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**Project Title:**

An Integrated Program  
of Operations Research  
In Bangladesh

**Progress Report**

**For the Period:**

May 1, 1982 - April 30, 1983

## A. INTRODUCTION

In 1982 the International Centre for Diarrhoeal Disease Research, Bangladesh launched a study in two thanas of Pabna and Jessore Districts to test the hypothesis that service innovations in Matlab are transferable to other areas of Bangladesh served by the Ministry of Health and Population Control. This project is known as the MCH-FP Extension Project. Crucial to this effort are several baseline operations research studies which employ a variety of instruments to study the Matlab and Extension sociodemographic and service deliveries situation. The ICDDR,B has therefore fielded a series of baseline socio-demographic surveys of the study populations which included modules on health and family planning service utilization and contraceptive behavior. This report documents progress on these studies, delays and problems encountered, and plans for work in 1983. We shall first consider progress in each project area and subsequently ICDDR,B institution development activities that contribute to overall operations research capabilities.

## B. MATLAB

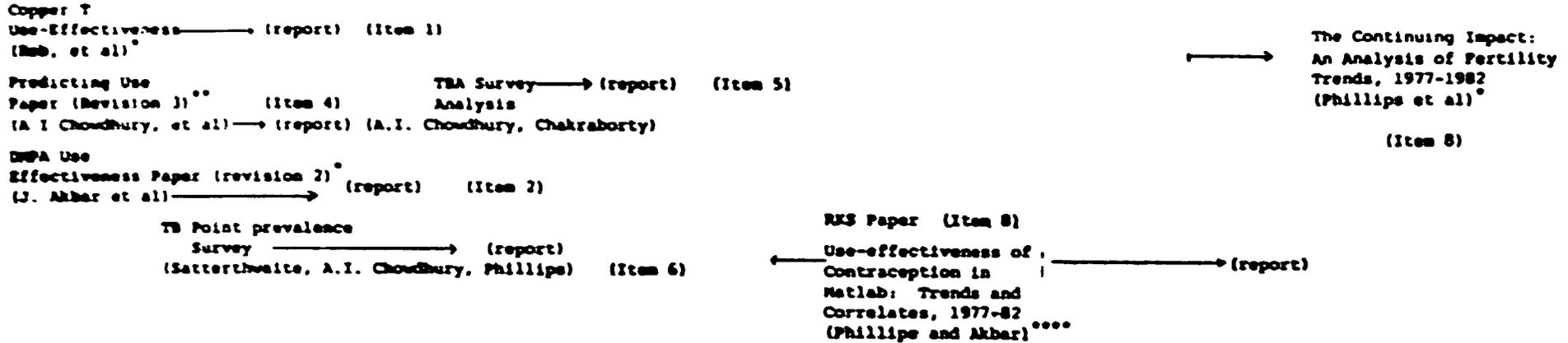
A continuing study of MCH-FP programme impact is underway in Matlab. During 1982 family planning service delivery was intensified to include household insertion of Copper T's. This change in programme strategy has been accompanied by a 6 percentage point increase in overall use prevalence-- from 32 percent (see Appendix A: Project Progress Reports, Matlab MCH-FP Project). There has been a concomitant development of MCH services in half of the service area. Immunization coverage has been excellent, and evidence suggests that substantial mortality effects of the MCH package were realized within 1/1) most dramatically among neonates.

(C) Matlab

Figure 1: Matlab reporting in 1983

January February March April May June July August September October November December

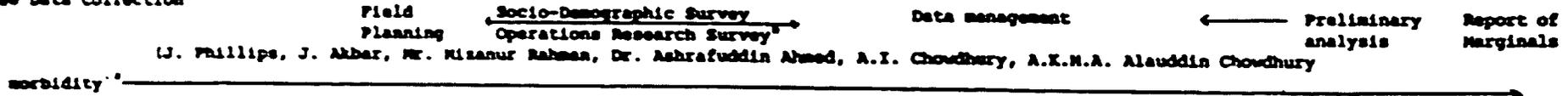
A. Analysis of Existing Data:



B. Systems Development and Documentation

- Redesign of the Matlab Family (report on Planning Record System systems design) (J. Akbar, A.P. Satterthwaite, J.P. Phillips)
- Redesign of Morbidity Surveillance (Satterthwaite, Rowley, Shimichi, Jahan, Yunus) (Item 7)

C. New Data Collection



\*Revision/update of an earlier analysis  
 \*\*Completed  
 \*\*\*Consultant, CDC leaves in April. Satterthwaite leaves in June or July  
 \*\*\*\*with new statistician, under recruitment  
 \*International Scientist (to be recruited)  
 \*\*morbidity surveillance to be shifted to CNRP in 1983 and revised by Satterthwaite. Analysis by new MCN physician

Planned for 1982, but not implemented, was a survey of operations, service utilization, and family planning KAP to match instruments in the field in the Extension Areas. This survey has been delayed until work is completed in Extension Thanas so that field work could utilize the personnel for the baseline extension work.

A revised timeline for Matlab activities in 1983 appears in Figure 1. As the Figure shows, work in early 1982 is addressed to simplifying the family planning record keeping system into a more replicable "data base" approach that could be transferred to the Extension Project. In this system registers of contraceptive histories that have been maintained by community health workers are now simultaneously maintained on the Centre's S-34 computer. Two reports on contraceptive use-effectiveness on this new data base are cited in the Appendix A Bibliography.

The Project Counterpart, Mr. Jalaluddin Akbar and Computer Scientist were responsible for developing this "data base" approach to family planning management information.

As an adjunct to this family planning information system ICDDR,B scientists are developing morbidity surveillance systems in Matlab for eventual linkage with the family planning system. A Center for Disease Control epidemiologist has set up a pilot, and discussions are underway with the Government's Health Information Unit for a joint pilot test in Extension Areas. As a research system this linked file will permit assessment of the health impact of family planning.

C. MUNSHIGONJ

The International Centre for Diarrhoeal Disease Research, Bangladesh entered into a collaborative agreement with the German Technical Assistance Agency (GTZ) in 1981 to undertake a two round study of the socio-demographic situation in a six thana subdivision contiguous to Matlab. This project known as the Munshigonj project, has components addressed to the study of the quantity and quality of services provided in family planning and health service programme, as well as the study of the client population. Data permit assessment of the extent to which services are provided in the six areas of Munshigonj. The second round instrument in the Munshigonj project is the baseline survey for the MCH-FP Extension Project to be described below.

In 1982 three scientific reports were written on the Munshigonj project and a second round of survey was fielded and data management was started. The second round will permit estimate of the demographic dynamics in the Munshigonj area, and afford comparison of the socio demographic situation in Matlab and Munshigonj. A separate progress report for the Munshigonj study appears in Appendix B.

Two operations research studies are planned for 1983: a study of the efficacy of the GTZ Mother's Club programme and a functional analysis of the family welfare center (FWC) programme of the Munshigonj project. These studies will be directed by Mr. Jalaluddin Akbar.

Our plan is to replicate the FWC evaluation in extension areas. Results will contribute to a forthcoming paper on the barriers to the implementation of FWCs for primary health care in rural Bangladesh.

D. THE MCH-FP EXTENSION PROJECT

Of the operations research projects in progress at the ICDDR,B, the largest and most complex is the Maternal and Child Health and Family Planning Extension Project in Abhoynagar thana of Jessore district and Sirajgonj thana of Pabna district. This study was fielded in 1982 to test the hypothesis that service innovations developed in Matlab are transferable to the government service system elsewhere in Bangladesh.

Research Activities in 1982 were primarily addressed to establishing a multipurpose evaluation system which is known as the Sample Registration System (SRS). Two baseline survey were also conducted, one addressed to the assessment socio-economic status in the project area, and the second addressed to assessing fertility and contraceptive use dynamics. These surveys also contain information about health and family planning service utilization in the study areas, and thus provide the baseline information on the quantity of services delivered in the extension project areas. Comparative analysis with Matlab and the Munshigonj project is planned for 1983 and 1984. An annual progress report for the Extension Project appears in Appendix C.

As the progress report shows, the principal technical achievement in the extension project in 1982 was the creation of the SRS. The SRS represents an attempt to combine the advantages of longitudinal demographic surveillance with the advantages of a one time only sample survey. Initially all households are enumerated and sample household individuals are subsequently visited in a 90 day work cycle to record demographic events as well as information relevant to service operations. Thus the sample registration expands on the concept of the demographic surveillance to include operational indicators, socio-economic

status information, and background characteristics of the study population. This data base information system will thus permit the assessment of programme service information as well as analysis of the correlates of programme impact

In addition to the development of the sample registration system there has been a team of operation research investigators who have been trained and fielded in the study areas to conduct functional analysis of health care delivery. A system of interaction with government officials has been developed so that the findings and insights of this operations research team are communicated to a thana committee. These local officials, in turn, are discharged with the task of developing regular reports on operational problems in the study thanas and communicating these problems to higher authorities. At the national level a National Committee has been assembled to review the progress of the thana committees and interpret the operations research data from the field. To our knowledge this is the first such project to have been fielded in Bangladesh wherein research results are immediately interpreted by a team of government officials and utilized for action both at the thana and perhaps eventually at the national level. Reports to the National Coordinating Committee from the ICDDR,B and the project implementation committee in Abhoynagar appear in Appendix D. One meeting of the NCC has taken place and various barriers to project implementation have been communicated to relevant authorities. We are hopeful that this will result in orders correcting critical dysfunctional rules hampering programme implementation. This process of addressing government orders in Dhaka in response to operations research findings in the field is a principle objective of the MCH-VP Extension Project. It is the paradigm of diagnostic research combined with administrative actions that will facilitate utilization of the Extension Project research for policy.

**E. THE DEVELOPMENT OF AN OPERATIONS RESEARCH PROGRAMME AT THE ICDDR,B**

In the course of fielding the survey and special studies in the three areas of Munshigonj, Matlab and the Extension Project has been assembled trained and oriented to operations research in health family planning. Prior to the fielding of these projects there was limited experience in the ICDDR,B in sample survey research outside of the special environment of Matlab. Moreover data management procedures were geared to the special conditions in Matlab in which blocks of data were managed in large batches with minimal computer editing. We have developed a system of continuous flow of data management which small blocks of data are coded edited and processed through a series of editing and linking programmes. This approach is illustrated in the Munshigonj project progress report in Appendix B.

In addition to the sampling and data management systems development we have developed skills in questionnaire development and study design. All the study instruments for the SES indepth interviews were developed by junior ICDDR,B scientists in collaboration with the Operations Research Project Director.

A serious difficulty in conducting socio-demographic research and operations research at the ICDDR,B are the technical limitations of the computer software available at the centre. Scientists of the operations research project are therefore developing a general purpose package of software for longitudinal data editing and for statistical analysis. The analysis package now includes software for tables, means and descriptive measures, and life table programmes developed for use on other computers have been rewritten and tailored to the features of the S34. In addition,

fertility history programmes have been written for the analysis of the baseline survey. A package of multi-variate analysis programmes has been written to include ordinary least squares, discriminant analysis, maximum likelihood logit regression, factor analysis, and special purpose rates programmes.

An important objective of the project for 1983 is to foster the transfer of this software technology to other facilities in Bangladesh such as the Bureau of Census and Statistics, BIDS, the MIS unit of the PCFP Division of the Ministry of Health and Population Control. Informal exchanges have begun with the health information unit of the Health Division of the MOHPC to explore ways in which ICDDR,B computer capabilities can be transferred to the government health services system. A difficulty in the transfer of technology to the MOHPC is the inadequate compilers installed in MOHPC equipment. More serious, however, is the shortage of technical staff and the absence of any capability to absorb ICDDR,B software innovations.

The data management staff who have been trained at the ICDDR,B under the Operations Research Project include two programmers, two senior data managers, one data processing assistant, a large cadre of coding, editing, and data entry staff. Much of the staff development in the area of data management has been supervised by the operations research counterpart to this project Mr. Jalaluddin Akbar. Mr. Akbar has also supervised the field work for the second round of the Munshigonj project.

F. DESCRIPTION OF DELAYS AND PROBLEMS

Several factors had contributed to delays in the implementation of the operations research project. Each is described in the specific project progress reports in Appendix A to C. Most notable among the difficulties has been the staff shortages that arose when the Project Director of the MCH-FP Extension Project left the ICDDR,B in June 1982. A suitable replacement has not yet been found. Thus the overall field direction of the Extension Project has fallen onto the Operations Research Project Director who had previously been involved in research rather than field implementation activities. This critical vacancy in the international staff coupled with staff turnover in the Bangladeshi staff has led to significant delays in project implementation and field research. Dr. Md. Yunus has recently joined the Extension Project after returning from the London School of Hygiene. As Station Head of Matlab and a skilled field administrator, his role of implementation coordinator will greatly alleviate the delays in project development. Other local staff vacancies have been filled, or will be filled by June, 1983, and international vacancies are under advertisement.

Most critical to the Operations Research Project is the delay in the implementation of the Matlab operations research survey that was scheduled for 1982. Instead of proceeding the extension project that survey is now scheduled to follow the baseline survey fielded in Abhoynagar and Sirajgonj. This will permit utilization of staff trained for the extension project and will obviate the need for further training staff development in field research methods.

Owing to these delays the new schedule of reporting has been drafted and appears in Figure 2. Figure 2 includes the proposed completion date for each activity and the revised completion date based on activity since May 1982.

As Figure 2 shows the Munshigonj project recording has been delayed considerably. Brass estimates and other preliminary analyses of round one data indicate that retrospective recall techniques did not successfully ascertain fertility levels in Munshigonj subdivision. We therefore withheld reports until completion of round 2 since the round two data will not be subject to reference period or memory biases. The GTZ has agreed to this arrangement and thus the completion of the final report will be in month 14 of the operations research grant. Munshigonj round two planning, training, field work, data entry, and processing is roughly on schedule. It is our expectation, however, that final reporting will be some 3 months behind the proposed completion schedule.

Since the Matlab contraceptive prevalence survey has been delayed pending completion of the Extension Project field work and work must follow the Extension Project, delays in the field work in Extension Areas require us to postpone work in Matlab. We are 3 months behind schedule in Sirajgonj owing to staffing problems and evidence of sample noncompliance. Each of the studies conducted in the operations research project has a posted enumeration survey associated with the modules that are placed in the field. Analysis in the Sirajgonj data indicated that some 4 percent of the sample was not matching the post enumeration results and reenumeration was required. This survey is now nearly completed and the post enumeration survey result in case that the problem example compliance in data reliability have been solved.

