# Improving the Bangladesh Health and Family Planning Programme

## Lessons Learned through Operations Research


**Editors**

**Barkat-e-Khuda**
**Thomas T. Kane**
**James F. Phillips**



CENTRE
FOR HEALTH AND
POPULATION RESEARCH


**MCH-FP Extension Project (Rural)**
**Health and Population Extension Division**
**Centre for Health and Population Research, ICDDR,B**

**April 1997**

**Copy Editing:** Kathryn E. Viguerie

**Layout and Desktop Publishing:** Md. Sakhawat Hossain

**Cover Design:** Asem Ansari

*ISBN 984-551-090-6*

**ICDDR,B Monograph No. 5**

© 1997 International Centre for Diarrhoeal Disease Research, Bangladesh

**Published by:**
**International Centre for Diarrhoeal Disease Research, Bangladesh**
GPO Box 128, Dhaka 1000, Bangladesh
Telephone: 880-2-871751-871760 (10 lines): Cable: CHOLERA DHAKA
Telex: 675612 ICDD BJ
Fax: 880-2-871568 and 880-2-883116

Secretary
Ministry of Health & Family Welfare
Govt. of the People's Republic of Bangladesh

## FOREWORD

The partnership between the Government of Bangladesh (GoB) and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) Maternal and Child Health and Family Planning (MCH-FP) Extension Project (Rural) has existed for over a decade and a half and is quite strong. The success of the ICDDR,B Matlab Health and Family Planning Project led the GoB, in 1982, to ask the MCH-FP Extension Project (Rural) to test the feasibility of transferring the successful elements of the Matlab project to the government programme. Since 1985, the MCH-FP Extension Project has expanded its collaboration and assistance to the GoB beyond the scope of Matlab and has been involved in many operations research activities and innovations that have been tested at Project field sites and then applied and integrated into the national programme. During the 1990s, the MCH-FP Extension Project (Rural) has concentrated its efforts on research activities designed to improve management, quality of care, and sustainability of the national programme.

The Project has tested a number of interventions, which have had important policy implications for the national programme. The purpose of this report is to provide a comprehensive document of the lessons learned from the various interventions tested and from the technical assistance provided to the GoB. Based on Project recommendation, the GoB recruited 10,000 additional fieldworkers, leading to a more favourable worker-client ratio. Additionally, the Project contributed to various components of the national health and family planning programme management information system (MIS), including the FWA and HA Registers, client screening checklists and monitoring tools for frontline supervisors. Also, the Project has helped local managers better organise logistics and management through the provision of drug and dietary supplement (DDS) kits to Satellite Clinics, transport fees for FWVs to attend Satellite Clinics and through the waiver of mandatory Monday Satellite Clinics. The success of the Project's injectable contraceptive intervention led to its national phased-in expansion. Similarly, the combined Satellite Clinic and Expanded Programme on Immunization (EPI) has also been implemented nationally. Favourable results of the emergency obstetric care (EOC) intervention have led the GoB to adopt a policy of replicating the intervention nationally.

These interventions have gone a long way toward improving the national health and family planning programme. Dramatic changes in contraceptive use, contraceptive continuation, fertility, and infant and child mortality occurred in the Project areas over the 1983 - 1996 period. Positive changes in key family planning variables and demographic parameters are linked to Project interventions. These interventions have had a significant impact on improving the management and quality of MCH-FP services, which have ultimately led to greater utilisation of services and more positive family planning and health outcomes in the Project areas and the nation as a whole.

The vision now for the Project and the GoB is to ensure better health for the whole family. The changing needs and priorities of families and the desire to ensure better health for all have prompted the Project to design a number of new interventions which include: providing a broader Essential Service Package of health and family planning services; strengthening maternal and neonatal health; promoting clinical contraceptives; encouraging male involvement in reproductive health; promoting the prevention and treatment of RTI and STDs, including HIV/AIDS; improving nutrition; and, reaching out to underserved groups mainly men and adolescents. In addition to these expansions, the Project continues to be involved in maximising existing resources and improving programme efficiency. The Project is involved in operations research which has identified ways to make this possible, through an alternative service delivery approach (known as "cluster visitation"), cost recovery, and networking among service providers.

The Project has also had a significant influence in shaping the mandate of the USAID-funded National Integrated Population and Health Program (NIPHP) and the Health and Population Sector Strategy (HPSS) for the GoB, for example, by: testing the Essential Service Package; testing alternative service delivery strategies to move from the doorstep to fixed sites; operationalising comprehensive EOC services at the thana level; and, increasing the emphasis on providing services in low-performing areas.

Over the past fifteen years, the ICDDR,B MCH-FP Extension Project (Rural) has contributed substantially to the success story that has emerged from the Bangladesh Health and Family Planning Programme. As new challenges face the national programme, the Project, working together with the GoB and the NGOs, will test, fine tune and help improve the management, quality and sustainability of the service delivery system during the critical years ahead.

I thank the ICDDR,B MCH-FP Extension Project (Rural) for taking on the formidable task of developing this monograph, and commend Professor Demissie Habte, Director, ICDDR,B, and Syed Shamim Ahsan, Division Director, Health and Population Extension Division, ICDDR,B for their leadership and guidance to the authors and editors who prepared this monograph. My special thanks are due to Professor Barkat-e-Khuda and his colleagues for a comprehensive documentation of lessons learned from the Extension Project and the application of the Extension Project research into the national programme.

Muhammed Ali

## ACKNOWLEDGEMENTS

The MCH-FP Extension Project (Rural) is a collaborative effort of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) and the Ministry of Health and Family Welfare (MOHFW) of the Government of the People's Republic of Bangladesh, supported by the Population Council. Its purpose is to improve the delivery of maternal and child health and family planning services through the MOHFW programme.

The study is funded by the United States Agency for International Development (USAID) under Grant No. 388-0071-A-00-3016-00 with the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B). ICDDR,B is supported by the aid agencies of the governments of Australia, Bangladesh, Belgium, Canada, Japan, the Netherlands, Norway, Saudi Arabia, Sri Lanka, Sweden, Switzerland, the United Kingdom, and the United States; international organisations, including the Arab Gulf Fund, Asian Development Bank, European Union, the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), and the World Health Organization (WHO); private foundations, including Aga Khan Foundation, Child Health Foundation (CHF), Ford Foundation, Population Council, Rockefeller Foundation, Thrasher Foundation and the George Mason Foundation; and private organisations, including East West Inc., Helen Keller International, International Atomic Energy Centre, Lederle Praxis, New England Medical Center, Procter & Gamble, RAND Corporation, Social Development Center of the Philippines, Swiss Red Cross, the Johns Hopkins University, the University of Alabama at Birmingham, UCB Sidac, Wander A.G., and others.

The editors gratefully acknowledge the valuable support and encouragement received from Professor Demissie Habte, Director, ICDDR,B and Syed Shamim Ahsan, Division Director, Health and Population Extension Division, ICDDR,B. The editors also note with appreciation the work of numerous individuals who have substantially contributed to the preparation of this report. GoB colleagues, both at the national level and in the field, as well as NGO and donor colleagues continually contributed their expertise. Project staff, both past and present, deserve special recognition for their tireless contributions to the preparation of this report. Special thanks is given to Md. Sakhawat Hossain for typing the entire report and preparing the numerous graphs and tables. Ann Levin and Bruce Caldwell provided invaluable assistance through their review of earlier drafts and Kathryn Viguerie is to be commended for her editorial assistance throughout the long process of preparing this report.

## TABLE OF CONTENTS

## Chapter 3. Developing Fixed Service Sites



## Chapter 4. Improving Management Support Services

## Chapter 5. Achieving Sustainability of Health and Family Planning Services



## Chapter 6. Demographic Change



## Chapter 7. Policy Impact of the Project

## TABLES

### Chapter 2



### Chapter 3



### Chapter 4



### Chapter 6

## Chapter 7

Page



## FIGURES

## Chapter 2



## Chapter 3



## Chapter 4

Chapter 6

Page



**PICTURES**

**(Between Pages 98 and 99)**

## ACRONYMS

| | |
|---|---|
| **AHI** | Assistant Health Inspector |
| **AIDS** | Acquired Immune Deficiency Syndrome |
| **ANC** | Antenatal Care |
| **ARI** | Acute Respiratory Infection |
| **AVSC** | AVSC International, Bangladesh |
| **BDHS** | Bangladesh Demographic and Health Survey |
| **CBD** | Community-based Distribution |
| **CHW** | Community Health Worker |
| **CMR** | Child Mortality Rate |
| **CPR** | Contraceptive Prevalence Rate |
| **CS** | Cluster Spot |
| **DA** | District Approach |
| **DDS** | Drug and Dietary Supplement |
| **DMPA** | Depo Medroxy Progesterone Acetate |
| **EOC** | Emergency Obstetric Care |
| **EPI** | Expanded Programme on Immunization |
| **ESP** | Essential Service Package |
| **FGD** | Focus Group Discussion |
| **FPI** | Family Planning Inspector |
| **FWA** | Family Welfare Assistant |
| **FWV** | Family Welfare Visitor |
| **GoB** | Government of Bangladesh |
| **HA** | Health Assistant |
| **HAPP-V** | Health and Population Program fifth five-year plan |
| **H&FWC** | Health and Family Welfare Centre |
| **HI** | Health Inspector |
| **HIV** | Human Immuno-Deficiency Virus |
| **HPSS** | Health and Population Sector Strategy |
| **ICDDR,B** | International Centre for Diarrhoeal Disease Research, Bangladesh |
| **ICPD** | International Conference on Population and Development |
| **IEC** | Information, Education, Communication |
| **IMR** | Infant Mortality Rate |
| **IUD** | Intra Uterine Device |

## Acronyms continued . . .

| | |
|---|---|
| **JSI** | John Snow International |
| **LFPV** | Lady Family Planning Visitor |
| **MCH-FP** | Maternal and Child Health and Family Planning |
| **MIS** | Management Information System |
| **MO** | Medical Officer |
| **MOHFW** | Ministry of Health and Family Welfare |
| **MWRA** | Married Women of Reproductive Age |
| **NET-N** | Norethendrone Enantate |
| **NGO** | Non-governmental Organization |
| **NID** | National Immunization Day |
| **NIPHP** | National Integrated Population and Health Program |
| **OR** | Operations Research |
| **ORS** | Oral Rehydration Saline |
| **PIC** | Project Implementation Committee |
| **RAP** | Rapid Assessment Procedure |
| **RKB** | Record-Keeping Book |
| **RTI** | Reproductive Tract Infection |
| **SC** | Satellite Clinic |
| **SFWV** | Senior Family Welfare Visitor |
| **SHA** | Senior Health Assistant |
| **SRS** | Sample Registration System |
| **STD** | Sexually Transmitted Disease |
| **TBA** | Traditional Birth Attendant |
| **TFR** | Total Fertility Rate |
| **TFPO** | Thana Family Planning Officer |
| **THC** | Thana Health Complex |
| **THFPO** | Thana Health and Family Planning Officer |
| **TMFR** | Total Marital Fertility Rate |
| **TOT** | Training of Trainers |
| **USAID** | United States Agency for International Development |
| **WHO** | World Health Organization |

# EXECUTIVE SUMMARY

## Introduction

Bangladesh has made remarkable strides towards improving the health and well being of its people. Despite pervasive poverty and an absence of the conditions believed to be necessary for reproductive change, Bangladesh has achieved considerable fertility decline and improvements in some health indicators. Convenient, low cost, and effective services are available throughout the country as part of a sizable health and family planning infrastructure that has been developed over the past two and a half decades. The ability to plan and implement a comprehensive system of services has been enhanced by the operations research activities of the Maternal and Child Health and Family Planning (MCH-FP) Extension Project (Rural) - the "Project". This Project, which was created in 1982, is the largest collaborative effort of the Ministry of Health and Family Welfare (MOHFW) of the Government of Bangladesh (GoB) and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), with financial assistance from the United States Agency for International Development (USAID) and technical support from the Population Council.

ICDDR,B has been actively involved in strengthening the national health and family planning programme since it began its Mother, Child Health and Family Planning work in Matlab in 1977.The Project was originally conceived as a means to transfer the successful elements of work at Matlab to the GoB's family planning and MCH programme in rural Bangladesh. Since 1985, however, the Project has expanded its collaboration and assistance to the GoB beyond the application of the Matlab experience. Since this time, many small-scale and special purpose operations research activities and innovations have been tested for the Government at Project sites, and then applied and integrated into the national programme. During the 1990s, the Project has concentrated its efforts on research and intervention activities designed to improve the **management, quality of care,** and **sustainability** of the national programme.

The main purpose of the Project is to improve the efficiency and effectiveness of service delivery by undertaking **applied research, dissemination** and **technical assistance**. The Project does not act as a direct service provider. It has aimed to provide collaborative support to the GoB in determining areas of critical need in the service delivery system, develop and test innovative solutions, and evaluate the impact of these efforts for possible replication in the national programme using existing resources.

The Project has successfully tested a number of interventions which have had an important policy impact on the national programme. The purpose of this report is to provide a comprehensive document of the lessons learned from the various interventions tested and from the technical assistance provided to the GoB. The report documents the successes and difficulties encountered in implementing the Project interventions, in providing technical assistance to and collaborating with the MOHFW on these activities, and in assisting the MOHFW to bring about needed policy and programmatic changes.

At the initial stage of the programme, there was a great need to create awareness about the need for family planning. Therefore, the Project sought to assist the national programme in its efforts to provide family planning services at the doorstep as a means of improving contraceptive prevalence. Later, as the need for more cost-effective and sustainable services and a broader reproductive health agenda became apparent, innovative solutions were sought

to move delivery away from the doorstep to more static centres. Chapter 2 documents some of the lessons learned developing services provided by fieldworkers at the doorstep, and Chapter 3 looks at lessons learned from operations research on fixed service sites. Throughout this report, the themes of management improvement and quality of care are emphasised. Chapter 4 provides an overview of the many management improvement issues the Project has addressed for the national programme, while issues of sustainability are addressed in Chapter 5. For each operational issue the Project addressed, Chapters 2, 3, 4 and 5 present a statement of the problem; a description of the intervention; the main findings; and lessons learned.

Additionally, an account of some of the significant demographic changes associated with Project interventions is provided in Chapter 6, while the policy and programmatic impact the Project has had on the national programme; with special emphasis on policy changes that have occurred over the last five years, is provided in Chapter 7. The concluding Chapter (Chapter 8) outlines the Project's visions for the future.

**Systems Approach**

To the extent possible, the Project's operations research interventions followed the systems approach to address operational issues and problems of various aspects of the health and family planning programme's subsystems (e.g., service delivery, management issues such as monitoring, MIS, supervision, and training, and IEC, logistics and supply problems) at the different tiers of the service delivery system (i.e., from the fieldworkers at the doorstep, to cluster spots, Satellite Clinics, H&FWCs, Thana Health Complexes (THCs), and referrals up to the district hospitals). The focus of the research has been on improving the coverage, quality, and sustainability of the various sub-systems at the different tiers of service delivery.

For example, interventions have been designed and tested to improve the quality, coverage, and sustainability of fieldworker and community-based services (see Chapter 2), and fixed-site services at the community level (Satellite Clinics), at the union level (H&FWCs), and at the thana level (THCs) (see Chapter 3).

The systems approach has also been used to test interventions designed to improve the quality and coverage of ANC and EOC services, by establishing referrals and linkages from fieldworkers up through the H&FWCs, THCs and District Hospitals, and by developing the skills of health workers and the infrastructure for enhanced ANC and EOC capacity at all the appropriate levels of health services (see Chapter 3).

The Project has made special efforts to test ways to improve the management of the service delivery system at all levels (e.g., through the use of FWA and HA Registers by fieldworkers, the use of FPI and AHI Diaries by supervisors, and the practice of local level planning by fieldworkers and health workers at fixed-site facilities at the union and thana levels) (see Chapter 4).

**Developing Quality Doorstep Services**

A consistent and unequivocable finding from Project research is the relationship between home-based service encounters and client contraceptive use. Project findings have demonstrated that if the number of workers proportionate to the population is increased, worker-client contact increases and the contraceptive prevalence rate (CPR) increases in turn.

The Project's research has also found that the quality of FWA care significantly and positively effects current use of modern contraceptives, and among non-users, their intention to use modern contraceptives in the future. Over the past fifteen years, improved contraceptive prevalence, particularly the use of modern methods, can be largely attributed to the successful delivery of services by fieldworkers at the doorstep. The Project has played a crucial role in expanding doorstep services and ensuring the proper management and quality of those services. Specifically, to enhance and improve the doorstep delivery system, the Project experimented with an intervention to increase the number of fieldworkers, which was later adopted by the GoB and the NGOs; and provided technical support to improve the system for recruiting the GoB fieldworkers.

With particular emphasis on providing quality services, in terms of method choice, information given to clients, technical competence of providers, mechanisms to encourage continuity and appropriate constellation of services, the Project designed and implemented an intervention to test the feasibility of allowing the Family Welfare Assistants (FWA) deliver injectable contraceptives at the doorstep. The Project found that the use of injectable contraceptives can be greatly increased through the provision of the method by FWAs, if the quality of care is maintained and proper counselling is provided. Increasing method choice in this way can increase the CPR.

To additionally strengthen the services that are provided at the doorstep, the Project began an intervention in June 1990 to improve the antenatal care provided by the FWAs. As part of this intervention, the Project sought to test the feasibility of having the FWAs use a checklist to identify high risk mothers. Because it was ultimately determined that the FWAs could not effectively screen pregnant women, it was decided that it would be better for them to provide a pictorial card which would educate women about the danger signs of pregnancy so that they could seek appropriate care if needed. An additional element of the antenatal care initiative was an intervention to inform moderately and severely anaemic pregnant women about the rationale for, and the implementation of, a system of iron supplement distribution.

The Project can point to many successes in the area of doorstep delivery. The maturity of the programme as well as the growing need for cost-effective and sustainable services, however, call for a shift in emphasis away from doorstep delivery to fixed service sites. The Project is well positioned to make this transition, as it has invested a great deal in developing and improving services at fixed sites.

**Improving Utilisation and Quality of Fixed Service Sites**

Over the past three decades, the MOHFW has built an enormous infrastructure of fixed service facilities, which deliver services throughout the country. These include the Satellite Clinic (SCs), the Health and Family Welfare Centre (H&FWC), and the Thana Health Complex (THC). These sites, however, have been grossly underutilised and the quality of care provided has varied greatly from site to site, in terms of treatment of clients, the technical skills of those providing services and the equipment used. In an effort to improve the utilisation and quality of fixed service sites, the Project undertook a number of operations research interventions. These interventions have been crucial for the long term sustainability of the national health and family planning programme.

Less mobile women in the community need more convenient services than were traditionally provided at union-based H&FWC. Therefore, the Project tested the operational requirements

of establishing convenient Satellite Clinic services at outreach locations staffed by H&FWC paramedics. At the THC level, the Project began an intervention to upgrade the obstetric services at the thana level in an effort to address high maternal mortality and morbidity in Bangladesh. The quality and range of services were substantially improved, so that most of the complicated cases could be managed at the THC. Additionally, to improve services provided at the THC and the H&FWC, the Project was involved in improving certain basic clinical procedures. Specifically, the Project tested the utility of a new IUD sterliser, investigated procedures for safe disposal of clinical waste, and experimented with varying the hours of clinic operation.

**Improving Management Support Services**

Efficient and effective management is essential to the national health and family planning programme, which has a large work force, a sizable physical infrastructure, large logistics and supply systems, and a substantial management information system. One of the key roles of the Project has been to identify and address some of the critical management issues of the national programme. The Project has been involved in improving record-keeping, developing operations research for management information systems (MIS), providing better management and supervision, building training capacity, and addressing issues related to the management of logistics and supplies.

The Project has had many successes in the area of management support. Because health and family planning workers and managers at the local level lacked problem-solving skills to improve programme performance, the Project worked to improve planning mechanisms at the local level and develop review and problem solving processes at the union and thana level. The Project also introduced a series of supervisory checklists for Senior Family Welfare Visitors (SFWV) to improve supervision of the FWVs. Additionally, the Project was involved in the development of the GoB MIS for fieldworkers through its work on the FWA Register and HA Register.

As training is crucial to operationalising any intervention, the Project worked to plan and implement various intervention-specific training sessions as well as orientation sessions for the Project and the GoB staff. Counterpart support was also adopted as a mechanism to train workers and paramedics in the Project sites about the interventions to be tested. In addition, the Project addressed a number of issues to improve the logistics and supply system of the GoB, particularly the supply and transport of drugs and other equipment.

To address managerial weaknesses that may be associated with low contraceptive prevalence, the District Approach, designed by the Project, helps managers assess the factors that influence accessibility to, and utilisation of, services and help them develop a plan of action to scale-up programme improvement. These interventions have served to strengthen the management of the national programme, and many have been adopted at the national level.

**Achieving Sustainability of Health and Family Planning Services**

With the maturing of the national program, the rapid increase in the population of Bangladesh, the growing demand for family planning and other health services, and diminishing prospects for sustained international donor support, the need for more cost-effective and sustainable service delivery has become a necessity for the national health and family planning programme. Since the early 1990s, the Project has designed and began

testing a number of innovative alternative service delivery strategies and cost recovery approaches to help make the national programme more sustainable in the years ahead.

Preliminary results of the various sustainability interventions are encouraging, suggesting that interventions designed to increase the utilisation of fixed-site service centres, the use of cluster spots, and to provide combined health and family planning services from one spot provide cost-effective alternatives to the existing community-based delivery of family planning and MCH services, without adversely affecting the CPR. Furthermore, people have been found to be generally willing to pay for health and family planning services, and the introduction of pricing schemes and a formal system for charging fees for services have proven to be, by and large, acceptable and feasible. The current sustainability interventions being tested by the Project will be continued into the NIPHP. The NIPHP and the HAPP-V Projects are relying on the final results of these Project interventions to shape the service strategies and other efforts to sustain the national health and family planning programme in the future.

Nevertheless, it is appropriate to ensure that a safety net of free services for the poor is provided as part of any cost recovery system that is established.

**Demographic Change in Project Areas**

Beginning in 1983, the Project tested a number of interventions at Abhoynagar and Sirajganj to enhance the accessibility and utilisation of MCH-FP services provided by the MOHFW. The interventions were fielded in an incremental fashion, and concentrated on the improvement of programme management and the quality of services. The purpose of these interventions was to enhance the use of MCH-FP services that lead to fertility reduction and improvement in maternal and child health.

Dramatic changes in contraceptive use, contraceptive continuation, fertility, and infant and child mortality occurred in Project areas over the 1983-1996 period. Positive changes in key family planning variables and demographic parameters are linked to Project interventions. For example, discontinuation rates for injectables declined by over one-third in the Project areas during the 1984-1994 period. It is clear that the Project interventions have had a significant impact on improving the management and quality of MCH-FP services in the Project intervention areas, which have ultimately led to greater utilisation of services and more positive family planning and health outcomes. Additionally, and importantly, the demographic impact has been quite appreciable at the national level, with the replication of many of the successful Project interventions now part of the national programme.

**Major Programmatic and Policy Changes**

The Project has developed and tested many innovative interventions and approaches in its field sites, a number of which have greatly influenced the policy decisions of the MOHFW. Based on Project recommendations, the Government recruited 10,000 additional fieldworkers, leading to a more favourable worker-client ratio. The Project has contributed to various components of the MIS of the national health and family planing programme, including the FWA and HA Registers, client screening checklists, and monitoring tools for frontline supervisors, such as the FPI Diary and AHI Diary. It also helped local managers better organise logistics and management through the provision of drug and dietary supplement (DDS) kits, transport fees for FWVs to go to Satellite Clinics and through the waiver of

mandatory Monday Satellite Clinic. The success of the Project's injectable contraceptive intervention led to its phased-in expansion nationwide. Similarly, the combined Satellite Clinic and EPI intervention has also been implemented nationwide. Favourable results of the EOC intervention have led to the Government's decision to introduce it soon in five other sub-districts and to adopt a plan to scale up the intervention nationwide. The third generation FWA Register was also developed with technical assistance from the Project, as was the pictorial card for maternity referrals.

In addition to the many policy impacts of Project operations research on the MOHFW, the Project has also influenced the programme activities of many NGOs, which have adopted several service strategies that were first tested by the Project (e.g., the use of cluster spots and FWA-administered injectables at the doorstep).

The Project has also had a significant influence shaping the mandate of the USAID-funded National Integrated Population and Health Program (NIPHP) and the Health and Population Sector Strategy (HPSS) for the GoB, for example, by: testing the Essential Service Package; testing alternative service delivery strategies to move from the doorstep to fixed sites; operationalising comprehensive EOC services at the thana level; and, increasing the emphasis on providing services in low performing areas.

### Visions for the Future

The sociodemographic situation in Bangladesh is changing rapidly. Fertility has declined by half in less than a generation; child survival has improved, causing significant increases in life expectancy; and contraceptive prevalence has increased from about 7 percent in 1975 to over 49 percent in 1996-97. Health needs and preferences at the grassroots level have also changed. The intense family planning drive over the years has greatly improved the awareness level of the population with regard to contraceptives. However, other reproductive health problems and new dangers posed by emerging high-risk diseases, environmental degradation and changing lifestyles in an impoverished country, are creating health needs that also require urgent attention. At the same time, greater social mobility of women through education improvements and employment opportunities outside the home, have raised the prospects for improving the health of the whole family.

In response to the International Conference on Population and Development (ICPD), health and population policy and priorities have undergone major changes everywhere. In Bangladesh, the national health and family planning programme will not only have to sustain the successes it has already achieved but also improve and strengthen these advances and meet the new demands mentioned above. Accordingly, the national programme has taken steps to meet the changing needs and priorities of the country. In response, the Center, in its Strategic Plan for the Year 2000, has committed itself to women's reproductive health, safe motherhood, child survival, and the prevention of sexually transmitted diseases.

Over the next seven years, the Project will be working closely with the GoB, NGOs and the private sector, conducting operations research that is essential for ensuring the success of HPSS, NIPHP and HAPP-V.

The vision now for the Project and the national programme is to ensure better health for the whole family. The changing needs and priorities of families and the desire to ensure better health for all have prompted the Project to design a number of new interventions which

include: providing a broader Essential Service Package of health and family planning services; strengthening maternal and neonatal health; promotion of clinical contraceptives; encouraging male involvement in reproductive health; promoting the prevention and treatment of RTI and STDs, including HIV/AIDS; improving nutrition; and, reaching out to underserved groups, mainly men and adolescents. In addition to these expansions, the Project is still committed to maximising existing resources and improving programme efficiency. The Project is involved in operations research which has identified ways to make this possible, through an alternative service delivery approach (known as "cluster visitation"), cost recovery, and networking among service providers.

