	1,581	1.0%	900	1.2%
Building	119	0.3%	77	0.4%	119	0.1%	97	0.1%



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Vehicle		0.0%		0.0%	0	0.0%	0	0.0%		
TOTAL DIRECT COST	36,754	100.0%	17,439	100.0%	-110.8%	151,618	100.0%	73,641	100.0%	-105.9%
INDIRECT COST								86,838		
TOTAL COST								160,479		
Contacts/Delivere	608		723		15.9%	2,891		3,031		4.6%
Cost/Contact	60.50		24.13		-150.7%	52.44		24.29		-115.9%
Cost/Contact \$	\$2.26		\$0.79		-185.2%	\$1.96		\$0.80		-145.6%
Total Cost/Contact								52.94		
Total Cost/Contact \$								1.74		

IMMUNIZATION: AZAM BASTI

TOTAL

CATEGORY	IMMUN 1992	%	IMMUN 1993	%	% GROWTH	IMMUN 1992	%	IMMUN 1993	%	% GROWTH
RECURRENT										
Salaries:	24,550	22.4%	19,009	15.0%	-29.1%	120,571	29.9%	100,440	17.9%	-20.0%
Field	7,241	6.6%	5900	4.7%	-22.7%	41,677	10.3%	36,404	6.5%	-14.5%
Other	17,309	15.8%	13109	10.4%	-32.0%	78,894	19.6%	64,036	11.4%	-23.2%
Vaccines	58,763	53.5%	75208	59.4%	21.9%	202,930	50.3%	322,635	57.4%	37.1%
Medical/Surgical	8,348	7.6%	6796	5.4%	-22.8%	33,252	8.2%	23,696	4.2%	-40.3%
Office Supplies	543	0.5%	1,280	1.0%	57.6%	3,257	0.8%	7,094	1.3%	54.1%
Rent & Utils	9,136	8.3%	19,887	15.7%	54.1%	28,562	7.1%	69,548	12.4%	58.9%
Subtotal	101,340	92.3%	122,180	96.5%	17.1%	388,572	96.4%	543,978	93.1%	28.6%
CAPITAL										
Depreciation	8,475	7.7%	4,435	3.5%	-91.1%	14,483	3.6%	18,290	3.3%	20.8%
Furniture	4,492	4.1%	2,837	2.2%	-58.3%	7,991	2.0%	11,652	2.1%	31.4%
Equipment	3,983	3.6%	1,598	1.3%	-149.2%	6,348	1.6%	6,638	1.2%	4.4%
Building	398	0.4%	556	0.4%	28.4%	542	0.1%	875	0.2%	38.1%
Vehicle		0.0%		0.0%		0	0.0%	0	0.0%	
TOTAL DIRECT COST	109,815	100.0%	126,615	100.0%	13.3%	403,055	100.0%	562,268	96.3%	28.3%
INDIRECT COST								542,739		
TOTAL COST								1,105,007		
NUMBER FIC	65		77		15.1%	282		260		-8.7%
COST/FIC	1,682		1,648		-2.1%	1,429		2,166		34.0%
COST/FIC \$	\$62.75		\$54.02		-16.2%	\$53.28		\$71.02		25.0%
TOTAL COST/FIC								4,257		
TOTAL COST/FIC \$								\$139.57		

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## COMPARISON OF COST PROFILES: 1993 FIELD SITES

CATEGORY	ORANGI	CHESEENAR GOTH	GRAX	ESSA NAGRI	AZAM BASTI	BABA ISLAND
Personnel	83.8%	82.8%	83.8%	84.7%	80.9%	81.1%
Medical Supplies	10.8%	11.2%	11.5%	11.1%	11.7%	6.0%
Office Supplies	0.9%	0.9%	0.9%	0.9%	0.9%	1.5%
Vehicle Running	0.1%	0.1%	0.1%	0.1%	0.1%	3.3%
Rent & Utilities	3.5%	4.1%	2.7%	2.4%	5.1%	3.0%
Recurrent Costs	99.1%	99.0%	99.0%	99.2%	98.7%	92.9%
Depreciation	0.9%	1.0%	1.0%	0.8%	1.3%	7.1%