Figure 2: Operations Research Grant, 1983  
 Schedule of Activities as Proposed and Revised

<u>Activity</u>	<u>Proposed Completion Date</u>	<u>Estimated Completion Date, from May, 1982</u>
1) Munshigonj Survey (Round 1)		
a) Data editing	Month 1	Month 1
b) Marginals	Month 2	Month 4
c) First report, Demographic Rates*	Month 3	Month 9-12
d) Second report, Health, morbidity, services	Month 4	<u>Fig.2, Items 1-3</u> Month 16
e) Determinants of use	Month 5	<u>Fig. 2, Item 8</u> Month 14 <u>Fig. 2, Item 4</u>
2) Munshigonj (Round 2)		
a) Planning	Month 2-4	Month 4
b) Training	Month 5	Month 5
c) Field work	Month 6-8	Month 5-7
d) Entry Editing	Month 7-9	Month 7-12
e) Demographic Rates Report	Month 11	Month 14
		<u>Fig.2 Item 6</u>
3) Matlab Contraceptive Prevalence Survey*		
a) Field work	Month 0-12 )	
b) Entry and editing	Month 11-13 )	
c) First report	Month 14-15 )	Uncertain*
d) Second report	Month 17 )	(Item C, Sociodemographic survey, Figure 3)
4) Baseline Surveys: Extension Areas		
a) Listing	Month 1-2	Month 1-7
b) Research planning, pretesting	Month 1-3	Month 1-6
c) Orientation, field work begins	Month 3	Month 3,6
d) Field Work, baseline	Month 4-6	Month 5-9
e) Entry, editing	Month 7-10	Month 7-11
f) Preliminary reports	Month 10-12 (Items 6-9, Figure 1)	Month 12-10
5) Final Comparative Report	Month 18	Month 26

\*Preparation of Brass rates for Matlab suggest that the 1974-75 famine distorted  $P_1/P_2$  and  $P_2/P_2$  ratios. Report withheld pending round 2 data.

\*Study not yet approved by ICDOR, B working group.

G. SUMMARY

In 1982 considerable progress has been achieved in developing research capabilities and project development. Work completed in this period has generated considerable potential for scientific reporting on baseline operations research data and on communicating findings to key decision-makers in the MOHPC programme.

Bibliography of Manuscript and Reports in the April 1, 1982 to  
March 31, 1983 period

- Akbar, J.; J. Chakraborty; N. Jahan; J.F. Phillips; A.P. Satterthwaite  
1982 "Dynamics of Depot Medroxy Progesterone Acetate (DMPA) Use  
Effectiveness in the Matlab Family Planning Health Services  
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Conference of Bangladesh Fertility Research Programme (BFRP),  
Dhaka, December 8-9.
- Choudhury, A.I.; J.F. Phillips, and Makhliur Rahman  
1983 "Predicting the adoption of contraception: A multivariate  
analysis of contraceptive intentions and subsequent  
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- Stinson, W.S.; J.F. Phillips, Makhliur Rahman, J. Chakraborty  
1982 "The Demographic impact of the Contraceptive Distribution  
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Planning. 13(5):141-148.
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(unpublished manuscript).
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1982 "The Demographic Impact of the Family Planning Health Services  
Project in Matlab, Bangladesh," Studies in Family Planning,  
13(5): 131-140.

**APPENDIX A**

**ACTIVITIES OF THE MATLAB MATERNAL & CHILD HEALTH FAMILY PLANNING  
PROJECT OVER THE OCTOBER 1, 1982 TO MARCH 31, 1983 PERIOD**

**James F. Phillips**

**International Centre for Diarrhoeal Disease Research, Bangladesh  
GPO Box 128  
Dhaka**

I. DESCRIPTION OF WORK DONE IN THE REPORTING PERIOD BY PRINCIPAL SUBJECT IN THE PROPOSED SCOPE OF WORK.

1. Government Liaison Activities

In our previous PPR of October, 1982 we noted the establishment of an extension project for the testing of the transferability of the Matlab system and the creation of project implementation committees. In the reporting period we have negotiated with the Government to constitute a National Coordinating Committee (NCC) to interpret and utilize Matlab research for policy and to foster implementation of the extension project. A Government order has been issued and official notice has been circulated for a meeting on May 4, 1983. This meeting will review policy implications of the UNFPA funded work in Matlab and foster implementation of the Extension Projects elsewhere in Bangladesh.

2. Training Activities

Throughout the reporting period, Community Health Workers meet regularly with project medical staff to develop MCH and FP skills. Work prior to the reporting period focused on immunization, high risk pregnancy screening, and family planning. In the reporting period, all CHW staff were trained to train TBAs in safe delivery practices.

3. Family Planning Services in Matlab

In our previous PPR we noted that special retraining of staff and household insertion of copper Ts had brought about an increase in prevalence of 3 percent (32 to 35 percent). Over the reporting

period an additional three percent was achieved, mainly through continuing expansion of the copper T programme. Thus prevalence now stands at 38 percent.

Two use-effectiveness reports were written, one on the copper T, and other on DMPA (see attached reports). Both reports demonstrate the importance of follow-up and referral for maintaining continuing users over time.

Mr. Makhlisur Rahman completed field work and data processing on his study on sources of community level variation in contraceptive use in Matlab. He is now in Canberra writing his dissertation on the subject. This important study will provide insights into the reasons for success in some villages and failure in others.

4. Oral Rehydration, Immunization, and Other MCH

ORT continues as a regular service activity as well as our comprehensive immunization programme.

Our principal new activity was developing and pilot testing a general purpose morbidity surveillance system that could be used to study the impact of MCH interventions and disease interactions. Many surveillance instruments have been developed for Matlab over the years, but there was a need for a comprehensive review of instruments, expansion of the scope of data collection, and systematic integration of instruments into a simple to use lay reporting system. Dr. Diane Rowley of the Centers for Disease Control in Atlanta Georgia, USA was consulted for this purpose. Work is now proceeding in a pilot in 5 villages and will soon be expanded to all areas of Matlab.

Work has begun on a special study of maternal mortality to update the work of Lincoln Chen in 1967 and to augment the system of cause of death reporting so that maternal deaths are recorded.

Work was completed on a survey of TBAs to assess their knowledge and birth practices as a guide to our TBA interventions.

#### 5. Monitoring Impact

Monitoring continued, but much effort was addressed to improving MCH monitoring systems as noted above. In addition we redesigned the family planning monitoring system so that field registers are fully computerized. This new system was tested and installed by Mr. Jalaluddin Akbar.

## II. DESCRIPTION OF DELAYS AND OTHER PROBLEMS

We have not succeeded in obtaining the release of funds for a project vehicle in Matlab and our old 1974 model jeep has been seriously disabled by engine problems. This creates logistics problems that hamper plans to field a survey in Matlab.

The socio-demographic survey for Matlab, described in several previous reports, is much needed. UNFPA funding constraints hamper us in this area. We now plan to utilize teams working in the Extension Project areas for Matlab work on a time available basis. Costs for this, however, cannot be covered by the limited funds available from UNFPA.

### III. CHANGES IN THE WORK PLAN

Despite UNFPA cutbacks, the ICDDR,B is maintaining all aspects of the work plan.

### IV. GOVERNMENT CONTRIBUTIONS

The ICDDR,B continues to have full Government support for this work. Formal commitments of funds or resources are not requested or desired at this time.

### V. MULTILATERAL COOPERATION

The ICDDR,B has sought and received support for project activities not covered by UNFPA funding, but embodied in the scope of work. The United States Agency for International Development now funds some of the Community Health Workers and special research costs in the Matlab project that are not covered by UNFPA.

### VI. TECHNICAL ACHIEVEMENTS

The principal technical achievements in the reporting period have been in the area of information system development. While some aspects of this work may be relevant to national health and family planning systems, our primary objective is to test the hypothesis that morbidity has been reduced, not only by direct MCH interventions, but also indirectly by fertility decline in service areas.

**APPENDIX B**

**THIRD PROGRESS REPORT  
MUNSHIGANJ PROJECT EVALUATION SURVEY**

**James P. Phillips**

**A Report to the German Technical Assistance Agency by the  
International Centre for Diarrhoeal Disease Research, Bangladesh**

#### A. INTRODUCTION

The International Centre for Diarrhoeal Disease Research last reported progress on the Munshigonj Project Evaluation Survey (MPES) in February, 1982. This report is an annual update of project activities between March 1, 1982 and April 30, 1983. In this 14 month period the first round data were evaluated and analyzed and a second round was fielded and partially processed. Our previous reports focused on project design. In this report we outline the research progress and future reporting plans.

#### B. ROUND 1 DOCUMENTATION

We have prepared a basic reference manual for marginal frequency distributions by thana which is attached (Documentation Note 13). Each questionnaire item appears with the computer code information, file location information and frequency distributions. All forthcoming research is based on the analysis of these data. Marginals are presented in this form to provide GTZ personnel quick insights into survey results and guide the development of research and tabulation plans.

Also attached are 3 reports: 1) Background characteristics of the Munshigonj population, 2) Fertility in Munshigonj, and 3) Family planning in Munshigonj. Each represents a section of the final report for study to be submitted within 1983. Our intension is to present findings in a series of such reports rather than to delay reporting until all aspects of the study are completed.

The background report indicates that the Subdivision is somewhat typical of Bangladesh as a whole. The population is young, rural, and largely Muslim. Although the economy is dominated by farming and fishing, the

proximity of the area to Dhaka produces a somewhat larger proportion of the population in non-agricultural pursuits. Educational attainment is low. In general there is marked homogeneity across thanas.

Fertility in Munshigonj is higher than the national average and is unlikely to have declined in recent years. Further analysis of fertility is needed since evidence suggests that famine induced fertility fluctuations may have compromised assumptions underlying this estimation. We have therefore incorporated two additional estimation procedures in round 2 which do not employ the assumption of constancy in fertility over the recent past.

The level of family planning use in Munshigonj is below the national average. In depth assessment of the methods of the round 1 survey suggests that use may be underestimated by the failure of women to report male method use. The second round therefore interviews couples. Most striking is the finding that knowledge of family planning is high and intentions to use are prevalent, but actual use is rare. This suggests that GTZ emphasis should be on improving household service delivery with mass information campaigns being of secondary importance.

Forthcoming reports will show the unacceptably high infant and child mortality in the area and the need to upgrade outreach worker skills in primary health care. Door to door service delivery with referral links to the excellent GTZ FWCs in the area should be a high priority for future work. The relationship of the FWC programme to the MCHPC field work programme will be the subject of a forthcoming report.

C. ROUND 2 PROGRESS

A detailed data flow report is attached which documents the disposition of MPES data. Enumeration data have been computerized in a sample household register for future reference. This system greatly improves the quality of data collection since the computer register can be printed and used in the future for subsequent rounds. By interviewing respondents about the status of previously enumerated individuals, memory biases are greatly reduced.

Table 1 shows that this household register is compiled for all but one chana, Gazaria, where about 40 percent of the coding remains.

Table 2 shows progress on computer editing. Programs A, B, and C check the internal logic of the data. "Updates" refer to the date when a batch was finally cleaned of all inconsistencies. As the table shows, data editing is nearly complete.

Table 3 reports progress in coding the subset of data about fertility histories and family planning. In April this work was completed.

Table 4 shows that none of the women's questionnaires are completely edited, but that work is proceeding well with no delay between stages of processing.

No coding has started on male schedules.

**D. REPORTING PLANS, 1983**

Figure 1 diagrams 10 reports for completion in 1983:

- 1) Background characteristics of the population of Munshigonj subdivision: population composition and household economic status
- 2) Fertility levels and differentials in Munshigonj subdivision: Estimation by the Brass procedure (completed)
- 3) A comparison of contraceptive knowledge and practice in Munshigonj subdivision with Bangladesh as a whole
- 4) Mortality levels and differentials (in progress, due in May)
- 5) Changes in family planning use, 1981-82 (due in June)
- 6) Socio-economic status
- 7) Fertility history analysis
- 8) The MOHPC workers of Munshigonj
- 9) Operations research report: FWC analysis
- 10) Final report

**E. DESCRIPTION OF DELAYS AND PROBLEMS**

Round 1 was an attempt to obtain fertility and mortality data by retrospective recall. On the whole the data suggest that this is not a successful strategy owing to reference period errors and other memory biases. The MPES provides multiple mechanisms for indirect and direct assessment of fertility and mortality so that the round one set of estimates can be checked against round 2 results. We have delayed round 1 estimates until verification afforded by round 2 can establish reliable demographic data. Reports now in circulation for round 1 are therefore subject to revisions based on round 2 results, and they should not be circulated until the final

round report is circulated. Nevertheless, they represent our best assessment of demographic dynamics as of mid-1983, and we have no reason to believe that reported levels will change appreciably.

F. LIST OF DOCUMENTATION NOTES

The following project documents have been completed:

- 1: Proposal for Collaboration between the International Center for Diarrhoeal Disease Research, Bangladesh and the German Technical Assistance Project in MCH and Family Planning, Munshigonj.
- 2: English Language Pretest Version of Questionnaire.
- 3: Preliminary Notes on Field Procedures and Interviewing with Comments on the Draft English Version.
- 4: Sampling Notes.
- 5: Mouza Worker Interviews: Commentary and Preliminary English Language Questionnaire.
- 6: Preliminary Guide to Data Management in the Munshigonj, MCH-FP Evaluation Project: The flow of data and overall file structure.
- 7: Coding and Editing Instructions for Bari Level Data.
- 8: Editing and Coding Instructions for Supervisors and Coders.
- 9: Household Interview Schedule: Direct English Translation of the Final Bengali Version and Corresponding Bengali Questionnaire.
- 10: Preliminary Variable List and Code Format Indepth Interview File.
- 11: Computer Editing for Enumeration Data.
- 12: Computer Editing for Indepth Data.
- 13: Thana Frequency Distributions, Indepth Interviews (Revised).