**Conclusions**

Over the past fifteen years, the ICDDR,B MCH-FP Extension Project (Rural) has contributed substantially to the success story that has emerged from the Bangladesh Health and Family Planning Programme. As new challenges face the national programme, the Project, working together with the GoB and the NGOs, will continue to test, fine tune and help improve management, quality and sustainability in the service delivery system in the critical years ahead.

# CHAPTER 1

# INTRODUCTION

Barkat-e-Khuda
Thomas T. Kane
James F. Phillips
Kathryn E. Viguerie

## 1.1 Background

In its short history as a nation, Bangladesh has made remarkable strides toward improving the health and well being of its people. Despite pervasive poverty and underdevelopment and an absence of the conditions believed to be necessary for reproductive change, Bangladesh has achieved considerable fertility decline. Also, there has been improvements in several health indicators, including infant and child mortality, and life expectancy. In the brief period of two decades, total fertility in Bangladesh has declined by half; from over 6 births per woman in 1975 to around 3.3 in 1996. Convenient, low cost, and effective family planning services blanket the country, while information, education, and communication (IEC) have reached nearly every household. The ability to plan and implement this system of services has been enhanced by the operations research activities of the Maternal Child Health and Family Planning (MCH-FP) Extension Project (Rural) - the "Project". The Project, which began in 1982, is the largest collaborative effort of the Ministry of Health and Family Welfare (MOHFW), the Government of Bangladesh (GoB) and the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), with financial assistance from United States Agency for International Development (USAID) and technical support from The Population Council.

In many developing countries, large scale government programmes have often not been able to adequately meet the health care and family planning needs of a large percentage of the population, particularly in rural areas. In contrast, there is evidence that smaller scale projects, which link research findings with improved service delivery, can have dramatic results because they are able to more easily adapt services to the local environment. The Project was originally set up within this context as means to transfer the successful interventions of the Matlab Health and Family Planning Project to the GoB's MOHFW FP-MCH programme in rural areas.

Since 1985, however, the Extension Project has expanded its collaboration and assistance to the GoB beyond the application of the Matlab experience to the government programme. Since the mid-1980s, many small-scale and special purpose operations research activities have been tested for the government at the Extension Project sites, and then, effectively applied and integrated into the national programme. During the 1990s, the Project has concentrated its efforts on research and intervention activities designed to improve the **management, quality of care**, and **sustainability** of the national family planning and MCH programme. The MCH-FP Extension Project (Rural) has met the significant challenge for researchers and government officials in transferring the success of small scale projects to the national programme.

The MCH-FP Extension Project (Rural) has tested and fine-tuned innovative and cost-effective interventions to improve the various sub-systems of the GoB health and family planning programme, especially in the areas of service delivery (both modes of delivery and quality of care), training, management (including MIS record-keeping and reporting, monitoring and supervision, and logistics and supplies), and IEC. Although research is generated by the Project, all service activities, programme management and supervision, and utilisation activities are the responsibility of the MOHFW. This arrangement ensures that agencies responsible for using research results are fully involved in planning research, interpreting results, and controlling service operations, and that project outcomes are vested in the policy community. The collaborative nature of the Project ensures that successful interventions become part of national health policy and are effectively implemented on a national scale.

The primary goal of the Project has been to transfer innovations that have been successfully tested in the field operations setting of the MOHFW service delivery system, using available resources. The function of the Project has never been to provide direct health or family planning services. Rather, the aim has been to provide collaborative support to the GoB in determining areas of critical need in the service delivery system, to develop and test innovative solutions, and to evaluate the impact of these efforts for possible replication in the national programme. This approach is potentially relevant to other settings where government commitment to action in the population field is strong, where demand for services is great, but where organisational capacities of large scale bureaucracies are constrained by bureaucratic traditions, resource constraints, and other problems. This report summarises lessons learned from 15 years of the Project operations research and the impact of these lessons on the national programme.

## 1.2 Evolution of the Project

During the 1970s and early 1980s, the national programme was concentrating mostly on expanding needed services, improving the health infrastructure, including building new facilities (Health and Family Welfare Centres -H&FWCs) and deploying personnel, including Family Welfare Visitors (FWVs), Medical Assistants (MAs), and Family Welfare Assistants (FWAs), and their supervisors, Family Planning Inspectors (FPIs). During this time, the integrated MCH and Family Planning Programme administered by the ICDDR,B in Matlab was able to achieve a much higher contraceptive prevalence rate (CPR) than the national programme. Other than worker to population ratio, Matlab was nearly identical to the government programme. Services were delivered by Community Health Workers (CHWs), who were carefully supervised and supported. However, the resource concentration and closely monitored environment of Matlab were thought to be barriers to its replication in the government system. Nonetheless, the success of Matlab provided the best evidence in Bangladesh of the potential impact of family planning and was the impetus for the concept of transferring the success of certain innovations to the national programme.

In 1982, when ICDDR,B's MCH-FP Extension Project began, contraceptive prevalence in Bangladesh was still quite low. In 1983, overall prevalence was 19 percent and 14 percent for modern methods (Mitra and Kamal, 1995). In the early years of the Project, efforts were concentrated on increasing the number of family planning fieldworkers and rationalising the

fieldworker/population ratio, and on improving fieldworker performance through the transfer and/or adaptation of the successful experiences of Matlab to other parts of the country. Contraceptive prevalence rose more dramatically in the 1980s and early 1990s in the Project intervention areas than in the comparison areas or for the country as a whole. As the needs and priorities of the programme changed, more effort was provided by the Project to improve the monitoring and supervision of fieldworkers. In the early 1990s, there was concern in the national programme about high contraceptive discontinuation. At the same time, the international family planning community gave increasing emphasis to quality of care and a broader reproductive health agenda (resulting from the International Conference on Population and Development (ICPD) in Cairo and other efforts). As a result of these concerns and initiatives, the Project began focussing more on interventions designed to improve the quality of care and to improve services that included more MCH and reproductive health components, rather than focussing only on improving family planning coverage.

Bangladesh evolved rapidly from a country with a low contraceptive prevalence rate (7 percent in 1975) to one in which nearly half of all married couples are contracepting (49 percent in 1996-1997). Demand for contraceptives and other health services has continued to increase at an extremely rapid pace. This fact, coupled with concerns about programme sustainability in an environment of increasing constraints in the international donor community in providing support for national health and family planning programmes, resulted in efforts on the part of the national programme and the Project to explore ways to ensure the long-term sustainability and greater self-sufficiency of the national programme. Since 1994, the Project has been developing a number of sustainability interventions, including providing an integrated essential service delivery package, finding ways to increase worker productivity, increasing utilisation of static clinics, and introducing pricing and cost-recovery schemes. Many of these interventions are now being tested by the Project. The results of these ongoing interventions are critical to the long-term success of the national health and family planning programme of Bangladesh.

The MCH-FP Extension Project (Rural) has long been much more than a testing ground for transferring successful Matlab interventions to the national programme. Today, the MCH-FP Extension Project (Rural): (1) conducts critical operations research to test new and innovative interventions for the national programme; (2) provides continuous technical assistance to the MOHFW on management, training, service delivery, quality of care, and sustainability issues facing the national programme; (3) disseminates relevant research findings, and provides feedback to the GoB, donors and the NGOs through participation in national steering committees and task forces; and (4) works with the MOHFW to shape policies related to the management and service delivery of the national health and family planning programme.

## 1.3 Objectives of the Project

The main purpose of the Project is to improve the efficiency and effectiveness of service delivery in the national health and family planning programme by undertaking applied research, dissemination and technical assistance.

To achieve the Project goals and objectives, the Project staff use the operations research approach to: (1) identify operational and socio-cultural barriers to effective delivery of services; (2) test the feasibility of proposed solutions; (3) evaluate interventions, in terms of process and impact; (4) provide technical assistance to the MOHFW in the implementation of successful service delivery intervention strategies on a wider basis throughout the government system ("scaling up"); (5) promote sustainability of the national programme; (6) seek to improve the quality of family planning and health services and Essential Obstetrical Care (EOC); (7) improve the management of the Government's MCH-FP programme; and (8) conduct demographic and epidemiologic research, using the Sample Registration System (SRS), special surveys and in-depth studies at project sites.

Operations research, technical assistance, and dissemination activities have been carried out in four government field sites in an intensive way: Abhoynagar Thana in Jessore District (1982 to present), Sirajganj Sadar Thana in Sirajganj District (1982 to 1994), Mirsarai Thana in Chittagong District (1994 to present), Patiya Thana in Chittagong District (1996 to present) as well as in a less intensive way in eleven other rural thanas of Chittagong District. The programme site at Sirajganj was phased out in 1994, although the Project continues to monitor the sustainability of some of the previously implemented project interventions in the area. Mirsarai Thana was selected as a new site, because it was a low-performing thana in Chittagong Division, the lowest performing division in the country. Problems are identified and new interventions are developed, operationalised and monitored within the government system. Successful interventions are, then, replicated nationally.

## 1.4 Operations Research Design used in the MCH-FP Extension Project

The MCH-FP Extension Project (Rural) is an operations research project. The operations research process involves the following steps: (i) problem identification and diagnosis; (ii) development of solutions (strategies or intervention); (iii) testing and evaluation of proposed solutions; (iv) information dissemination to influence policy decisions on programme operations and performance; and (v) utilisation of the results for national or programme-wide implementation.

The MCH-FP Project (Rural) uses quasi-experimental operations research design as the basic approach for testing and evaluating the impact of various project interventions in the Project areas.

The basic design structure has been a non-equivalent comparison group design for each of the extension sites, where observations are made of key indicators in both the intervention area and the selected comparison area before, during, and after the intervention, using both pre- and post-intervention surveys and the longitudinal Sample Registration System (SRS - a bi-monthly surveillance of a sample of households in which demographic, programmatic and intervention-specific information is collected in Project areas) as the means of data collection. In this design, the comparison areas should be similar to the intervention areas, but not necessarily equivalent. Comparison areas are selected on the basis of their having sufficient similarity to the intervention areas in terms of demographic and socioeconomic characteristics, and preferably with no significant other interventions or treatments underway

in those areas[1]. However, the Project also uses other data collection methods, including situation analyses, rapid assessments, special surveys and qualitative approaches in some of its operations research activities.

## 1.5 Systems Approach

To the extent possible, the Project's operations research interventions followed the systems approach to address operational issues and problems of various aspects of the health and family planning programme's subsystems (e.g., service delivery, management issues such as monitoring, MIS, supervision, and training, and IEC, logistics and supply problems) at the different tiers of the service system (i.e., from the fieldworkers at the doorstep, to cluster spots, Satellite Clinics, H&FWCs, Thana Health Complexes (THCs), and referrals up to the district hospitals). The focus of the research has been on improving the coverage, quality, and sustainability of the various sub-systems at the different tiers of service delivery.

For example, interventions have been designed and tested to improve the quality, coverage, and sustainability of fieldworker and community-based services (see Chapter 2), and fixed-site services at the community level (Satellite Clinics), at the union level (H&FWCs), and at the thana level (THCs) (see Chapter 3).

The systems approach has also been used to test interventions designed to improve the quality and coverage of ANC and EOC services, by establishing referrals and linkages from fieldworkers up through the H&FWCs, THCs and District Hospitals, and by developing the skills of health workers and the infrastructure for enhanced ANC and EOC capacity at all the appropriate levels of health services (See Chapter 3).

The Project has made special efforts to test ways to improve the management of the service system at all levels (e.g., through the use of FWA and HA Registers by fieldworkers, the use of FPI and AHI Diaries by supervisors, and the practice of local level planning by fieldworkers and health workers at fixed-site facilities at the union and thana levels) (See Chapter 4).

## 1.6 Objective of This Report

The purpose of this report is to provide a comprehensive document of the lessons learned from the various Project interventions tested and from the technical assistance provided to the Government of Bangladesh's MOHFW by the MCH-FP Extension Project (Rural) during the 1982-1996 period. The report documents the successes and difficulties encountered in implementing the MCH-FP Project interventions, in providing technical assistance to and

[1]Although the comparison areas selected at Abhoynagar and Sirajgonj were initially similar to the intervention areas, NGOs began operating intensively in the comparison areas, but not in the MCH-FP Extension Project's intervention areas. Thus, some of the comparison areas became inappropriate as the "non-experimental" areas in the operations research design framework of the Project. As a result, the Project evolved to become more of a collaborative research arm of the GoB, conducting applied programmatic research on a range of issues. Consequently, the systems development research of the Project took a more prominent role in the Project than the quasi-experimental operations research design.

collaborating with the MOHFW on these activities, and in assisting the MOHFW to bring about needed policy and programmatic changes in three major areas: management, quality of care, and sustainability.

## 1.7 Report Methodology

In preparing this report, the Project has used a variety of data sources, including the SRS, a series of in-depth surveys, government service statistics, rapid assessment procedures, discussions with Project staff and GoB counterparts as well as other qualitative data collection methods to monitor the success of Project interventions in improving programme performance and in affecting positive changes in health and demographic behavior. To the extent possible, quantitative and qualitative data are used to document intervention results and lessons learned. References are made to working papers, project documentation notes, intervention updates, and published work from the Project, so that the reader may pursue certain topics in greater depth. Although many of the excluded research papers have enormous importance to understanding demographic and health processes and behavior in rural Bangladesh, they were not included here because they were not directly linked to Project interventions being tested for the government programme. For the period up to 1993, readers are also referred to other references regarding lessons learned from the Extension Project and the contributions of the Project to the national family planning and health programme in Bangladesh (Haaga and Maru, 1996; Haaga, 1993; Koenig and Whittaker 1991; and Phillips, et al., 1985).

## 1.8 Limitations to the Report

It should be noted that, by necessity, there are a few limitations to this report. Some of the interventions spanned a period of several years. Turnover in both international and national staff working on the Project over the Project life meant that few senior research staff had the continuity of service to provide first-hand and comprehensive information on the history, process, shortcomings, and lessons learned from various interventions (e.g, increasing worker-client ratio; the FWA Register). Reliance on published articles, working papers and documentation notes helped, but many of the useful details on the actual problems encountered and lessons learned were not reported in these documents and were difficult to recall from memory by the staff involved.

Additionally, many of the most important Project interventions relevant to the current and future national family planning and health programme are now being tested in the field and only preliminary results on current progress are reported here (e.g., The Essential Service Package, pricing, networking, comprehensive EOC, referrals and linkages from the community to higher levels, and the District Approach/scaling-up). Final evaluation results are expected before completion of the lessons learned report for the following interventions: Cluster Visitation, combined Satellite Clinic with EPI spots, and performance planning and monitoring at the local level.

Involvement of the government policy makers, managers, and health care providers in the design and implementation of the Project interventions was inconsistent over the life of the

Project, which may have sometimes led to government officials feeling less ownership of the interventions, and therefore, less likely to include successful project results into national policy and programmatic changes. However, during the past three years (1994-1996), regular meetings of the national steering committee, special project task forces and working groups, and joint field trips to project sites by ICDDR,B project staff and senior government policy makers, managers, and health providers appear to have had a very positive impact on the motivation of project staff and government workers and has increased the government's involvement in the design, implementation, and replication of the Project interventions in the national programme.

## 1.9 Organisation of the Report

This report has been structured so that three themes are referred to throughout: management, quality of care and sustainability. Chapter 2 documents the lessons learned developing services provided by fieldworkers at the doorstep. Chapter 3 looks at the lessons learned from OR interventions at fixed service sites. Both chapters emphasise the importance quality of care has played in Project activities. Chapter 4 provides an overview of the many management issues the Project has addressed for the national programme. Chapter 5 describes the Project's operations research efforts to improve the sustainability of health and family planning services in the national programme, primarily through the design and testing of cost recovery strategies and cost-effective alternative service delivery approaches.

In Chapters 2, 3, 4 and 5, the format for each intervention discussed is as follows: (1) Statement of the Problem: identification of the programmatic problem or issue the Project addressed through operations research; (2) Intervention: the intervention or solution that was tested by the Project operations research; (3) Findings: the main findings or results of the intervention research; and (4) Lessons Learned: the major lessons learned (somewhat similar to conclusions and recommendations) from doing the Project intervention and from the findings of the research.

A brief account of some of the significant demographic changes associated with Project interventions is provided in Chapter 6. When possible, these changes in the intervention areas are compared to the comparison areas and to the country as a whole.

The policy impact the Project has had on the national programme is documented in Chapter 7. Special emphasis has been given to policy changes that have occurred over the past five years (1991-1996). The concluding chapter (Chapter 8) outlines visions for the future of the Project as new interventions are tested and the Project moves into the next seven-year phase, the National Integrated Population and Health Program (NIPHP).

References are provided at the end of each chapter for that particular chapter. A comprehensive list of publications and reports has been included in Appendix 1.

## 1.10 Conclusions

The Project has successfully tested a number of interventions, which have had important policy impact in the national programme. It is hoped that this report will be useful to the

policy makers and programme managers of the MOHFW, to donors and NGOs, and to operations researchers in other countries, who may recognise the need for such extension research activities to complement and support their national health and population programme.

## References

Haaga JG. 1993. "The MCH-FP Extension Project: Lessons Learned and Plans for the Future." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 96-unpublished).

Haaga J, Maru RM. 1996. "The Effect of Operations Research on Program Changes in Bangladesh." *Studies in Family Planning*, Vol. 27, No. 2: 76-87 (March/April).

Koenig MA, Whittaker M. 1991. "Increasing the Application of Operations Research Findings in Public Sector Family Planning Programs: Lessons from the ICDDR,B Extension Project." In Operations Research: Helping Family Planning Programs Work Better, Wiley-Liss, Inc., pp 451-460.

Mitra SN, Kamal GM. 1983. Bangladesh Contraceptive Prevalence Survey, 1981: A Final Report Submitted to the Ministry of Health and Population Control. Dhaka: Mitra and Associates.

Mitra SN, Ali MN, Islam S, Cross AR, Saha T. 1994. "Bangladesh Demographic and Health Survey: 1993-1994." NIPORT and Mitra and Associates, Dhaka and Macro International Inc., Calverton, MD, U.S.A.

Phillips JF, Simmons R, Koblinsky MA. 1985. "Bureaucratic Transition: A Paradigm for Policy Development in Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 10 - unpublished).

# CHAPTER 2

# DEVELOPING DOORSTEP SERVICES

Ali Ashraf
Shameem Ahmed
James F. Phillips

## 2.1 Introduction

The successive governments of Bangladesh attached top priority to containing the rate of population growth and, accordingly, sought ways to intensify family planning efforts in the country to foster fertility decline. Various studies in the 1970s and 1980s documented how the customs of *purdah,* modesty, and the segregation of the sexes in predominately Muslim countries severely restrict the mobility of women and constrain their access to primary health care, including family planning services. Women in Bangladesh were not socialised to leave their homes to seek health care services, particularly contraceptive services. Thus, the GoB began bringing family planning services directly to the doorsteps of women to establish exchanges between providers and clients that would not otherwise have occurred.

Project research, using SRS data from Project sites, has demonstrated that fieldworker contact and the quality of care in both doorstep and clinical services have a positive impact on both contraceptive acceptance and continuation (Rahman, et al 1997; Kane, et al, 1997; Koenig, Hussein and Whittaker, 1992; and Philips, Hossain and Arrends-Kuening, 1996). Thus, this chapter reviews Project research on services that are provided at the doorstep by fieldworkers and the lessons learned about the impact of household services on behavior within in the context of quality of care. The chapter begins with a discussion of the Projects' impact on increasing fieldworker density. The chapter goes on to cite the example of the doorstep injectable intervention.

Although it was initially very important to improve the coverage of services and enhance method choice, the quality of the services provided is of enormous importance to the Project. The chapter outlines some issues of quality and provides a summary of some of the elements of quality of care. The chapter concludes with a discussion of the Project's Antenatal Care initiative. Although some of the components of this initiative can not be termed exclusively "doorstep", they represent services that are at least initially provided at the doorstep (i.e., pictorial card) and require a good system of referral linkages, which is discussed elsewhere in the report.

## 2.2 Increasing FWA Density

The national family planning programme was developed in the government sector as a separate entity in the mid-sixties, and since the emergence of Bangladesh, has gone through a process of integration with the health sector a number of times. Although health and family planning are separate wings merged under a single ministry, true

structural integration from the directorates to the grassroots level has never been seriously pursued, though attempts were made to integrate these two sectors at the thana level and below. As the female family planning fieldworker, the family welfare assistant (FWA) of the Family Planning Directorate, and the male health worker, the health assistant (HA) of the Health Directorate had similar job responsibilities, including motivation for family planning acceptance and provision of primary health care, the thana family planning manager was placed under the thana health administrator. However, resistance to integration within these directorates not only made them hostile to each other but also caused them to provide separate services independently.

The FWA initially provided only family planning services, including motivation to encourage contraception acceptance, distribution of temporary methods at the doorstep, and referral for clinical methods. Subsequently, when MCH tasks were added in 1986, the FWA was supposed to provide information on the MCH services provided by paramedics at the H&FWC, the union level static center. Also, the FWA was responsible for informing women of the services provided at the satellite clinics, the mobile outreach centers in a union. Service delivery, however, was hindered by many barriers, including poor coverage, infrequent visits by workers, sporadic holding of satellite clinics, lack of transportation, drug shortages, non-coverage during providers' leave, inadequate monitoring of the programme, poor coordination of health and family planning services, and lack of awareness in the community of the type and location of services provided.

This chapter discusses the service delivery interventions undertaken by the Project at the doorstep to improve programme performance, as well as to provide recommendations for policy changes in the government service delivery programme at the national level.

### 2.2.1 Improving Fieldworker Density

**Statement of the Problem:** A consistent and unequivocable finding from Project research is the relationship between home based service encounters and client contraceptive use. During the 1976-77 period, 13,500 FWAs were recruited as full-time family planning fieldworkers to provide regular visitation and ensure interaction with eligible women on a 'one to one' basis. Each FWA was posted in a ward to serve approximately 1,200 eligible couples from, on average, six villages (Hussain et. al., 1991). There are three wards per union, and the population and land area of a ward varies widely. In Extension areas, each ward had one FWA assigned, irrespective of the ward population. This rigid assignment rule was problematic, because the number of eligible couples in ward varied between 600 and 5,000 (Hussain et. al. 1991). As a result, it was difficult for workers in high population ratio areas to complete a round of the work area in a three-month time period.

Additional observation showed that workers in areas with many eligible couples took more than six months to complete their regular round (Koblinsky et. al., 1989). This was further aggravated by the poor supervision and work behavior of the FWAs. The FWAs were strongly encouraged to recommend clients for sterilisation in order to fulfil specific targets. They also looked for potential sterilisation clients in other catchment areas rather than visiting clients systematically in their regular rounds. Consequently, they lost contact with women who did not rate as potential candidates for sterilisation, and as a result, routine MCH work suffered.

Both Matlab and MCH-FP Extension Project findings showed that if the number of workers proportionate to the population is increased (i.e., if a fieldworker has to serve a smaller population), then worker-client contact increases, which, in turn, leads to an increase in the CPR (Phillips, et. al., 1984; MCH-FP Extension Project Briefing Paper No. 2, 1987). FWAs' contact with eligible couples was concentrated in the vicinity of the FWAs' residence. The FWA-to-eligible couple ratio and the average travel time from the worker's residence to the clients' house were both significantly related to contraceptive prevalence (MCH-FP Extension Project Briefing Paper No. 4, 1988).

**Intervention - experiment on worker density and development of a recruitment strategy:** Within the government setting, the Project experimented with a more moderate worker-couple ratio of one FWA to about 800 couples in two rural thanas. The Project took into consideration a number of factors during the intervention (i.e., breakdown of wards and formation of units based on recommended population, relocation of existing workers, and recruitment of workers from the respective unit). The Project not only identified operational barriers to effective recruitment, but it also tested a recruitment strategy and assessed the impact of this improved staffing pattern on service performance.

Based on recommendations from the Project, the GoB adopted the policy of improved density in 1986, but decided to recruit 10,000 FWAs on a more modest ratio of 1:1000 eligible couples. Because of the earlier experience of the Project in the planned process of recruitment, the MOHFW involved the Project in providing technical assistance in the nationwide recruitment of FWAs. The recruitment strategy included the following elements: **a)** selection criteria, **b)** recruitment process, **c)** a recruitment manual, **d)** a computerised monitoring system, and **e)** project counterpart technical support. The national implementation of recruitment began in 1986, and was completed by April 1991.

One of the major selection criteria for recruitment was that the candidate should be a resident of the unit advertised. One of the unique elements of the recruitment process was physical verification to find out whether the candidate actually belonged to the unit. The whole recruitment process was synchronised for the first time with the basic training programme offered at the Regional Training Centre (RTC). In considering the intake capability of these centres, the recruitment process was planned to be completed in 14 batches. Table 2.1 (see page 24) shows the original and revised recruitment requirements for FWAs. Figure 2.3 (see page 25) shows the various steps and activities carried out as part of the FWA recruitment process.

**Findings**

- By April 1991, 99 percent of the original target had been recruited. Almost 100 percent were Secondary School Certificate holders, and only about one-third were unmarried.

- A follow-up survey was conducted in mid-1990 in 12 sub-districts (thanas), three from each of the four divisions, to assess the field workers' and supervisors' perceptions of the impact of FWA recruitment on their work environment, particularly the size of the work area, coverage and frequency of client contact, quality of services, and supervision (Rahman et.al., 1991). The survey found that the worker-population ratio improved from 1:7500 to 1:3285 and that the size of the work unit decreased from the previous

four miles in diameter to a maximum of two miles, resulting in higher coverage, more frequent visits and better follow-up of clients.

- With the Project's involvement in demarcating work areas and recruiting additional FWAs, the FWA rounds were reduced in duration in 1987 from the previous three or more months to two months. The Project experimented with different FWA rounds when FWA density began to increase (Hasan and Koblinsky, 1991). Instead of three-month rounds, Abhoynagar started with a one-and-half month round and Sirajganj with a monthly round, soon after new FWA recruitment. The one-month round was found to have the advantage of more frequent client contact. In addition to increased motivation, FWAs could provide more frequent care to clients and the doorstep injectable service could be easily administered. However, when FWAs had to attend to large numbers of clients, the quality of services suffered. The major disadvantage of a one-and-half month round was that half of the time it began and ended in the middle of a month, which made reporting difficult both at the local and national level. Based on these findings, the GoB introduced a two-month round visitation schedule.