## COMPARISON OF COMPONENT COST PROFILES: 1993 FIELD SITES

COMPONENT	ORANGI	CHESEENAR GOTH	GRAX	ESSA NAGRI	AZAM BASTI	BABA ISLAND
Curative Care	38.4%	39.2%	37.4%	34.5%	51.0%	36.9%
ANC/PNC	11.1%	11.0%	10.8%	12.5%	8.5%	12.1%
EPI	25.4%	25.5%	25.3%	25.8%	20.6%	19.7%
Family Planning	6.3%	6.0%	7.0%	7.1%	5.6%	6.1%
ORS	2.2%	2.4%	2.3%	2.6%	1.7%	3.0%
Nutrition	14.3%	13.7%	14.7%	15.1%	10.9%	19.1%
Health Education	2.3%	2.2%	2.4%	2.5%	1.8%	3.1%
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

## COMPARISON OF TABLE 7a AND 3a FOR 1991 AND 1993

CATEGORY	TABLE 7a (b) 1993	%	TABLE 3a (b) 1992	%	TABLE 7a (b) 1991	%	VARIANCE (1993-1991)	VARIANCE (1992-1991)	VARIANCE (1993-1992)
<b>RECURRENT</b>									
Salaries/Benefits	4,013,557	76.7%	3,810,089	74.7%	3,470,616	75.8%	542,941	339,473	203,468
Vehicle Operating	88,195	1.7%	208,590	4.1%	88,987	1.9%	(792)	119,603	(120,395)
Supplies	698,938	13.3%	656,850	12.9%	623,196	13.6%	75,742	33,654	42,088
Drugs	113,332	2.2%	152,014	3.0%	186,325	4.1%	(72,993)	(34,311)	(38,682)
ORS	15,642	0.3%	43,786	0.9%	23,650	0.5%	(8,008)	20,136	(28,144)
Vaccines	335,516	6.4%	217,007	4.3%	150,924	3.3%	184,592	66,083	118,509
FP Supplies	8,847	0.2%	8,284	0.2%	5,663	0.1%	3,184	2,621	563
Medical/Surgical	47,809	0.9%	60,426	1.2%	86,839	1.9%	(39,030)	(26,413)	(12,617)
Office	122,539	2.3%	94,400	1.9%	97,833	2.1%	24,706	(3,433)	28,139
Housekeeping									
Other General	55,253	1.1%	80,933	1.6%	71,962	1.6%	(16,709)	8,971	(25,680)
Building Operation									
Training	48,856	0.9%	52,750	1.0%	13,169	0.3%	35,687	39,581	(3,894)
Maintenance									
Miscellaneous/Boat	15,420	0.3%	15,840	0.3%	15,600	0.3%	(180)	240	(420)
Rent	226,459	4.3%	212,788	4.2%	236,350	5.2%	(9,891)	(23,562)	13,671
Utilities									
Subtotal Recurrent	5,091,425	97.2%	4,956,907	97.2%	4,447,918	97.1%	643,507	508,989	134,518
<b>CAPITAL</b>									
Depreciation									
Equipment	27,308	0.5%	34,246	0.7%	27,077	0.6%	231	7,169	(6,938)
Vehicles	53,760	1.0%	53,760	1.1%	53,760	1.2%	0	0	0
Building	20,967	0.4%	20,967	0.4%	20,967	0.5%	0	0	0
Furniture	42,424	0.8%	34,256	0.7%	30,604	0.7%	11,820	3,652	8,168
Subtotal Capital	144,459	2.8%	143,229	2.8%	132,408	2.9%	12,051	10,821	1,230
TOTAL DIRECT COST	5,235,884	100.0%	5,100,136	100.0%	4,580,326	100.0%	655,558	519,810	135,748
TOTAL INDIRECT	1,420,486	21.3%	1,234,550	19.5%	1,305,032	22.2%	115,454	(70,482)	185,936
TOTAL COST	6,656,370	78.7%	6,334,686	80.5%	5,885,358	77.8%	771,012	449,328	321,684

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## COMPARISON OF TABLE 7a AND 3a FOR 1991 AND 1993