**Table 1: Enumeration Data Status Report for  
the data as of 24-4-1983**

Thana	Seq. No. Mouza	Total Mouza list received	Reporting date	Total Mouza list coded	SENT TO COMPUTER .	
					Date	Total Mouza list (records)
LOHAJONG	1-36	36 (17-11-82)	10-1-83	25	9-1-83	14 (3472)
			19-1-83	11	18-1-83	22 (5152)
<b>Total</b>		<b>36</b>		<b>36</b>		<b>36 (8624)</b>
TUNGIBARI	37-74	38 (25-12-82)	19-1-83	3	-	-
			24-1-83	8	-	-
			31-1-83	9	30-1-83	11 (3546)
			7-2-83	10	6-2-83	19 (4648)
			14-2-83	8	13-2-83	8 (1547)
<b>Total</b>		<b>38</b>		<b>38</b>		<b>38 (9741)</b>
MUNSHICONJ	75-124	50 (8-2-83)	14-2-83	7	-	-
			22-2-83	9	22-2-83	14 (4691)
			9-3-83	10	4-3-83	7 (3166)
			15-3-83	4	13-3-83	7 (2600)
			22-3-83	9	20-3-83	9 (2517)
			29-3-83	4	27-3-83	5 (1422)
			5-4-83	5	3-4-83	3 (1623)
			12-4-83	2	10-4-83	5 (2250)
<b>Total</b>		<b>50</b>		<b>50</b>		<b>50(18269)</b>
CAZARIA	125-155	31 (8-2-83)	12-4-83	8	-	-
			19-4-83	8	12-4-83	6 (1470)
			26-4-83	10	14-4-83	6 (1765)
					21-4-83	7 (2266)
<b>Total</b>		<b>31</b>		<b>26</b>		<b>19 (6001)</b>
<b>ACHIEVEMENT FOR</b>						
LOHAJONG		36		100%		100%
TUNGIBARI		38		100%		100%
MUNSHICONJ		50		100%		100%
CAZARIA		31		83.87%		61.29%

Table 2: Enumeration Data Status edit report as of 24-4-1983

Thana	Seq. No. Mouza No	Data Entry		Temporary file			Edit Programme						Permanent file	
		Entered	Re-entered	MSV	Update	Back-up	A	Update	B	Update	C	Update	Back-up	Record
LOHATONG	1-14 (3472)	20-1-83	25-1-83	27-1-83	30-1-83	31-1-83	1-2-83	7-2-83	15-2-83	17-2-83	20-2-83	22-2-83	3-3-83	3472
	15-26 (3172)	2-2-83	2-2-83	6-2-83	8-2-83	10-2-83	13-2-83	15-2-83	20-2-83	22-2-83	24-2-83	27-2-83	3-3-83	3172
	27-35 (1980)	6-2-83	6-2-83	8-2-83	13-2-83	20-2-83	20-2-83	22-2-83	24-2-83	27-2-83	28-2-83	28-2-83	3-3-83	1980
	<b>Total</b>	8624												
ONGIBARI	37-47 (3546)	9-2-83	10-2-83	13-2-83	15-2-83	15-2-83	1-3-83	2-3-83	3-3-83	8-3-83	13-3-83	14-3-83	14-3-83	3546
	48-60 (3143)	20-2-83	22-2-83	23-2-83	27-2-83	27-2-83	1-3-83	2-3-83	9-3-83	9-3-83	13-3-83	13-3-83	17-3-83	3143
	61-74 (3052)	24-2-83	26-2-83	28-2-83	2-3-83	8-3-83	9-3-83	10-3-83	13-3-83	14-3-83	15-3-83	16-3-83	17-3-83	3052
	<b>Total</b>	9741												
MUSHIKONJ	75-100 (9995)	13-3-83	14-3-83	14-3-83	14-3-83	14-3-83	21-3-83	22-3-83	23-3-83	24-3-83	27-3-83	28-3-83	29-3-83	9995
	101-117 (4401)	22-3-83	24-3-83	27-3-83	27-3-83	27-3-83	3-4-83	4-4-83	5-4-83	5-4-83	6-4-83	6-4-83	7-4-83	4401
	118-124 (3873)	12-4-83	13-4-83	14-4-83	14-4-83	14-4-83	17-4-83	16-4-83	16-4-83	16-4-83	17-4-83	17-4-83	21-4-83	3873
	<b>Total</b>	18269												
ZARIA	125-134 (3164) 135-148 ( ) 149-155	14-4-83	15-4-83	16-4-83	16-4-83	16-4-83	17-4-83	17-4-83	18-4-83	19-4-83	20-4-83	20-4-83	24-4-83	3164

Table 3: Fertility Survey of Ever Married Women  
Data Status Report as of 24-4-1983

Thana	Seq. Nos	Total received	Reporting date	Checked total	Coded total	Post Coded total	Sent to Computer	
							Date	Total
Lohajong	1-708	660 (17-11-82)	31-1-83	660		-		
			7-2-83	-		-		
			14-2-83	-	100	-		
			22-2-83	-	100	-		
			9-3-83	48	508	100		
			15-3-83	-	-	100		
			29-3-83	-	-	200	20-3-83	351
	-	-	308	27-3-83	357			
<b>Total</b>		<b>708</b>		<b>708</b>	<b>708</b>	<b>708</b>		<b>708</b>
Tungibari	709-1515	807 (25-12-82)	14-2-83	500	-			
			22-2-83	100	-			
			9-3-83	207	120			
			15-3-83	-	400			
			22-3-83	-	287		30-3-83	209
			29-3-83	-	-	300	31-3-83	230
			5-4-83	-	-	507	3-4-83	368
<b>Total</b>		<b>807</b>		<b>807</b>	<b>807</b>		<b>807</b>	
Munshigonj	1516-276	1247 (4-2-83)	15-3-83	600				
			22-3-83	300	500		5-4-83	144
			29-3-83	347	747		7-4-83	388
			5-4-83	-	-	300	14-4-83	275
			12-4-83	-	-	700	14-4-83	490
			13-4-83	-	-	247		
				-	-	-		
<b>Total</b>		<b>1247</b>		<b>1247</b>	<b>1247</b>		<b>1247</b>	
Cazaria	2763	635 (4-2-83)	29-3-83	200	-	-		
			5-4-83	200	200	-		
			12-4-83	235	300	-	18-4-83	193
			14-4-83	-	135	100	19-4-83	258
			26-4-83	-	-	335	21-4-83	184
<b>Total</b>				<b>635</b>	<b>635</b>		<b>635</b>	
Achievement for								
Lohajong		708		100%	100%	100%		100%
Tungibari		807		100%	100%	100%		100%
Munshigonj		1247		100%	100%	100%		100%
Cazaria		635		100%	100%	100%		100%

Name	Seq. Nos.	Sent to Computer		Temporary file			Edit Programme					Permanent file		
		Entered	reentered	MSV	Update	Back-up	A	Update	B	Update	C	Update	Date Back-up	Recod
hajang	1-708	23-3-83	27-3-83	7-4-83	10-4-83	10-4-83	11-4-83	12-4-83	12-4-83	17-4-83				
tal	708													
gibari	709-1515	6-4-83	7-4-83	10-4-83	11-4-83	12-4-83	12-4-83	12-4-83	13-4-83	17-4-83				
tal	807													
shigonj	1516-2762	17-4-83	20-4-83	21-4-83	21-4-83	21-4-83	24-4-83	24-4-83	24-4-83					
tal	1247													
aria	2763-3397													
tal	635													

A = Sequential varified

B = Range Checks

C = Inconsistency checks

86

Figure 1: Reports for the Munshigonj Project

January February March April May June July August September October November December

(B) Munshigonj:

Round 2 data management

(Census books prepared, coding editing)

Report writing:

Report 1: Background characteristics of the population of Munshigonj subdivision: population composition and household economic status (Akbar et al.)

Report 2: Fertility levels and differentials in Munshigonj subdivision: Estimation by the Brass Procedure (Rob et al.)

Report 3: A Comparison of contraceptive knowledge and practice in Munshigonj subdivision with Bangladesh as a whole (Akbar et al.)

Report 4: Mortality levels in Munshigonj: Estimation with the Brass Procedure (Majumder et al.)

Report 6: Socio-Economic status in Munshigonj subdivision: A Principle Components Analysis (Akbar et al.)

Tabulation (of Marginals)

Report 5: (1) Changes in FP in KAP, 1981-1982 (Akbar) (2) Husband/Wife KAP

Report 8: Health and Family Planning Services; Characteristics of Workers and the Quantity of Services Provided

Report 7: Fertility Levels and differentials in Munshigonj (Akbar & Phillips)

Report 9: Operations Research Report: FUC Evaluation

Report 10: Final Report Rounds 1 & 2 Akbar and Phillips

Close out contractual commitments, German Technical Assistance

**APPENDIX 'C'**

**MCH-FP Extension Project:  
First Annual Progress Report, 1982**

**James F. Phillips, Ph.D.**

**International Centre for Diarrhoeal Disease Research, Bangladesh  
GPO Box 128, Dhaka 2**

**FEBRUARY, 1983**

A. INTRODUCTION

The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) in collaboration with Ministry of Health and Population Control (MOHPC) launched a field study in two rural thanas of Bangladesh to test the transferability of service innovations developed in special projects to the service systems of the MOHPC. This project has three basic features: 1) It is an experiment in institutional change and development, 2) it is an experiment in the transfer of innovation from special situations such as Matlab to the more realistic conditions that prevail in the MOHPC system, and 3) it is a research project in which both the process of change and the effects of change are the focus of inquiry. Since this transfer experiment is linked to the Matlab system and since work on the Matlab project is continuing, Extension Project support from USAID has a major component for service delivery and research for Matlab work. This project progress report will therefore review the 1982 goals and progress in Matlab and the Extension Areas. Since Project development activities were concentrated in the Extension Areas, technical achievement sections of this report focus on 1982 activities in the Extension Project.

Our focus on the Extension Project is further justified by the fact that successful implementation of its three basic features require modifications that are not documented in the original project document. In order to develop the project as an experiment in institutional change the investigators have embraced the paradigm of operations research known as "organization development (OD)" While wholly consistent with the original goals and purposes of the project design, this paradigm differs somewhat from the "functional analysis" approach originally posited in project documents. This project progress report will discuss this revised approach, the rationale for change, and achievements to date.

As an experiment in the transfer of innovation we have deliberately introduced certain constraints: a) we provide no special resources, no matter how small, for MOHPC operations, in order to insure that the host system is viewed at the end of the project as a truly replicable field site, b) no special hiring, staffing, or rules are imposed so that the host system is truly an MOHPC operation, and c) no new facilities or institutional structures are imposed. These constraints have hampered project implementation but have enabled us to learn about barriers to implementation and have fostered MOHPC ownership of the project, which is vital to our OD strategy.

As a research project we have addressed much of our efforts in the first year to developing a comprehensive evaluation system with treatments to permit measurement of impact and a variety of operations research instruments to research organizational processes. This evaluation system differs somewhat from the original project design, although overall goals and purposes are maintained. This project progress report will discuss this revised system, the rationale for specific changes, and achievements to date.

.../...

First, we present an overview of project proposal plans for 1982 and achievements according to objectives.

The report next presents a review of specific technical achievements: operations research strategy development and requisite government liaison, evaluation systems development, a synopsis of key findings, and problems and difficulties encountered.

Next we discuss implementation plans for 1983 with 1) the revised staffing pattern and the rationale for changes 2) research implementation plans and 3) implementation goals with training programme time lines.

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**B. THE 1982 PROJECT PLANS AND ACHIEVEMENTS**

Work in 1982 proceeded in three thanas of Bangladesh: Matlab, Sirajgonj and Abhoynagar.

1) Matlab

In Matlab, the family planning system was fully developed but elements of the Community Health Services Project were not yet developed. In 1982 a comprehensive high risk pregnancy screening system was developed and tested, treatment area TBAs were canvassed and interviewed, and a "safe delivery" training program was launched. Measles immunization was completed for all under five children with an 85 percent coverage rate. In the family planning area the household record system was greatly simplified with a view to developing a replicable model for the Extension Project. Reorientation and retraining of workers was completed along with an intensification of household IUD insertions. Within 1982 these efforts were associated with an increase in prevalence from 33 percent, to 37.5 percent. Thus, the 1981 "32 percent plateau in use" that is often cited in the Matlab research literature appears to have been artificially low. Operational improvements in that programme over the past two years have increased prevalence by five percentage points. This 1982 achievement serves to underscore our conclusion that improvements in the quantity and quality of services have direct impact on reproductive behaviour. Even a fully developed service system can have significantly greater impact if operations are further developed and refined.

2) The Extension Project

a) Progress

In Sirajgonj and Abhoynagar work was addressed to researching baseline operational features of the MOHPC and to developing a comprehensive research and evaluation system. The following activities were undertaken:

- i. Staff development and project planning. In 1982 we developed 10 project documentation notes to serve as detailed instruction manuals for staff at all levels. First we reviewed some 200 articles on knowledge transfer, research utilization, special project in Bangladesh and extracted themes from the literature with relevance to the project.
- ii. The shift from functional analysis to OD. Next we designed and documented project management, recruited ICDDR,B staff, and oriented them to project goals and plans. Simultaneously we attempted to clarify these themes and ideas in informal discussions with MOHPC officials. A consultant was retained for this purpose and a total of eleven meetings were held in the field areas for this purpose. Much confusion about the nature of the project persisted despite such orientation sessions. In September we therefore shifted our orientation strategy to one of joint implementation of pilot projects in "demonstration unions." By addressing discussions to specific demonstration area joint implementation problems rather than abstract project plans the quality of liason greatly improved,

project implementation progressed, and our work strategy changed from "functional analysis" which was viewed as a "fault finding process" to joint exercises in implementation. We have not abandoned "functional analysis" as a research tool, but we have become cautious about undertaking it in the absence of a joint framework for fielding studies and utilizing results.

Thus on the "training and counterpart support" component of the programme we proceeded according to project agreement plans in the following respects: By March internal planning and staff development was completed, by May orientation of senior officials in Matlab was completed, and in June and July training courses were designed for technical components of an MCH-FP orientation course. In August and September joint Project Implementation Committees (PIC) were constituted and demonstration areas were started. At this point, however, the functional analysis system could not be implemented without careful incorporation of the views of MOHPC officials in the research process. The instruments were pretested but administered on FWV's only. Our substitute system, "OD", will be described in the technical achievements sections below. Manpower budgetted for functional analysis was diverted to demographic research for reasons to be described below

- iii. Demographic surveillance. The exceptional quality of impact assessment in Matlab accounts for much of the credibility of findings that emerge from the service work in that research project. We therefore assigned high priority to developing impact assessment systems that would be commensurate with project needs yet less expensive to maintain than the Matlab Demographic Surveillance System (DSS). In 1982 we devoted much effort to developing a sample registration system (SRS) that would provide DSS data quality and insights without prohibitive maintenance costs over the 1983-1984 period.

Over the January-August period work proceeded as planned. Field manuals and instruments were designed, pretested, modified and documented. An ICDDR,B staff was recruited and trained, cluster sample points were listed, and sample households were drawn from this frame and their individual members were enumerated. By October<sup>1</sup> a socio-economic survey was completed in all project areas, sample households data were edited and computerized and routine continuous vital event monitoring was proceeding in all areas.

In September two fundamental changes in this system were instituted to facilitate future analysis: 1) Comparison areas were added and 2) computer methods were modified to use a "data base management" design. We will discuss these modifications, in turn.

Original project planning called for a two treatment two thanas design in which no treatment would be completely free of ICDDR,B "contamination" since all study areas were within intervention thanas. In the course of its protocol review process the ICDDR,

submitted project plans to four external reviewers<sup>1</sup> all of whom objected to this weakness in the study design. Complying with these stipulations required the revising treatment design, increasing the sample size by one third, and delaying survey research by two months while new areas in Khulna and Tangail could be listed, enumerated, and interviewed for SES. The revised treatment plan appears in Table 1. Manpower for this was acquired in part by postponing baseline survey work in Sirajgonj and by delaying functional analysis work for November and December until 1983. Added costs were absorbed by eliminating speed boats and delaying some hiring, and by hiring additional temporary staff.

Note that in Table 1 there are 8 intervention unions in the Project (denoted S and T) half of which are areas with ICDDR,B counterparts (denoted S). Each thana has all cells (A=Abhoinagar, S=Sirajgonj) plus one demonstration union (D1 and D2) that is outside of routine research areas. Control unions (Denoted C) are outside of the study thanas in contiguous areas of Khulna (K in Table 1) and Tangail (T). In some areas we do no research, but study thana workers are nevertheless expecting to be trained in 1983 (unions denoted N1-N7).