- There was no pre-post survey conducted to specifically assess the impact of increased workers on the contraceptive prevalence rate (CPR) or fieldworkers contact rate, due to the nation-wide recruitment. However, data from the Project thanas show a consistent upward trend in the CPR, increasing, on average, by approximately one percentage point per quarter during the 18-month period after recruitment; whereas, in the comparison area, the CPR remained, more or less, unchanged during the same period (MCH-FP Extension Project Briefing Paper No. 4, 1988). At the national level, the CPR increased at a faster rate during the post-recruitment period; about 3.4 percentage points per year during the 1989-1991 period to 1.5 percentage points per year during the 1985-1989 pre-recruitment period (CPS Reports - 1985, 1989, 1991).

**Lessons Learned**

(1) The government recruitment process can be strengthened through a series of interventions that include: planning workshops; extensive advertising; careful review of recruitment criteria; and physical verification of the residence of the potential applicants.

(2) Demarcation of work areas must be undertaken locally, so that geographical conditions, population density, and activities of NGOs can be taken into account.

(3) The requirement that the worker reside in her work unit is central to ensuring good population coverage.

(4) The rate of recruitment must be directly tied to basic training capacity.

## 2.3 Targets and the Choice Controversy

**Statement of the Problem:** From the early days of post-independent Bangladesh, population policies were motivated by concerns about population growth. Forecasts of catastrophic growth were projected and various forecasting models were used to examine the implications

of controlling growth for programme activities and outputs. Demographic analysis, used as a management tool, led to the creation of national targets for achieving population growth objectives. Macro-demographic targets, in turn, were decided by workers assigned to each locality of the country, and annual output targets were apportioned by time period for the desired results to be attained. Based on studies of use effectiveness, weights were assigned to each of the contraceptive methods so that targets could be specified by type of method.

This system of goal setting, compensation, and worker recognition became increasingly controversial as the Bangladesh programme matured. Concerns were multifaceted, but derived mainly from the worry that compensation involved in this programme constituted incentives for the promotion of sterilisation; method promotion, in turn, was potentially coercive. Individuals undertaking contraceptive decisions often do so in times of great adversity. Resources associated with method options can induce short sighted choices that are later regretted when economic conditions improve. Prevalent regret in the case of sterilisation services could signal a major ethical lapse in the strategic design of services.

Early Extension Project research and activities were directed to addressing elements of this "target and choice" controversy in the mid 1980s. Elements of this research focus continue, to date:

*External review:* There was a need for a systematic appraisal of the impact of the target, referral, and compensation scheme on worker behavior and client choice. Evidence of ethical lapses could be used as a rationale for immediate change.

*Internal review of the determinants of choice:* There was a need for project review of the implications of house-to-house outreach for choice behaviors.

*Management dialogue:* Target and compensation schemes, while taken in the spirit of achieving performance, probably have the opposite effect. There was a need for practical demonstration of feasible alternatives to mechanistic targets that respect client needs and worker perspectives on how to address them.

**Intervention and Findings**

In response to these needs, the Extension Project developed a detailed scope of work for an external review of the target and referral fee system. Results of this review showed that choices made by clients were by and large informed decisions. However, referral fees were found to distort worker priorities and activities. Recommendations to drop this policy were accepted and implemented by the MOHFW.

## 2.4 Home-based Services and Quality of Care

Internal review of the "target and choice" issue focused on the implications of FWA outreach for client method decisions. Econometric methods were used to determine if client exposure to household visits was associated with higher probabilities that permanent methods would be selected. Results demonstrated precisely the opposite relationship. FWA encounters were associated with increased probabilities of pill and Depo Medroxy Progesterone Acetate

(DMPA) choice and decreased probabilities of sterilisation choice. Home-based adopters were likely to be spacing child bearing; whereas women who attended clinics were more typically limiting their fertility with long-acting contraception. Rather than recruiting sterilisation clients, house-to-house services expanded the range of contraceptive options and opened up contraceptive decision-making to younger, lower parity women who intended to have additional children in the future. Attention was addressed, therefore, to ways of expanding FWA coverage and the range of services that are provided at the doorstep. These doorstep services are discussed within the context of quality of care.

### 2.4.1 Elements of Quality of Care

Quality of care is an important issue for achieving programme sustainability. Jain and Bruce (1989) define quality in terms of the way individuals and clients are treated by the system providing services. Bruce (1988) conceptualised quality of care in family planning in terms of six elements: 1) choice of method; 2) information given to the client; 3) technical competence; 4) interpersonal relations; 5) mechanisms to encourage continuity; and 6) an appropriate constellation of services. Jain (1990) stated that quality of care refers to the way clients are treated by the system providing services. Quality of care, in this sense, places additional emphasis on the interpersonal dimension of the interactions between providers and clients. Every client and potential consumer of a service has the basic right to expect and receive services of adequate quality, and they should all be treated with dignity and respect.

Dixon-Mueller (1988) defined the elements of quality of care as: 1) high medical standards of service delivery; 2) clients' ability to maintain control over the decision making process; 3) sense of trust between provider and client and planning for continuity; and 4) systematic research and evaluation of programme goals. Improvement in quality of care will result in a larger, more committed clientele of satisfied contraceptive users. Over the long term, an expanded base of well served individuals will translate into higher contraceptive prevalence and, ultimately, reduction in fertility (Jain, 1989). The concept of quality of services is also sometimes used and it focusses less on the clients' perspectives and more on the standards, procedures, facilities and system of delivering family planning or health services safely and effectively in a clinic or community setting.

Despite dramatic increase in overall contraceptive prevalence, high discontinuation and low acceptance of clinical methods were indications that quality of care in the Bangladesh programme needed considerable improvement. The MCH-FP Extension Project (Rural) had been addressing quality of care issues in the government system in family planning and health (e.g., Antenatal Care (ANC) and EOC) since the mid 1980s (Brechin and Koblinsky, 1990; Koenig, et. al., 1992; Huque and Koblinsky, 1988; Whittaker, 1990, Kane et. al., 1997). The Project has taken into consideration the impact of service quality on contraceptive use continuation (Koblinsky et al, 1991). The major interventions related to quality of care and the lessons learned from doing them are discussed in this chapter.

### 2.4.2 The Example of Doorstep Injectables

**Statement of the Problem:** Injectable contraceptives have been used in the National Family Planning Programme for two decades. DMPA was introduced in 1976, and Norethindrone Enantate (NET-N) in 1980. They were provided from the static delivery points, Satellite

Clinics (SCs) and H&FWCs, by the female paramedics, the FWVs, though their contribution to the National Programme remained very low. Because temporary methods, like pills and condoms, were widely available, clients were less inclined to overcome cultural barriers and travel to clinics for injectables (another temporary method) every two or three months. The provision of injectables by the FWAs at the clients' doorsteps would improve method choice and help women make an independent decision.

**Intervention:** In order to increase the range of methods available and improve method choice, the Domiciliary Injectable Services by the Family Welfare Assistant(FWA) intervention was undertaken by the Project, in collaboration with the GoB. In 1983 and 1994, the CPR of Abhoynagar and Sirajganj was 21.3 percent and 11.2 percent respectively, with only 0.1 percent prevalence of injectables in both areas (Rahman et al., 1992). To further increase the availability and accessibility of contraceptives, domiciliary injectable services were started in Matlab by ICDDR,B in 1976 and were replicated at Abhoynagar and Sirajganj. Since the intervention started in 1984, the CPR more than doubled between 1984-1992, with injectables contributing to one-quarter of the users (Khuda et al, 1994). The success of the two thanas led the Directorate of Family Planning to further expand the domiciliary service to eight more thanas. The general objective of the test expansion was to assess the feasibility of introducing doorstep delivery of injectable contraceptives by the FWAs in the national family planning programme.

The intervention addressed various quality of care elements in family planning service delivery. These elements of the intervention are discussed below.

***Improving Method Choice:*** One idea behind the intervention was that wide availability of more effective and more convenient methods would increase contraceptive use (Sadik 1990). Also, providing choice of methods would increase the quality and effectiveness of the family planning programme (Jain, 1989; Bruce 1990).

***Technical Competence of the Service Providers:*** In order to enhance the technical competence of the service providers, the FWAs, FWVs and FPIs were trained in their respective thanas. The training included a description of the method, counseling, technique/procedure criteria for client selection, side-effects management, record keeping, and the injection technique, including maintenance of asepsis. To assess the quality of the services provided by the fieldworkers and paramedics, observations were conducted at the actual time injectables were being administered. In the doorstep injectables intervention, launched in July 1993, quality of care issues regarding supply and disposal of used syringes and needles were also addressed (Rahman et al. 1993).

***Information Given to Clients:*** The clients were given information on different contraceptives and helped to make a decision in line with the training given to the workers. The importance of using disposable syringes and needles was also stressed. A message was incorporated into the injectable client card, emphasising the use of new syringes so that women would be empowered with sufficient information to insist, if necessary, that a new syringe be used during administration of each new dose.

***Interpersonal relationships:*** During training for the intervention, emphasis was given to the interpersonal relationships between the provider and client. The importance of positive client-provider interactions was an important aspect of the intervention.

*Follow-up/continuity of services:* The FWAs managed side-effects and clients were followed-up regularly. The FWAs were provided with necessary record-keeping books to collect requisite information and to keep track of each client for subsequent due doses. Later, a screening checklist for client selection, and a follow-up checklist to manage possible side effects and to counsel the clients were incorporated into the FWA Register. Close monitoring was done, using an observation checklist, interviews with users who had discontinued and clients with complications, and a monthly performance review.

*Appropriate Constellation of Services:* The doorstep injectable intervention provided by the FWAs was part of the other services they usually provided, including MCH services such as health education and immunisation and nutrition advice.

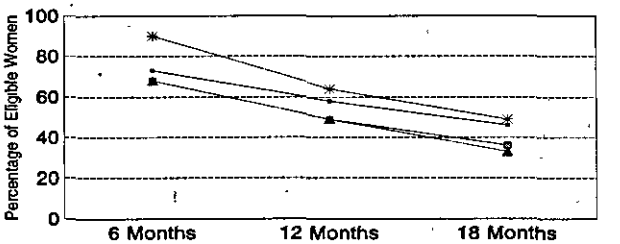
## Findings

- *Contraceptive Prevalence Rate (CPR):* By June 1991, the CPR at Abhoynagar and Sirajganj rose to 47 and 41 percent respectively, up from 21 percent and 11 percent, respectively in 1984; and prevalence of injectables rose to 9 percent at Abhoynagar in 1991 and 13 percent at Sirajganj (Rahman et al, 1992). The Bangladesh Demographic and Health Survey (BDHS) (1993-94) reported a CPR of 44.6 percent, with the prevalence of injectables at only 4.5 percent. Injectable contraceptives contributed to about 32 percent of the CPR at Sirajganj and 20 percent at Abhoynagar. Also, the MIS data showed a two-fold increase in injectable clients from March 1993 to July 1994. Two-fifths of them were non-acceptors, and another half switched from other temporary methods.

- *Method Continuation Rates:* The Project's SRS reported cumulative continuation rates during 1983-1990, of 73.3 percent at six months, 58 percent at twelve months, and 46.2 percent at eighteen months for Abhoynagar, and 67.8, 49.3 and 33 percent at six, twelve and eighteen months respectively for Sirajganj (Figure 2.1). The Matlab findings showed a continuation rate of 90, 64 and 49 percent after six, twelve and eighteen months (Akbar et al. 1991).

Figure 2.1

Percentage of women continuing injectable use by ordinal month
Abhoynagar, Sirajganj, Matlab, WHO



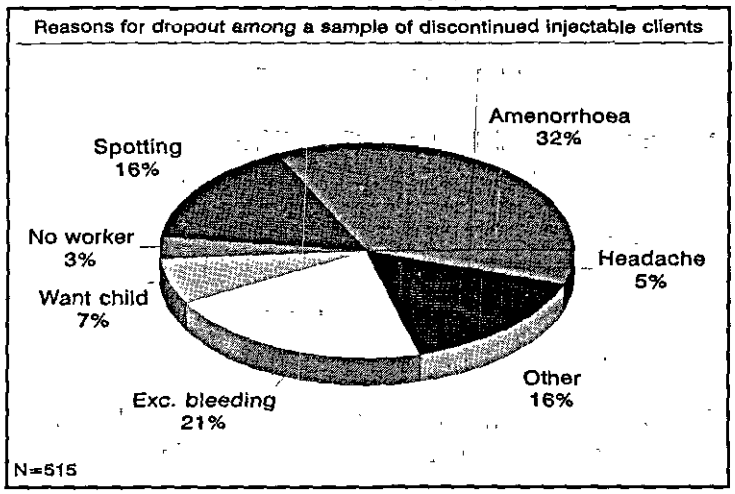

| | 6 Months | 12 Months | 18 Months |
|---|---|---|---|
| Abhoynagar | 73 | 58 | 46 |
| Sirajganj | 68 | 49 | 33 |
| Matlab | 90 | 64 | 49 |
| WHO | 68 | 49 | 36 |

Abhoynagar Sirajganj Matlab WHO

A multinational study conducted by WHO reported in 1982 that the cumulative continuation rate for DMPA at 6, 12 and 18 months was 67.9, 48.7 and 36.5 percent, respectively. It is evident from the comparison that the continuation rates were similar in the Project areas and consistent with other studies (Fraser 1981). Khuda et al. (1994) found that continuation rates showed a sharp decline after six months. This may be because of side effects, which are more common during initial use and gradually decline with long term use. Thus, continuation rates could be improved if counseling at the time of the first dose and at the initial follow up could be improved.

- ***Drop-out:*** The major reasons for drop-outs in the doorstep programme were side effects, including excessive bleeding, spotting, and amenorrhoea (Figure 2.2). According to the 1993-94 BDHS data, drop-out rates for injectables are relatively high, about 58 percent at the end of first 12 months of use (BDHS 1993-94).

Figure 2.2




- ***Technical competence:*** Of the 1,089 observations recorded to assess the quality of the injectables services (Khuda et al. 1994), the FWAs and FWVs maintained the "no touch technique" needed for prevention of infection during injection pushing in over 90 percent of the cases. In almost all of the observations, cotton with spirit or savlon was used to disinfect the injection site. However, 39 percent of the FWAs failed to use the follow-up checklist, and only 50 percent of the clients were given full information, including information about disadvantages, side effects and danger signs.

In a study by Mirza et al. (1996), in about 70 percent of the cases, the providers washed their hands with soap and water before giving the injections. However, in only 43 percent of the observations did the provider check the expiration date of the injectables. "No touch technique" was strictly maintained. In more than 90 percent of the cases, all of the drug was taken from the vial, the needle was pushed at right angles into the deep muscle, the plunger was pulled back to make sure the needle had entered a vein, the workers were able to push all the medicine into the deep muscle, and nearly all the workers held the cotton at the injection site without rubbing. In about 68 percent of the observations, the workers kept the syringe in the packet so that it could be submitted to their supervisors.

In 96 percent of the cases, the workers could calculate the date of the due dose properly. There was no difference in the technical competence of the fieldworkers and paramedics. However, the screening was not done systematically and follow-up mechanism was not well maintained.

- ***Information Provided to Clients:*** Information on possible side effects was given to the users at the time they accepted the method to reduce user anxiety and to prepare the users for side effects. In about 87 percent of the observed cases, the workers provided information on the advantages of injectable contraceptives, while information on the disadvantages was provided in 77 percent of observed cases. Over four-fifths of the clients observed were told of the side effects of injectables. However, in only 39 percent of the observations did the worker mention the danger signs of complications. One of the reasons for this poor communication may be the fact that some workers do not want to scare clients by talking about danger signs (Mirza et al. 1996).

- *Client Satisfaction:* A survey conducted in the project areas (Huque et al. 1986) reported better client satisfaction, better accessibility to service, more confidence in the method, greater level of privacy and better counseling and side effects management in the intervention areas when compared to the comparison areas.

- **Provider Satisfaction:** The FWAs expressed pride and satisfaction at being able to deliver injectables, because this increased their credibility in the community.

**Lessons Learned**

The following describes some of the lessons learned from evaluation of the doorstep delivery intervention.

(1) The use of injectable contraceptives by rural women can be greatly increased through the provision of such a method by the FWA, and safe delivery of injectables is feasible by female fieldworkers within the MOHFW programme if it is planned carefully. However, the FWAs need training in maintenance of quality of care and proper counselling for this method.

(2) Increasing method choice at the community level by introducing injectable contraceptives delivered by FWAs, can increase the CPR and client satisfaction.

(3) Introduction of disposable syringes and needles, instead of reusable ones, will assure quality service, including the prevention of transmission of HIV, Syphilis, and Hepatitis B.

(4) Use of one single brand of injectables makes it easier to dispense and maintain records on regularity of dispensing.

(5) Strong supervision, if maintained, will ensure regular service by the FWAs.

(6) The paramedics training should emphasise appropriate screening and follow-up mechanisms for method continuation.

(7) Counselling and side-effect management of injectables need further attention to reduce drop-outs.

(8) As the government is planning to move away from the community-based distribution (CBD) approach, injectable contraceptives can still be given by the FWAs at alternate service delivery points like the Cluster Spots.

## 2.5 Antenatal Care Initiative

Provision of antenatal care leads to improved birth outcomes in terms of both maternal and neonatal health. "Risk assessment", the screening of pregnant women for a variety of "risk factors" is a major component of antenatal care. Risk factors can be identified through the medical history and a physical examination of pregnant women. Women at risk need extra

care and in some cases need to be referred to higher levels of care. Also, all pregnant women need to be made aware of complications that can occur during pregnancy and childbirth, so that they can seek medical help at the appropriate time if it is needed.

A number of MCH care providers with varying levels of training and service exist within the MOHFW. The FWAs and the FWVs are mandated to provide antenatal care for pregnant women, with special emphasis on screening. However, this is not usually done for all pregnant women at the grassroots level. To strengthen antenatal care, the MCH-FP Extension Project started a package intervention in June 1990 in its field sites following a training session. The intervention sought to: test the feasibility of having the FWAs use a checklist to identify high risk antenatal mothers and to examine the effectiveness of the checklist; test a supervisory checklist for the Senior FWVs to aid them in their roles as technical supervisors; introduce a pictorial card at the doorstep to help women and their families identify the danger signs of pregnancy; and orient moderately and severely anaemic pregnant women about the rationale for, and the implementation of, a system of distribution of iron supplements.

### 2.5.1 Antenatal Screening Checklist

**Statement of the problem:** The existing screening check-list for detection of high-risk pregnant women in the Record-Keeping Book (RKB) of FWAs was seldom used. It was long, and had technical terms beyond the scope of by the FWAs understanding.

**Intervention:** The existing screening check-list for high-risk pregnancy was replaced by a simple flow chart format designed by the MCH-FP Extension Project.

**Findings**

- The FWAs can diagnose pregnancies within the first three months, and record them in the pregnant mothers' listing during their household visits every two months (Mirza et al, 1992). However, out of twenty six women who were either pregnant or had delivered within the last 30 days, who were interviewed to determine the quality of antenatal care provided by the FWAs, three were not counseled at all by the FWAs. The FWAs also did not usually ask about menstruation or about symptoms of pregnancy.

- Out of 25 observations of FWAs interactions with pregnant women, the screening check-list was not used in 10 (Mirza et al, 1992). Also, the FWAs diagnosed over 60 percent of the women as "high risk" cases according to the screening criteria, which is not very useful for identifying the women who would actually have had a serious complication.

- Only 14 (56%) of the pregnant women received some advice from the FWAs regarding safe delivery. Data from the SRS indicate that the majority (91%) of the deliveries are conducted by untrained TBAs (Mirza et al, 1993). Hence, the pregnant mothers themselves need to be made more aware of safe delivery practices.

**Lessons Learned**

(1) Instead of screening pregnant women, which the FWAs are neither trained to do nor capable of doing properly, the FWAs need to spend time motivating women to see the

FWVs for antenatal care. The FWVs can provide complete antenatal check-ups, including screening for high-risk factors. This would allow the FWAs to perform other functions properly.

(2) The FWAs should explain safe delivery practices in detail to pregnant women. They need to keep a list of the trained TBAs in their areas, and inform pregnant women about them. They should motivate all pregnant and postpartum women to see the FWVs at the H&FWC, inform them about the place and time of the Satellite Clinic, and enquire about newborn babies.

(3) Training programmes need to be designed for FWAs on ANC, breastfeeding and nutrition to improve the quality of antenatal care in the homes.

(4) Pregnant women should be taught to recognise the signs of complication of pregnancy and childbirth that require immediate care (e.g., swelling, bleeding, fever, prolonged labor, primitive rupture of the membrane). The main task of FWAs should be to communicate information about services at the H&FWC and SC, provide advice on safe deliveries and motivate mothers to use these services.

### 2.5.2 Strengthening FWA's Role in MCH Care and introduction of Pictorial Cards

**Statement of Problem:** Early recognition and prompt treatment of common obstetric emergencies is the key to an effective reduction in maternal mortality and morbidity. Delay in recognition of the signs of complications and their management is an important cause of the high maternal mortality and morbidity in Bangladesh. Based on a lesson learned from the earlier intervention on Antenatal Screening by the FWAs, it was felt that the FWAs should not screen pregnant women, but instead make them aware of the complications of pregnancy and childbirth so that they can seek medical help if an emergency arises.

**Intervention:** In order to give the FWAs a new role in informing pregnant women about the early symptoms of complications of pregnancy that require immediate obstetric care, a new intervention on "Strengthening the FWAs role in MCH care" was designed and launched in April, 1994 at Abhoynagar. This was done to: test a new approach to FWA's antenatal and postnatal care services; create awareness among pregnant women and their relatives of the signs of obstetric complications; increase the utilisation of antenatal and postnatal services provided by the FWVs; and test the retention of home- based antenatal and pictorial cards.

As part of this intervention, the FWAs no longer performed antenatal screening. Instead, they educated women about the early symptoms of obstetric complications and, if they appear, the necessity of seeking care from hospitals without delay. They provided pregnant women with a pictorial card, showing the signs of most serious complications that can occur during the antenatal, postnatal and the delivery period. The pictures on the card were designed to be easily understood, even by illiterate women. A short explanation in Bangla was also added. The FWA explained each picture on the card to pregnant women and their close relatives, and gave the women the government antenatal card along with the pictorial card. The cards were retained by the clients and presented to the FWV when services were required. The FWA motivated the pregnant women to go to the FWV for antenatal and postnatal care. She provided information about the services and location of the Satellite Clinic, gave advice on

nutrition and utilisation of trained TBAs, and advised them to go to the H&FWC or THC if there were complications.

After orientation and training for all levels of service providers, the pictorial and antenatal cards were distributed in three selected unions each at Abhoynagar and Mirsarai beginning May 1996.

**Findings**

- An evaluation of the intervention at the end of one year showed that 76 percent of the women received their cards from the FWAs and 21 percent from the FWVs (Juncker et. al., 1996). Among the recipients, two-thirds had received a full explanation of the pictures on the cards.

- Most FWAs in the intervention area visited pregnant women at least three times: for the first antenatal visit; a revisit; and a postnatal visit.

- The FWAs reported that the intervention improved their credibility with mothers, because they were able to provide something concrete to their clients. There was a positive impact on the FWA's family planning activities. Mothers have increased confidence in FWAs, and subsequently, adopt FP methods on their advice (Juncker et. al., 1996)

- The card was considered a convenient and valuable support to the client and her in-laws. Women and their relatives were found to be interested in antenatal and obstetric care. Three-quarters of the women clearly understood the meaning of the cards.

- Women with no education or less than 6 years of education were better able to understand the pictorial cards in the intervention area than women in the non-intervention area.

- The retention of the cards was excellent (96%) in the intervention areas.

- Antenatal and postnatal care by the FWVs increased by 35 percent and 26 percent, respectively, in the intervention unions, whereas antenatal care increased by only 8 percent and postnatal care actually decreased somewhat in the comparison area.

- The evaluation also showed that women, unfortunately, were not being properly examined by the FWVs.

**Lessons Learned**

(1) Some of the pictures used, for example, the one showing labor pain more than 12 hours and the one showing fever on the card, needed to be changed in order to ensure better comprehension by mothers and their relatives. The pictures depicting prolonged/ obstructed labor and fever were modified to give a clearer representation of these conditions.

(2) The FWAs and FWVs need to make sure that the clients understand the full contents and meaning of the pictures on the card.

(3) Women need to be advised to share the message of the card with the family decision makers, and of the necessity of preparing for an potential referral.

(4) As a result of lessons learned, a new pictorial card was developed.

### 2.5.3 Iron Supplementation Intervention for Pregnant Women

**Statement of problem:** The presence of anaemia increases the risk of maternal and neonatal mortality and morbidity. It contributes to maternal deaths associated with haemorrhage and heart failure. The lower the haemoglobin level, the greater the risk of death when haemorrhage occurs. Post-partum haemorrhage is responsible for 12 percent of the maternal deaths in the MCH-FP Extension areas of Jessore and Sirajganj in Bangladesh (Rahman et al., 1993). There is also a correlation between maternal serum iron and foetal birth weight and the probability of premature labor. These two conditions are related to a higher risk of neonatal mortality and morbidity.

**Intervention:** Integrated in the wider antenatal care intervention, iron supplementation for anaemic pregnant women was initiated in two unions of Abhoynagar in May 1990 and two unions of Sirajganj in February 1991, with the intent of testing an appropriate iron supplementation system for pregnant women. The FWAs were advised to detect anaemia and provide iron tablets for pregnant women. They screened each pregnant woman, based on clinical signs or symptoms of anaemia. According to the severity of the symptoms, anaemia was classified as mild, moderate or severe by the FWA. Women with moderate and severe anaemia were given two tablets, containing 200 mg of ferrous fumarate and 0.2 mg of folic acid, to be taken daily until the end of pregnancy and 6 weeks after delivery. Severely anaemic cases were referred to the FWV or Medical Officer (MO).

When providing iron tablets, the FWA informed the clients about the possibility of side effects and, at each visit, inquired about the presence of side effects.

**Findings**

- ***Providers' attitude:*** Of the FWAs who were asked about the iron supplementation, all had a positive attitude towards the intervention. They perceived that providing iron tablets increased their credibility as health workers and that their clients liked to receive medicine from them.

- ***Clients' attitude:*** Out of the women interviewed , 63 percent were given iron tablets. Out of those, given iron tablets, 88 percent regarded iron tablets to be safe for pregnancy and had a positive attitude towards iron supplementation.