CATEGORY	GROWTH RATE (1993-1991)	GROWTH RATE (1992-1991)	GROWTH RATE (1993-1992)
<b>RECURRENT</b>			
Salaries/Benefits	13.5%	9.9%	5.1%
Vehicle Operating	-0.9%	57.3%	-136.5%
Supplies	10.8%	5.1%	6.0%
Drugs	-64.4%	-22.6%	-34.1%
ORS	-51.2%	46.0%	-179.9%
Vaccines	55.0%	30.5%	35.3%
FP Supplies	36.0%	31.6%	6.4%
Medical/Surgical	-81.6%	-43.7%	-26.4%
Office	20.2%	-3.6%	23.0%
Housekeeping			
Other General	-30.2%	11.1%	-46.5%
Building Operation			
Training	73.0%	75.0%	-8.0%
Maintenance			
Miscellaneous/Boat	-1.2%	1.5%	-2.7%
Rent	-4.4%	-11.1%	6.0%
Utilities			
Subtotal Recurrent	12.6%	10.3%	2.6%
<b>CAPITAL</b>			
Depreciation			
Equipment	0.8%	20.9%	-25.4%
Vehicles	0.0%	0.0%	0.0%
Building	0.0%	0.0%	0.0%
Furniture	27.9%	10.7%	19.3%
Subtotal Capital	8.3%	7.6%	0.9%
TOTAL DIRECT COST	12.5%	10.2%	2.6%
TOTAL INDIRECT	8.1%	-5.7%	13.1%
TOTAL COST	11.6%	7.1%	4.8%

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## DISAGGREGATION OF COMMUNITY CONTRIBUTION BY FIELD SITES

CATEGORY	Consult	Drugs	Med/Surg	Lab	FP	TOTAL	No. Days	Patients	Free	% Free
March 1994	465	416	5			886	12	123	30	24.4
February 1994	508	413				921	13	146	44	30.1
January 1994	569	340	30			939	14	146	36	24.7
Subtotal	1,542	1,169	35	0	0	2,746	13	415	110	26.5
Percent	56.2%	42.6%	1.3%	0.0%	0.0%	100%				
December 1993	464	472				936	10	126	29	23.0
November 1993	520	253				773	14	125	21	16.8
October 1993	476	240	5			721	13	124	27	21.8
September 1993	663	419				1082	14	160	23	14.4
August 1993	625	296	5			926	17	152	26	17.1
July 1993	608	455	20			1,083	17	157	9	5.7
June 1993	587	365	5			957	16	155	30	19.4
May 1993	632	290	10			932	16	179	39	21.8
April 1993	573	386				959	15	137	22	16.1
March 1993	688	432				1,120	17	160	21	13.1
February 1993	724	492	3			1,219	17	179	30	16.8
January 1993	599	447	5			1,051	15	179	34	19.0
Subtotal	7,159	4,547	53	0	0	11,759	15	1,833	311	17.1
Percent	60.9%	38.7%	0.5%	0.0%	0.0%	100%				
December 1992	327	254	3			584	14	128	27	21.1
November 1992	335	447	3	3		788	12	152	36	23.7
October 1992	453	499	6	6		964	17	190	36	18.9
September 1992	461	396	3	6		866	17	189	33	17.5
August 1992	378	471	6			855	17	161	30	18.6
July 1992	297	401	3	6		707	13	117	16	13.7
June 1992	285	395		9		689	12	121	24	19.8
May 1992	335	384				719	15	147	23	15.6
April 1992	312	412	15			739	12	121	8	6.6
March 1992	504	476	9	3		992	19	184	9	4.9
February 1992	316	400	6			722	16	138	27	19.6
January 1992	339	363			29	731	15	142	27	19.0
Subtotal	4,342	4,898	54	33	29	9,356	15	1,790	296	16.6
Percent	46.4%	52.4%	0.6%	0.4%	0.3%	100%				
December 1991	378	536		6	69	989	20	169	23	13.6
November 1991	429	600			72	1,101	18	201	28	13.9
October 1991										
September 1991	546	800			77	1,423	12	229	30	13.1
August 1991	393	501	3		49	946	17	180	35	19.4
July 1991	436	484	44	6	54	1,024	20	187	22	11.8
June 1991	433	626	36	6	89	1,190	20	184	12	6.5
May 1991	537	665	3		47	1,252	22	222	27	12.2
April 1991	333	461		3	40	837	17	158	33	20.9
March 1991	498	640	6		104	1,248	21	211	16	7.6
February 1991	506	539	15	3	79	1,142	19	217	20	9.2
January 1991										