The second change in SRS plans did not delay plans appreciably, but intensified project software development requirements in 1982. The change was addressed to the observation that operations research requires a capacity to study vital events or prevalence of contraceptive use and MCH innovation as a function of service quality and quantity. This, in turn, requires a data management system in which households are the unit of analysis and all information is managed like a "checking account" in which events are posted to households along with any other household information collected by SRS workers over time. This will be discussed further below.

With these added research responsibilities routine SRS work was on schedule within 1982, even in the newly added comparison areas. Survey research, however, was delayed.

- iv. Survey research. In 1982 all study unions in Table 1 have been covered with a socioeconomic status survey. Data have been entered, edited, processed (linked to the SRS) and tabulated. Study unions in Jessore, Khulna and Tangail were covered by a sociodemographic survey of mothers. Work in Sirajgonj will be finished in April, 1984.

Survey instruments include baseline OR modules on contraception, service quantity and service quality which have been incorporated for repetition in the 90 work cycle of the SRS.

Baseline survey work will be approximately 12 weeks behind schedule upon its completion owing to SRS problems noted above and unanticipated difficulties in locating and interviewing household heads. Computer software development for all modules was completed by November, 1982.

**Table 1: Treatments by Union and Thana in the MCH-FP Extension Project**

Treatment Conditions		ICDDR,B Demographic and OR Research Area?			
		Yes		No	
		Is Training Provided?		Is Training Provided?	
		Yes	No	Yes	No
Is ICDDR,B Counterpart Support Provided?	Yes	S1 (A) S2 (A) S3 (S) S4 (S)	(No Unions)	D1 (A) D2 (S)	(No Unions)
	No	T1 (A) T2 (A) T3 (S) T4 (S)	C1 (K) C2 (K) C3 (T) C4 (T)	N1 (A) N2 (A) N3 (A) N4 (S) N5 (S) N6 (S) N7 (S)	(No Unions)

b) Problems

The principal problems which delayed program implementation in 1982 were the following:

- i. Changes in the experimental design and field problems. As we have noted above the addition of comparison areas and the difficulty in locating male respondents have delayed program survey research. Post-enumeration survey have been conducted to check on sample compliance and data reliability rate. A 4% sample noncompliance rate in 4 unions of Sirajgonj necessitated a recheck of the sample and 3 weeks delay in survey work. In all baseline data collection is 12 weeks behind schedule.
- ii. Senior staff vacancies. The ICDDR,B has revised its staffing pattern in response to recommendations from the Simmons' consultancy report. While baseline data collection has not been disrupted, full implementation of the operations research program in 1983 will depend upon recruitment of an OR specialist.

As an interim measure the ICDDR,B arranged for a six week consultancy for Dr. Ruth Simmons of the University of Michigan in January, 1983. Her work was addressed to training operations research personnel and is assisting in the analysis of existing OR data.

The ICDDR,B has been attempting to identify a skilled trainer to conduct training research and evaluation. A senior staff member has recently returned from the University of London School of Hygiene and will assume overall direction of the training program as an Implementation Coordinator. The Senior Consultant for Government Liaison resigned for an international position. His functions have been absorbed by the Implementation Coordinator. An opening for a health educator continues despite efforts to recruit. Formal interviews of six candidates is scheduled for February. The Senior Medical Officer for counterpart support has resigned for a position with another international agency. Recruitment is proceeding. The assistant scientist for survey research will be leaving for higher studies and recruitment efforts are proceeding. This staff turnover at a crucial stage in project implementation has not introduced implementation delays but the ICDDR,B is assigning high priority to filling existing staff vacancies in order to prevent delays in its 1983 implementation program described below.

The cash flow savings from staff vacancies have been allocated to the SRS and survey research deficit that arose from adding comparison areas.

.../...

## PROJECT TECHNICAL ACHIEVEMENTS

Project 1982 technical achievements fall into three general categories: Operations research development, impact assessment systems development, and software development. We shall consider each, in turn.

### 1) Operations Research: The Development of an Organization Development Paradigm

Plans for organization research in the early phases of project planning focussed mainly on assessing the technical inadequacies of the service system. We assumed the principal barrier to the implementation of services inadequate technical skills. Since technical training and orientation of supervisors was needed project implementation required careful studies of each component of the family planning and health care service system so that training could address relevant issues.

The limitation of this approach was that field operations were nearly totally absent and that functional analysis was relevant only for the limited operations that existed. First we had to "energize" a non-functioning system and subsequently study the operation that ensued. Only then could we design a training programme commensurate with needs and realities. Our first priority thus became one of implementing MOHPC plans in one or two "demonstration unions," studying the problems that hampered implementation, and working jointly with local MOHPC staff to conduct a collaborative assessment of the major dysfunctions that arose in the process.

This project strategy is known in the OR literature as "organization development" (OD), a paradigm of operational research in which external research work in collaboration with managers to improve organizational functioning. OD typically has the following attributes:

- a) Senior administrators request external "OD Consultants" to assist in improving organizational functioning. In this instance, the Planning Commission requested the ICDDR,B to conduct a replication study.
- b) Social science and quantitative research techniques are applied by the "OD Consultants" which are then fed back to mid-level managers.
- c) Joint action teams are formed at various levels to interpret research, take action, and feed relevant information to the higher authorities who initiated the exercise.
- d) Joint "ownership" of research and decision-making is cultivated in order to foster utilization of results.

.../...

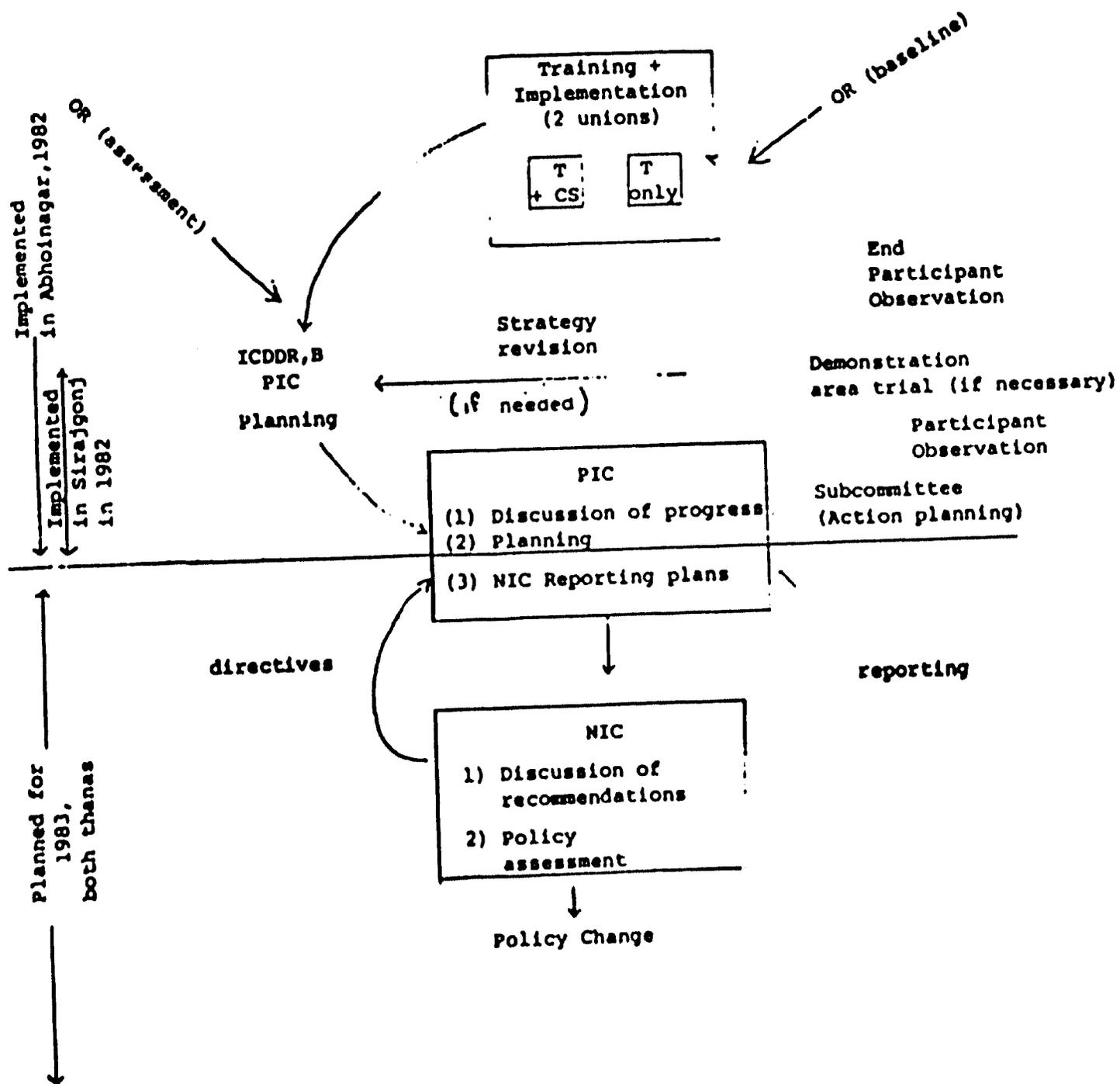
Change agents" are assigned to key functionaries to facilitate early utilization of results. OD Change agents are typically temporary workers affiliated with the OD Consultant organization with no formal authority in the host agency. Their sole purpose is to facilitate implementation through temporary counterpart support and close liaison with implementation committees.

The OD strategy in this project is diagrammed in Figure 1. As of February 1982 a National Implementation Committee (NIC) was constituted but had not met owing to MOHPC senior staff changes. At the first NIC meeting the ICDDR,B will submit a report on project goals and achievements as well as a synopsis of recommendations based on OR work. This report will be drafted by the ICDDR,B from the two thana reports prepared in close collaboration with "Project Implementation Committees (PIC)". One report for Abhoynagar is already in draft form. Each thana PIC meets regularly to facilitate implementation of project activities and are comprised of the District Officials (Civil Surgeons and Deputy Directors) and relevant thana authorities (Thana Health Administrators, Thana Family Planning Officers, Thana Medical Officers, and Health Inspectors). The ICDDR,B senior field staff are members as well, with the ICDDR,B Project Director and project consultants as patrons.

The initial purpose of the committees was to foster cooperation and develop a capacity to intervene. In both Abhoynagar and Sirajgonj this has required extensive attention to clarification of project goals and purposes, developing personal relationships, and involving MOHPC staff in decision making in order to shift "ownership" of project governance to each PIC. This, in turn, has produced informal meetings, subcommittee meetings, progress reporting, planning, and activities which represented immediate changes in the system that we had intended to "diagnose" through systematic functional analysis research. Our presence in Abhoynagar, in particular, seemed to "energize" the system in intriguing and unanticipated ways. Not surprisingly, this impact was less a result of our technical inputs and knowledge transfer than the emerging belief on the part of MOHPC workers that influential ICDDR,B representatives were everywhere. Indeed, observers were at all levels, researchers were in the villages, senior officials were appraised of progress and were joining in the process of decision making with unprecedented interest and intensity. In short, a powerful management control system was installed and the MOHPC staff went to work as they never had before.

The obvious challenge that emerges from this situation is to devise a replicable substitute for this informal ICDDR,B "counterpart support" management control system. Our plans for doing so will be discussed in the section on 1983 training plans, below. We nevertheless stress our conviction that change agent impact to date, which it is somewhat artificial, can contribute to identifying MOHPC mechanisms for achieving a comparable "energizing" effect in our absence.

Figure 1: The Organizational Research and Change Strategy: One Thana of the MCH-FP Extension Project



In the course of this work PIC sessions were addressed to identifying elements of the Matlab system for transfer. Two were assigned priority in 1982: 1) establishing union level health and family planning services at FWCs with referral capabilities and administrative links to field teams. 2) establishing a system of regular household visitation for both health and family planning work with referral links to the FWC and with close coordination among the workers of the health and family planning divisions. Achieving these modest objectives encompassed 3 months of work in Abhojnagar (since no FWCs existed). In Abhojnagar an implementation subcommittee is established (see Figure 1) to follow up on PIC decisions. Subsequent to a successful demonstration area field trial, implementation proceeds in at least two unions, one with and one without ICDDR,B participation. The ICDDR,B conducts continuous observation and research which it shares with PIC in a feed back cycle as shown in Figure 1. Our plan in 1983 is to utilize our growing experience with OD within each PIC to report findings to the NIC thereby fostering policy change.

Using this strategy we implemented a new FWC programme in Abhojnagar and tested the implementation of the "Crash Plan"--a scheme for a team approach to household visitation.

The first PIC reports to NIC are not finalized but the following recommendations appear in minutes and exemplify the type of recommendations to NIC that are likely to appear in the PIC report:

- a) FWC implementation lags because implementation is overly linked to central decision making and construction

Current official MOHPC procedures entail the following: A national MOHPC committee selects unions for FWC construction, informs the DO, who in turn constitutes a site selection committee to purchase land. This committee reports recommendations to the EDO who, in turn, submits recommendations to the DC who subsequently reports this to the Secretary of the MOHPC. If the Secretary approves, the DC is advised to release funds for the purchase of land. Only when a constructed FWC exists can a TIA assign equipment and resources to personnel--even if personnel have long been assigned to the union. Even if an FWC is constructed services may not be implemented owing to equipment and supply shortages or the absence of a designated paramedic.

Many of the bottlenecks inherent in this approach are eliminated by the following PIC procedure. A subcommittee of PIC approaches Union Councils to solicit donated buildings. Nearly all unions in Abhojnagar have complied. Given a donated building a community committee is constituted to oversee service implementation. They donate labor and some resources if renovations are needed. The DO then contributes MCH kits. Since community groups are involved, the facilities are soon utilized by patients. Three FWCs have

been opened at no cost to the MOHPC in Abhoinagar and more will follow pending concurrence of the national authorities to purchase furniture for "unofficial" FWCs. A PIC(A) report to NIC entitled "Where there is no FWC" is forthcoming which recommends a change in national FWC implementation policies. In this report PIC(A) places little emphasis on construction and much emphasis on decentralized decision making and community participation. Specific recommendations for opening FWCs from their experience is:

- i. FWC Site selection by DD's in collaboration with MOHPC communities like PICA
- ii. Priority for FWC implementation to unions with community donated personnel, land, or buildings.
- iii. Construction priority to areas with community organized centres that are overcrowded or inadequate.
- iv. Community governance of FWC's with technical support from the MOHPC.

In all, 3 FWCs were set up in a 5 month period using this strategy. Three more could be set up immediately if equipment were available. The total cost has been under Tk.500. The average case load exceeds 30 patients daily per FWC.

FWCs are crucial to this transfer experiment because they represent the basic static facility for family planning and primary health care. The FWCs are also the focus of efforts to organize an effective management system for the service team in a union. This community sponsored FWC implementation strategy was first applied by Mr. Chakraborty in 1977 in the Matlab study and, in our judgement, has now been successfully transferred to Abhoinagar.