- ***Providers' knowledge:*** Evaluation of FWAs' theoretical knowledge, through interviews, shows that very few of them knew how to diagnose anaemia. The findings indicate that pregnant women were not properly screened for anaemia by the FWAs. The evaluation results indicate that the FWAs did not have adequate knowledge in this regard.

- *Side effects management:* Of the FWAs asked about side effects management, only 31 percent could provide the correct answers. The results showed that the FWAs did not have adequate knowledge to provide proper counseling to pregnant women regarding management of side effects.

- *Cost-effectiveness of Iron Supplementation:*

  **Cost of iron without screening test:** If all the 3 million pregnant women were given a complete course of iron supplementation, the total cost would be taka 264 million with a dose of 400 mg of iron, or taka 132 million with a 200 mg. dose.

  **Cost of iron with screening:** If we assume prevalence of moderate and severe anaemia to be 15 percent, as was found in Matlab, then out of 3 million pregnant women, 450,000 would be given iron tablets. The total cost of iron would then be taka 40 million with a high dose of iron and taka 20 million with a low dose. Thus, the total cost of iron would be 6.6 times higher when distributed to all pregnant women without screening, than when distributed only to moderately and severely anaemic women. However, a substantial number of moderate and severely anaemic cases would remain undetected after screening and would therefore not receive iron supplement.

**Lessons Learned**

(1) The exact degree of prevalence and severity of anaemia among pregnant women in Bangladesh is not known; and hence, needs to be investigated.

(2) Iron should be provided to all ante-partum and post-partum women when funds are available, but only to moderate and severely anaemic mothers if adequate funds are not available.

(3) New appropriate and more sensitive tests, which can be utilised by fieldworkers to screen anaemic mothers, need to be sought.

(4) Iron supplementation may be provided by the FWAs, but their knowledge of anaemia, their communication skills and their rapport-building capacity have to be improved.

(5) An efficient managerial and technical supervisory system must be set up to maintain the correct implementation of iron distribution.

## 2.6 Conclusions

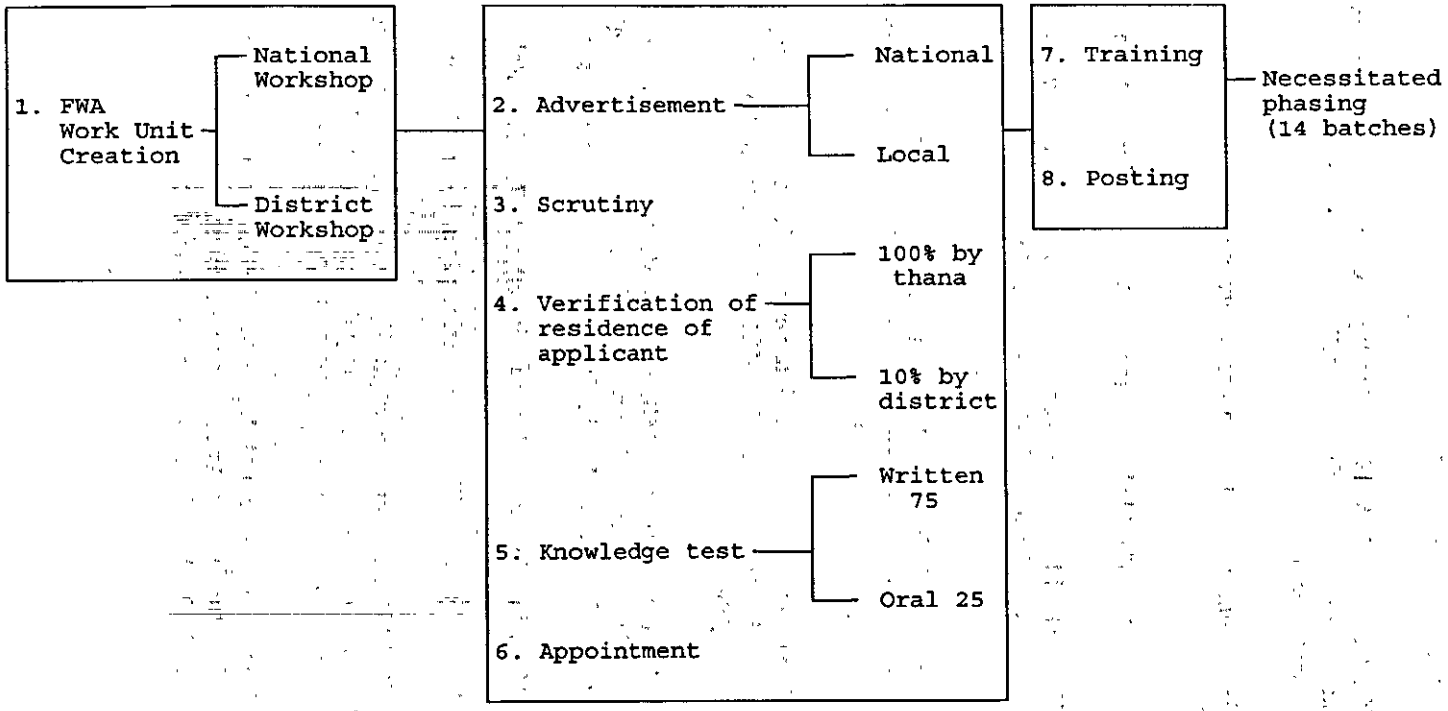
Over the past fifteen years, contraceptive prevalence, particularly the use of modern methods, can be largely attributed to the successful delivery of services by FWA at the doorstep. However, continued high discontinuation rates suggest that the quality of doorstep services needs further improvement, especially in the areas of side effects management and referral and linkages for antenatal care and RTI/STD prevention, diagnosis and treatment. The growing need for cost effective and sustainable services call for a shift in emphasis from doorstep delivery to fixed service sites. The Project has played a crucial role in expanding doorstep services and ensuring the proper management (see Chapter 4) and quality of those services.

Table 2.1: **Original and Revised Recruitment Requirements for FWAs**

| Sl. | Original | Revised | |
|---|---|---|---|
| | | During re-advertisement | During 14th Batch |
| 1. | Resident of own unit | Resident of own union but set of pref. | Resident of district but set of pref. |
| 2. | 10th standard education | 9th standard education but set of pref. | 10th standard education |
| 3. | 18-30 yrs age | Same | Same |
| 4. | Preferably married | Same | Same |

Figure 2.3

## FWA RECRUITMENT PROCESS LINKAGE



## References:

Akbar J, Phillips JF, Koenig MA, 1991. "Trends in Contraceptive Methods Mix, Contraceptive Rates, and Failure Rates in Matlab, Bangladesh: 1978-1987." Proceedings of the United Nations Expert Group Meeting on Measuring the Dynamics of Contraceptive Use, New York, 5-7 December, 1988, United Nations, pp 123-136.

Brechin SJG, Koblinsky MA. 1990. "Quality of Care in Community-Based MCH-FP Programs: The Field Worker's Perspective." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 56 - unpublished).

Bruce J. 1988. "Fundamental Elements of quality of care: A Simple Framework". IP (Working paper 24), The Population Council.

Fraser Ian S. 1981. " The Medical Journal Of Australia" Special Suppl. 1: 1-20.

Hasan Y, Koblinsky MA. 1991. Work Routine of Female Family Planning Field Workers (FWA) in Rural Bangladesh. Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 119 - unpublished).

Huque Z, Fermo A, Koblinsky MA, Smith C. 1986. Client Satisfaction Survey: A Domiciliary Injectable Contraceptive Programme. Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 29 - unpublished).

Huque AAZ, Koblinsky MA. 1988. "Interventions Towards Improving Quality of MCH-FP Care: A Case Study in Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 41 - unpublished).

Hussain S, Maru RM, Hossain MB, Rahman M. 1991. "Recruiting Appropriate Female Field Workers: Experiences from a National Recruitment Process in Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 59 - unpublished).

ICDDR,B MCH-FP Extension Project (Rural), 1987. "The Role of Domiciliary Injectable Contraception In the Government of Bangladesh System: A Mid-term Assessment." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Briefing paper 2 - unpublished).

ICDDR,B MCH-FP Extension Project (Rural), 1988. "The Impact of Increased FWA Density Upon MOHFP Program Performance: Preliminary Evidence from the ICDDR,B Extension Areas." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Briefing paper 4 - unpublished).

Juncker T, Khanum PA, Uddin MdJ, Das SC. 1996. "FWA's New Role in Antenatal Care and Use of a Pictorial Card for Creating Awareness about Obstetric Emergencies." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 113 - published).

Kane TT, Hossain MB, Khuda B, Ahmed S. 1997. "Quality of care, client satisfaction, and contraceptive use in rural Bangladesh." Paper presented at 1997 PAA Meeting, Washington D.C., March 27-29.

Khuda B, Mirza T, Ahmed S. "Lessons Learned On Doorstep Delivery of Injectable Contraceptives", Workshop Proceedings, September, 1994. Dhaka: MCH-FP Extension Project (Rural), ICDDR,B.

Koblinsky MA, Brechin SJG, Clark SD, Hasan MY. 1989. "Helping Managers to Manage: Work Schedules of Field- Workers in Rural Bangladesh." *Studies in Family Planning*, Vol. 20, No. 4: 225-234 (July/August).

Koenig MA, Hossain MB, Whittaker M. 1992. "The Influence of Fieldworker Quality of Care Upon Contraceptive Adoption in Rural Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 73 - unpublished)

Mirza T, Khanam PA, Juncker T. 1993. "Utilization of Trained Traditional Birth Attendant." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 84 - - unpublished).

Mirza T, Juncker T, Mita R. 1992. "Evaluation of Antenatal Care Provided by FWA in Abhoynagar Thana." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 80 - unpublished).

Mirza T, Ashraf A, Kabir H, Ahmed J. 1996. "Training Experience in Domiciliary Injectable Contraceptive Services in the National Family Planning Programme." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 120 - published).

Phillips JF, Simmons R, Simmons G, Yunus Md. 1984. "Transferring Health and Family Planning Service Innovations to the Public Sector: An Experiment in Organization Development in Bangladesh." *Studies in Family Planning*, Vol. 15, No. 2: 62- 73. (March/April).

Phillips JF, Hossain MB, Arends-Kuenning M. 1996. "The Long-Term Demographic Role of Community-Based Family Planning in Rural Bangladesh. *Studies in Family Planning*, Vol. 27, No. 4: 204-219 (July/August).

Rahman Md M, Maru RM, Hossain MB, Hossain S. 1991. "Evaluating Increased Worker Density in Bangladesh Family Planning Program: Field Managers and Workers' Perspectives." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 60 - - unpublished).

Rahman F, Islam M, Maru RM. 1992. "Home Delivery of Injectable Contraceptives: An Operations Research Study in Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 66 - unpublished).

Rahman F, Whittaker M, Hossain MB. 1993. "Maternal Mortality in Rural Bangladesh, 1982-1990: Data from Verbal Autopsies." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 81 - unpublished).

Rahman M, Khan MA, Caldwell B, Kane TT. 1997. "Factors associated with reported side-effects of oral pills and injectables in rural Bangladesh." paper presented at 1997 PAA Meeting, Washington D.C., March 27-29.

Whittaker M. 1990. Quality of Care - An Applied Operational Research Framework. Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 88 - unpublished).

# CHAPTER 3

# DEVELOPING FIXED SERVICE SITES

Shameem Ahmed
Yousuf Hasan
James F. Phillips

## 3.1 Introduction

Over the past three decades, the MOHFW has built an enormous infrastructure of fixed facilities which provide services throughout the country. These include the Satellite Clinic (SC), the Health and Family Welfare Centre (H&FWC), and the Thana Health Complex (THC). However, historically, these fixed service sites have been grossly under-utilised and the quality of care provided has varied greatly from site to site, in terms of treatment of clients, the technical skills of those providing services, and the equipment used. In an effort to improve the utilisation and quality of fixed service sites, the Project undertook a number of operations research interventions. These interventions have been crucial for the long term sustainability of the national health and family programme.

Less mobile women in the community needed more convenient services than were provided at union-based H&FWC. Therefore, the Project tested the operational requirements of establishing convenient SC services at outreach locations staffed by H&FWC paramedics. Lessons learned with regard to the SC programme are reviewed in the first part of the chapter. Second, the chapter reviews lessons learned regarding fixed facilities that are the referral points for the outreach programme described in Chapter 2 and reviews some of the clinical issues associated with care at these fixed service sites. Of immediate importance to any clinical care programme, is a strong system of referrals and linkages between the household services that are performed by fieldworkers and the fixed sites. This chapter reviews the elements of clinical services that have been the focus of the Extension Project investigation and intervention.

## 3.2 Satellite Clinics

**Statement of Problem:** Due to inaccessibility of union level H&FWC for many rural women, the GoB mandated in 1982 that female paramedics, Family Welfare Visitors (FWVs), organise SC twice a week in various sites within each union. However, there were many operational barriers to establishing effective Satellite Clinics.

**Interventions:** Since the early 1980s, the Project has attempted to identify operational barriers related to the functioning of Satellite Clinics, and to recommend ways to improve SC services (MCH-FP Extension Project Briefing Paper No. 5, 1988; MCH-FP Extension Project Briefing Paper No. 13, 1990; and MCH-FP Extension Project Briefing Paper No. 15, 1991).

In 1985, the Project began interventions to specifically address the difficulties encountered in the GoB Satellite Clinic programme. The first step was to organise a meeting of thana family planning and MCH workers and supervisors. The intent of this meeting was to clarify the purpose of the Satellite Clinics and to get personnel together to discuss their responsibilities. Another early intervention involved the Extension Project's Lady Family Planning Visitors (LFPVs) accompanying the government's Family Welfare Visitors (FWVs) to the clinic sites. The LFPVs main functions were to observe the FWVs in the performance of their duties, with particular attention to the quality of care provided, and to assist the FWVs in the development of their counselling and service skills. The Project also conducted follow-up monitoring to see if Satellite Clinics were still being held regularly and with the appropriate personnel.

## Findings

Awareness of SC increased much more dramatically in the Abhoynagar and Mirsarai intervention areas than in the comparison areas over the intervention period. In every case, the increase in attendance at SCs was much greater in the intervention areas than in the comparison areas over the intervention periods (Figure 3.1, 3.2 and 3.3).

Figure 3.1

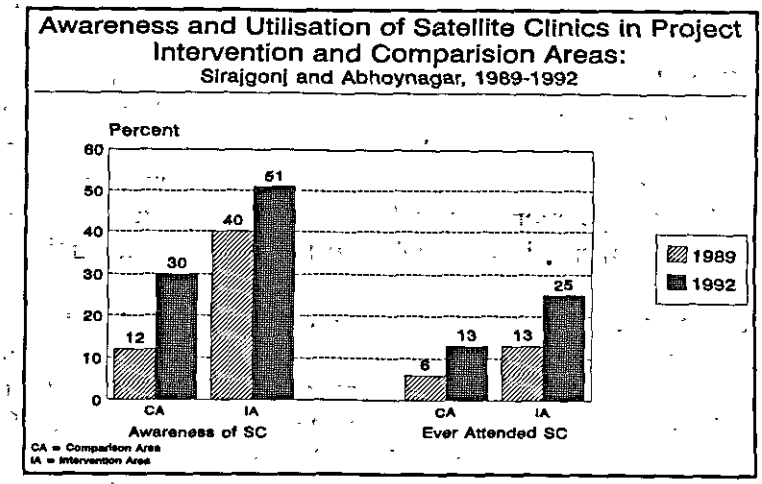



Figure 3.2

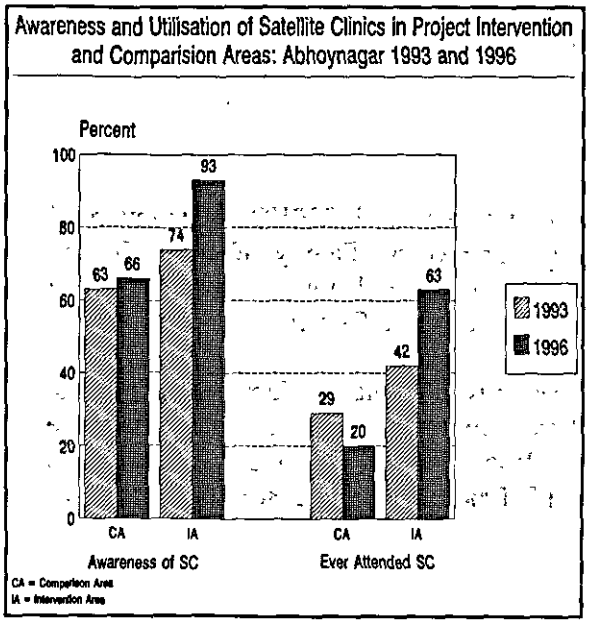
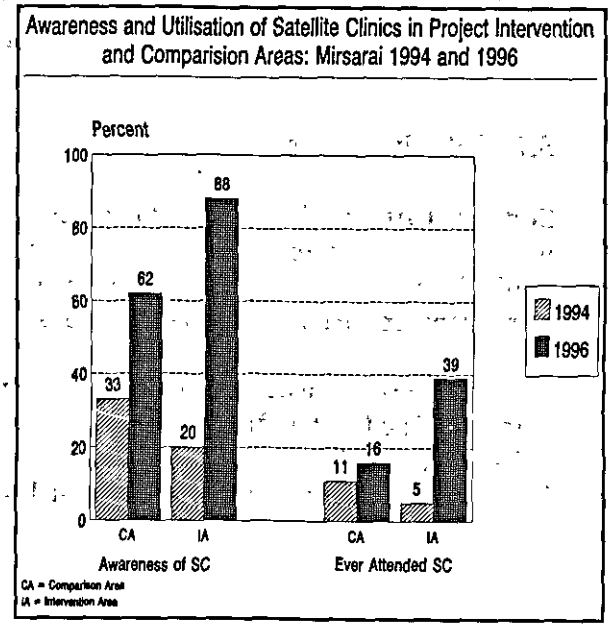



Figure 3.3



**Lessons Learned**

(1) ***Cooperation Between FWVs and FWAs:*** Findings from the intervention indicate a need for sub-group meetings among FWVs and FWAs when workers go for meetings at the THC. Additionally, FWVs need a greater role in the supervision of FWAs' work. Presently, any such supervision is informal: there is no direct institutional relationship between FWVs and FWAs. The new management information system, in which a unit-specific record of Satellite Clinic activity is kept, may encourage the FWAs to maintain relations with the FWVs, in order to assure effective operation of SCs in their areas.

(2) ***Supply of necessary drugs and equipment:*** Supervision and monitoring of the drug and dietary supplement (DDS) kit distribution system for the H&FWCs needs to be improved. The programme should consider supplying additional kits and drugs to SCs where needed (e.g., hypertension medication for women with pre-eclampsia and medication for hemorrhaging).

(3) ***Mix of Services:*** Further work is needed in defining the most appropriate and cost effective mix of services to provide at SCs and at Expanded Programme on Immunization (EPI) Spot/Satellite Clinics. This work should consider both the advantage of convenience for the clients (especially in areas where women's mobility is more restricted), and the priority health needs of the population (including family planning). Greater emphasis could be placed on life-threatening problems, such as acute respiratory infections (ARI) and the malnutrition/diarrhoeal disease cycle. Provision of ante- and post-neonatal care needs improvement too. Satellite Clinic-based provision of clinical contraceptive methods, like IUDs and injectables, is under-utilised. Furthermore, the role of Satellite Clinics in providing other methods and managing side-effects needs to be defined and strengthened.

As for co-scheduling of EPI Spots and Satellite Clinics, a circular establishing policy in this area is already in effect. However, continual encouragement from upper level officials is required to make high rates of co-scheduled events a reality. The emphasis of this encouragement can be on the productivity possible when health and family planning wings work together. Satellite Clinic and EPI spot schedules should be reviewed and monitored to assure compliance.

(4) ***Demand Creation:*** Options need to be considered with regard to disseminating SC scheduling information throughout the community. Improving relations among groups of workers, especially FWVs and FWAs, would be productive in communicating the required information. Also, other forms of community outreach, via mothers' clubs, community leaders, miking, etc., are needed to increase awareness and utilisation of SCs.

(5) ***Quality of care in Satellite Clinics:*** A study should be conducted to assess which aspects of quality of care are most important to clients and front-line providers, and which aspects are the most feasible to address. The question of integrated services must be considered in the context of appropriate constellation of services, and the potential importance of privacy for optimal delivery of FP services should be considered. It would be useful to investigate the association between attendance trends and technical quality of care information and counselling provided, and client-provider interventions.

(6) Also, the SFWV Satellite Clinic checklist appears to be a useful tool for the SFWV to ensure quality of services at the sites. The use of these checklists should be implemented nationally, with adequate training of SFWVs in their use.

### 3.2.1 Satellite Clinic Combined with EPI

**Statement of Problem**: Satellite Clinic (SC) services are provided at eight different spots within a union in order to increase access to FP-MCH services. These clinics have been found to be an important source of FP-MCH services for villagers.

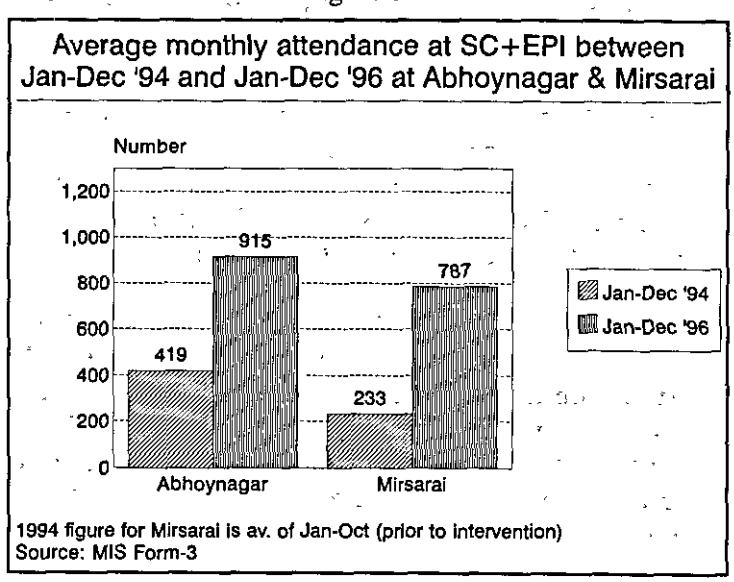
There is evidence, however, that most of the clients who attend the satellite clinic are from the village where it is conducted, even though the clinic covers two villages (Hasan et.al., 1994) . One explanation for the low visitation rate of neighboring villagers is that a woman often needs another person to accompany her to a SC held in another village. Additionally, a woman is more likely to attend an EPI spot than a SC, since the EPI spot is usually closer to her home and receives more publicity as well as provides the types of services (i.e., immunisation for mothers and children) that are in greater demand. Thus, a SC can be turned into a more viable facility with a wide range of services, provided it is closer to a woman's residence and held jointly with an EPI session.

**Intervention**: An intervention is currently underway with the objective of increasing the availability of FP-MCH and EPI services to rural women and children and providing joint services from one spot. Two unions from Mirsarai and Abhoynagar thanas have been selected for field testing of this intervention. Initially, there were eight SCs per month per union in the intervention areas. In two unions at Abhoynagar, 24 SCs sessions have been combined with 24 EPI spots; and in two unions at Mirsarai, 20 SCs sessions are being held, with 16 combined with EPI spots. Two FWVs have been posted in each intervention union. An additional FWV has been posted in each union, so that one of the FWVs can remain at the Health and Family Welfare Centre (H&FWC ) on all working days. This intervention began in January 1995.

**Initial Findings**

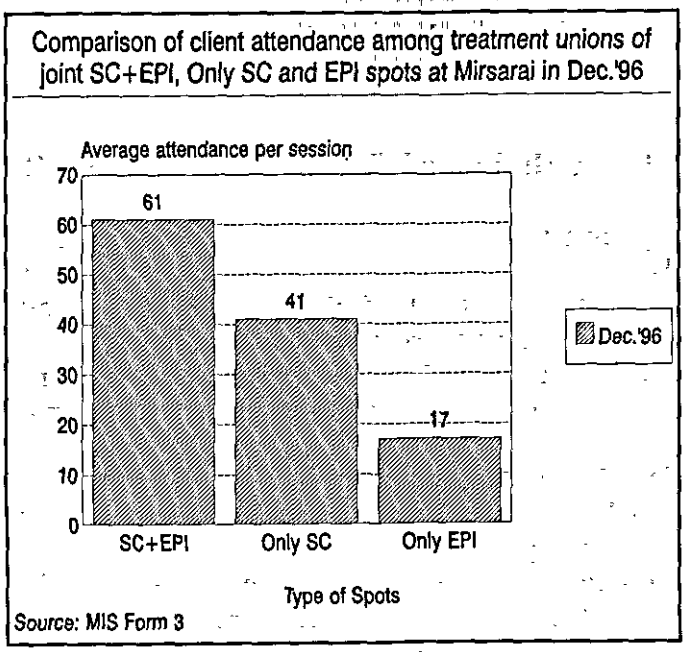
Awareness of SCs and visits to SCs have increased many times, as can been seen in Table 3.1 and 3.2. (see page 44). However, knowledge of the services actually offered at the SCs is still relatively low. Attendance at clinics at Abhoynagar increased almost three times over the previous year and more than tripled in the intervention union at Mirsarai (Figure 3.4).

Figure 3.4



In comparing attendance at joint SC and EPI spots to separate SC and EPI spots, data from Mirsarai clearly indicate that attendance is considerably higher at the joint spots (Figure 3.5).

Figure 3.5




Clients continue to associate the Satellite Clinic with health care for children, but also seek family planning and preventive MCH services. Many of the clients receive multiple services from the Satellite Clinic site. At Abhoynagar, during March-April 1996, over half of the combined SC and EPI centre clients received immunisation services, over one-quarter received Vitamin A along with immunisation, about one-sixth received other health related services and only one-eighth percent family planning-related services. At Mirsarai, during the same period, over one-half received immunisation services, about one-sixth children received Vitamin-A along with immunisation, about one-third received treatment for health and one-fifth obtained family planning-related services. However, out of those who received family planning services, more than half were also treated for health.

The Project in-depth survey data for 1993-1994 indicate that the clients who visit Satellite Clinics were found to have lower socio-economic status and educational level than those who do not visit SCs.

## Lessons Learned

(1) There is a need for information, education and communication (IEC) to inform clients about the services that are offered at the combined spots and where they are located.