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## ANALYSIS OF PROGRAMME COSTS: DHAKA URBAN COMMUNITY HEALTH PROGRAMME

SECTION	CATEGORY	1991	1992	1993	% 1991-92	% 1992-93	% 1991-93
ADMIN	Salaries & Benefits	706,422.15	727,395.00	964,687.00	2.9%	24.6%	26.8%
	Travel	74,898.00	110,987.16	127,686.47	32.5%	13.1%	41.3%
	Equipment	20,763.12	54,683.31	59,947.63	62.0%	8.8%	65.4%
	Supplies	68,384.21	89,795.90	117,001.00	23.8%	23.3%	41.6%
	Other Direct Cost	24,849.50	93,569.50	134,789.50	73.4%	30.6%	81.6%
	Indirect Cost	238,205.66	326,454.87	417,870.53	27.0%	21.9%	43.0%
	Subtotal	1,133,522.64	1,402,885.74	1,821,982.13	19.2%	23.0%	37.8%
	Subtotal \$	\$29,523.82	\$36,063.90	\$46,872.43			
HIS	Salaries & Benefits	209,782.00	460,831.00	440,670.00	54.5%	-4.6%	52.4%
	Consultancy	298.00	125,000.00		99.8%		
	Travel		538.00	816.00	100.0%	34.1%	100.0%
	Equipment	4,352.23	53,813.03	99,115.63	91.9%	45.7%	95.6%
	Supplies	50,823.30	100,342.90	76,440.00	49.4%	-31.3%	33.5%
	Other Direct Cost	65,285.00	12,245.00	8,636.00	-433.2%	-41.8%	-656.0%
	Indirect Cost	64,797.55	66,130.03	51,726.00	2.0%	-27.8%	-25.3%
	Subtotal	395,338.08	818,899.96	677,403.63	51.7%	-20.9%	41.6%
Subtotal \$	\$10,297.01	\$21,051.41	\$17,426.93				
TRAINING	Salaries & Benefits	108,315.00	482,569.00	519,753.00	77.6%	7.2%	79.2%
	Travel	0.00	70,646.17	33,572.27	100.0%	-110.4%	100.0%
	Equipment		1,513.11	7,276.43	100.0%	79.2%	100.0%
	Supplies	0.00	13,384.00	2,340.00	100.0%	-472.0%	100.0%
	Other Direct Cost	80,464.15	170,130.00	146,362.00	52.7%	-16.2%	45.0%
	Indirect Cost	48,589.71	90,687.87	72,528.00	46.4%	-25.0%	33.0%
	Subtotal	237,368.86	828,930.15	781,831.70	71.4%	-6.0%	69.6%
	Subtotal \$	\$6,182.53	\$21,309.26	\$20,113.45			
OVERHEAD	Salaries & Benefits	1,024,519.15	1,670,795.00	1,925,110.00	38.7%	13.2%	46.8%
	Consultancy	298.00	125,000.00		99.8%		
	Travel	74,898.00	182,171.33	162,074.74	58.9%	-12.4%	53.8%
	Equipment	25,115.35	110,009.44	166,339.69	77.2%	33.9%	84.9%
	Supplies	119,207.51	203,522.80	195,781.00	41.4%	-4.0%	39.1%
	Other Direct Cost	170,598.65	275,944.50	289,787.50	38.2%	4.8%	41.1%
	Indirect Cost	351,592.92	483,272.77	542,124.53	27.2%	10.9%	35.1%
	Subtotal	1,766,229.58	3,050,715.84	3,281,217.46	42.1%	7.0%	46.2%
Subtotal \$	\$46,003.35	\$78,424.57	\$84,412.82				
CHC	Salaries & Benefits	599,823.00	156,092.00	151,344.00	-284.3%	-3.1%	-296.3%
	Travel	145,905.28		45.00			-324134.0%
	Equipment	2,699.80	3,119.57	4,545.88			40.6%
	Supplies	41,912.22	54,696.59	39,810.00	23.4%	-37.4%	-5.3%
	Other Direct Cost	1,517.50	5,453.00	18,723.00	75.8%	70.9%	93.0%
	Indirect Cost	64,797.55	21,847.34	17,484.00	-196.6%	-25.0%	-270.6%
	Subtotal	856,455.35	241,208.50	231,951.88	-255.1%	-4.0%	-269.2%
	Subtotal \$	\$22,307.30	\$6,200.73	\$5,967.21			
FIELD	Salaries & Benefits	822,373.00	832,878.00	815,352.00	1.3%	-2.1%	-0.9%
	Travel	118,810.00	157,022.09	176,066.33	24.3%	10.8%	32.5%
	Equipment		19,795.17	19,795.17	100.0%		
	Supplies	141,875.72	28,261.05	29,038.53	-402.0%	2.7%	-388.6%
	Other Direct Cost	81,349.50	49,480.00	34,657.75	-64.4%	-42.8%	-134.7%