Strajgonj has a full complement of FWCs, although none are functioning. Interestingly, FWC implementation is more of a challenge where standing facilities exist than where there is no FWC. In 1983 we plan to develop a strategy for fostering service implementation in standing FWCs which are not functioning, as a sequel to our work in Abhoinagar where facilities were completely lacking throughout the thana.

b) A Case Study of the "Crash Plan": Strengths and limitations of integrated teams

In December of 1982 the MOHPC promulgated a "Crash Plan" for population control. PICA assigned priority to implementing the plan with ICDDR,B counterparts conducting OR in one union and attempting to inject Matlab strategies into the Crash Plan work regimen.

.../...

OR results shows quite clearly that MOHPC promulgation of the plan in the absence of a more specific implementation strategy had no initial effect on the quantity of work. Once ambiguities about the service system, supervisory system, and referral system were resolved, however, the constitution of joint health and family planning teams greatly increased the quantity of work. Service quality, however, was very poor. The PIC have therefore requested technical training courses for 1983 to be addressed to specific deficiencies. This training planning will be discussed below. Experience suggests integration improves the quantity of work, since male and female workers are more effective as a team, than they are working separately. Roles and functions are inappropriately delineated, however, and general technical knowledge must be substantially improved.

A PICA report is in draft form entitled "Energizing Health and Family Planning Services: A Case Study in Rural Bangladesh."

## 2) The Impact Assessment System:

The impact assessment system for the MCH-FP Extension Project was fully implemented in 1982. The Sample Registration System (SRS) is unlike any other data collection system in Bangladesh in that it provides for "record linkage"--a procedure storage of all data collected according to household rather than type of event. Over successive rounds of visitation to sample households a history is maintained with all demographic, family planning, and operational data stored together in a common data base. Every 90 days the histories are updated so that demographic change can be monitored as a function of service contract, among other things. This data base system design permits immediate tabulation of rates--since events are recorded along with the requisite information on the population at risk. Thus the vital rates and contraceptive use rates have already been tabulated for study areas and reported back to PIC for their information.

This "data base" system is designed to be portable, "user friendly" and micro-computer compatible so that the approaches used in this study may be transferable to other systems. Our goal is not to transfer the SRS to the MOHPC, however. Instead, we are implementing, in one union of each thana, a "replicable SRS" that permits assessment of vital rates and standard MIS without any computer component. Standard MOHPC procedures call for much data collection and report generation. With minor systems modifications the volume of data collection can be greatly reduced, and its utility in the field can be greatly improved. Much of this work on replicable MIS systems is based on the Matlab MIS--a household record book system that gives unionwise data for each service component plus vital events without recourse to electronic data processing. This will be discussed further below.

In 1982, documentation of the SRS was limited to preparation of internal project documents on definitions, field procedures, and the computer system. In 1983 a report will be released entitled, "The Sample Registration System in Abhainagar and Sirajgonj: Concepts and Design."

3) Software Development

The system analysis aspects of the project have centered on developing key event reporting and update cycles of the SRS. A working model has been implemented although there may be modifications based on field experience with the feedback cycle.

Software development has included both editing and data analysis programs. All necessary edit programs were completed in 1982 although modifications may be required. Editing software has been completed for the MCH/FP extension area enumeration and SES survey data. A package for a three-level series of editing and linking quarterly event reports for the SRS has also been written and tested. Data processing from the first quarter event reports indicate that minor modifications to software and field procedure will be required.

Sociodemographic interview data is also being processed. The appropriate editing programs, previously written and tested, are now going through their initial data runs.

In 1982 basic descriptive statistical programs were developed for project research. A program to calculate various birth rate statistics, first applied to user-defined groupings of villages, has also been completed. A second program calculates a 40-year cohort grid covering total female and marital risks, with related fertility rates, for single year age groups and 5-year age groups. Its original application was to the Munshigonj data but it is designed for the Extension data on maternity histories. A life table program has also been implemented. For general statistical use, a package of programs has been written in BASIC containing descriptive measures, OLS, and multiple classification analysis (MCA), among other modules. Several other more sophisticated programs have been written in FORTRAN. These include a logit regression and discriminant analysis package; an MCA (more versatile and computationally accurate than the BASIC module) and a soon-to-be completed fairly robust package for factor analysis. Some initial plans have also been made for a time series analysis. Progress in this area has been hampered by lack of applicable texts or other written material in Dhaka, as well as the limitations of the S-34. This package, developed in 1982 will facilitate analytical work planned for 1983.

Work has been hampered by the scarcity of computer professionals in Bangladesh and the local scales which fail to compete with the Middle East job market. In 1982 we failed to recruit the computer counterpart/personnel, although two experienced people have joined in 1983.

.../...

An aim of our project is the extension of services and development of other GOB computer facilities in Dhaka. The statistical software developed thus far is readily transferable to any other S-34 with the appropriate translator (compiler or interpreter), even to those of a smaller configuration than that of ICDDR,B. Furthermore, the FORTRAN modules could easily be transferred to any system with a FORTRAN-IV compiler, not just an S-34, as the modules were intentionally designed to use a minimum amount of S-34 specific features. No actual transfers have taken place, however, although some interest has been shown by the MOHPC-MIS that unit lacks the relevant translators, however. We have also been collaborating with the Health Information Unit as they evaluate alternative options in future data processing activities.

.../...

**D. IMPLEMENTATION PLANS, 1983**

In 1983 data collection will be greatly reduced with field priorities shifting to training and Dhaka operations addressed to baseline data analysis. In this section we report revised staffing plans for 1983, research plans, and the schedule of field team training for Abhoainagar and Sirajgonj.

**1) Staffing plans, 1983**

Project administration has been revised to reflect the increased emphasis on operations research. The administrative structure for overall all accountability is shown in Figure 2. A Project Director has overall responsibility with two senior colleagues, one for medical services, the other for operations research. Demographic research work is under the direct supervision of the Project Director.

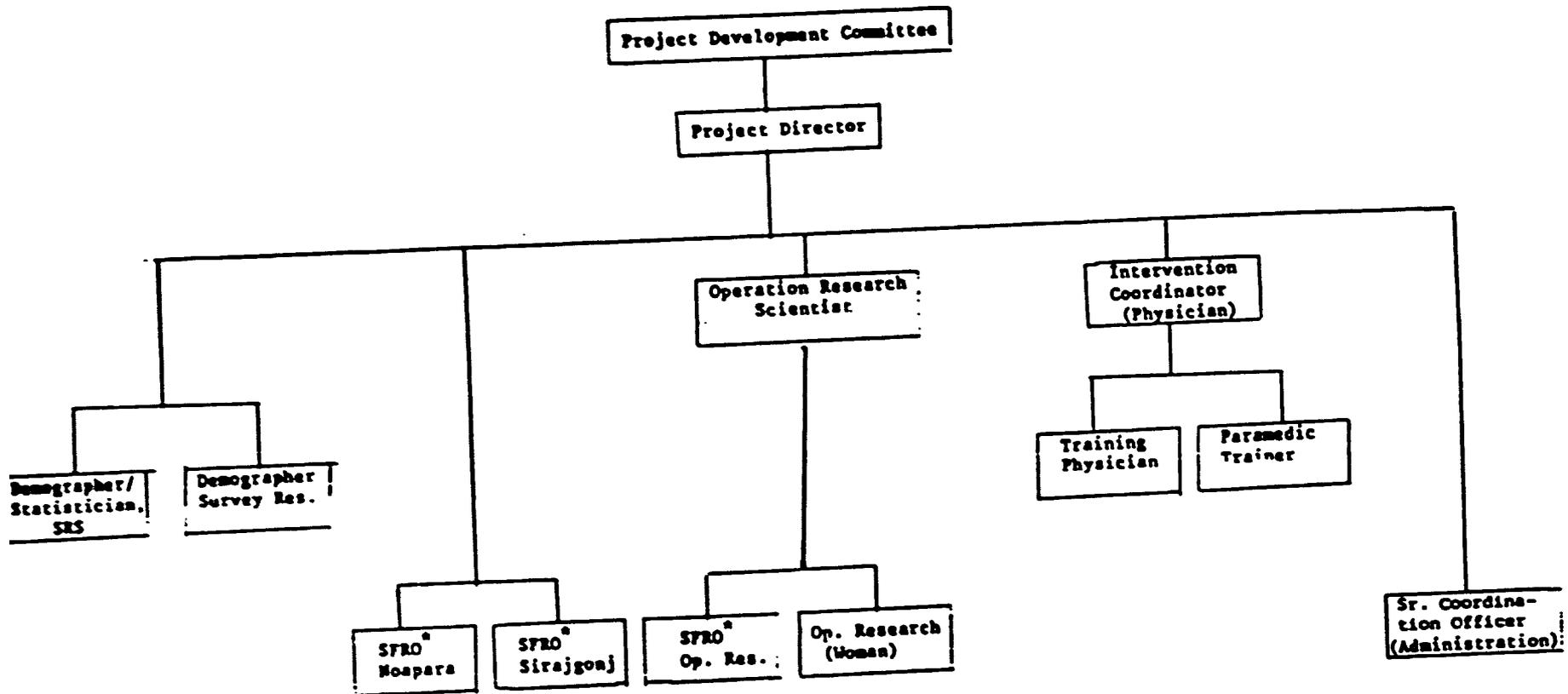
Actual task accountability is more complex owing to shared technical responsibilities for four technical operations. Thus the individuals shown in Figure 2 participate in technical task teams, each with a specified structure.

These four technical operations which must be undertaken in 1983 and their corresponding team structure are shown in Figures 3-6. Diagrams are not intended to be comprehensive, as administrative and logistics staff are not included, nor do they define the administrative structure, since one individual can participate in more than one team (eg Senior Field Research Officers, Senior Medical Officer, etc.). Moreover certain important functions such as overall project coordination and government liaison are not diagrammed, the former because each technical activity leader reports to the Project Director, and the latter because it is a function of NIC and each PIC and the ICDDR,B is represented on each committee by the Project Director, Dr. Phillips, and the "Implementation Coordinator," Dr. Md. Yunus.

The primary activity in 1983 is training. One professional trainer and one implementer will run this activity along with counterparts from the MOHPC. Trained Field Research Officers (FRO) have been transferred from Matlab to the Extension Project areas to assist in implementation work. As training sessions are conducted the FROs will be fielding counterpart paramedics from the existing field staff. That is, as data collection activities wind down, workers will be shifted to service work.

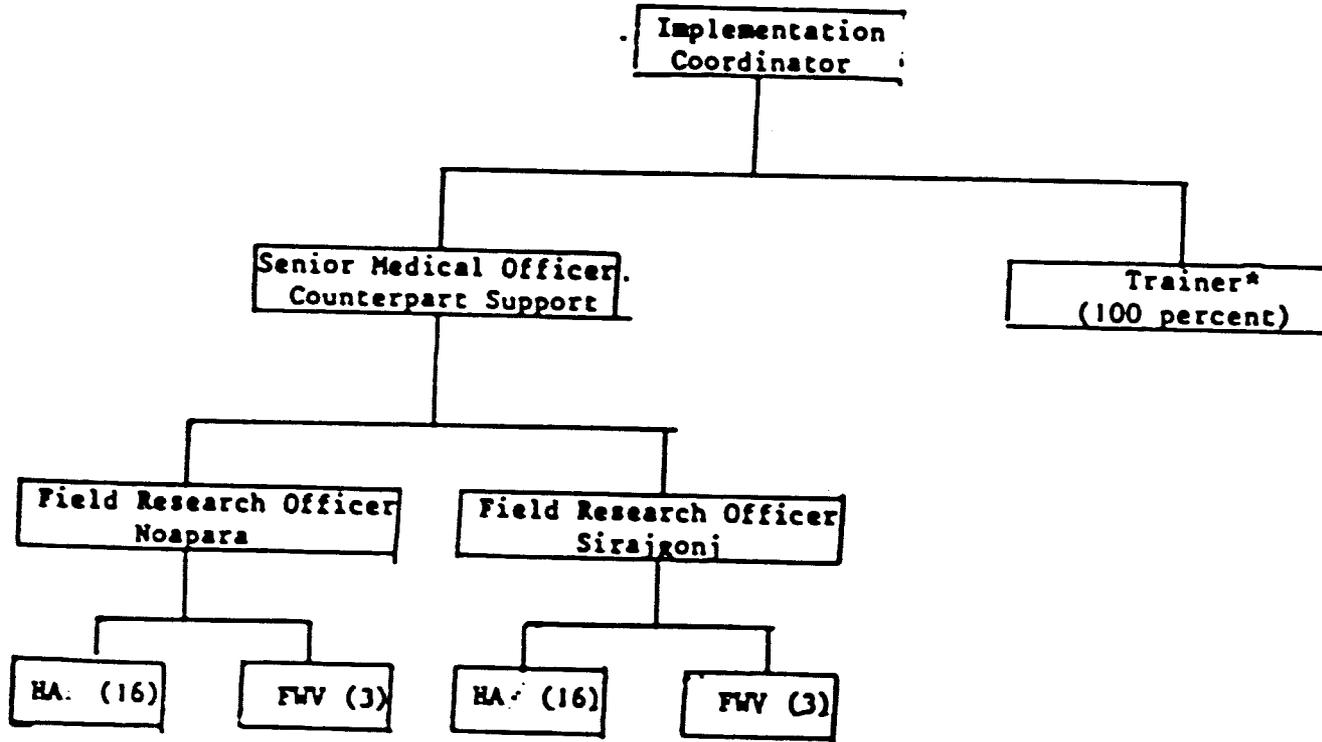
Figure 4 shows the structure of a large, but temporary team assigned to a KAP survey of husbands and wives currently in the field in Sirajgonj. As field work is completed the technical staff will shift to research support and interviewers to counterpart support.