(2) Involvement of community leaders is needed in promoting the use of SCs and EPI.

(3) Clients are more willing to travel to combined spots that are more accessible.

(4) The number of clients seeking services at combined spots will increase, because it is more convenient to receive different services in one location and there are more outlets and days per month when services are available.

(5) Offering combined health and family planning services from one spot, i.e., SC combined with EPI, is an acceptable service delivery strategy from both the provider and client perspective.

(6) Waiver of the mandatory Monday SC in late 1994 enabled local managers to adjust their schedules, if needed, to an alternative day of the week, depending on availability of manpower, drugs, etc., thereby, eliminating some of the logistical problems created by the mandatory Monday SC requirement.

## 3.3 The Health and Family Welfare Centre (H&FWC) Service Programme

Beginning in 1974, the Second World Bank Health and Family Planning Project funded a plan to construct clinics in 3,400 rural unions throughout Bangladesh. Unions are the primary organisational unit of the GoB, and the H&FWC construction programme aimed to develop accessible primary health care for the rural population at the local level. National plans specified a standard design for clinics with four rooms and nearby dwelling units for a staff of resident paramedics, and basic equipment and drugs for essential health services.

Since the beginning of the Extension Project in 1982, all existing H&FWC in study areas are visited to determine their clinical capabilities, operational problems, and service volume. In the beginning of the Extension Project all but one of the H&FWCs visited in Sirajganj were in disrepair, and only one of the ten mandated H&FWCs were constructed in Abhoynagar. Although a complete complement of personnel was on the payroll, none of the H&FWC staff assigned to the unconstructed clinics were reporting to work, because H&FWC service implementation was linked to the completion of World Bank construction programmes rather than to client needs. Table 3.3 (see page 45) shows the operations process used to develop interim H&FWC care in unions where no clinic had previously been constructed.

Table 3.4 (see page 46) reports the service utilisation consequences of lapses in the implementation of the H&FWC service programme. Not surprisingly, H&FWC utilisation was low. When women were asked what decisions they had taken the last time someone in their household was too sick to eat, only 1.5 percent sought help at an H&FWC. Two critical problems were addressed by the Extension Project action in response to these findings: i) there was a need to implement interim services, where staff could work in temporary facilities until H&FWC construction was completed; ii) there was a need to retrain, equip, and supervise workers to provide credible health care in standing H&FWCs.

A review of the H&FWC rules and procedures showed that lack of decentralised management explained most of the implementation problems at Abhoynagar Thana. Although the thana was fully staffed, and ample space existed in government facilities that could be used for clinical services, standing orders prevented interim implementation. Central plans specified that service implementation followed construction, preventing thana authorities from requisitioning supplies. In the absence of supplies, services could not be provided. Since most staff were under-utilised; many were engaged in personal pursuits elsewhere. Other problems identified concerning H&FWC operation are discussed below (Section 3.5).

## 3.4 Services at the THC- Basic and Comprehensive EOC

**Statement of the problem:** Complications related to pregnancy and childbirth are among the leading causes of maternal mortality in women of reproductive age in many parts of the

developing world. In Bangladesh, the current maternal mortality rate is estimated to be about 4.7 deaths per 1000 live births (Mitra et at., 1994). The combination of a high maternal mortality rate and relatively high fertility takes a huge toll on women in Bangladesh. Approximately one out of every 40 women dies of a maternal cause. In contrast, only one in 10,000 women in Northern Europe dies of a maternal-related cause (Maine et al, 1993). Over 20,000 maternal deaths occur each year in this country (Maine, 1993). Moreover, for every death, at least ten women suffer from permanent obstetrical complications that impair reproductive health.

It is known that antenatal care, even under the best conditions, cannot predict and prevent all obstetrical complications. Major studies have demonstrated that the high risk approach has its limitations. A study in Kasongo, Zaire (1984) shows that previous bad obstetric history has a very poor sensitivity in defining the group of women at risk of obstructed labor. Rooks and Winikoff(1990) made a review of several studies and came to the conclusion that the sensitivity of the risk assessment approach is poor in view of the pregnancy outcome. Winikoff(1991) and Walsh(1991) concluded that maternal mortality and morbidity can only be drastically reduced by providing effective services at the time of obstetric emergencies. Therefore, maternal mortality cannot be substantially reduced, unless women have access to emergency obstetric care (Maine et. al., 1993). In Bangladesh, almost 60 percent of deliveries are assisted by untrained traditional birth attendants(TBA), who have no midwifery training, 29 percent by relatives, and only 10 percent are by medically trained personnel (Mitra et al., 1994).

According to UNICEF, 10-15 percent of the total pregnancies may have complications, and 5 percent of all pregnancies may require caesarian section (Maine, 1993).

The Thana Health Complex (THC) is the first static facility, where basic Emergency Obstetric Care (EOC) services are expected to be available. EOC consists of measures and services provided to women with complications during pregnancy, childbirth and within 42 days of childbirth. Unfortunately, most THCs are neither equipped to provide these services nor do they have the skilled manpower to do so. Basic EOC services include oxytocics (injectable), antibiotics (injectable), anticonvulsants (injectable), manual removal of placenta, and assisted vaginal delivery (ICDDR,B MCH-FP Extension Project (Rural), Concept Paper, December 1995).

**Intervention:** The Project started an intervention in 1993 to upgrade the obstetric services at the thana level to improve the quality and the range of services at the THC in order to provide adequate obstetric care and manage most of the complicated cases at the THC level. A summary of this intervention can be found in Table 3.5 (see page 47).

**Basic Emergency Obstetric Care: Abhoynagar**

The delivery room at Abhoynagar was rehabilitated in 1993. The existing equipment was repaired, and complementary instruments were provided. Seven emergency drugs were made available by the Project in the maternity unit for obstetric care. When used, the drugs are replaced by the patient at her expense. A partograph was introduced for systematic labor monitoring, and guidelines have been established for the management of prolonged labor. In 1994, a referral system was introduced between the THC and other referral district/divisional

hospitals. Two medical officers and one medical technologist were trained in blood transfusion. The Directorate of Health trained two medical officers in Gynecology and Obstetrics from January to June 1996.

The following procedures were made available at the Abhoynagar THC, beginning in 1993:
**(i) Labor monitoring and vaginal delivery**: Vacuum delivery, forceps delivery, labor monitoring with Partograph, artificial rupture of the membranes and stimulation of the uterus with oxytocic perfusion.

**(ii) Medical treatment:** Treatment of shock, sepsis, pregnancy induced hypertension, eclampsia and blood transfusion (started in June 1995)

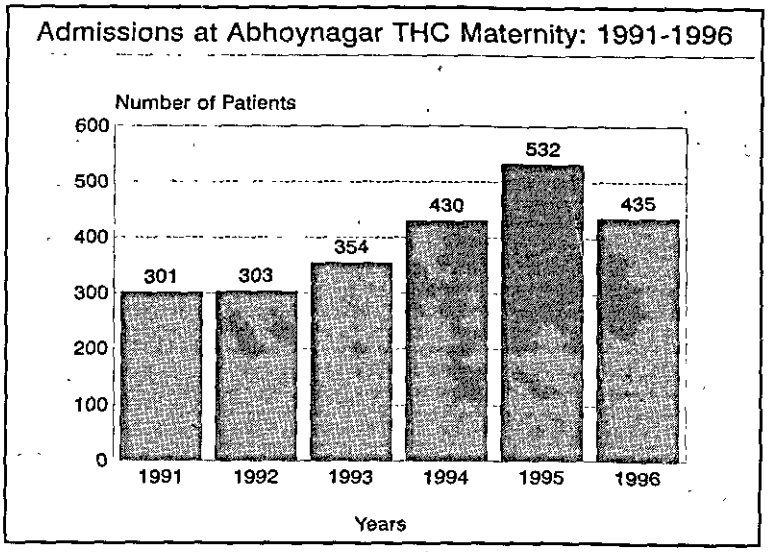
**(iii) Blood transfusion:** Blood grouping, collection, cross matching and direct transfusion began in June 1995. Screening for Syphilis (VDRL test), Hepatitis B ($HB_s$ $A_g$ test) and Malaria (M.P. test) is carried out on all blood donations at Abhoynagar. A voluntary donor list has been prepared for the thana, which will be useful for emergency transfusions of rare blood groups.

**(iv) Surgical treatment**: Repair of first, second, and third degree perineal tear, cervical tear, manual removal of the placenta, dilation and curettage and embryotomy.

(v) **Family planning services**: Post-abortion contraceptive counselling started in June, 1996.

**Findings**

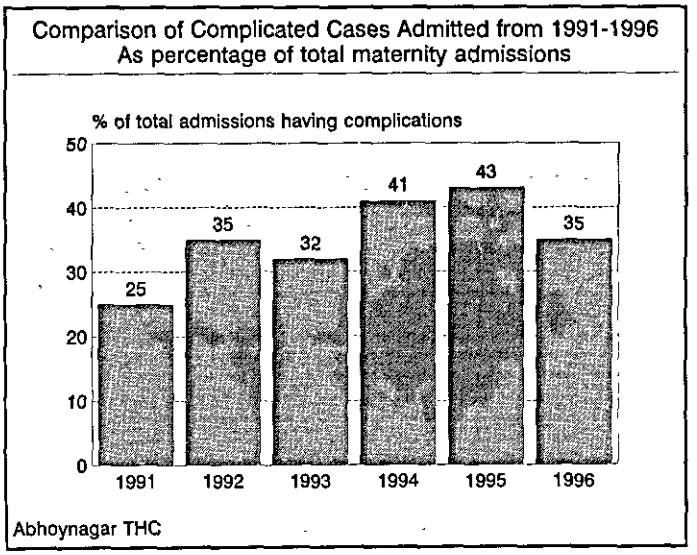
Figure 3.6




**Admissions:** There was a steady increase in the total number of admissions from 1993, the year the intervention began to 1995. During the two years prior to the intervention, about 300 patients per year were admitted to the THC maternity. In 1995, the number of admissions exceeded 500 (Figure 3.6). It should be noted that blood transfusion services, an important component of obstetric care, were introduced in June, 1995. Based on the fertility rate in the area, the admissions in 1995 represented 10 percent of the total live births in the thana compared to 6 percent in 1992. Significant increases in the number of admissions compared to the years prior to the intervention indicate a positive impact of the intervention in the community. The drop in admissions in 1996 was due to (1) political unrest during the first half of the year; and (2) floods in Rajghat, Sreedharpur and Noapara for 3 months (all areas were under water). The number of deliveries at the THC was 124 in 1992, and almost doubled (237) in 1995.

The proportion of cases admitted with complications was also higher in 1995 than in the previous years. It has gone up from 25 percent in 1991 to 43 percent in 1995 (Figure 3.7). This is an indication of some changes in hospital care and probably in the community. The THC staff were more prompt in recognising complications in 1995 than in 1992. Provision of blood transfusion and overall improvement of the quality of care might have encouraged a large number of patients to the THC. It can be noted that the intervention on informing pregnant women and their relatives about the signs of obstetric complications might have contributed as well. A decrease in the proportion of stillbirths has been noted.

Figure 3.7




## Referrals

The percentage of referred cases from the THC to a comprehensive EOC unit did not change, and remained at 15 percent of all admissions in 1995, as it was in 1992. However, patients normally requiring referral for haemorrhage have been treated at the THC rather than being referred to the district hospital since the intervention has been in place.

## Maternal deaths

The case fatality rate increased after 1992, as did the proportion of women admitted with complications. It is to be noted that no woman died from hemorrhage in 1995, although this is one of the major complications. Eclampsia remains the major killer.

## Service Providers' perspective

A focus group discussion conducted in November 1995 showed that the medical team is very satisfied with being able to provide more appropriate services for their patients and they strongly recommended setting up services for caesarian section. However, the major constraint expressed by all members of the medical team is the limited number of nurses and sweepers.

## Blood Transfusion

From June 1995 to June 1996, after blood transfusion services began at the Abhoynagar THC, over 91 people were transfused. In the focus group discussions, the THC doctors and nurses argued that blood transfusion at the thana level is essential. A reasonable service charge was decided upon in order to make this service sustainable. According to the doctors, there was no community objection to the fees. The income generated between September and December 1995 covered 100 percent of the expenditure for the reagents and transfusion bags.

## Lessons Learned

### Utilisation of Obstetric Care

(1) Improvement in the quality of care provided and the provision of life-saving services such as blood transfusion at the THC, resulted in a remarkable increase in the use of obstetric services.

(2) The increased proportion of complicated cases admitted to the hospital probably reflects changes at the THC as well as at the community level. Due to improvements in quality of care, complications are more promptly diagnosed on admission and the community is more inclined to seek the services of the hospital for complications. The community-based intervention, aimed at creating awareness about obstetrical complications, has also probably contributed to the increase in the use of hospital services in cases of complications.

### Management of Complications

(3) Provided they have some experience, the THC medical officers and doctors have the capability to provide a package of services to manage obstetric complications that do not require major surgery.

(4) Obstetric care requires close monitoring of patients over several hours. The number of nurses at the THC is insufficient to ensure proper monitoring of women in labor and to provide care for surgical cases. Transfer of trained personnel is of concern. The relative stability of the personnel at Abhoynagar contributed to sustaining the new intervention.

(5) There is no effective system of supervision at the THC level.

(6) The lack of contingency money for the EOC services is a major hindrance to ensure adequate maintenance and provision of consumable items.

(7) The lack of cooperation between the Health and Family Planning wings at the Thana level is preventing integration of Family Planning services into the THC maternity.

### Sustainability and Replicability

(8) The services presently delivered at the THC are sustainable, provided some of the problems described above are solved. Trained staff should not be transferred without securing continuity of qualified staff. Technical supervision of personnel should be ensured.

(9) Payment for blood grouping and blood transfusion services is a key element for sustainability. The Abhoynagar experience shows that a proper system can be managed by the THC staff, and that reasonable fees are sufficient to recover expenses for most consumable items required for those services.

## Quality of Care

(10) The quality of care is not yet at an optimal level, but this experience shows that it can be further improved (Juncker et al, 1996). Continuous supervision will help to integrate and sustain quality of care in the system.

Since August 1996, the government has taken steps to introduce comprehensive EOC at Abhoynagar THC. Two Medical Officers have been trained, 6 months each, in obstetric and gynecology. An anesthesia machine has been installed. It is expected that caesarean sections can be started as soon as an anaesthetist is placed at the THC.

## Comprehensive EOC: Mirsarai

With lessons learned from Abhoynagar, the MCH-FP Extension Project decided to establish comprehensive EOC at the Mirsarai THC. Comprehensive EOC services, in addition to providing basic EOC services, also includes caesarean section and blood transfusion (ICDDR,B MCH-FP Extension Project (Rural), Concept Paper, December 1995). The Mirsarai THC has a larger population, and the catchment area is also large. The MOHFW agreed to allocate a substantial amount of about Tk. 7 million for the overall improvement of the THC. It was decided to make additional construction to provide all the required rooms for the new EOC unit and to purchase necessary equipment with the allotted money. The construction work was completed in June 1995. Most of the equipment was supplied either by the Directorate of Health or by the Directorate of Family Planning.

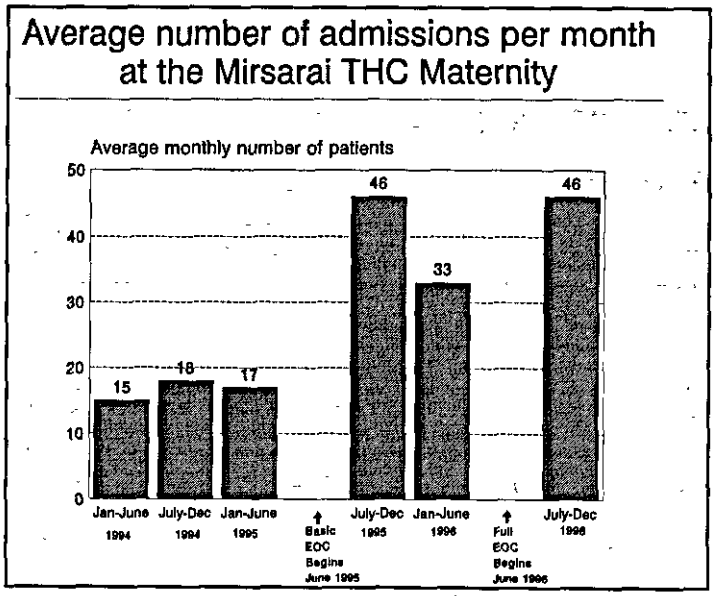
The Director-MCH arranged a one-year training for two MO-MCHs of Mirsarai on obstetrics and anaesthesia, respectively. After completion of training, they resumed work at the THC in September 1996. A two-week training on blood transfusion was completed for one medical officer and one technologist. The vacant post of the anaesthetist has been recently filled by the government.

### Findings

- Blood transfusions and caesarian section operations started in June 1996 at the Mirsarai Thana Health Complex. However, patient admission increased remarkably after the opening of the EOC Unit in June 1995 (Figure 3.8). As of January 1997, 23 blood transfusions had been provided at Mirsarai THC. Screening for Syphilis (VDRL test), Hepatitis B ($HB_s$ $A_g$ test) and Malaria (M.P. test) is carried out on all blood donations at Mirsarai. A voluntary donor list has been prepared for the thana, which will be useful

Figure 3.8

Average number of admissions per month at the Mirsarai THC Maternity



for emergency transfusions of rare blood groups. The first caesarean section at the thana level in rural Bangladesh took place at Mirsarai in June 1996, a remarkable milestone in the Bangladesh's reproductive health programme. Since then, several more caesarean sections have been performed, all of them successfully.

- The temporary decrease in admission during the first half of 1996 may have been due to the prevailing political situation in the country during that time, which substantially restricted the mobility of clients and providers' ability to deliver services. In addition, two of the MOs performing obstetric services were away in training for most of this period. Despite these limitations, it should be noted that the average monthly number of admissions during the Jan-June period in 1996 was approximately twice as high compared to those in the corresponding periods in 1994 and 1995. With the appointment of the Obstetrician, the range of services at the THC also has increased. As reported during interviews, people in the community are generally happy with the new services.

**Lessons Learned**

(1) Commitment and involvement of high officials speed up any new intervention, as was the case for this one.

(2) The conflict between Health and Family Planning wings is very difficult to overcome, and impedes effective implementation of a programme, particularly one that involves both health and family planning in a joint effort. However, the problem is considerably less acute at Mirsarai than elsewhere.

## 3.5 Providing Quality Services at the THC and H&FWC

The Project has been involved in improving certain basic clinical procedures. Specifically, the Project tested the utility of a new IUD steriliser, investigated procedures for safe disposal of clinical waste, and experimented with varying the hours of clinic operation. The lessons learned from these activities are summarised below.

### 3.5.1 IUD Steriliser

**Statement of the problem:** The Intra Uterine Device (IUD), once a very popular method, is now one of the least popular modern methods (Mitra et. al, 1994). It has been found that one of the most important reasons for declining IUD acceptance was reproductive tract infection, resulting from improper cleaning, disinfection and sterilisation of the instruments (AVSC, MOHFW, and URC, 1992).

An IUD evaluation study (Kamal, 1990) found that common IUD equipment sterilisation practices of FWVs were to boil the equipment in water (42%), soak the equipment in savlon (33%) and boil and then soak the equipment in savlon solution (37%). It should be noted that savlon alone does not sterilise IUD equipment properly.

Common observed practices of FWVs (Nessa et al., 1994) for sterilising IUD equipment at SCs include boiling and soaking at the SC, or soaking the instruments in savlon at the H&FWC and then carrying them to the SC wrapped in an unclean cloth, plastic bags or in a pan with a loose cover.

Thus, it is clear that the instruments are not sterilised properly, increasing the risk for infections in clients, especially RTIs.

**Intervention:** The national IUD Task Force recommended experimenting with a new IUD steriliser, a small-sized autoclave with three compartments for sterilising IUD equipment. AVSC took the overall responsibility for the development of the IUD steriliser, with the Project being responsible for the initial testing of the sterilisers in the field. This is the same steriliser used in the EPI programme for sterilising syringes and needles. In order to use the EPI steriliser for IUDs, modification of the device was necessary. Three separate compartments were made to hold three sets of IUD instruments. The length of the uterine sound was reduced from 13 inches to 8.5 inches and the tenaculum from 9.5 to 8.5 inches, so that these could be accommodated in the compartments. After the modifications were completed, the Task Force decided that the Project having extensive field experience, should conduct the field test. Thus, twenty sterilisers were field-tested.

In order to enhance the quality of the IUD service provided, a one-day training workshop was conducted on the operation of the steriliser for the FWVs, Senior Family Welfare Visitors (SFWVs) and Medical Officers (MOs).

Twenty two FWVs conducted 176 "sterilisation sessions". Seven SFWVs and seven MOs observed eighty four sessions. Five Focus Group Discussions (FGDs) were also conducted with the SFWVs, FWVs, and MOs. The FWVs did not have any problems following the procedures for sterilising the equipment, operating the timer, removing the compartments from the steriliser, removing the instruments from the compartments, and following the guidelines on the use and maintenance of the steriliser. The FWVs and SFWVs in over half of the sessions and the MOs in two-thirds of the sessions reported that it was easy to arrange the compartments with the three sets of IUD instruments in the steriliser. In about half of the sessions, the MOs observed that it took 2-3 attempts to close the lid of the steriliser. The SFWVs and the MOs said that closing the lid depended on the length and proper arrangement of the instruments (refer to Table 3.6 (see page 49), for a summary of this intervention).

### Status and Expected Results

Twenty-two sterilisers were field tested in close collaboration with AVSC. Of these, twenty were tested in the Project sites. The IUD instruments are now being sterilised at the H&FWC, and carried to the SC for IUD insertions there.

- **Increased range of services:** With the introduction of the new IUD steriliser, it is expected that the quality of the IUD service at the SCs will improve. This incidence of RTI may have been high before the insertion. This risk of RTI can now been minimised as the steriliser maintains the sterility of the instruments during transport and allows the Copper-T to be inserted under aseptic conditions.

- **Enhance the quality of IUD services:** During the field testing of the steriliser, an average of four IUDs were inserted per Satellite Clinic. The FWVs, SFWVs and MOs stated that though only three sterile IUDs could be carried in the steriliser at a time, the equipment could now be re-sterilised at the SC if needed.

**Lessons learned**

(1) The steriliser is easy and convenient to use, and ensures the sterility of the IUD equipment. It gives the FWVs three complete sets of sterile IUD equipment, which they can carry to the Satellite Clinic.

(2) It saves the FWVs time in the Satellite Clinics, because they do not have to wait for the instruments to be boiled after each insertion.

(3) It maintains the sterility of the instruments during transport.

(4) It makes the common practice of soaking the instruments in savlon, which is an ineffective way of sterilisation, unnecessary.

(5) It reduces the cost of sterilisation.

(6) Money for fuel and transportation should be ensured to continue the use of the multi-chambered steriliser.

(7) The Government of Bangladesh has agreed to introduce the multi-chambered IUD sterilisers in each union under the national programme. An order for 6500 IUD steriliser from Copenhagen was placed in March 1997. These IUD sterilisers are expected to be received in July 1997 and introduced in the national programme.

### 3.5.2 Clinical Waste Disposal at the Thana Level

**Statement of problem:** Waste disposal is a serious problem in hospital facilities and maternity centres. Contaminated material and blood products accumulate daily. There is no systematic and safe mechanism for disposal of infected waste at the THC. Burning a large amount of materials in an open space may be difficult, especially during the rainy season.

**Intervention:** In October 1993, the MCH-FP Extension Project initiated an experiment at the Abhoynagar THC, Jessore, to: (a) test a mechanism for collecting and disposing of clinical wastes from the hospital; (b) test the feasibility of using a simple incinerator and two deep pit holes to dispose of waste; (c) test the durability of the incinerator; and (d) estimate the cost of the incinerator. A summary of this intervention can be found in Table 3.7 (see page 50).

A low cost incinerator was built at a cost of taka 22,000, including two pit holes. Clear guidelines and formats on the collection, incineration and disposal of waste were made. The intervention deals with two types of waste. The first type includes dry products that can be burnt in the incinerator, including syringes, needles, cotton, swabs, gauze, dressings, rubber gloves, transfusion sets, vials, and lancets. They can be put into the incinerator for burning. The second includes wet products that cannot be burned in the incinerator, such as placenta, fetal parts, and blood products.

Two pit holes were dug and covered with cement lids - one for the disposal of ashes after incineration, and the other for disposing of fetal parts and blood products.

Hospital sweepers are responsible for collecting, burning and disposing of hospital waste. The clinical staff supervise the collection and incineration of the waste.

The incinerator at the Mirsarai THC was built in June 1995, at the same time facilities for comprehensive EOC were being built.

**Findings**

- Both the sweepers and the clinical staff have welcomed the initiative. They think of it as a means of keeping the hospital clean, and a way of reducing their workload because they clean and dispose of the waste in a systematic and defined way.

- The incinerator seems to be durable, but many things cannot be burnt at one time. It should be made of the more appropriate and durable fire bricks instead of the normal bricks.

**Lessons Learned**

(1) The final evaluation of the incinerator is not yet complete. However, experience, thus far, shows that the incinerator requires close supervision and monitoring for proper functioning and use.

(2) The incinerator designed by the project was relatively inexpensive and functional and was subsequently replicated in two other thanas (Mirsarai and Jhikargacha) in 1995.

### 3.5.3 Varying Hours of Clinic Operation

At the request of the GoB, the Project began an intervention at Abhoynagar in August 1996 to test the feasibility of varying the operation hours of H&FWCs to give working women and men a greater opportunity to access services. The usual operating time of 8:30 am. to 2:00 pm. was not considered convenient for working women and men, who could only visit the clinics in the late afternoon or evening. In the intervention area, clinic hours were changed to two sessions: 10:00 am. to 01:00 pm. and 04:00 pm. to 06:00 pm. This intervention is being monitored, and it is too early to say anything conclusively at this stage.

## 3.6 Conclusions

As the national programme attempts to become more sustainable, efforts to increase the utilisation and quality of fixed service site clinics will intensify in the future. The programme will gradually move away from the costly doorstep delivery of mostly family planning services to the provision of an essential package of health and family planning services at fixed service sites. However, outreach services will undoubtedly be needed in the community to inform and refer family members for essential family planning and health services at various tiers of the health care system.