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## ANALYSIS OF PROGRAMME COSTS: DHAKA URBAN COMMUNITY HEALTH PROGRAMME

SECTION	CATEGORY	1991	1992	1993	% 1991-92	% 1992-93	% 1991-93
	Indirect Cost	64,797.55	98,543.37	73,653.00	34.2%	-33.8%	12.0%
	Subtotal	1,229,205.77	1,185,979.68	1,148,562.78	-3.6%	-3.3%	-7.0%
	Subtotal \$	\$32,015.99	\$30,487.91	\$29,548.00			
S CLINIC	Salaries & Benefits		244,641.00	233,690.00	100.0%	-4.7%	100.0%
	Travel		68,045.13	31,785.38	100.0%		
	Equipment	8,099.41	29,153.87	29,430.38	72.2%	0.9%	72.5%
	Supplies		151,789.21	129,176.70	100.0%	-17.5%	100.0%
	Other Direct Cost		3,283.00	211.00	100.0%	-1455.9%	100.0%
	Indirect Cost		22,732.34	20,146.00	100.0%	-12.8%	100.0%
	Subtotal	8,099.41	519,644.55	444,439.46	98.4%	-16.9%	98.2%
	Subtotal \$	\$210.96	\$6,288.97	\$11,433.68			
NSP	Salaries & Benefits	171,328.00	272,923.00	308,950.00	37.2%	11.7%	44.5%
	Travel		118,296.85	130,338.70	100.0%	9.2%	100.0%
	Equipment		19,795.17	19,795.17	100.0%		
	Supplies		180.00		100.0%		
	Other Direct Cost	19,924.67					
	Indirect Cost		21,707.34	18,747.00	100.0%	-15.8%	100.0%
	Subtotal	191,252.67	432,902.36	477,830.87	55.8%	9.4%	60.0%
	Subtotal \$	\$4,981.38	\$11,128.60	\$12,292.71			
SERVICE	Salaries & Benefits	1,593,524.00	1,506,534.00	1,509,336.00	-5.8%	0.2%	-5.6%
	Travel	264,715.28	343,364.07	338,235.41	22.9%	-1.5%	21.7%
	Equipment	10,799.21	71,863.78	73,566.60	85.0%	2.3%	85.3%
	Supplies	183,787.94	234,926.85	199,025.23	21.8%	-18.6%	7.2%
	Other Direct Cost	102,591.67	58,216.00	53,591.75	-76.2%	-8.6%	-91.4%
	Indirect Cost	129,595.10	164,830.39	130,030.00	21.4%	-26.8%	0.3%
	Subtotal	2,285,013.20	2,379,735.09	2,302,784.99	4.0%	-3.3%	0.8%
	Subtotal \$	\$59,515.63	\$61,175.71	\$59,241.60			
COMMUNITY	Salaries & Benefits	993,701.00	1,350,442.00	1,357,992.00	26.4%	0.6%	26.8%
	Travel	118,810.00	343,364.07	338,190.41	65.4%	-1.5%	64.9%
	Equipment	8,099.41	68,744.21	69,020.72	88.2%	0.4%	88.3%
	Supplies	141,875.72	180,230.26	158,215.23	21.3%	-13.9%	10.3%
	Other Direct Cost	101,274.17	52,763.00	34,868.75	-91.9%	-51.3%	-190.4%
	Indirect Cost	64,797.55	142,983.05	112,546.00	54.7%	-27.0%	42.4%
	Subtotal	1,428,557.85	2,138,526.59	2,070,833.11	33.2%	-3.3%	31.0%
	Subtotal \$	\$37,208.33	\$54,974.98	\$53,274.39			
COMM PHC	Salaries & Benefits	822,373.00	1,077,519.00	1,049,042.00	23.7%	-2.7%	21.6%
	Travel	118,810.00	225,067.22	207,851.71	47.2%	-8.3%	42.8%
	Equipment	8,099.41	48,949.04	49,225.55	83.5%	0.6%	83.5%
	Supplies	141,875.72	180,050.26	158,215.23	21.2%	-13.8%	10.3%
	Other Direct Cost	81,349.50	52,763.00	34,868.75	-54.2%	-51.3%	-133.3%
	Indirect Cost	64,797.55	121,275.71	93,799.00	46.6%	-29.3%	30.9%
	Subtotal	1,237,305.18	1,705,624.23	1,593,002.24	27.5%	-7.1%	22.3%
	Subtotal \$	\$32,226.94	\$43,846.38	\$40,981.68			