Figure 2: Administrative Structure for Senior Project Staff



<sup>a</sup> Senior Field Research Officer

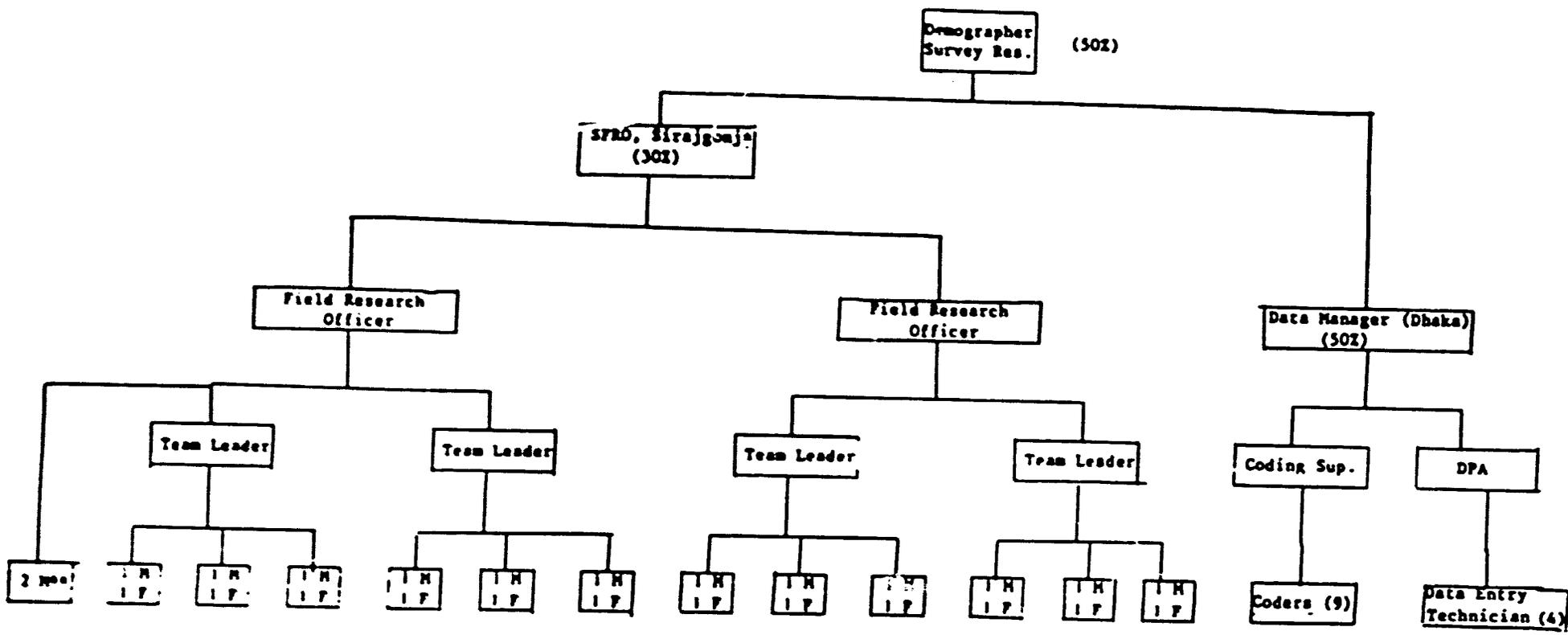
Figure 3: Technical Accountability Structure for Training and Counterpart Support



\*Support Staff will be assigned from Matlab on rotation.

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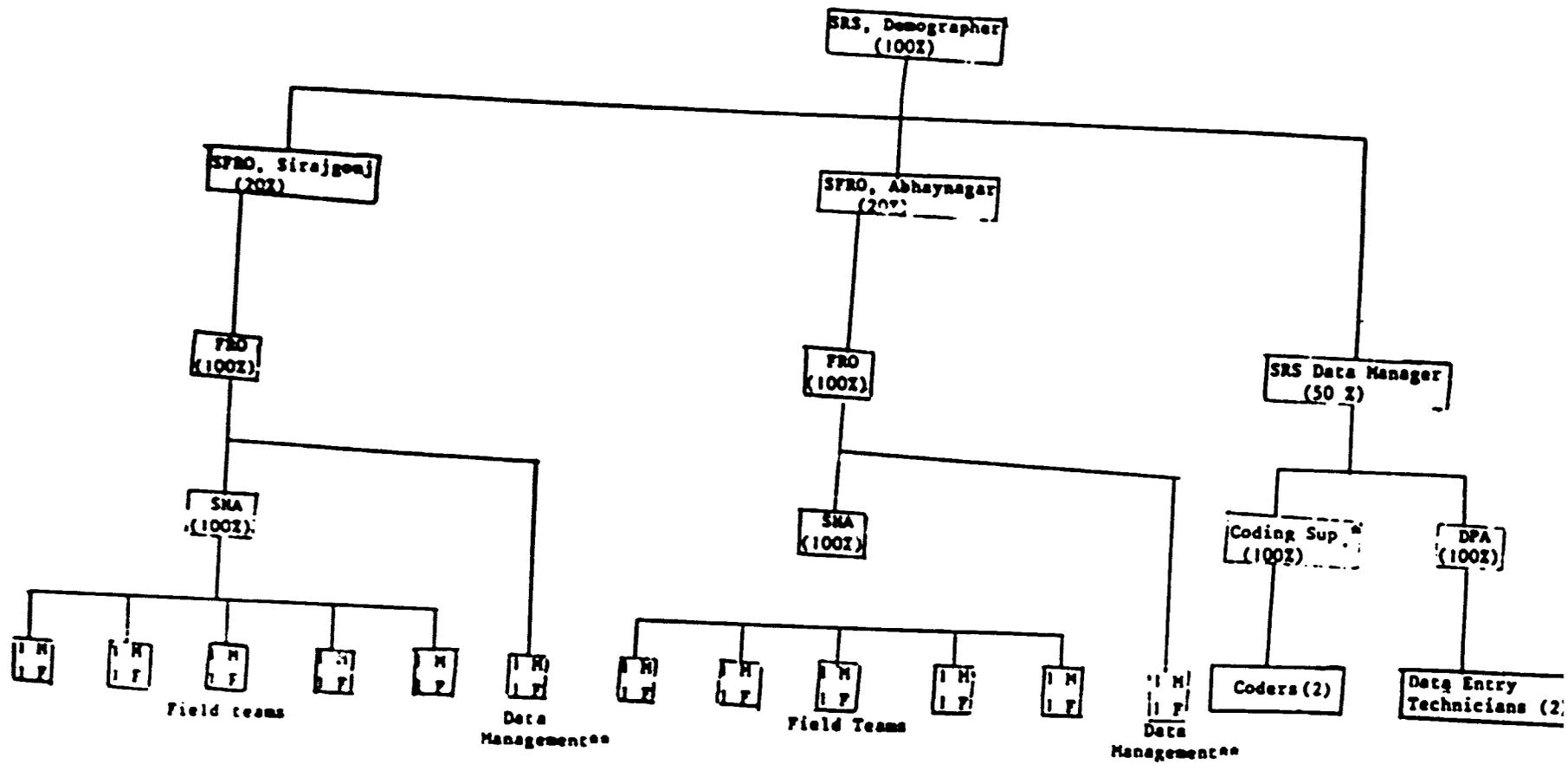
Figure 4: Technical Accountability Structure for Survey Research  
 (Data Collection and Management)



\* Field Operations will terminate in Sirajganj on April 30, 1983.  
 \*\* Reserve team for sample loss follow up.

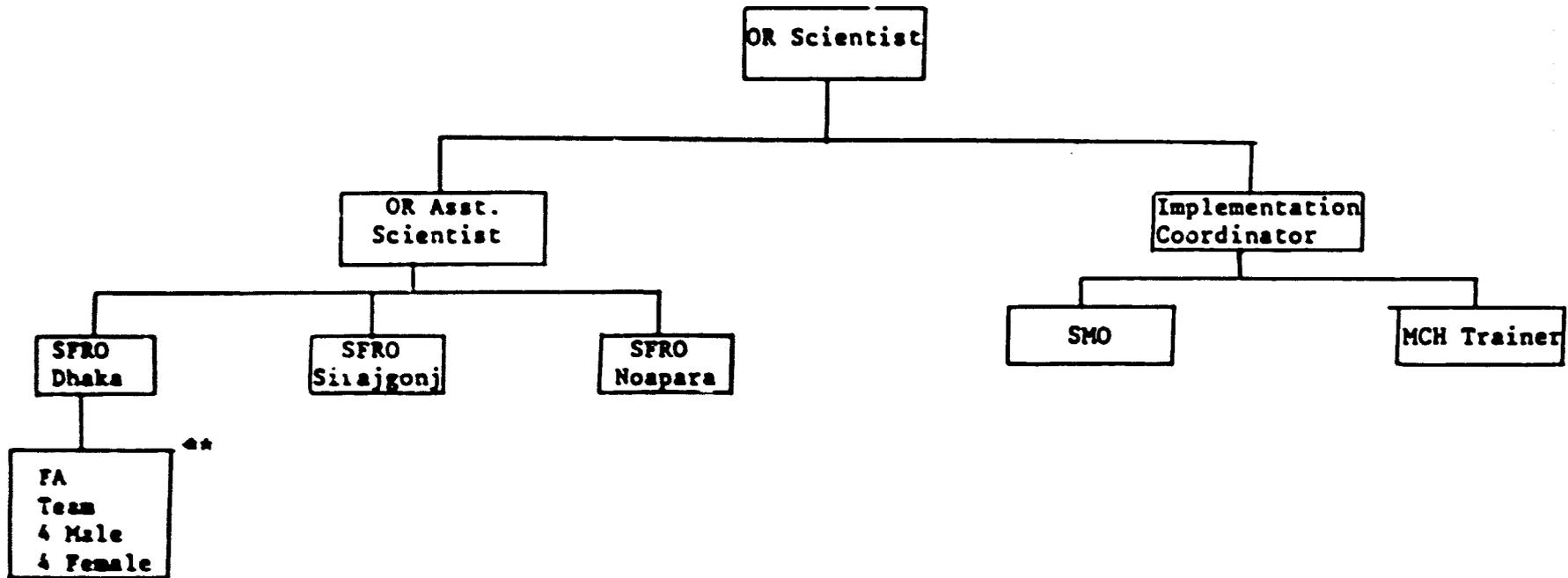
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Figure 3: Technical Accountability Structure for the SRS



... are field preceded, but one data manager pre checks coding in Dhaka  
... coming from the field

Figure 6: Technical Accountability Structure, Operations Research (OR)\*



\*SRS Teams conduct all OR household interviewing, and are accountable for this activity to the OR Assistant Scientist

\*\*Assigned to various field locations for special studies (FA = Functional Analysis)

Figure 5 shows the SRS team. Female workers have been added so that SRS teams can provide continuous monitoring of contraceptive use, health behavior, and indications of health service quality. Each round of the SRS has a module of questions to be asked in addition to standard vital event collection.

Figure 6 shows the team responsible for the non-SRS component of OR. One special team has no fixed area of assignment and is changed with conducting special worker studies, field experiments, and the like under the direction of the OR scientist. Since implementers (SMO, Trainers, SPRO) maintain participant observation notes, this OR work is coordinated along with the more structured work of the Functional Analysis Team.

!) Research Plans for 1983

The following reports represent work either in draft or outline form for completion in 1983. Figure 7 summarizes reporting plans for 1983.

Project papers in draft form are as follows:

- 1) The Sample Registration System in Abhoynagar and Sirajgonj: Concepts and Design (Item 1, Figure 7).
- 2) The MCH-FP Extension Project in Rural Bangladesh: Concepts and Design (Item 1, Figure 7)
- 3) Organizational Development: Is it applicable to the Developing World?
- 4) Where there is no FWC: A Case Study in Community Participation in Health Care Delivery (Item 3, Figure 7).
- 5) Energizing Government Health and Family Planning Programmes: Findings from an Action Research Project in Rural Bangladesh (Item 4, Figure 7).

The following papers are being planned from edited data now available for analysis:

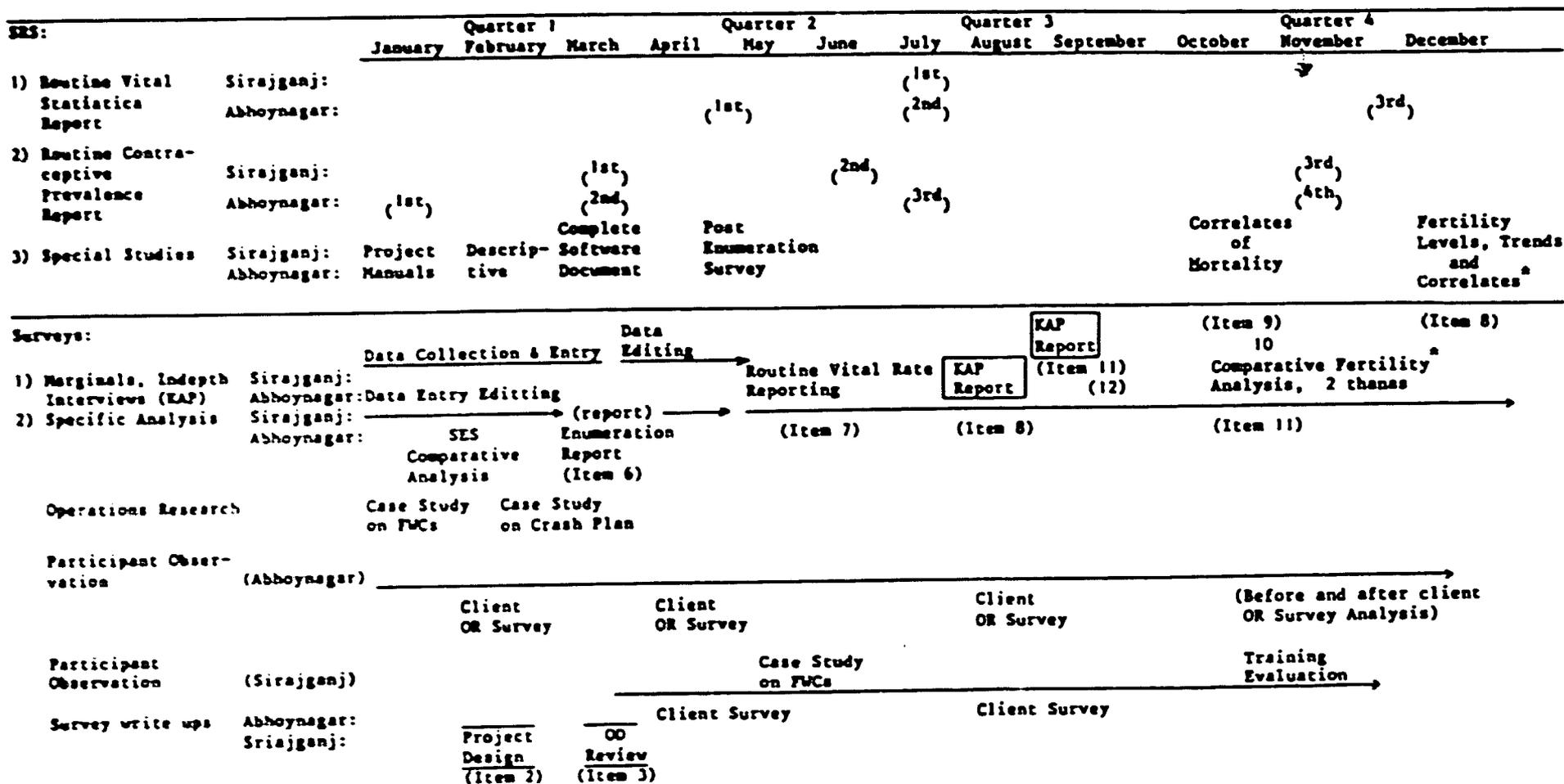
- 1) A Principal Components Analysis of Social and Economic Status in Two Thanas of Rural Bangladesh (Item 5, Figure 7)
- 2) Family Planning Knowledge Attitudes and Practice in Abhoynagar, Jessore: Correlates and Differentials (Item 6, Figure 7).

The following reports should be available from existing data in the last quarter of 1983:

- 1) Cohort and Period Fertility in Two Thanas of Rural Bangladesh: Trends and Correlates (Item 7, Figure 7).
- 2) Infant and Neonatal Mortality in rural Pabna and Jessore Divisions: A Multivariate Analysis (Item 8 in Figure 7).

(A) The MCH-FP Extension Project

Figure 7: Time Lines for Scientific Reporting, 1983



<sup>a</sup> Work to be completed, February, 1984 together with summary report on project achievements and findings.