Table 3.1: Awareness and Utilisation of Satellite Clinics in Intervention and Non-intervention Areas

| Area | 1989 | | | 1992 ** | | |
|---|---|---|---|---|---|---|
| | N | %Knew of SC | %Attended SC | N | %Know of SC | %Attended SC |
| Intervention | 5,330 | 39.6 | 13.0 | 5,708 | 50.6 | 25.0 |
| Non-intervention (Comparison areas) | 2,588 | 11.9 | 5.9 | 2,878 | 29.5 | 13.1 |

Note: For both variables (knowledge and attendance), there is a significant difference between intervention and non-intervention areas in both areas.
** Sample size in 1992 was somewhat larger than that in 1989.
Source: Sullivan et. al., Satellite Clinics: An Overview of Research from the MCH-FP Extension Project, Working Paper No. 83, June 1993.

Table 3.2: Awareness and Utilisation of Increased Satellite Clinics in Intervention and Non-intervention Areas

| Thana | Year | Area | Knowledge (%) | Visit (%) |
|---|---|---|---|---|
| Abhoynagar | 1993 | Intervention (N = 3159) | 73.5 | 42.1 |
| | | Comparison (N = 1808) | 63.0 | 28.6 |
| | 1996 | Intervention (N = 2040) | 92.8 | 62.7 |
| | | Comparison (N = 629) | 66.5 | 20.0 |
| Mirsarai | 1994 | Intervention (N = 886) | 20.0 | 5.3 |
| | | Comparison (N = 755) | 32.6 | 11.1 |
| | 1996 | Intervention (N = 840) | 88.3 | 39.4 |
| | | Comparison (N = 711) | 61.5 | 16.2 |

Note: The SRS samples were asked about their knowledge of Satellite Clinic sites at every two month round. As a result, there may be bias towards over reporting of knowledge.
Source: Indepth Survey, 1993 and 1994; Special SC+EPI Survey, 1996.

4.

Table 3.3: Developing Interim H&FWC Care in Unions Where No Clinic had been Constructed

| Problem | Diagnostic/Intervention | Finding | Recommendation | GoB Action | Reference |
|---|---|---|---|---|---|
| • H&FWC services not implemented unless facilities have been constructed | Review procedural barriers to implementation | • No funds for rent; no programme for community action | Disconnect implementation from the construction programme | Special orders issued permitting trial of interim H&FWC's in unions where construction was not complete | Corbett, *et al.* 1986<br><br>Rahman M. 1982 (a). MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 8).<br><br>Rahman M. 1992 (b). MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 9). |
| • Long delays in construction; over centralisation of site selection, contractors, and construction decisions<br><br>• H&FWC's not fully functioning even in unions where construction had been completed | Develop thana-based procedures for interim H&FWC operations | • Supplies not released unless construction facilities available in all study union; minor funds for renovation required | Provide supplies to interim H&FWC<br><br>Provide funds to THC for H&FWC implementation<br><br>Pretest interim H&FWC programme in Extension Areas | | |
| | Develop and document implementation plan for constructed H&FWC | Rapid implementation is feasible | Develop implementation guidelines for the national programme | Guidelines for H&FWC implementation developed | Juncker T. 1994<br><br>MOHFW, 1986<br>MOHFW, 1995 |

Table 3.4: Percentage Distribution of Respondents by Primary Source of Health Care for Most Recent Case When a Child Became too Ill to Eat: 1983

| Place of Consultation | Sirajganj | Gopalpur | Abhoynagar | Fultala | Total |
|---|---|---|---|---|---|
| Health and Family Welfare Centre (H&FWC) | 1.9 | 0.7 | 1.2 | 2.1 | 1.5 |
| Thana Health Complex (THC) | 3.9 | 2.4 | 3.5 | 2.9 | 3.5 |
| Inside respondent's bari | 33.0 | 33.3 | 21.0 | 16.4 | 27.6 |
| House of traditional practitioner or other provider | 59.2 | 61.8 | 74.1 | 78.6 | 66.2 |
| Other sources | 2.0 | 1.7 | 0.2 | 0.0 | 1.2 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Total sample | 1,023 | 288 | 686 | 238 | 2,235 |

Source: Phillips and Koblinsky, 1984

Table 3.5: Developing EOC at Abhoynagar and Mirsarai

| Problem | Intervention | Finding | GoB Action | Reference |
|---|---|---|---|---|
| . Maternal mortality in Bangladesh is 4.7 per 1000 live births, and over 20000 maternal deaths occur each year in this country.<br>. Almost 90 percent of all deliveries are assisted by medically untrained persons.<br>. 10-15 percent of all pregnancies are associated with complications, and 5 percent may require caesarian section.<br>. Most Thana Health Complexes (THCs) are neither equipped to provide obstetric services, nor do they have the skilled manpower. | Intervention launched in 1993 to upgrade the services at the thana level. This included the following:<br>. Rehabilitation of the delivery room.<br>. Repair of the existing equipment.<br>. Provision of complementary instruments.<br>. Seven obstetric care emergency drugs made available on a cost recovery basis.<br>. Partograph introduced for systematic monitoring of labour | . Study increase in the total number of THC maternity admissions since 1993.<br>. Total number of admissions with complications has increased.<br>. Total number of stillbirths decreased.<br>. Partograph was not found to be a useful tool for labour monitoring. | Govt. is taking necessary steps to upgrade Abhoynagar THC from basic to comprehensive EOC.<br>There will be phase-wise upgradation of most THCs into comprehensive EOC. | Maine D. 1993<br>Mitra et. al.,1994<br>Ahmed S. et. al., 1996. MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 145)<br>Juncker T, et.al,. 1996. (WP No.124)<br>MCH-FP Extension Project (Rural), ICDDR,B, Intervention Update, Vol. 3, No. 4, 1996 |

Table 3.5: (Cont...)

| Problem | Intervention | Finding | GoB Action | Reference |
|---|---|---|---|---|
| No proper FP counselling and service provision available for post-partum mothers in the community. | . Guidelines made for the management of prolonged labour<br>. Referral system between the THC and other referral district/divisional hospitals.<br>. Medical Officers and technologists trained in blood transfusion.<br>. Medical Officers trained in ObGyn and Anaesthesiology in 1994.<br>. Post-partum contraceptive counselling started in June 1996. | . Not much of a change in referrals was observed.<br>. Blood transfusion services were successfully launched.<br>. Service providers supportive of this initiative. | | |

Table 3.6: IUD Steriliser

| Problem | Intervention | Finding | Recommendation | GoB Action | Reference |
|---|---|---|---|---|---|
| IUD had become the least popular method due to high rate of RTIs resulting from poor cleaning and sterilisation of instrument | IUD task force recommends testing use of 22 new sterilisers in Project Satellite Clinics.<br><br>Training workshops held for FWV, SFWV and MO, on use of new steriliser. | No problems arise with use or maintenance of steriliser<br><br>Quality of IUD services improve in study area<br><br>Steriliser simple and convenient means of providing SCs with sterilised IUD equipment<br><br>Saved FWVs time and is energy and cost-efficient<br><br>More women could be given IUDs on any one clinic day. | Guidelines developed for large scale replication<br><br>MOHFW should provide each H&FWC with fuel and transportation implementation | GoB ordered 6500 IUD sterilisers in March 1997<br><br>IUD sterilisers will be introduced nationwide at the union level in July 1997 | AVSC, MOHFW, & URC, 1992<br><br>Nessa, 1994, MCH-FP Extension Project (Rural), ICDDR,B, (Woking paper 103)<br><br>Mitra et. al.,1994<br><br>AVSC International, USAID/Dhaka and PATH/Washington, D.C. October 1995.<br><br>Barone M. et. al., April 1996. |

Table 3.7: Developing Clinical Waste Disposal Procedures

| Problem | Diagnosis/ Intervention | Finding | GoB Action | Reference |
|---|---|---|---|---|
| . No systematic mechanism for safe disposal of contaminated material (e.g. syringes, needles, cotton, swabs, gauze, dressings, rubber gloves, transfusion sets, vials, lancets) | The Project initiated experiment to test:<br>. procedures for collecting and disposing of clinical wastes.<br>. feasibility and durability, and to measure the cost of a simple incinerator. | . Final evaluation is yet completed. Experience indicates the intervention is effective, functional and replicable in other thanas if appropriate supervision ensured. | The project was appreciated by district level health managers and has been replicated in two other thanas | Mirza, et. al., 1996. (Working paper 119) |
| . Burning hospital waste in an open space adds to environmental pollution, and is very difficult in the rainy season. | . feasibility and durability of two pit-holes to dispose of non- combustible waste. | . Support staff welcomed the initiative as a means of keeping the hospital clean and reducing maintenance. | | |
| . No proper disposal of products that cannot be burned, i.e. blood products and waste tissue like placenta, fetal parts, blood, etc. | Clinical staff trained in procedures for supervising the collection and incineration of waste. | | | |

## Reference

Ahmed S, Mitra D, Ahmed MU, Wazed A, Khyang J. 1996. "Introduction of Comprehensive Emergency Obstetric Care at the Thana Level: Experience from Mirsarai, Chittagong." Dhaka: MOHFW and MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 145).

AVSC, MOHFW, and URC, 1992. Assessment of Clinical Contraception Services in the Bangladesh Family Planning Programme. Dissemination Workshop, August 1992.

AVSC International, USAID/Dhaka and PATH/Washington, D.C. October 1995. Validation of an IUD Instrument Steam Steriliser. Final Report.

Barone M, Faisel AJ, Andrews L, Jahiruddin A, Begum R. April 1996. " Development of an IUD Instrument Steriliser for Use in Bangladesh." Paper presented at the Annual Meetings of the Society for Health Epidemiology.

Bruce J. 1990. "Fundamental elements of the quality of care: a simple framework." *Studies in Family Planning* 21, 2: 61-91

Corbett M, Koblinsky MA, Rahman M, Khan AM, Rahman F, Zaman MA. 1986. "Implementation of the Maternal Child Health and Family Planning Logistics System at Upazila Level: Supplies at the Health & Family Welfare Centre." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 12 - unpublished).

Hasan MY, Rahman Md F, Khan MH, Wazed A. 1994. "Accessibility and Services in Satellite Clinics: Findings from Exit Interview." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 98 - unpublished).

ICDDR,B MCH-FP Extension Project (Rural). 1988. "Functioning Satellite Clinics: The Experience of the ICDDR,B Extension Project." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Briefing paper 5 - unpublished).

ICDDR,B MCH-FP Extension Project (Rural). 1990. "A Cost-Effectiveness Analysis of Alternative Approaches to Providing Satellite Clinic Transport." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Briefing paper 13 - unpublished).

ICDDR,B MCH-FP Extension Project (Rural). 1991. "Increasing the Effectiveness of Satellite Clinics: Improving the Supply of Drugs and Equipment." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Briefing paper 15 - unpublished).

ICDDR,B MCH-FP Extension Project (Rural). 1995. "Strengthening Maternal and Neonatal Health: Improving Linkages at all levels". Dhaka: MOHFW and MCH-FP Extension Project (Rural), ICDDR,B, (Concept paper - unpublished).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Maternal and Neonatal Health: Emergency Obstetric Care at the Thana Level." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Intervention Update-Flyer, Vol. 3, No. 4 - published).

Jain AK, Bruce J. 1989. "Quality: the key to success." People 16, 46-8.

Jain AK. 1989. "Fertility reduction and the quality of family planning services." *Studies in Family Planning* 20, 1: 1-16.

Jain AK. 1990. "Commentary on program performance indicators." Presented at the First Annual Latin America Conference on Quality of Care in Family Planning. Maxico, August.

Jain, AK. 1992. Managing Quality of Care in Population Programs. Kumarian Press.

Juncker, T. 1994. "Clientele and Types of Services at the Family Welfare Centres and Satellite Clinics in Rural Areas of Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 109 - unpublished).

Juncker T, Khan MH, Ahmed S. 1996. "Interventions in Obstetric Care: Lessons Learned from Abhoynagar." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 124 - published).

Kamal M, Rahman S. Nasrin T. "IUD Annual Evaluation 1990". Associates for Community and Population Research."

Maine D. "Reduction of maternal mortality in Bangladesh 1995-2000." UNICEF: February 1993.

Mirza T, Ashraf A, Kabir H, Wazed A, Ahmed J. 1996. "Clinic Waste Disposal in the Rural Family Planning Programme of Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 119 - published).

Mitra SN, Ali MN, Islam S, Cross AR, Saha T. 1994. "Bangladesh Demographic and Health Survey: 1993-1994." NIPORT and Mitra and Associates, Dhaka and Macro International Inc., Calverton, MD, U.S.A.

Nessa F. "Report on the field testing of IUD steriliser", June 1994. Working Paper No. 103: MCH-FP Extension Project (Rural), ICDDR,B.

Rahman, M. 1982 (a). "Functional Analysis Plans for Govt. Primary Health Care Services Delivery Systems in Extension Projects, Sirajganj and Noapara. Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 8 - unpublished).

Rahman, M. 1982 (b). "Health and Family Planning Activities in the Demonstration Unions. Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 9 - unpublished).

Sadik N. 1990. The State of World Population, 1990. New York: United Nations Population Fund.

# CHAPTER 4

# IMPROVING MANAGEMENT SUPPORT SERVICES

Yousuf Hasan
Ali Ashraf
Mahidul Islam
Mafizur Rahman
Mizanur Rahman
Thomas T. Kane
Barkat-e-Khuda

## 4.1 Introduction

Efficient and effective management is essential to the health and family planning programme, which has a large work force, a sizeable physical infrastructure, complicated logistics and supply systems and a substantial management information system (MIS). One of the key roles of the Project has been to identify and address some of the critical management issues of the national programme. The Project has been involved in improving record-keeping, developing operations research for MIS, providing better monitoring and supervision, building training capacity and addressing issues related to the management of logistics and supplies. The lessons learned from these various interventions are summarised below.

## 4.2 Improving Performance Monitoring, Supervision and the MIS

Since the mid 1970s, the Bangladesh Family Planning programme has been widely known for its strong community-based distribution (CBD) approach, where almost 35,000 fieldworkers deployed by the government and non-governmental organizations (NGO) are expected to contact every eligible woman for the purpose of motivation and provision of family planning and MCH supplies and services. Monitoring and supervision were generally considered weak areas in the national programme, but had received no meaningful attention. The role of systematic supervision in any family planning programme with a strong CBD approach is crucial. It is generally believed that quality supervision can improve the performance of fieldworkers, who need supervisory guidance and support to do their jobs effectively. Routine monitoring of a set of planned activities in order to take corrective action to remove deficiencies is an important element of supervision and an integral component of the managerial process.

The Extension Project interventions were initially designed to transfer the successful elements of the Matlab system, such as a timely and accurate record-keeping system for monitoring and systematic supervision of family planning and health fieldworkers. The Project attempted to replicate the work routine, record-keeping, and supervisory styles followed in the Matlab programme without increasing its financial requirement. The Project has contributed to the development of the GoB MIS for fieldworkers (FWAs and HAs), particularly in the development of the FWA Register and the HA Register. The

Project gained the support of the thana and district managers through the Project Implementation Committee (PIC), which legitimised all interventions initiated by the Project. As the needs and priorities of the national programme shifted, the government began requesting that the project test additional strategies for improving the monitoring and supervisory activities within the national MCH-FP programme.

The Project contributed to the development of different monitoring tools to improve the performance of the national programme. Some of the tools designed by the Project have been absorbed in the national programme. This section discusses the role of the Project in institutionalising monitoring and supervision and improving management information systems of the national programme at the sub-national level, and documents some of the lessons learned in the process.

### 4.2.1 Monitoring

Staff meetings in the MOHFW system at the thana level often take the form of exhortations to workers to achieve unrealistic goals. MOHFW officers have been trained in family planning technology rather than in ways to provide administrative support to staff so training was essential. Training modules and interventions were developed by the Project to improve the quality of management information and teamwork in problem solving. Elements of this initiative are described below and summarised in Table 4.1 (see page 81).

#### 4.2.1.1 Using Meetings for Monitoring

**Statement of the Problem:** The Project found that mandated meetings (weekly, biweekly, monthly, mid-level supervisory, salary and supply meeting, and H&FWC meetings, etc.) were not being held regularly. The meetings were not properly organised or routinely attended by all field personnel. The meetings lacked a predetermined agenda, and there was no discussion of the union and ward performance, contraceptive prevalence, or field problems (resistant individuals or groups, shortage of supplies and medicines, FWA vacant position, or poor due dose coverage for injectables, etc.). Minutes of the meeting were not recorded, and decisions were not adhered to.

**Intervention:** The Senior Health Assistant (SHAs) helped the FPIs organise the meetings, set the agenda and help ensure the proper functioning of the meeting (see Table 4.2 - page 82).

**Findings**

Working with the FPIs, the SHAs made sure that meetings were held according to a schedule and that all field personnel attended. Meetings were usually chaired by the FPI, and a rapporteur was selected. The chairperson was mutually selected. The SHAs consulted with the FPIs before the meeting to establish an agenda which was written on a blackboard, wall board or meeting register. The FWAs brought the Record-Keeping Book (RKB) to be checked by the FPI. Good performing workers were praised, and poor performing workers were offered assistance. This process was found to be useful for monitoring individual performance as well as aggregated outputs at the ward and union levels. This contributed to a gradual improvement in the thana performance.

**Lessons Learned**

(1) Meetings are an important element of the monitoring and supervision aspects of the programme.

(2) Meetings help systematise the performance review process.

(3) Meetings are an important forum for resolving other problems such as conflicts between workers, community related problems, and for informing workers about important policy and programme changes.

(4) Holding meetings in a systematic manner (e.g., at a regular time with a fixed agenda and minutes taken) contribute to better monitoring of performance. The meetings provide an excellent venue for performance review and problem discussion, and provide necessary on-the-job training. The meetings would be more useful if they could be a part of the entire system, i.e., MCH and family planning performance must be reviewed systematically at all levels and extensive use of data should be made.

#### 4.2.1.2 Performance Planning and Monitoring at the Local Level

**Statement of the Problem:** Health and family planning workers and managers at the local level lacked problem-solving skills to improve programme performance, and needed training in using MIS data at the local level to monitor progress.

**Intervention:** The purpose of this intervention was to improve planning mechanisms at the local level and develop review and problem-solving processes at the union and thana level.

There is considerable variation in FP-MCH service delivery among the divisions of Bangladesh. The 1993-94 Bangladesh Demographic and Health Survey found, for example, that the contact rate of fieldworkers in the last six months ranged from 29 percent in Chittagong Division to 49 percent in Khulna Division. This variation in coverage can be attributed to differences in socio-cultural conditions, physical environment, and management support. Programme failures can be attributed, in part, to a top-down planning process, which leaves little control in the hands of lower level officials.

In the Bangladesh national family planning programme, most of the planning occurs at the top and middle levels. Top management formulates policies and strategies, sets national and regional targets, and allocates resources, while the mid-level managers plan and supervise field activities and the allocation of programme resources. Local level managers have little control over resource use. Therefore, it is useful to develop planning capability at the local level so that local level managers can identify problems and find solutions to address the problems effectively, especially in low-performing areas.

This operations research project has been underway since 1994. It follows a process design, aimed at improving the planning capability of supervisors and managers at the operational level. There are four distinct components of this process: (1) strengthening H&FWC and supervisory meetings; (2) developing micro-level planning at the union level; (3) introducing follow-up review processes at the H&FWC and thana level meetings by using service

statistics for local level planning and decision making; and (4) introducing monitoring tools for front-line supervisors such as the Family Planning Inspector (FPI) Diary and the Senior Family Welfare Visitor (SFWV) Checklist. Four unions each from Mirsarai and Abhoynagar thanas have been selected for field testing this intervention. Data are also being collected from two comparison unions.

The Projects surveillance system and the Government's Management Information System (MIS) are used to compare the performance of both the treatment and comparison unions.

The intervention began in two unions at Abhoynagar in July 1991, and was extended to two more unions in October 1994. The intervention at Mirsarai began in November 1994.

**Findings**

Previous experience from Abhoynagar indicates that the intervention will not be effective, unless the key personnel are at their posts and are able to participate in the planning process.

**Lessons learned**

(1) It is feasible to institute a systematic performance review process; project managers are able to easily use understandable indicators in their planning; and a regular performance review process helps improve the quality and usefulness of data at the local level.

(2) A planning activity format can be completed successfully by workers and their supervisors.

(3) The FPIs, the supervisors of the FWAs, are essential elements of the implementation process. However, the most critical factor is the leadership and commitment of the Thana Family Planning Officer (TFPO).

### 4.2.2 Supervision

The following intervention was designed to improve supervision.

#### 4.2.2.1 Supervisory Checklist

**Statement of the Problem:** Senior Family Welfare Visitors (SFWVs) lacked a supervisory tool to monitor FWV activities. Furthermore, the technical competence of the FWVs needed continual improvement.

**Intervention:** In late 1989, an intervention to improve supervision of FWVs and, ultimately, quality of care was introduced through a series of supervisory checklists for the SFWV to use during her supervisory visits. During the supervisory checklist development, it was found that both the SFWVs and FWVs lacked certain skills and knowledge, necessitating additional training. Eight checklists were originally field tested: (1) H&FWC checklist; (2) Satellite Clinic checklist; (3) side-effects management checklist; (4) IUD insertion checklist; (5) pill follow-up checklist; (6) injectable follow-up checklist; (7) ANC/PNC checklist; and (8) Satellite Clinic packing checklist. Three (pill and injectable follow-up checklists and the

ANC/PNC checklist) were dropped, because the workers felt these three checklists were very basic and not needed and that it was best to concentrate on the areas of greatest difficulty. A frequent complaint has been that the checklists are long and time-consuming to fill out. However, when revisions were discussed, it was concluded that most items were needed to assess the quality of care delivered by the FWVs (see Table 4.3 - page 83).

**Findings**

Without the checklists, the SFWVs themselves were not sure of many of the MCH-FP procedures at the H&FWC and SC. The IUD insertion and antenatal checklists are considered the most helpful.

Supervisory checklists are a useful tool for the supervision of FWVs. Problem identification, problem solving, and decision making have been difficult for the SFWVs, and should be incorporated into the checklist design and training. The tendency has been to fill in the blanks, but not define problems nor act on them. With ongoing counterpart support, the proper use of checklists by supervisors has improved.

**Lessons Learned**

(1) Both SFWV and the thana managers should be trained on the use of supervisory checklists.

(2) Supervisory checklists must be introduced gradually with ongoing dialogue with FWVs to facilitate change in the use of checklists.

(3) It is not necessary to fill out a checklist on every family planning service topic during every supervisory visit. However, the SFWV should be trained on how to determine when specific checklists need to be filled out.

(4) A supervisory record-keeping system showed enough promise to ensure quality service and that useful data are recorded in the field.

### 4.2.3 Worker-oriented MIS

Based on a review of worker information needs, Matlab MIS systems were reviewed by the Extension Project, adapted to MOHFW needs, and used in a programme of collaborative systems development. Each type of worker had routine activities with information needs that required MIS support. The FWA, for example, needed a scheme for canvassing the population, recording services rendered, and planning daily coverage routines. Thus, a register system was devised, together with procedures for information utilisation and management. Early in the project period, the pilot MIS became a model for national MIS development. The Extension Project has developed MIS instruments for each type of worker and service subsystem. The MIS, in turn, produces information for supervisors and thana-level officers to use in their routine management duties. Orienting managers in appropriate uses of MIS has been a theme of Extension Project interventions (Table 4.4 - see page 84).

### 4.2.3.1 The FWA Register

**Statement of the Problem:** As there was no standardised recording and reporting system and no worker/client based records existed, supervisors at the field level were unable to effectively evaluate worker performance

**Intervention:** The Project has been involved in all stages of the design and implementation of the FWA Register that is now being used by the national programme. The fieldworker record-keeping system in Matlab was worker- and client-oriented, and very much linked with field management. Using the Matlab design, a Fieldworker Record-Keeping System (FWRS) was developed and adapted to the government framework and tested in the two Extension Project thanas. During late 1986, adequate interest was generated at the national level for nationwide implementation of the record-keeping system used in the Project field sites. Figure 4.4 (see page 89) shows the development process.

The register was called the "Family Welfare Assistant (FWA) Register" and it was introduced nationwide in late 1989. With MIS Unit leadership, it provided a foundation for monitoring of fieldworker activities through supervisory visits. The Project provided support to the MIS Unit for the development of a systematic training programme, a revised curriculum, appropriate training materials (including cases and exercises), and a training manual. Though a field-tested training curriculum was developed by mid-1990, nation-wide training could not take place at that time due to delayed acquisition of funds by the MIS Unit. A "Manual to fill out the FWA Register" was also prepared, field-tested by the Project, and distributed to all FWAs and their supervisors in July 1990.

Further, introduction of the new record-keeping system necessitated changes in the reporting system. The Project provided technical assistance in the design and field-testing of revised reporting formats. Reporting formats, based on the register, were field-tested and distributed nationally by the MIS Unit in November, 1990. However, there was no training on the reporting format due to delayed finalisation. The Project also prepared and field tested a "Manual to fill out Reporting Formats" and submitted it to the MIS Unit. After necessary modifications, this manual has been introduced in the national programme.

**Findings**

Nationwide introduction of the FWA Register was done hastily, and not backed up by adequate training of the trainers and workers. The quality of the two-day training programme for district and thana officials, held in Dhaka in June 1989 to prepare them as trainers for FWAs and FPIs at the thana level, was found to be poor. An evaluation of the five-day training programme by the Extension Project found that more than 30 percent of the subjects included in the curriculum were not taught at any of the thana sites (Ashraf et. at., 1989). Also, training was inadequate for developing data recording and interpretation skills. The Project field-tested a three-day training programme for FWAs and FPIs on the use and maintenance of the FWA Register in four thanas between January and March 1990. The pre- and post-evaluation showed a significant improvement in the participants' knowledge of the record-keeping system.

An evaluation of the use and maintenance of the FWA Register was undertaken by the Extension Project six months after training in September 1990 to assess retention of knowledge and practice. A total of 594 client visits were observed in four thanas to assess practice in the field. Comparison between immediate post-training knowledge scores and retention levels measured after six months showed a 20 percent decline in retained knowledge over the six month period. This points to the need for refresher training and adequate supervisory support after training. Nevertheless, field practice observations showed that FWAs were able to record some information correctly on reproductive history and contraceptive status. However, FWAs often did not fill in information on side effect/reason for drop or change, follow-up/referral, or mother care and child care in the service section of the FWA Register. This was attributed to lack of emphasis on these activities by supervisors as well as complicated and ambiguous codes. Thus, the evaluation indicated a need to simplify and revise the FWA Register.