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## COST-EFFECTIVENESS OF THE DHAKA URBAN COMMUNITY HEALTH PROGRAMME

INDICATOR	1991	1992	1993	% 1991-92	% 1992-93	% 1991-93
Total Cost	4,051,242.78	5,430,450.93	5,584,002.45	25.4%	2.7%	27.4%
Total Cost \$	\$105,518.98	\$139,600.28	\$143,654.42			
Total Population	23,712	25,042	23,307	5.3%	-7.4%	-1.7%
Cost/Capita	170.85	216.85	239.58			
Cost/Capita \$	\$4.45	\$5.57	\$6.16	20.2%	9.6%	27.8%
Clinic Cost (a)	863,250.76	677,190.28	604,836.59	-27.5%	-12.0%	-42.7%
Clinic Cost \$	\$22,484.29	\$17,408.49	\$15,560.07			
Consultations	6,207	7,147	7,849	13.2%	8.9%	20.9%
Cost/Patient	139.08	94.75	77.06			
Cost/Patient \$	\$3.62	\$2.44	\$1.98	-48.7%	-22.9%	-82.7%
Clinic Cost (b)	1,304,808.15	1,439,869.24	1,425,140.95	9.4%	-1.0%	8.4%
Clinic Cost \$	\$33,985.13	\$37,014.63	\$36,663.27			
Consultations	6,207	7,147	7,849	13.2%	8.9%	20.9%
Cost/Patient	210.22	201.46	181.57			
Cost/Patient \$	\$5.48	\$5.18	\$4.67	-5.7%	-10.9%	-17.2%
Immunization Cost	54,367.48	52,455.60	50,800.66	-3.6%	-3.3%	-7.0%
Immunization Cost \$	\$1,416.06	\$1,348.47	\$1,306.90			
Number FIC		100	113	100.0%	11.5%	100.0%
Cost/FIC		524.56	449.56			
Cost/FIC \$		\$13.48	\$11.57	100.0%	-16.6%	100.0%
80.9% Number Doses		8,490	9,214	100.0%	7.9%	100.0%
85.6% Cost/Dose		6.18	5.51			
Cost/Dose \$		\$0.16	\$0.14	100.0%	-12.0%	100.0%
Antenatal/PNC Cost	316,380.57	305,254.77	295,624.18			
Antenatal/PNC Cost \$	\$8,240.47	\$7,847.17	\$7,605.25			
Total Contacts			4,444			
Cost/Contact			66.52			
Cost/Contact \$			\$1.71			
ANC/PNC Cost (c)	436,819.61	339,174.72	328,242.42			
Antenatal/PNC Cost \$	\$11,377.44	\$8,719.14	\$8,444.39			
Total Contacts			5,553			
Cost/Contact			59.11			
Cost/Contact \$			\$1.52			
Family Planning Cost	24,513.06	23,651.03	22,904.86			
Family Plan Cost \$	\$638.47	\$608.00	\$589.25			
Couples Protected		5,473	7,114			
Cost/Couple		4.32	3.22			
Cost/Couple \$		\$0.11	\$0.08			
Growth Monitor Cost/d	315,010.22	552,307.87	593,469.21			
Growth Monitor Cost \$	\$8,204.78	\$14,198.15	\$15,267.63			
Children Weighed		2,650	1,586			
Cost/Child		208.42	374.19			
Cost/Child \$		\$5.36	\$9.63			
Growth Monitor Cost	315,010.22	552,307.87	593,469.21			