- 3) Does the Quantity of Health Service Delivery Correlate with Health Behavior?--An Areal Analysis in Rural Bangladesh (Item 9, Figure 7)
  - 4) Family Planning Knowledge Attitudes and Practice in Sirajgonj Pabna: Correlates and Differentials (Item 10, Figure 7)
  - 5) Organizational Development--A Paradigm for Achieving Institutional Change (Possible revision of Item 2, Figure 7)
- 3) Training Plans, 1983

The primary project implementation activity of 1983 will be training in primary health care, family planning, and management of services.

a) Overall aims

Training in the extension project in 1983 will be guided by four principles:

- i) Training is linked to Diagnostic research. Training will be addressed to improving the quality of family planning and health services as needed. Each training component is therefore preceded by a research component which identifies technical deficiencies or operational problems.
  - ii) Training utilizes existing research knowledge and emphasize transfer of innovation. To the extent possible, the scope, content, and style of training activities is guided by the Matlab experience. Maximum reliance is placed on utilizing existing modules. Where no ICDDR,B material is available we borrow from the experience of other special projects.
  - iii) Training utilizes evaluation research. Training should be continuously evaluated with before and after knowledge assessment and participant observation of the implementation process. The research will document what has been achieved and how training can be improved.
  - iv) The training is implementation oriented. Our work suggests that the MOHPC is introducing too many themes too quickly in the course of training. Our approach will be to focus training on a limited range of technical issues (family planning, treatment of diarrhoeal diseases, and immunization against tetanus) and to place strong emphasis on implementation (management information, the scope and content of work meetings, referral procedures, supervisory roles and methods, household visitation techniques, etc.) Under MOHPC procedures trainees are typically removed from their jobs and given technical training on issues that are difficult to implement. Our aim is to emphasize field demonstration and to make the scope of training limited by what can be realistically achieved, and to assign counterparts to training sessions to facilitate implementation.
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b) Training Cycles: Planned Intervention for Institutional Change

Training plans reflect the following constraints:

- i) The staff in no more than two unions can be trained at a time since about 10 FWW and FWAs plus their supervisors comprise the MOHPC staff for a pair of unions.
- ii) A separate course cycle is required for each "demonstration union" since field demonstration for regular courses requires a prior training period in a pilot area.
- iii) Training cannot interrupt regular MOHPC orders. Thus the "Mouza update" must be completed before formal training sessions begin. This means that formal training cannot begin until late April. We are attempting to assist in expediting updating in the demonstration unions of Hoopara to move this forward or at least to insure that delays will not ensue.
- iv) We have only one ICDDR,B training team. Therefore, we will undertake training in only one study site at a time.
- v) We have an experimental design in which the content and quality of course is not an experimental variable. Therefore participation in sessions should control for the quality and content of didactic sessions.
- vi) Treatments of the project are shown in Table 1 above. The study design has 3 cells of which 2 are training only cells. The scheduling of training is complicated by the fact that 17 unions are in the study thanas of which only 10 are in research and demonstration areas. Our understanding with the MOHPC requires us to complete training courses for MOHPC staff in all 17 unions in the study thanas--a commitment to train personnel in 7 unions where we are not doing research.

Treatment conditions in Fig. 8 specify areas where ICDDR,B health assistants will attend training and accompany MOHPC staff in their work for a period of time following training (counterpart support). In Fig. 8, unions labeled E1 to E4 will have both training sessions and counterpart support. Unions E1 and E2 are in Abhoynagar and E3 and E4 are in Sirajgonj.

Training only unions will receive the formal orientation, but ICDDR,B staff will not be assigned there (T1-T4). Similar training will be provided for MOHPC staff from non-research areas and since research is greatly simplified to "replicable components" in demonstration unions they are not formally included in the research design (D1-D2). The control unions C1 and C2 will neither receive ICDDR,B training nor counterpart support and are outside of the study districts.

Figure 8: Implementation schedule (1983) training and counterpart support in Abhaynagar and Sirajgonj thanas

Union	Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV*
D1			Implement Work Teams Participant Observ.	PICA	PICA	PICA	PICA	Course 1	Counter. Supp.	+ OR		
T1			Impl. Work Teams CS + OR					Course 2	Counter. Supp.			
T1			MOHPC Impl. + OR				PICA	PICA				
T2			Implement Work Teams Counter. Supp. + OR					Course 3	Counter. Supp.			
T2			MOHPC Impl. + OR				PICA	PICA	OR	PICA	PICA	PICA
N1								MOHPC Implementation of Work Teams	Course 4 (MOHPC)			
D2								Implement Work Teams Counter. Supp. + OR	Course 5	PICA		
T3			(As in I1, T2)						Course 6	PICS	PICS	PICS
T4			(As in I1, T1)						Course 7			
N4								MOHPC Implementation of Work Teams	Course 8 MOHPC			
N6								MOHPC Implementation of Work Teams	Course 9			
N7												

\* The first cycle of training will be completed in November. A new cycle focusing on MCH-EPI will start in February 1984 unless research shows that retraining is needed.

c) Training Content

On the basis of field observation, survey interviews, and past experience we are planning the content of a training cycle. There are three overall categories of findings from operations research with training implications: Management control, field methods, and and technical knowledge. We shall consider each, in turn.

- 1) Management Control. In general, there is no clear idea among MOHPC field staff on how problem solving and work productivity is to be developed and maintained. Although our experience indicates that supervision is nearly completely lacking, we will not hold courses on "supervisory techniques". Rather we will attempt to introduce a system of management control that involves minimal incremental resources. This involves orienting staff to a new work system which includes the following elements:

Household record keeping in a highly simplified data format (Household Record Books, HRB)

Current MOHPC procedures are both overly complex and deficient in content. Procedures are designed for reporting work to superiors and workers <sup>collect no information</sup> that can be of use to them in doing their job. The first task in establishing management control is collecting data that is useful for work performance--the minimum requisite for effective health and family planning care delivery. In Abhoynagar an action committee is drafting an HRB system after pretesting a simplified Eligible Couple Register (ECR).

A system of reporting from the HRB progress, problems and plans

Management control involves utilization of HRB data in union level meetings to see who is doing well, who is not, why problems are arising and what can be done about it. In the end of 1983 each FWC in study thanas will have monthly work meetings for this purpose. Training will address orienting staff to the tasks to be done before such meetings. Counterpart support to supervisors will address the problem of getting meetings going and developing their content to focus on work performance issues.

Goal setting and priorities

Effective management control requires realistic goal setting based upon meaningful task objectives. Yet, teams are not clear about priorities and goal setting. Activities, moreover have little relation to the needs of villagers. Rather, activities are designated by a central order (e.g. January is Vitamin A capsule month, February and March are for data updating, etc.). Instead we propose using HRB and survey

data to ascertain problems, sit with staff to discuss results, and setting priorities according to local needs. Part of training will involve examples in the utilization of HRB and other data for short term task planning. Data based planning is not a familiar practice in Bangladesh, and we expect considerable difficulty and "trial and error" in developing this activity.

#### Supervisory support

Given orientation to planning, achieving task accountability, and procedures for preparing data for a given meeting there must be a system of field checking and supervisory support. This system needs to be worked out and explained in training sessions so that all workers understand all elements of the management system. Supervisors will be oriented to doing two things: spot checking and dealing with special field problems. We have been demonstrating "supervisory support" and contrasting this management style with the prevailing practice of administering stern warnings without meaningful interaction and field visitations.

- ii) Field Visitation Techniques. The most obvious problem in our field areas is the inappropriate MOHPC approach to village work. The "Crash Plan" was implemented in limited areas in order to observe workers in the process of delivering services. Since much emphasis in past MOHPC training has been given to technical topics workers typically to know the basic rudiments of paramedical care. However, the male workers, in particular, have little experience in visitation methods and no systematic training in village service delivery techniques. An unprioritized list of 27 tasks has been given to workers, but no instruction in screening and referral work, basic principles of interpersonal work, and techniques for setting priorities. Female workers, in turn, abandon health issues to their male counterparts, and focus exclusively on family planning. This inappropriate bifurcation of roles and functions within teams requires reorientation and training.

We will suggest developing the female staff in MCH and FP delivery with male workers serving as guides, husband motivators, community organisers, and record keepers. That is, all workers should have both health and family planning duties with roles segmented according to the culturally accepted activities of male versus female workers.

.../...

- 111) Technical Knowledge. Knowledge tends to reflect past designation rather than current tasks. A brief refresher training course in health and family planning is appropriate. Special emphasis is required for new components to work, such as injectables. Female workers cannot give injections as that is the work of male "innoculators". Our intention is to stimulate development of the tetanus and injectable contraceptive programmes, as these are programmes best implemented through female workers.

Technical training modules have been adapted from Matlab and other special project modules.

### CONCLUSION

The year of 1982 has been a period of project planning and development. Work systems were developed for data collection, computer systems were developed for data management and analysis, and work relationships were developed with the MOHPC which give us the capacity to intervene collaboratively.

The 1983 period will afford an opportunity to report findings from baseline studies to field a comprehensive training programme, and to monitor organizational change in the course of the intervention period.

**APPENDIX D**

**THE MCH-FP EXTENSION PROJECT**

**A Brief Overview for the National Coordination Committee**

**James F. Phillips, Project Director  
Md. Yunus, Implementation Coordinator**

**International Centre for Diarrhoeal Disease Research, Bangladesh  
GPO Box 128, Dhaka-2  
Bangladesh**

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## **PREFACE**

In 1982 the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) and the Ministry of Health and Population Control (MOHPC) launched a project in Abhoynagar and Sirajganj. This brief note explains the background to this project and its objectives together with a description of services and research work.

## 1. Background

In 1977 the ICDDR,B started a family planning and MCH project in its Matlab field station which has had dramatic impact on fertility in project areas. Evaluation has shown that modern contraceptive use rose from about 10 percent to 32 percent in 1978 where it remained until 1981. Over the 1981 to 1983 period prevalence rose to 38 percent, mainly due to operational improvements in the programme. Fertility declined by 24 percent in the first three years of project impact and further declines are expected owing to the increasing prevalence in 1982-83. Immunization for tetanus and measles is nearly universal in service areas and other MCH interventions are implemented. Overall mortality has declined by 25 percent, with mortality declines most apparent among neonates.

The MCH-FP Extension Project was fielded to determine if the Government of Bangladesh can successfully use Matlab service innovations, and if the impact of the programme improves once these service innovations are implemented. Unlike the Matlab project all work and supervision is conducted by the MOHPC staff who work with existing regulations, payscales, and facilities. The role of the ICDDR,B is to serve as researchers, trainers and change agents. Thus the MCH-FP Extension Project, unlike many special health service projects, is a collaborative effort involving staff from both the MOHPC and the ICDDR,B.

The origins of the project can be traced to 1980 when the Planning Commission and the MOHPC requested the ICDDR,B to transfer the approach of its Matlab project into the health and family planning system in thanas elsewhere in Bangladesh. Two thanas were selected by the Government in 1981 and donor support for the project was secured in 1982.

2. Objectives of the Project

(a) Replicable services. Matlab, because it is a research station, has certain special managerial and logistic capabilities which are not replicable. However, it is possible that certain elements of the Matlab system can be replicated if carefully introduced to Government workers. An aim of the Extension Project is to identify replicable elements of the Matlab project and demonstrate them to MOHPC staff. To insure replicability current regulations and resources will be maintained. The ICDDR,B will train workers and conduct operations research to assess programme progress.

(b) Transfer of innovation. Too often special projects have little impact on policy in that few of the "lessons learned" actually become policies in the larger governmental operation. An aim of the Extension Project is to jointly interpret research results so that project reporting is an activity with links to implementers in the MOHPC.

(c) Research. Little would be accomplished from the Extension Project if its impact were not known or if barriers to success were not understood. Research has been designed to measure project effects

on the quantity and quality of services over time and project impact on birth and death rates. Operations research has been designed to assess processes which either hamper project effectiveness or explain project success. Thus research aims to examine two sets of issues - project impact on operations and overall impact on fertility, mortality, and morbidity.

4. Field Operations

(a) Technical components. The ICDDR,B project in Matlab owes its success to several technical components: 1) Paramedical services and village based female workers deliver comprehensive family planning services to the doorstep. Follow-up is fortnightly and referral services are available for both FP and MCH. 2) A system of management is in place which insures that every worker knows her own performance and supervisors receive reports. This permits quality services since a simple system keeps track of both clients and workers. A critical element of the management system is decentralization and regular meetings in FWCs of all workers.

The Matlab technical components -- paramedical services and a management system -- are in our view, to some degree transferable to the MOHPC (see Table 1). Through technical training paramedical services can be upgraded. Through counterpart support management can be improved. We therefore turn next to this issue of training and transfer.

(b) Transfer of Operations from Matlab to the MOHPC. The Extension Project is coordinated in each thana by a "Project Implementation Committee" (PIC) comprised of MOHPC senior thana health officials and ICDDR,B project staff. The PIC review progress on a monthly basis, formulate plans, and implement services. PIC activities are currently addressed to interpreting research which diagnoses operational problems and to formulating training plans based on operational needs. A list of specific operational goals and PIC actions appears in Table 2. Note that most of 1982 was for baseline research and implementation was limited to pilot areas. Training is a forthcoming activity.

The central field activity of 1983 is conducting a technical training course with the following characteristics:

- (a) ICDDR,B field staff from Matlab join the training program and work with MOHPC staff for one work cycle. We term this "counterpart support." It is designed to foster implementation of lessons learned in training.
- (b) It includes field visitation and motivational techniques.
- (c) It includes refresher training on FP and MCH.
- (d) It introduces a management information system and orients workers to a management control system.
- (e) It discusses other special elements of Matlab which are relevant to the MOHPC system.

Table 1: Elements of the Matlab Technical System and Mode of Transfer.

Element of the Matlab Service System:	Activity to be transferred to the MOHPC in two thanas:
<b>A. <u>Technical Components</u></b>	
1. Comprehensive family planning services at the doorstep: pills, DepoProvera, Copper T, condoms.	1. Assist MOHPC implement integrated teams with FWA and FWV going door to door first with pills, condoms and injectables.
2. Subcentre Copper T services with comprehensive MCH, contraceptive backup, and referral services.	2. Assist in implementing FWC's. Train FWV's.
3. Follow-up of all women fortnightly for both MCH and FP services.	3. Assist in devising schemes for follow-up of all women bi-monthly.
4. Central clinic facilities for tubectomy. Referral services to trained physicians.	4. Assist in developing a referral system. Assist in regularizing services at the THC.
5. Comprehensive immunization services, village based ORT, antenatal care, nutrition advice.	5. Assist in developing cold chain procedures. Train staff in MCH care.
<b>B. <u>Operational Components</u></b>	
1. Primary care by village women posted at a ratio of 1/1000 population  High proportion of female workers.	1. Foster better utilization of FWAs. Explore means of stimulating community involvement.  Develop FWA/FWV teams.
2. Decentralization to the union level: a) 1 male supervisor with all administrative authority. b) Simple to use management information system with no computer necessary c) Fortnightly meetings of all union level workers.	2. Foster FWC development to include: a) Clear lines of supervision. b) Train workers in a simple adaptation of the Matlab MIS. c) Foster monthly meetings of union level workers in the FWC.