The Project, then, undertook an exercise to simplify the first generation FWA Register in mid-1991, based on the results of continuous field observations in the two Project and four non-Project thanas. This was necessary because the first set of registers was expected to last for only 3 (three) years. Accordingly, the Extension Project proposed and submitted a revised draft version of the FWA Register to the Director General, Family Planning (DG-FP) for his approval. The DG-FP set up an eleven-member committee, headed by the Director-MIS, to examine the draft version. It included officials of the Directorate, district and thana officials, fieldworkers, and two staff members of the Extension Project. The committee invited suggestions from other field officials, and incorporated them in the draft version. The field trial was held in four thanas, one from each division. It was designed to test whether the formats were useful, whether the information could be obtained with reasonable accuracy, and whether any additional information would be useful for the FWAs. Also, suggestions for improvement of the Register were sought from the workers.

Following the evaluation of the first version, a second version was designed in 1991 and field-tested in collaboration with the MIS Unit in four non-project thanas. The use of the new register by 164 FWAs was observed in the field for 2,631 couple visits. The records of services provided during the previous day by the same FWAs for 2,973 couple visits were examined to determine the extent of errors in unobserved situations. Information from the unobserved days was designed to reduce observer bias. The average rate of error was less than one out of 18 items that had been selected for monitoring in both observed and unobserved data (Ashraf et. al, 1992). The frequency of error due to the failure to fill out the appropriate item in the service section also declined substantially.

The field trial indicated a need for simplification and reduction of the number of codes, and elimination of information on total pregnancies and total population, and highlighted the need to strengthen supervision to emphasise use of screening checklists. After completion of field testing, a workshop was held to seek opinions from workers and their supervisors. The revised FWA Register was recommended by nearly 95 per cent of the FWAs. The field test provided an opportunity to fine tune the register, and to recommend a final version for printing. Because of earlier experiences with poor training, the Project designed a training methodology for trainers and fieldworkers which included training curriculum and a manual. The Project provided training to the trainers along with the higher officials of the MIS Unit before implementation of the second version. By March 1993, the revised FWA Register and manuals for the Register and Reporting Formats were distributed throughout the country.

Project staff continued work to adapt methods of record-keeping, reporting, systematic performance review, target setting, and supervision within the government system.

*Third Generation FWA Register*

Since the second generation FWA register would continue until November 1995, a discussion paper, indicating necessary steps and recommended changes in the third generation FWA Register, was forwarded to the MIS Unit in December 1994. This was done to allow the MIS Unit to ensure timely replenishment of the Register. Based on the experience of MCH-FP Extension Project (1982-94) in the design and implementation of the previous two versions, the Project forwarded a prototype version of the third generation FWA Register with minor changes. Then, a series of meetings was held with the MIS Unit and the Directorate, and the changes were shared with division, district and thana officials prior to finalisation of the register. The weight of the register was reduced; different checklists were reorganised; codes were reduced from 20 to 13; provisions were made to record only those data absolutely necessary for the FWA; and the formats which had never been used in the last three years were discarded. The register is now distributed nationwide with limited technical assistance by the Project.

**Lessons Learned**

(1) Hasty nationwide implementation of the FWA Register should be avoided. The implementation of the FWA Register should only follow adequate training and supervisory support. The study recommended, designed, and field-tested a systematic training programme before nationwide implementation of the FWA register.

(2) Establishing a work routine supported by a longitudinal record-keeping system for the fieldworkers provided an opportunity to make further improvements in monitoring and supervision.

(3) The introduction of a permanent record-keeping and reporting system has established a solid base for monitoring performance systematically for the whole country.

(4) Ensuring the continuity of technical assistance is important for maintaining the quality of the record-keeping system throughout the implementation phase.

### 4.2.3.2 FPI Diary

**Statement of the Problem:** Through regular observations from April to September 1985, the Project learned that there was no clear understanding in the government programme of how to operationalise front-line supervision. There were ambiguities in the job descriptions of Family Planning Inspectors (FPIs), an absence of guidance on how supervisory tasks should be performed, and no mechanism for measuring the quality of field visits. In general, the norm was for FPIs to avoid going to the field to see the work of Family Welfare Assistants (FWAs). Even when they did go, most of them didn't know what to look for or what types of questions to ask. In both the Project sites, most of the FPIs observed and informally interviewed in the 1985-1988 period, did not know how to help an FWA when she sought assistance about a resistant client or a hostile community. Some of them ignored

the requests of FWAs. None of the FPIs were found to offer spontaneous assistance to their workers. They did not know how to organise group meetings to generate favorable community support. More surprisingly, most of the FPIs were unfamiliar with the geography of the work area, population, eligible women and percent using contraceptives.

**Intervention:** The FPI Diary was designed to strengthen FPIs' supervision of FWAs, and to establish accountability. The Diary was field-tested by the Project on a small scale in Sirajganj, Abhoynagar, and Monohardi, a non-project thana, in 1990-91. The Diary served to remind FPIs what the priority programme activities were.

Although not all of the FPIs received the Diary enthusiastically, the Diary proved to be a useful tool for local-level problem solving and showed enough promise to be introduced nationally. The majority of the FPIs felt that the Diary was useful (Table 4.5 - see page 85). The Directorate of Family Planning expressed interest in introducing the diary nationwide in January 1992. The Project requested the Directorate to proceed in a phased-in manner rather than through a hasty introduction, since it was not quite clear how the Diary would be used in a non-project environment.

The Project continued the use of FPI diary at Abhoynagar and Monohordi as part of the performance planning and monitoring system to improve planning mechanisms, introduce review mechanisms and the problem solving process at the union and thana level, and enhance the quality of data. The intervention introduced biannual micro-plans to identify problems and seek solutions for each worker, set goals for the workers and make plans to reach these goals, and review on performance in the meetings.

**Findings**

- It is feasible to institute a systematic performance review process.
- Easily understandable indicators are well received.
- Targets can be set at the local level.
- A regular performance review process helps improve the quality of data.
- The planning activity format can be filled in by workers and supervisors.

In order to strengthen the supervision of FPIs over FWA and to establish accountability, the FPI Diary has been introduced at Mirsarai and five other non-project thanas of Chittagong district under the District Approach intervention, before scaling-up in the national programme begins.

**Lessons Learned**

(1) The FPI Diary was not an effective tool, due, in part, to a lack of appreciation of its utility by the Directorate of Family Planning.

(2) The FPI Diary reports must be reviewed by the TFPO to be useful.

### 4.2.3.3 The Health Assistant Register

**The Problem:** There was no record-keeping tool to monitor the performance of the Health Assistants (HAs). A client-oriented longitudinal record-keeping system for outreach workers is a pre-requisite for an effective management information system (MIS), which is essential for successful implementation of any health care programme. However, there had been no systematic record-keeping system for the HAs, the outreach workers of the national primary health care programme.

**Intervention:** The purpose of the intervention was to develop a Health Assistant Register to be scaled-up to the national primary health care programme.

In early 1991, the Project, in collaboration with the Health Information Unit (HIU), Directorate of Health Services, developed a record-keeping system for health workers of the national programme. A client-oriented longitudinal hand-held register, called the HA Register, was developed and field tested at Abhoynagar thana during the second half of 1991 with very encouraging results (Siddique, et. al., 1992).

Based on the findings of the field test of the HA Register, the MOHFW decided in 1994 to implement the Register in the national programme, after necessary modifications by a committee comprising representatives from the ICDDR,B MCH-FP Extension Project (Rural), the Health Information Unit (HIU) of the Directorate of Health Services and the Management Development Unit (MDU) of the MOHFW. Accordingly, the Register was revised and approved by the MOHFW in November, 1994 for implementation in the national programme.

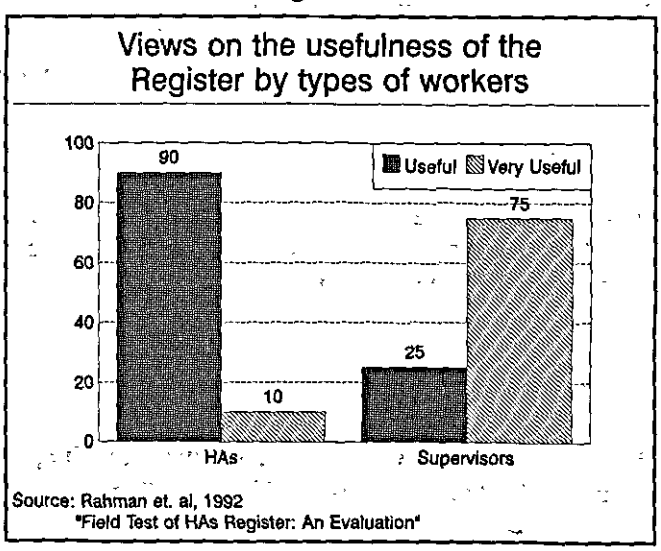
The Project is providing technical assistance to the Directorate of Health Services during the national implementation of the HA Register. As part of the first phase of national implementation, the HA Register was introduced in Project field sites in early 1996.

The implementation of the Register is currently being evaluated, and the findings will be taken into account in the process of national implementation. The Register will be revised, if needed, based on the evaluation results.

**Findings**

Collection of necessary data (through checklist) for evaluation of the intervention is in progress. Findings from the field test evaluation conducted in Abhoynagar in 1992 suggest that the HA Register was well accepted by both the fieldworkers (HAs) and their supervisors (AHIs). The fieldworkers found the Register "useful" in helping them perform their duties and responsibilities. The supervisors perceived it a "very useful" tool for supervising and monitoring the performance of the fieldworkers (see Figure 4.1).

Figure 4.1



Regarding the feasibility of its implementation, it was observed that the Register was implemented satisfactorily in the normal government programme without extra inputs (except supplies and training) and within the GoB rules and regulations (Siddique et al., 1992).

During their routine home visitations, the HAs were observed in the field by ICDDR,B staff. They were found to use and update the HA Register during their routine visits.

The HAs were able to fill out different forms of the Register correctly and completely. The error rate was very low, ranging from 0-2%. However, one-tenth of the Health Education forms were found to be recorded incompletely or incorrectly. One plausible reason might be that health education activities are not systematically performed by the HAs, and as such, they sometimes make mistakes in recording information in this form.

Use of codes for different diseases, services, and supplies is considered the most difficult part of the Register. However, the HAs were comfortable using the appropriate codes for recording information in the Register. The error rate in using codes was very low, only 3-5%. Table 4.6 (see page 86) shows the intervention process, findings and lessons learned from developing an MIS for HA outreach.

**Lessons Learned**

(1) In order to ensure effective monitoring of training and implementation, the HA Register should be implemented nationally in a phased-in manner.

(2) The HA Register training should take place at the thana level. The training should continue for three days, with emphasis on field practice and role play.

(3) A team of trainers at the thana level, comprising the THFPO, MO(DC) and MO(MCH), can effectively conduct the HA Register training of the fieldworkers. The team of trainers, however, must first participate in a training of trainers (TOT) for the HA Register at the district level, led by a core training team formed at the national level.

(4) In Chittagong District where the HA Register is being introduced in several thanas under the District Approach, the large number of HA vacancies in some thanas appears to be impeding implementation of the HA Register. Therefore, measures should be taken to fill the vacant HA positions before scaling-up the HA Register in the national programme.

(5) Special programmes such as National Immunization Day (NID), Geographical Reconnaissance (GR) updating etc., interfere with the implementation of the Register.

(6) Health Fieldworkers (HAs) can record and/or update information in the Register correctly and with ease.

## 4.3 Training

One of the key components of operationalising most interventions is training. Field-testing of the majority of the interventions was made through a process of systematic observation

to diagnose the problem, develop, test, and implement the solutions through training or workshops. Testing and implementation of the solutions to monitoring and supervisory problems were done through intervention-specific classroom training and one-to-one counterpart support.

### 4.3.1 Orientation of MCH-FP Extension Project Staff

When the Extension Project began in the early 1980s, all newly-recruited staff members were taken to the ICDDR,B Matlab Project for orientation for an average of one month. The purpose of the orientation was to identify the outcomes of the special projects that had been successfully implemented and to provide the staff with the basic skills needed for transferring successful components of service interventions into the government health structure in the Extension Project areas.

Prior to taking the staff to Matlab, four key papers on the Matlab Project were provided for critical review (Phillips et. al., 1984a; 1984b; Simmons Phillips, and Rahman, 1984; Koblinsky et. al, 1985). It was felt that the staff could benefit from the orientation only if they had a better understanding of the research background of the Matlab operational system.

Background information was provided to all senior staff on the formal organisational structure of Matlab, its staffing pattern, supervision mechanisms, logistics, motivation techniques, leadership qualities, management information system, health and family welfare centre (H&FWC) meetings, field visits, hospitals, demographic surveillance system, special interventions, etc. The orientation was designed to stimulate discussions on project design and field activities and to compare the Matlab interventions to the government system.

### 4.3.2 Orientation of the Government Staff

The initial training of the government staff in the field sites of the Extension Project involved sequential training of all health and family planning workers. A series of training sessions was conducted, bringing workers from two unions at a time. The course curriculum differed in the two Project sites, as the final design was adapted to meet local needs and the specific plans of the individual thanas. Courses were organised as collaborative ventures with local health and family planning officials (Hoque and Yunus, 1983).

A training needs assessment was conducted before starting the training process in each project site. The training sessions were conducted at the Thana Health Complex, and between 25 and 30 participants attended each session. Although the training sessions were meant for the workers, the supervisors and the paramedics also attended by invitation.

The Project provided technical assistance by helping design the course curriculum. The ultimate decision, however, lay with the Project Implementation Committee (PIC), comprised of the thana officials. Before deciding on the curriculum design, the existing government training curriculums were reviewed. Based on the review, new training courses were designed with emphasis on the practical aspects of service delivery. Attention was given to innovative problem-solving mechanisms in everyday activities, based on task analysis of the MOHFW workers. As the aim was to develop the most effective course, the curriculum was modified as the Project progressed.

The goals of the training courses were to: 1) update the existing knowledge of workers; 2) impart new knowledge about topics, including injectable contraceptives, record-keeping systems, EPI; and 3) facilitate close interaction between the trainers and the trainees.

To evaluate some of the training sessions, assessments of trainees' knowledge were conducted before and after the training. A detailed worker questionnaire was used, together with participant observations. These evaluations were done in each of the training sessions, so that the curriculum could be modified for the best possible results.

The training sessions of government staff were conducted simultaneously at both Abhoynagar and Sirajganj routinely, beginning October of 1983. The sessions were divided into four modules: record-keeping, family planning, maternal and child health and diarrhoeal disease, and immunisation. Each module was followed by a period of field practice or direct service delivery. All the government workers of the unions of both thanas were trained, using these modules.

The Community Health Workers (CHW) of Matlab also participated in the training sessions, so that practical references could be made during discussions. The trainers ensured that active learning was maintained, feed-back mechanisms were used, and that the teaching was meaningful and job-related. Individual differences among the participants were respected.

### 4.3.3 Intervention-specific Training

Various intervention-specific training sessions were held. The salient features of these training sessions are presented below:

#### *(a) Training on Family Welfare Assistant Register*

The Project was involved in the development of a record-keeping system for FWAs, which resulted in a series of training sessions on the FWA Register for the FWAs and FPIs of the Project area. Training manuals and guidelines for use of the FWA Register and other monitoring tools were developed by the Project.

The Project's view was that the Extension Project must maintain desirable training standards and procedures. If this is not done, the effects of poor or inadequate technology transfer may outweigh outcomes attributable to factors relating to government capabilities.

#### *(b) Training on Antenatal Care*

Antenatal care is a mandated responsibility of both FWAs and FWVs. In order to strengthen the roles of FWAs and FWVs in the provision of antenatal care, an intervention was designed and implemented at Sirajganj and Abhoynagar thanas. The training necessary for this intervention was conducted after carrying out a needs assessment.

The objectives of the training were to: (i) improve antenatal care; (ii) assist FWAs and FWVs in identifying high-risk pregnant women; (iii) strengthen the links between the Senior FWV, the FWV and the FWA; (iv) give senior FWVs the tools to further assist them in their roles as technical supervisors; (v) teach the rationale for, and implement a system of iron distribution to pregnant women who are at risk of developing anemia.

Planning for the training was conducted jointly with all the thana and district managers, where the trainers were also selected. The main trainers were the Medical Officer (MO-MCH) and Senior FWV, since they were the thana officials who could also supervise the work of the fieldworkers and the paramedics. The training was conducted in January 1991.

The training began with the training of trainers (TOT), followed by the training of fieldworkers. Evaluations were conducted to measure the immediate impact of the training. Based on the results of the evaluation, recommendations were proposed after the training (See Munro et. al., Documentation Note 111, 1991). The trainees were not able to understand certain topics, such as high-risk pregnancy assessment, signs of anemia that indicate that the woman should be referred, the safety of iron supplementation in the first trimester, causal factors of anemia, and the correct use of the antenatal mothers' list. However, the training methods, materials and the time of the training were seen as appropriate. More attention was needed for the training of the trainers, as the thana managers did not have sufficient experience in training fieldworkers.

### *(c) Training on Side-Effects Management for Medical Officers*

Effective side-effects management is an important aspect of the provision of quality service delivery. Thus, the Extension Project undertook a series of interventions to improve side-effects management. These interventions included testing an algorithm for screening, use of follow-up check-lists by FWAs, introduction of new supervisory check-lists to help SFWVs supervise the paramedics, and training of the staff on side-effects management.

Since Medical Officers (MO) manage side-effects themselves and also provide technical support to the fieldworkers and the paramedics, it was felt that they should receive training on this issue. A training needs assessment was carried out by conducting focus group sessions with the MOs and having them fill out self-assessment questionnaires. Based on this assessment, training sessions were planned in consultation with the MOs with the following objectives: to improve side-effects management, including strengthening knowledge and skills on screening potential acceptors for contraindications; and to provide tools to assist the MOs in training and supporting paramedics and field staff to manage side-effects.

The training was conducted at Sirajganj and at Abhoynagar from January to April 1991 (Munro, Rahman and Whittaker; 1991). The evaluations of the training indicated that the training sessions went well in terms of participants' comprehension of materials. Since much of the teaching material was new, active participation and discussion among the trainees occurred. However, follow-up observations after the training showed that although the MOs had changed some of their previous practices, many unsafe practices remained (e.g., the provision of oral pills for management of IUD induced menorrhagia). Discussion with the MOs after the training revealed that the training on side-effects resulted in improved knowledge and attitudinal changes so that side-effects are now more likely to be perceived as valid problems. On-going support by MOs to the fieldworkers and paramedics would be needed to bring about the desired level of change for managing side-effects.

### *(d) Training on Fieldworkers' Role in the Provision of Injectable Contraceptives*

One of the interventions replicated from the Matlab Project is the provision of domiciliary injectable contraceptives by the FWAs. The key question that needed to be tested in this

intervention was whether government fieldworkers would be able to safely and effectively provide injectable services at the homes of clients.

To test this intervention, 13 unions of the Extension Project were used as test sites. The thana managers, who were the trainers, were trained by Project staff on the use of injectable contraceptives. The managers, then, trained their fieldworkers. The FWAs were trained on selection of women appropriate for injectables, the injection technique, management of side-effects, record-keeping, and logistical issues, such as resupply and disposal of used syringes.

The success of this intervention led the Directorate of Family Planning to further test this intervention in eight thanas to determine whether domiciliary injectable services can be accomplished in the government set-up with minimum external input. The TOT from the eight thanas and eight districts was conducted at Sirajganj and Abhoynagar. This allowed the trainers and managers of other areas to have practical experience in door-step injectable services. TOT of various NGOs was also conducted at Sirajganj. Thus, Sirajganj served as a training base for further expansion of doorstep injectable services in the national programme.

*(e) Training at Mirsarai Thana and Chittagong District*

Since 1994, the Project has expanded its intervention activities to include several thanas from the low-performing Chittagong Division.

Training has been an integral part of the Project activities in the new project sites. Training and orientations have been carried out on Cluster Visitation, SC+EPI, FWA and HA Registers, performance planning, EOC, Rapid Assessment Procedure (RAP) needs assessment methodology, and several newly initiated interventions.

It is, perhaps, premature to report on the lessons learned from training conducted in the new Project sites. Nevertheless, preliminary feedback on training activities in Chittagong district is encouraging.

Evaluation of the refresher training conducted for FWAs, FPIs, FWVs and MAs at Mirsarai thana showed dramatic increases in knowledge between pre- and post-test scores overall and knowledge of specific training such as client screening, follow-up, MCH, calculations of delivery dates, use of indicators such as CAR, use and maintenance of FWA Registers.

A series of training and dissemination workshops, using the RAP needs assessment methodology, were conducted in Chittagong District. These workshops were successful and useful for thana managers and FWVs in identifying problems, developing solutions and for planning future activities at the thana level.

The one major lesson learned from all the above training initiatives of the Project relates to the need for a need-based team approach to training that is organised locally. Such a training minimises disruptions in work that would result if the trainees had to be sent out. Also, it takes less time by avoiding the need for travel time. Further, it provides an opportunity for trainees, the workers and their supervisors as well as thana managers, to be more open and ask questions than if they were in a group of trainees, most of whom are unknown. Based

on the clear advantages of such a training approach, the Project strongly recommends that such training should be organised both for the GoB and the NGO workers.

### 4.3.4 Counterpart Support

**The Problem:** The Government fieldworkers were not adequately familiar with the new interventions, and therefore, required special training and orientation to carry them out.

**Intervention:** Counterpart support by the Project staff was adopted as a mechanism of training workers and paramedics in the Project sites about the interventions to be tested.

The term "counterpart support" has been used to refer to the facilitation or motivation provided by the Community Health Workers (CHW) of Matlab to the government fieldworkers. The CHWs were not regarded as teachers or supervisors of the FWAs but rather as colleagues.

The CHWs intervened in the following areas to bring about the desired change: i) introduction of a new record-keeping system; ii) client motivation; iii) contra-indication and management of contraceptive side-effects; iv) introduction of domiciliary injectables; v) referral system; vi) follow-up visits; vii) antenatal and post-natal care; viii) identification high risk pregnant women; ix) ORS supply; x) motivation of workers to visit regularly and spend sufficient time in the field; and xi) submission of progress/performance reports.

The basic principle of the strategy was to train the FWAs, so that they could continue to work well on their own in the absence of counterpart support.

In order to provide counterpart support, the CHWs themselves had to observe the FWAs' work pattern, worker-client interaction, ways of motivating clients to accept contraceptives, screening, counseling and distribution of contraceptives, ORS, etc. The role of the CHWs was, then, to strengthen the FWAs' interaction with clients and improve the overall management of their work load. The CHWs' observations were transformed into guidelines (Hasan and Koblinsky, Documentation Note 43, 1986).

To provide counterpart support to the Family Planning Inspectors (FPI), Senior Health Assistants (SHA), similar to the SHAs of the Matlab Project, were hired. The purpose was to develop FPIs who would fulfill their job responsibilities effectively by improving their supervisory, administrative and support skills.

To test this mechanism, three unions at Sirajganj and two unions at Abhoynagar were designated as counterpart support unions where the CHWs assisted the FWAs for four months in each union. The support was provided immediately after the initial training courses, so that the FWAs could implement what they had learned in the classroom. Each FWA completed one full cycle of her scheduled home visitation with the CHW. The counterpart support strategy was implemented at both Sirajganj and Abhoynagar from October 1983 through the third week of December 1984.

During early 1986, the Project organised a five-day training session on supervision for the FPIs. The supervisory style followed by the front-line supervisor of Matlab was included

in the training curricula. The workshop topics included an overall orientation of the Extension Project, a review of job descriptions, supervision, supervisory approaches, roles, skills, data collection and the use of data for providing feedback to the workers, and the use of meetings for programme management. The training workshop was a collaborative effort between the Project and the sub-committees of the PIC assigned to determine the contents, learning objectives, duration, participants to be selected, costs, management and logistics of the workshop.

After supervisory training, the Project instituted one-to-one counterpart support with each of the FPIs. This process continued for 18 months for all FPIs of two thanas. Each FPI received, on average, one full month of counterpart support from experienced Senior Health Assistants (SHAs) of the Project. Simultaneously, the experienced Lady Family Planning Visitor (LFPV) provided counterpart support to the FWVs (described later). Guidelines were prepared for the Project staff to provide on-the-job training, and ways to provide support to the FWAs. The counterpart support activity continued as planned until 1990 when it become more of an observational activity rather than active support.

## Findings

There was a sharp increase in the use rate of contraceptives in the test unions after the provision of counterpart support compared to the unions that had not received any support (Hasan and Koblinsky, 1986). However, the change was not sustained for long, because of lack of support from the supervisors and the managers, among other factors.

The following four broad areas were found to effect the counterpart support.

**(a) Support Services:** Support services were actions taken by the FPIs to assist the FWAs in functioning more effectively. In providing support services, the objectives were: to improve community relations in order to increase the credibility of FWAs; to encourage the SHAs to motivate FPIs and accompany them on visits to hostile or resistant individuals or groups, and to clients with contraceptive side-effects to reinforce the motivational arguments used by FWAs; to improve the maintenance of accuracy of the record-keeping book (RKB); and to submit timely progress reports. In order to improve community relations, the SHA and FPI made scheduled joint field visits, and arranged group meetings with community members and leaders to promote acceptance and approval of the health and family planning programme. The SHAs reminded the FPIs, both in the field and at appropriate meetings, to ask the FWAs about clients in need of follow up for contraceptive side-effects, ante- or post-natal care or other problems. The SHA also encouraged the FPIs to: discuss with villagers their perceptions of the services provided by FWAs; speak with prospective clients to determine the motivational arguments and techniques used by FWAs for acceptance of health and family planning services; and check for contraceptive side-effects referrals. The SHAs used the motivational skills learned in Matlab to assist and orient the FPIs.

To carry out her mandated tasks, the FWA must have sufficient supplies. Timely indent to the FPO's office can minimise the delay in receiving supplies. Sirajganj and Abhoynagar did not use the same indent process. At Sirajganj, it was done by a FPI and at Abhoynagar by a FWV. At Sirajganj, the SHA ensured daily monitoring through the FPI to determine whether a shortage existed and, when appropriate, requested the FPI to address the shortage

sufficiently in advance through indent to the FPO. The SHA often had to remind the FPI to remind the FWAs to carry sterilised syringes, needles, cotton, spirit, etc., for clients requiring injectable doses and to check the expiration dates of condoms and pills distributed. FPIs would often only go to the field when SHAs went.