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## COST-EFFECTIVENESS OF THE DHAKA URBAN COMMUNITY HEALTH PROGRAMME

INDICATOR	1991	1992	1993	I 1991-92	I 1992-93	I 1991-93
Growth Monitor Cost \$	\$8,204.78	\$14,198.15	\$15,267.63			
Children Gaining		124	127			
Cost/Child Gaining		4,454.10	4,672.99			
Cost/Child Gaining \$		\$114.50	\$120.22			
VAC Cost	226,769.61	218,795.06	211,892.22			
VAC Cost \$	\$5,906.46	\$5,624.55	\$5,451.15			
VAC Doses Given			2,824			
Cost/VAC Dose			75.03			
Cost/VAC Dose \$			\$1.93			

- (a) Refers to direct service delivery costs (83.9% of CHC and S.Clinic Costs).  
 (b) Refers to direct service delivery costs and 25% total admin costs  
 (c) Refers to community PHC costs + 14.1% of CHC costs  
 (d) Refers to proportion of community PHC costs and NSP costs

Clinic =	14.1%
Immunization=	4.4%
Antenatal Care=	25.7%
Growth Monitoring=	10.1%
Family Planning=	2.0%
VAC=	18.4%

06-Jun-94

BREV

## ANALYSIS OF REVENUES OF THE DUCHP

SOURCE	1991	%	1992	%	1993	%	TOTAL	%
SJCS (AKF/USAID)	2,937,634.87	83.5%	5,572,232.27	90.3%	4,505,814.73	85.2%	13,015,681.87	86.9%
HKI	388,580.00	11.0%	316,667.00	5.1%	274,333.00	5.2%	979,580.00	6.5%
UNICEF			27,600.00	0.4%			27,600.00	0.2%
Contribution	39,666.72	1.1%	60,916.02	1.0%	173,094.79	3.3%	273,677.53	1.8%
Service Fees	98,483.25	2.8%	118,557.00	1.9%	112,787.00	2.1%	329,827.25	2.2%
Training Income			7,310.00	0.1%	111,100.00	2.1%	118,410.00	0.8%
Transport Service	51,286.00	1.5%	59,831.25	1.0%	80,070.00	1.5%	191,187.25	1.3%
Others	1,518.00	0.04%	4,289.00	0.1%	29,122.00	0.6%	34,929.00	0.2%
Total	3,517,168.84	100.0%	6,167,402.54	100.0%	5,286,321.52	100.0%	14,970,892.90	100.0%
Total \$	\$91,592.94		\$158,545.05		\$135,895.15		\$386,033.15	
Percent Change			43.0%		-16.7%			
					33.5%			
Total Expenditure	4,051,242.78		5,430,450.93		5,584,002.45		15,065,696.16	
Variance	(534,073.94)		736,951.61		(297,680.93)		(94,803.26)	
Percent of Y	-15.2%		11.9%		-5.6%		-0.6%	
NSP-Expenditure	191,252.67		432,902.36		477,830.87		1,101,985.90	
Variance	197,327.33		(116,235.36)		(203,497.87)		(122,405.90)	
Percent of Y	50.8%		-36.7%		-74.2%		-0.8%	
Fees as a % of Exp	2.4%		2.2%		2.0%		2.2%	
IGA as % of Exp	3.7%		3.5%		6.0%		4.5%	
Donors as % Y.	95.7%		96.9%		93.7%		95.5%	
Fees as % of Field, SC, and CHC	4.7%		2.5%		2.3%			
All IGA % of Field, SC, and CHC	7.2%		9.8%		18.3%			