- |   |  |
|---|--|
| 2. d) Task goal setting.  | 2. d) Demonstrate goal setting.  |
| 3. Special Logistics:<br>speed boats for supervisors,<br>country boats for village<br>workers.  | 3. (No special logistics)  |
| 4. Continuous training:<br>a) Component by component<br>introduction of new MCH<br>activities. Continuous<br>refresher training.  | 4. Short courses with<br>"counterpart support".<br>Continuous counterpart<br>training. |
| 5. Government pay scales for<br>village staff, higher salaries<br>for supervisory staff.  | 5. (No change in salary<br>structure)  |
| 6. Clear delineation of roles:<br>a) Technical (medical<br>supervision) by physician<br>over FWV and FWV over female<br>village worker.<br><br>b) Administrative (task<br>supervision) by paramedic<br>supervisor over male<br>assistant supervisor (union<br>level). | 6. Attempt to clarify roles<br>(No change in administrative<br>structure).             |
-

Table 2: Goals, problems, and PIC actions to date.

Implementation Goal	Barrier	PIC Resolution
1. Establish FWCs	1. No facilities	1. Establish community committees for soliciting donated facilities.
	2. No staff present	2. Assist in arranging posting.
	3. No furniture, rules against assigning furniture until an FWC is constructed.	3. For 3 centres, borrow furniture but otherwise unresolved.*
	4. Limited drugs	4. Divert limited <sup>*</sup> stocks to new FWCs (unsatisfactorily expedient)
2. Establish comprehensive doorstep FP services.	1. Lack of injectables.	1. None
	2. Team not assembled for field work.	2. Work set up in one union as a demonstration.
	3. Lines of supervision unclear.	3. Delineate roles, assign ICDDR,B counterparts.
	4. Primary Health Care field methods need improvement.	4. Not resolved yet.
	5. Payment for Copper T not possible.	5. None: <sup>*</sup> Funds are centrally allocated but should be allocated like tubectomy funds.

\* Barriers to implementation which the NCC can resolve.

Courses are conducted for small batches of FWW, FWA, FPA, ANI (20 each or staff posted in 2 unions) and involve 1 ICDDR,B trainer, ICDDR,B paramedic implement, and 4 ICDDR,B community workers.

(c) Barriers to Programme Functioning. The PIC committees have functioned smoothly and cooperation with the project has been excellent at all levels. Certain barriers to implementation hamper progress and recommendations appear in the PICA report to the NCC:

- i. The DD in Jessore should be authorized to purchase furniture for community donated FWCs. This is not a problem in Pabna.
- ii. Funds for Copper T insertions should be administered like tubectomy funds are now managed. This applies to both Pabna and Jessore.
- iii. Special consignments of copper Ts and injectables should be made to both study thanas. TEMO should be specially instructed to expedite supplies.

(d) Research Activities. In 1982 the ICDDR,B set up a vital event assessment system known as the "Sample Registration System," or SRS. It is designed to provide many of the insights about health, family planning, and demography that are available from Matlab, but on a much simpler scale. The SRS does the following:

- 1) It provides information on who is in sample households.
- 2) It records economic status of households.
- 3) It records demographic events continuously.

4. It records operational indicators of performance.
5. Contraceptive use is monitored.

It will be soon modified to record the following:

- 6) Cause of death.
- 7) Morbidity (particularly diarrhoeal disease)
- 8) Immunization coverage.

The SRS runs on a 90 day cycle of data collection.

In addition to the SRS the ICDDR,B has done a survey on fertility, family planning, and health behavior. Also examined are characteristics of workers, their technical knowledge, and job performance.

At present this research is baseline assessment but future research can examine trends over time. Comparison areas in Khulna and Tangail will permit controls for contaminating factors when analysis is conducted in the future.

#### 4. Conclusion

The MCH-FP Extension Project represents a unique opportunity to test whether the Government can absorb innovations from a special project and improve service quality and impact by doing so. It also represents a unique opportunity to observe field operations and to research ways in which programme functioning can be improved. Work in the first year was thus addressed to establishing an operations research system. Activities in the second year will be dominated by training and counterpart support designed to improve health and family planning services in the two study thanas.

APPENDIX D

Progress Report to the National Coordinating Committee  
MCH-PP Extension Project

by the

Project Coordination Committee, Abhoynagar

Members:	Dr.Md.Tariqul Islam	Thana Health & Family Planning Officer, Abhoynagar	"
	Dr.Md.Atiar Rahman	Medical Officer (MCH-PP)	"
	Dr.Md.Mozid Buksh	Thana Family Planning Officer	"
	Dr.Md.Abdul Hannan	Medical Officer	"
	Dr.Benazir Hossain	Medical Officer	"
	Dr.Md.Akram Ali	Medical Officer	"
	Mr.Pradip Kumar Muhuri	Senior Field Research Officer, ICDDR,B	"
	Mr.Md.Mukleshur Rahman	Field Research Officer	"
Patrons:	Dr.Sk.Alimuzzaman	Civil Surgeon, Jessore	
	Mr.Saidur Rahman	Deputy Director, Family Planning, Jessore	
	Dr.Md.Yunus	Coordinator, MCH-PP Extension Project & Head, Maclab Station, ICDDR,B	
	Dr.James F. Phillips	Principal Investigator, MCH-PP Extension Project, ICDDR,B	

International Centre for Diarrhoeal Disease Research, Bangladesh  
CPO Box 128, Dhaka  
BANGLADESH

APRIL 20, 1983

The MCH-FP Extension Project Coordinating Committee in Abhoynagar (PICA) has met for the past eight months to formulate plans and implement services related to the project. This report summarizes activities and achievements in this period of project development. Throughout 1982 the ICDDR,B assigned priority to baseline research and to establishing a vital registration system for evaluating the project. The committee has nevertheless been meeting monthly since September of 1982 with the aim of clarifying collaborative arrangement, making plans, and testing operations in pilot areas. In compliance with Government regulations, all PICA activities comply with MOHPC standing orders. The Extension Project is therefore not a special non-governmental project, but a MOHPC project that is conducted by Government staff in collaboration with ICDDR,B colleagues.

#### Project Design

The MCH-FP Extension Project is an experiment in the transfer of innovation from the ICDDR,B project in Matlab to the more realistic conditions of the Ministry of Health and Population Control. The Matlab project has the following features:

1. Special resources for logistics and supervisory support.
2. Contractual staff with special administrative rules supervision, and staff composition comprised mainly with female village workers.
3. An organizational structure with separate lines of authority for technical and administrative supervision. That is, a female physician, and FWVs direct medical activities while management control is vested in male non-medical supervisors.
4. Regular meetings in FWC's of all union staff with strong management control systems.
5. Comprehensive door step family planning services by Community Health workers with fortnightly follow-up and referral links to FWCs.
6. Comprehensive MCH care by the same individuals who provide family planning care.

The Extension Project will review the following successfully implemented elements of the Matlab system with the aim of improving the MOHPC system in Abhoynagar.

1. Supervisory support will be improved by introducing the Matlab management information system and supervisory training. There will be no special resources.
2. The staff composition will follow Government rules but we aim to clarify roles and stimulate productivity through improved training and supervision.
3. The organizational structure will not change from the Government pattern, but efforts will be made to improve technical supervision and referral services.
4. The ICDDR,B is assisting in the introduction of a union based management information system based on the Matlab model of regular meetings for progress reporting, orientation, and supervisory support.

In addition to the service objectives, the project has research aims. Research will assess the impact of the intervention as well as operational changes. Two unions have been selected in Khulna<sup>1</sup> for comparison.

Table 1: Treatment Design in One Thana

		Training	
		Yes	No
ICDDR,B Counterparts + Training	I	Yes 2 unions	(none)
	II	No 2 unions	III 2 unions (Khulna)

For Sirajganj these are in Tangail.

ICDDR,B counterparts will work in two unions. Comparison of household health and contraceptive practices across treatments will test whether practical interaction and field demonstration is a necessary prerequisite to improving services, or whether training alone will suffice. The hypothesis is that demographic impact of the project will be greatest in Cell I and that these effects will be greater than in Cell II. Cell II, in turn, will show effects that significantly differ from Cell III. Similarly, program operations can be compared across cells to determine the operational effects of intervention.

PICA has begun the work by focusing on two issues; 1) the need for FWC's, and 2) the need for regular household visiting by FWV and FWA teams. In the immediate future we will launch a training programme. In 1982 the ICDDR,B concentrated its efforts on base line research. We shall discuss each activity in turn.

#### Project Implementation

FWC Implementation: For primary health care to be effective in rural Bangladesh there must be a static health care facility below the thana level where basic MCH and family planning services can be delivered, and referral services can support an outreach programme. Since no FWC's are established in Abhoynagar, PICA has assigned high priority to developing a strategy for opening FWCs.

Our approach is in response to several programs with the current system of FWC development. Under present policies FWCs are established by central order and this requires much time for funds to be released. Until construction is finished, however, furniture and stocks cannot be consigned even if communities donate facilities.

Communities often volunteer to assist in some way with FWCs, but no resources can be released to support this until a standing MOHPC facility has been constructed.

To avoid delays PICA has formed a sub-committee for approaching communities for FWC facilities. In all 4 unions with donated facilities have been identified and opened. One of these has been selected as a demonstration site for MCH-FP SERVICES. In this area, the community donated labor and supplies and is currently expanding facilities. The lesson learned is that FWC implementation is best pursued in the following steps:

1. Approach communities first with the promise of MCH services if facilities are donated.
2. Once facilities are donated, move immediately to establish MCH Care with a formal opening ceremony involving elites.
3. Constitute a governing committee to hold the FWV accountable for delivery good services.
4. Facilitate an information campaign to inform the community. Establish Outreach services.
5. Expand the facility only if it is overcrowded. Involve District officials whenever possible so that funds can be used for furniture stocks, supplies, etc. At the moment furniture is the critical barrier to FWC implementation.

We have four FWC opened, two more ready, and the remainder identified. An order releasing funds for furniture is urgently needed.

#### Implementation of Household Services

PICA implemented the July 1982 order to integrate by forming teams of FWV/FWA with pairs of supervisors (FPA's, nonselection grade for FP and AHI, selection grade for Health). It was not possible to have a single supervisor for a union because of confusion over the designation and roles of selection versus nonselection grade supervisors. Once the joint supervision idea was resolved it was possible to post workers to teams and to assign routine work.

Once field teams were posted, the quantity of care increased markedly: FWA's were able to move about in their wards for the first time with FWV support and were more effective than they had been working individually. FWV, in turn, were clear about their task assignment for the first time since PICA assigned them a fixed two month cycle of household visitation.

There are several problems with current policies, however. Copper T funds for incentive payments flow slowly. It seems that some system of payment and allocation is needed so that persons entitled to payments receive it as is now the case with tubectomy.

Incentive payments for methods such as the Copper T are associated with other practical problems. The method requires regular follow up and counselling or women will confuse health problems with the method, and continuation will be poor. But the incentive makes no provision for follow up. If an FWA successfully recruits many copper T users, she will receive payments until the prevalence rate levels off. Once the population has received copper T's there is no "incentive" for supporting clients overtime. Incentive may not have the desired effect of keeping the prevalence rate high.

PICA has decided that MCH services could be developed by further training of FWAs and FWV. PICA has found that "Crash Plan" training did not adequately address the issue of household visiting techniques, so that the quality of actual field work was poor even though the quantity of work was greatly improved. FWAs can easily do much more than they are doing and can be trained to do EPI. FWVs, in turn, have no priorities assigned to 27 health topics. Since they are required to report on their work, much time is taken to enumerate households and fill forms. PICA is developing a simple to use record book system for FWV's and a family planning record book for FWAs.

Training Programme: In May, 1983 the training programme will be launched. A series of short courses will be offered by an ICDDR,B trainer. Trainees will be compensated according to Government rules. The courses will cover the following issues:

1. Technical refresher training in family planning, control of diarrhoeal disease, and tetanus (EPI).
2. Household visitation methods with practical field demonstration of community interaction.
3. Supervisory system: Management information, problem solving, and goal setting.

In counterpart support areas training will be followed by field introduction of the programme. Trained Matlab Community Health Workers will be assigned to field teams to introduce them to the work regimen and technology. For each batch of trainees there will be two months of counterpart support.

#### Baseline Research Activities

Research in this project is of two types: 1) demographic research and prevalence surveys for assessing impact, 2) operation research for examining organizational issues: the efficacy of training, the quantity and quality of work, and the identification of operational barriers to implementation.

The ICDDR,B has developed a "Sample Registration System" which supports both operational and demographic research activities. In the field the system permits simple tabulation of birth and death rates for sample households. It is linked to the ICDDR,B's computer so that data can be analyzed rapidly. Linked to the sample household is data from a survey on socio-economic status and a survey on family planning and health behaviour.

The work was completed by the ICDDR,B staff in the following sequence:

1) Sample unions were selected, 2) the households in sample unions were listed, 3) households were sampled and enumerated, 4) the enumeration was computerized and printed, 5) printed household record books were then used in rounds of 90 days visit cycles in which vital events were recorded, and 6) the computer was used to update the household data continuously. Aspects of the system which do not involve the computer can be utilized by PICA for MOHPC workers. Plans are being formulated to add operations research and health services research components.

#### Recommendations

1. PICA recommends that FWC implementation procedures be modified to foster community participation and utilization of existing facilities. Construction should be targeted for unions where a community operated FWC is inadequate for the caseload. That is, construction should follow implementation. Rules should be designed to foster implementation and procedures for consignment of furniture and equipment should be revised to permit use of existing donated facilities. As an interim measure, NIC should request the DG to permit the DD to release funds for furniture. We could immediately have 8 functioning FWCs.
2. Compensation schemes can be dysfunctional if the system of work does not conform to the pay scheme introduced. Joint health and family planning teams are now assembled, but TA and DA are only for the family planning teams. At present the copper T payment fees cannot be paid at the time of services. Funds should lie with the TFPO in a PL account just as it is done with tubectomy.

As an interim measure the NIC should request the DG (Implementation) to make a special allotment of funds to the TFPO for the copper T to be used in the manner prescribed for tubectomies.

3. There is an order integrating teams by placing FWAs together with FWAs. There are more FWG/GHA than FWA. But FWAs are most important for MCH and FP services. PICA recommends consideration of increasing the number of FWA's to at least as many as required to field teams as specified under the rule. PICA has solved the problem of staff mix by assigning extra FWG/GHA to other duties. We will do a study to determine the maximum number of households that can be visited on a regular basis.
4. It is not clear how selection grade and non-selection grade designations relate to roles of FPA. This creates much confusion about how supervision is to be implemented. We recommend classification of the job descriptions of selection versus nonselection grade workers. Patterns of supervision must be clarified and the issues of selection versus nonselection grade supervisors must be resolved.
5. When major Government orders are issued that affect operations they should first be pilot tested and evaluated on a small scale. PICA can be utilized for pilot testing new policies.