## COST PROFILES FOR THE DUCHP:

CATEGORY	1991	% 1991	1992	% 1992	1993	% 1993
Administration	1,133,522.64	28.0%	1,402,885.74	25.8%	1,821,982.13	32.6%
HIS	395,338.08	9.8%	818,899.96	15.1%	677,403.63	12.1%
Training	237,368.86	5.9%	828,930.15	15.3%	781,831.70	14.0%
CHC	856,455.35	21.1%	241,208.50	4.4%	231,951.88	4.2%
Field	1,229,205.77	30.3%	1,185,979.68	21.8%	1,148,562.78	20.6%
Satellite Clinics	8,099.41	0.2%	519,644.55	9.6%	444,439.46	8.0%
NSP	191,252.67	4.7%	432,902.36	8.0%	477,830.87	8.6%
TOTAL	4,051,242.78	100.0%	5,430,450.93	100.0%	5,584,002.45	100.0%
TOTAL \$	\$105,518.98		\$139,600.28		\$143,654.42	
Salaries/Benefits	2,618,043.15	64.6%	3,177,329.00	58.5%	3,434,446.00	61.5%
Consultancy	298.00	0.0%	125,000.00	2.3%		0.0%
Travel	339,613.28	8.4%	525,535.40	9.7%	500,310.15	9.0%
Supplies	302,995.45	7.5%	438,449.65	8.1%	393,806.23	7.1%
ODCs	273,190.32	6.7%	334,160.50	6.2%	343,379.25	6.1%
IDCs	481,188.02	11.9%	648,103.16	11.9%	672,154.53	12.0%
Subtotal	4,015,328.22	99.1%	5,248,577.71	96.7%	5,344,096.16	95.7%
Equipment	35,914.56	0.9%	181,873.22	3.3%	239,906.29	4.3%
TOTAL	4,051,242.78	100.0%	5,430,450.93	100.0%	5,584,002.45	100.0%

**Annex 17**

**UPHC Quality Assurance Checklists Derived From PHC MAP**

UPHC QUALITY ASSURANCE CHECKLISTS DERIVED FROM PHC MAP



THE AGA KHAN UNIVERSITY

QUALITY ASSURANCE CHECKLIST

A HANDBOOK OF PRIMARY HEALTH CARE  
FOR THE COMMUNITY HEALTH NURSES



0 May 1, 1994

READ ME  
FIRST

FOR EACH HOUSEHOLD VISIT:	YES	NO	COMMENTS
1. Greet and do introduction to client.			
2. Register all children <5 on family health cards.			
3. Check EPI status of children <3/refer.			
4. Ask about family planning method, education/refer.			
5. Assess nutrition status children, education/refer.			
6. Ask if any children have diarrhoea, ORS packet in house, KAP mother.			
7. Ask any pregnant women ANC, TT, where she is planning to deliver.			
8. Discuss water, hygiene and sanitation, if indicated.			
9. Establish good rapport with mother.			

## INSTRUCTIONS

1. The checklist should be used only to assess the work performance of the CHWs and LHVs.

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2. The CHNs should follow the instruction strictly and implement the mini card regularly on each visit.
3. This checklist should be utilized once a month with each CHWs and LHVs.
4. The checklist should be utilized while making an annual report of an individual worker.

CHW

CHECKLIST FOR USE BY LHV



CHN Supervisory Checklist

Field based activity \_\_\_\_\_

Centre based activity \_\_\_\_\_

Name of CHN: \_\_\_\_\_

Name of LHV: \_\_\_\_\_

Date: \_\_\_\_\_

Lane No: \_\_\_\_\_ House No. \_\_\_\_\_

Purpose of Visit: \_\_\_\_\_

	Yes	No
Follows quality assurance guidelines:	<input type="checkbox"/>	<input type="checkbox"/>
Use quality assurance handbook:	<input type="checkbox"/>	<input type="checkbox"/>

Omission: \_\_\_\_\_

General comments: \_\_\_\_\_

Feed back to worker: \_\_\_\_\_

Rating evaluation\*: Outstanding \_\_\_\_\_ Excellent \_\_\_\_\_ Good \_\_\_\_\_  
Fair \_\_\_\_\_ Unsatisfactory \_\_\_\_\_

\*Outstanding 100% Yes  
Excellent 90%  
Good 80%  
Fair 70%  
Unsatisfactory below 70%

Checklist for assessing

1. Growth Monitoring

Did the CHW:

	Yes	No	N/A
1. Greet client on arrival?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Introduce herself to the client?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Calculate the age correctly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Record the age correctly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Set scale to zero?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Was the scale read at eye level?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Plot the child's weight correctly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Give nutritional counselling to mother?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Ask mother, if she has any question?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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