At Abhoynagar, the SHA informed the LFPV of any shortage and reminded the FWV of the supply shortages of particular FWAs. This was done in the field or at biweekly staff meetings in order to ensure that FWAs made timely indents.

**(b) Spot Checking:** Spot checking was defined as the observation of fieldworkers' activities with or without their knowledge. The main objective was to provide the FWA with needed support services or assistance and to monitor the quality and quantity of work done by FWAs. The purpose of spot checking was not clearly understood by the FPIs. The FPIs needed to spend more time in the field to improve the effectiveness of spot checking.

In order to make a meaningful impact on the FPI and subsequently on the FWA during spot checking, the SHA had to constantly remind the FPI to bring the field visit schedule and to carry a tour diary. Upon arrival in the field, the SHA, through the FPI, checked whether the FWA's field schedule was maintained; asked the FWAs about field problems and offered suggestions; checked whether the FWAs were carrying their required supplies or were in need of additional supplies, and whether the sterility of their syringes and needles was being maintained; and checked whether clients were correctly recorded in the RKB by method.

**(c) Satellite Clinics and Home Visits:** The SHAs played an important role in improving relations between the FPIs and FWVs by identifying areas in need of SC services and assisting them in making arrangements with the FWV to prepare for these clinics. Prior consultation was made with LFPVs before attempting to promote SC. Using the approach described above, the SHA motivated the FPI to arrange for the FWV to provide home visits for important follow-up for side-effects, complicated cases and pregnant women.

**(d) Record-Keeping as a monitoring tool:** A simple and easily understandable record-keeping system is extremely important for the management of a health and family planning programme. The worker should be able to use the record for evaluation of his or her own performance. A considerable amount of time was invested by the Project in training government workers in the use of a longitudinal record-keeping system developed by the project.

During scheduled field visits, the FWAs collected data from all eligible women concerning their reproductive and contraceptive status, births, deaths, and due dose for injectable. They inquire whether clients using contraceptives are experiencing side-effects and refer them to the H&FWC, if necessary. At the end of the day, the FWAs summarise their daily work. The FWA makes a summary of contraceptive acceptors by method from the RKB, and brings it to the H&FWC meetings.

**Lessons Learned**

(1) The SHAs helped the FPIs to make better use of the RKB by routinely checking whether designated items were filled out correctly for each client, noting information on a few

clients and spot checking with the clients in the field. This checking was done both in the presence and absence of the FWA. In case any mistake was detected, the SHA encouraged the FPI to help the FWA understand the importance of correct recording. The SHA encouraged the FPI to check the previous days' work in the daily summary sheet and note any injectable due cases and reminded the FWA to carry the RKB to the H&FWC meeting.

(2) Counterpart support in teams operating at the local as well as at the national level has been found to be more effective than having a few experts who interact with top management only, because the change agents operate at several levels of the target organisation which facilitates peer interaction.

(3) Project data indicate that counterpart support appears to have had some limited positive impact on fieldworker contact rates and contraceptive prevalence rates in the short run (i.e., in the first 12 to 18 months of support). However, the positive effect was not sustained beyond that initial period, due to in adequate support from managers at the thana level and above.

(4) However, observation of the FPIs revealed that although their supervisory field visits were in frequent, most of them used a systematic approach field visits. Increased supervisory visits from higher levels could ensure the required field visits by the FPIs and eventually improve the work of the FWAs.

(5) The counterpart support strategy is ultimately not sustainable or cost-effective in the long-term since it creates dependence on workers outside of the government system. It is only useful in the initiation stages of new interventions.

#### 4.3.4.1 Counterpart Support by the LFPV for the FWV Paramedics

**Intervention:** One of the key components of the MCH-FP Extension Project was the counterpart support provided for female paramedics, the Family Welfare Visitors (FWVs). The objective was to improve the technical competence of the FWVs, so that they could provide effective services in the government programme. Counterpart support was provided to the FWVs by the Lady Family Planning Visitors (LFPV) of the Extension Project. These LFPVs had paramedic training similar to the FWVs. They also received several weeks orientation in Matlab.

The first LFPVs joined the Extension Project in March 1982. They tried to work closely with the FWVs to establish services at H&FWCs and in the villages but did not directly provide any services themselves. Like the counterpart support of the FWAs, they had to observe the FWVs working in order to identify the problems and barriers to implementing service packages. Later, they were expected to help the FWV solve the problems as best as they could.

The LFPV worked to develop services at the H&FWC and Satellite Clinic (SC), but did not provide any services because the Project strategy was mainly to document the problems and barriers to implementing service packages and help resolve those barriers and not to have the LFPVs work as substitute FWVs.

**Findings**

Due to their identical training and the passive nature of the LFPV's role in the field, the FWVs were not very clear about the types of assistance they could receive from the LFPVs. The Project, however, benefitted from the LFPVs' regular observations of problems and barriers in the service delivery which were quite useful in making recommendations to improve MCH services through H&FWCs and SCs.

**Lessons Learned**

An evaluation of the LFPV strategy was undertaken after three years of initiation of this counterpart support mechanism. According to the evaluation report, the strategy of counterpart support for the FWVs did not work as planned (Nessa et al, 1989) for the following reasons: (i) the government FWVs felt that the LFPVs had been imposed on them; (ii) the LFPVs did not have clear guidelines regarding their functions; (iii) since they were instructed not to give any service themselves, the LFPVs assumed a passive role which reduced their credibility with the government workers; (iv) the LFPVs were recruited from varying backgrounds at different times, and were not given standard training on the concept of counterpart support activities; and (v) the LFPV strategy, as an intervention, did not significantly improve the performance of government FWVs.

## 4.4 Lessons Learned from Project Training Activities

The series of training sessions which were conducted in Project intervention sites were of various types with different objectives for different cadres of service providers and their managers. A summary of the lessons learned is listed below.

(1) To replicate interventions from special projects to the government system, the Project staff must receive adequate training focusing on the special project, its organisational structure, staffing pattern, leadership mechanisms, service delivery mechanisms, and specific intervention components.

(2) Before implementing an intervention, specific training must be conducted with various levels of service providers. This training should be preceded by a training needs assessment, which can be conducted by observing training activities, by interviewing service providers, by conducting group discussions, and by providing self-assessment questionnaires.

(3) Counterpart support for interventions, using a team approach can be a useful strategy for transferring knowledge and skills from special projects to the government system, particularly when the knowledge transfer has to occur at various levels of the organisation. However, it is neither a replicable nor a sustainable strategy for scaling-up to the national programme.

(4) Counterpart support can work well, only when the specific tasks for the service provider are well defined. Job descriptions and worker expectations must be clearly laid out before initiating counterpart support. In the longer terms, counterpart support promotes dependence and repeats many of the duties of government workers.

(5) Prior to beginning fieldworker or paramedic training, thana managers need to be trained on how to conduct training for their fieldworkers. The thana and district managers should have training on training methodologies, so that they can conduct regular training of their staff based on their needs, which may differ from one thana to another.

(6) The training curriculum should not be a totally fixed agenda. It needs to be revised periodically, based on evaluations and discussions with the trainers and the trainees so that the subsequent training sessions can be improved.

(7) To bring about change in the practice of the service providers, one-time training is not sufficient. Follow-up mechanisms and provisions for refresher training must be institutionalised, which can include on-the-spot training during supervisory visits, in-service training, discussions at meetings, etc.

(8) The government service providers need refresher training on their job activities and responsibilities. Staff from the special projects need to attend these training sessions, so that they can provide practical insights about problems related to particular service interventions.

(9) Tools (e.g., forms, manuals, models, documents, equipment) necessary for implementing the training activities must be prepared before the training begins, otherwise the skills and knowledge acquired at the training will be lost.

(10) The supervisors of fieldworkers should be present at the fieldworker training sessions, so that they are aware of the skills of their workers and can build the team rapport necessary for service implementation.

(11) Quality training is essential for transferring innovations to the government system. The standard of the training must be maintained to allow replication in the public sector. However, training alone is not sufficient for successful replication. Follow-up and supervision are also needed.

(12) Project training strategies and curriculums should be easily transferrable (integrated) to the government system to ensure that the Project's success is replicable and sustainable for scaling-up activities throughout the national programme.

The one major lesson learned from all of the Project's training initiatives relate to the need for a need-based team approach to training that is organised locally. Such a training minimises disruptions in work that would result when trainees are sent out. Also, it stream lines the process by avoiding the need for travel time. Further, it provides an opportunity for trainees, the workers and their supervisors as well as thana managers, to be more open and ask questions than if they were in a group of trainees, most of whom they do not know. Based on the clear advantages of such a training approach, the Project strongly recommends that such trainings should be organised both for the GoB and the NGO workers.

Extensive and continuing training of government health and family planning workers in the delivery of antenatal care, doorstep injectables, side effects management, use of FWA Register to monitor performance, and improved techniques for supervision have undoubtedly

contributed to the Project's success in increasing the contraceptive prevalence rate, contraceptive continuation rate, and fieldworker contact rates in the Project intervention areas.

## 4.5 Logistics and Supplies

The Project has addressed a number of issues designed to improve the logistics and supply system of the family planning and health programme of the GoB. The Project has the mechanisms for collecting independent feedback from grassroots level workers of the Directorates of Health and Family Planning on issues related to logistics and supplies. This was accomplished mainly through visits by the LFPV (female paramedics of the project) using checklists, and through periodic discussions by the Project FRMs and MOs with the thana managers.

*Satellite Clinics and H&FWC: Supply and transport problems*

**Statement of the Problem:** Supply of drugs and other equipment as well as transportation difficulties for FWVs were identified by the Project early on as barriers to Satellite Clinic functioning. Accordingly, interventions were developed to deal with these two problems.

**Transport Intervention:** Inadequate transportation for FWVs' attendance at SC sites was first approached via a rickshaw van scheme. In this intervention, the local government purchased rickshaw vans, using an Extension Project grant, and contracted rickshaw pullers to take FWVs and their supplies to SC sites in the van. This service occupied the puller for two days a week; on other days, he could use the van to earn an income. An alternative strategy entailed making a contract for a fixed rate with a puller who already had a van. The cost of this approach was about one-tenth of the transportation allowance scheme. However, it required extensive organisation and coordination by the programme manager. The government adopted a transport scheme in 1993 for FWVs that is somewhat similar to the latter: Tk.100 is set aside specifically for each SC (Tk. 60 goes to the FWV for transport, Tk. 15 goes to the aya for transport, and Tk. 25 goes for kerosene and other supplies). The money is distributed to the FWVs via the Medical Officer (MCH) of each thana. Making sure this fund is properly used is one necessary area for follow-up. Table 4.7 (see page 87) summarises the FWV transport intervention findings and lessons learned.

**Findings**

- The transportation and contingencies allowance was implemented nation-wide, following the issuance of a MOHFW (DG-FP) circular in August 1992. In the early phases of implementation, there were some disagreements over who should administer the funds (TFPO or MO-MCH). Ultimately, it was decided that the MO-MCH would administer these funds.

- The FWV receives 100 Taka for each SC held. However, it was observed that the amount allocated for kerosene and the aya transport was not always sufficient. This leads to: (1) dissatisfaction on the part of the aya, and (2) sterility of the equipment being not always properly maintained due to lack of kerosene for the steriliser.

**Supply Intervention:** The supply problem was somewhat more complex. It involved obtaining supplies at the H&FWC where the FWV is based, and bringing the supplies from the H&FWC to the SC sites. It was found that disruption in the supply of contraceptives can lead to method discontinuation and poor family planning programme performance. It was also observed by the Project staff that performance at the SCs fluctuate. Poor performance can be attributed, in part, to poor attendance of the SCs and in part to short supply of drugs. The shortage of drugs also affected the motivation at the paramedics to attend the SCs. The FWVs, responsible for holding the SCs, often shared drugs with their male colleagues (HAs) at the clinic, and they often took along a haphazard assortment of available stock which prevented the appropriate treatment of many common diseases of mothers and children.

The government has a "push" and "pull" supply system. The warehouse receiving and dispensing system for contraceptive commodities and other medical supplies may be categorised as a "push" or a "pull" inventory supply system (Wolff, Suttenfield, and Binzen, 1991). The "push" system automatically distributes commodities to another warehouse or service outlet without receiving requisition orders, while the "pull" system requires that the service outlets or warehouses request the amount of supplies they need from the next higher-level of storage facilities. Decisions on the timing and quantity of shipments are made by higher-level managers or the shipper in the "push" system, and by the local-level managers or the recipients of the products in the "pull" system (Wolff, Suttenfield, and Binzen, 1991).

The Project found that inadequate supply of medicines and equipment was reported by FWVs as a major programmatic factor for low performance in some districts of Chittagong Division (Tunon, Maru, and Haaga, 1992). Needs assessments conducted at Mirsarai and several other thanas in Chittagong District found that programme managers perceived limited availability of family planning methods, drugs, and equipment as a weakness of the SCs in Chittagong District (Needs Assessment for MCH-FP in Mirsarai, 1994). On the other hand, programme managers found that availability of FP methods, drugs, and equipment was a strength in the management system of H&FWCs. The Project made a number of recommendations to ensure adequate supplies of FP methods, drugs and equipment, and also suggested sharing equipment between the Health and Family Planning wings in the merged SC+EPI spots.

While transporting the supplies was dealt with via the transport schemes, the packing of supplies was still an issue. To ensure that the proper materials were being brought to the sites, FWVs were provided with packing lists. Also, some items that were not provided regularly by the government such as batteries, plastic sheets, and curtains, were provided by the Extension Project, for a period of approximately three years (1986-1988). Since 1992, the GoB has been providing batteries using some of the SC transport and contingencies money. To ensure adequate supplies at the H&FWC, the Extension Project and other organisations recommended increased numbers of drug and dietary supplement (DDS) kits, as well as other drugs and equipment. In response to the Project recommendations, drug supplies to the FWV were increased in 1992, and kits specifically designated for SC use have been included. Assuring that adequate supplies reach the SCs is a priority for follow-up.

The Project devised several solutions to reduce the supply problems:

- The government field staff and their immediate supervisors were given training to enhance their ability to project the supplies needed for the following month. The training was given in both the Project's field sties during mid-1986 and concerned how to ascertain supply requirements, when to plan for indenting, how to store supplies at providers' home, how to handle the situation if supplies run out at the middle of the month, and how to use First to Expire, First Out (FEFO) technique and mechanisms to keep records.

- The Project staff continually spoke with the Store Keepers of the Directorate of Family Planning at the thana level regarding the available stock, which helped to project the supplies required for the next three months and provide accordingly for the items that were requested in the "pull" system.

- A format for supplies was designed by the Project and inserted in the FWA Register to indicate present stock, consumption, and the amount required for the next month.

- The Project developed a checklist for necessary supplies, and recommended a separate drug kit for SCs.

- In 1991, the Project provided information to John Snow International (JSI) and the MIS Unit on the record-keeping of the logistics and supplies of the field functionaries to improve the LMIS of the Directorate of Family Planning. JSI and the Project collaborated to develop the LMIS format to be incorporated in the FWA Register. The Project also assisted JSI in organising field tests of the logistics format in a non-project area. JSI found that the format fulfilled their requirements. The Project had played an active role in development of the FWA Register which included this logistics format.

**Findings**

- Shortage of drug supplies at the SC has been minimised because of the Satellite Clinic Kit (SC) kit, designed in 1992 to be utilised specifically in SCs. It is now supplied after every 24 clinics held.

- Separate SC Kits were allocated, and the number of SC Kits distributed increased. Currently, there are four SC Kits distributed per year, whereas none were distributed before the Project intervened in 1993.

- SC Kits were repackaged in a way that was similar to the Project's recommendations.

- The inclusion of the Monthly Stock and Distribution format in the FWA Register enabled the workers to monitor monthly supplies that were currently available and to assess requirements for the next month. This has minimised the arbitrary allocation of supplies to the workers by the thana Store Keepers, which has improved supply and logistics at the fieldworker level.

- The introduction of the LMIS format in the FWA Register has improved the supply situation for the grassroots-level fieldworkers.

- It was observed that, after training, the FWAs kept records, planned for supply requirements, gave indent in time on a regular basis, and that the overall system had improved considerably.

Table 4.8 (see page 88) provides a summary of the main findings, and lessons learned from the logistics and supply intervention.

**Lessons Learned**

Although there has been a tremendous improvement in the logistics and supply system, the following issues warrant attention for further improvement of the system:

**Transport**

(1) Funds need to be allocated at the thana level for the transport of the DDS kits to the H&FWCs, and SC Kits to the union level.

(2) An appropriate transport system is needed at the regional level to ensure that supplies are received on time at the periphery level.

(3) Proper monitoring is needed by the MO-MCH to ensure that funds for transport to SCs are allocated to FWVs on time and to ensure that the transport and contingency funds are properly utilised.

**Supplies**

(1) The thana managers need to constantly monitor the stock at the thana store.

(2) Timely indent of supplies, which fall in the "Pull" system, to the Regional Supply Officer are needed; and reminders to the appropriate authority are needed for the items that fall in the "Push" system.

(3) The Director of Supply and Logistics at the national level needs to project and indent appropriately to the foreign manufacturers with sufficient lead time.

***Other Logistics and Supply Activities of the Project***

In addition to the Project's efforts to improve the logistics and supply system for SCs and H&FWCs, the Project staff also identified logistical and supply problems affecting the doorstep delivery of injectable contraceptives (MCH-FP Extension Project Briefing Paper No. 2, 1987; Whittaker Workshop Proceedings 1989; Khuda et al, Workshop Proceedings 1994) and those affecting the overall family planning performance of Chittagong Division (Tunon, Maru, and Haaga, Working Paper 79, 1992; Needs Assessments for MCH-FP at Mirsarai, 1994; Rahman et al, 1996). A number of logistical and supply problems were examined during the Project's efforts to assist the GoB in expanding method choice by providing injectable contraceptives at the doorstep of households.

### Lessons Learned

The lessons learned from this experience (Project Briefing Paper No. 2, 1987; Khuda, Mirza, Ahmed, 1994) are summarised below:

(1) The Project found that the provision of a unified kit of peripheral supplies to each FWA was needed to simplify and improve service delivery. The kit includes needles, syringes, cotton, and disinfectant.

(2) The Project concluded that the use of disposable needles and syringes provided a safer and more reliable service system. The Project also developed guidelines for the Directorate of Family Planning on the safe disposable of used syringes and needles.

(3) Project research showed that disposable syringes and needles offer a more cost-effective way of delivering injectable contraception (Balk and Hurrell, OR Paper No. 57, 1986).

(4) To avoid confusion and the potential for the inappropriate delivery of dosages and to ease the workload of the FWAs, the Project recommended maintaining brand uniformity, with only one type of injectable being supplied to each district. The Project pointed out that the three-month injectable DMPA would be more cost-effective than the NET-EN (Noristerat) which requires more routine visits for resupply.

(5) For the doorstep delivery of injectable contraceptives to be successful, the logistic and administrative support must be tailored to the needs of the service outreach. This requires the full and active participation of both the TFPO and the FPI to ensure a regular logistical flow and that the due doses are being administered on schedule even if the FWA is on leave.

(6) With improvements in the MIS commodities and logistics reporting system, the previous problem of unequal distribution of syringes and needles with vials of injectable contraceptives has largely been resolved (i.e., equal distribution of syringes and needles with vials of injectable contraceptives).

## 4.6 District Approach

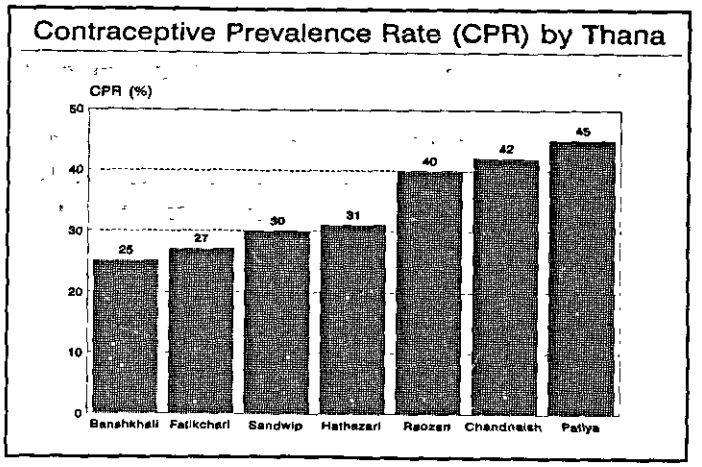
**Statement of the Problem:** Chittagong Division has the lowest contraceptive prevalence and some of the worst health and family planning indicators in Bangladesh. This poor performance may be associated with certain management weaknesses. Thus, the Project has been involved in a District Approach (DA) operations research in 13 rural thanas of Chittagong District to build capacity of district and thana level managers in the areas of programme assessment (through a cost-effective rapid assessment methodology of data collection) and planning for programme improvement. Improvements in programme management should enhance the delivery of services and increase their utilisation.

**Intervention:** As part of an effort to build capacity of programme managers, the DA intervention of the Project helps managers assess the programme factors which influence accessibility to, and utilisation of health and MCH-FP services. They are also helped to develop, with the assistance of the DA team, a plan of action for programme improvement.

## Findings

This intervention is currently being tested. The results of the baseline rapid assessment survey show that the CPR ranged from 25 percent in Banshkhali to 45 percent in Patiya (Figure 4.2). The variation is probably explained by both socioeconomic and programmatic differences between thanas. Contraceptive use is expected to increase; over 80 percent of contraceptive non-users expressed their intentions of future use.

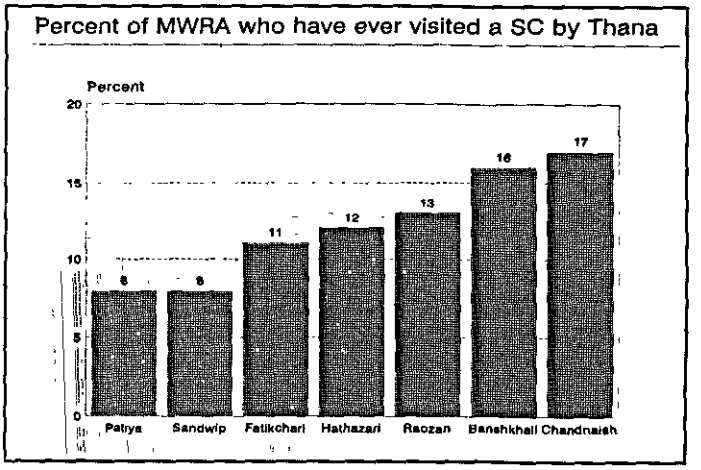
Figure 4.2




Contact between MWRA and health and MCH-FP workers was poor. A little over one-third of MWRA reported that they had been contacted at their homes by FWA or NGO fieldworkers within the last two months. About one-fifth could not remember when they were last contacted. Contact with Health Assistants was also low. The CPR was substantially higher among MWRA who had frequent contacts with the FWAs or NGO workers.

Utilisation of SCs was quite poor (Figure 4.3). About 80 percent of MWRA who had not attended a SC cited a lack of awareness of SC services or its location. Family objection to going outside the home to attend a SC was cited as a reason by only 8-15 percent of MWRA. Utilisation of H&FWCs was higher (36-54% had attended).

Figure 4.3




## Lessons Learned

Monitoring SC activities increases regular joint SC-EPI sessions. Monitoring tools of frontline supervisors such as the FPI Diary and AHI Diary are very useful, as perceived by the FPIs and AHIs. Thana managers feel the need for their own checklists and that performance review meetings will help improve field supervision. There were a number of other important lessons learned from the District Approach needs assessments completed jointly with GoB counterparts in all rural thanas, from workshops held with individual thana managers. The findings of the needs assessments will be reviewed at two district level workshops, after which, plans of actions will be developed. Based on these plans of actions, specific programmatic interventions will be introduced in other thanas to further improve performance (see Rahman, Khuda, and Hossain, 1996; and ICDDR,B "DA: Intervention Update", 1996).

## 4.7 Conclusions

A successful national programme imposes heavy demands and creates numerous management problems which require considerable attention. The Project has addressed some of the most critical management issues of the national programme by improving record-keeping, developing local-level planning, providing better monitoring and supervision, and ensuring coordination at the national level. These Project interventions in the area of management improvement, many of which have been successfully scaled up to the national level, have served to substantially strengthen and improve the national programme.

Table 4.1: Improving Performance Planning and Monitoring at the Local Level

| Problem | Intervention | Finding | Lessons learned | GoB Action | Reference |
|---|---|---|---|---|---|
| Fieldworkers, field supervisors, and thana level managers lack performance planning capacity | Operations research projects aimed at improving planning capability at the operational level by programme managers | • Bimonthly contact rate by FWA increased from 14 to 28 % in intervention area (24 to 26% in comparison area) | • Key personnel must be at their posts and participate in planning process | A manual developed by the Project is being reviewed by the GoB | MCH-FP Ext. Project (Rural), ICDDR,B, Intervention Update, October 1996 |
| ... problem solving skills to improve programme performance | • Use of H&FWC and supervisory meetings to review field problems and develop solutions | • Quality of data reported by service providers has improved in intervention area | • FPI's is an important element of the implementation process | Intervention is still underway. Further action (e.g., Scaling-up) will depend on final results and review of the manual | |
| ... practical skills in using MIS data to monitor programme performance | • Develop appropriate indicators based on MIS data to review and monitor programme performance | • Use of indicators to help reduce dropout rate and identify weak areas | | | |
| ... a mandate to plan activities | • Micro level planning at the union level | • Targets could be set by the workers based on their past performance | • Leadership and commitment of the TFPO is the most critical factor | | |
| ... control resource allocation | • Follow-up review at H&FWC and thana level meetings using available statistics for planning and decision making | • Helpful in resolving problems | | | |
| ... practical knowledge on supervisory methods | • Introducing monitoring tools for front line supervisors (FPI diary: SFWV Checklist) | • Systematic performance review process is possible and improves quality and usefulness of data at local level | | | |

Table 4.2: Developing the Concept of Basic Information Exchange through Meetings

| Problem | Intervention | Finding | Lessons learned | GoB Action | Reference |
|---|---|---|---|---|---|
| • Mandated staff meetings not held regularly. | • Establish organised meetings for information exchange<br>• Counterparts help organise meetings, set the agenda and ensure that meetings run smoothly, and that minutes are taken | • Process found to be useful for monitoring individual performance | • Meetings would be more useful if representatives of the entire system are involved in information exchange | Awaiting GoB decision regarding the establishment of national guidelines for conducting meetings at the union and thana levels | Islam M. et. al., 1991. MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 110) |
| • Meetings are poorly organised and not well attended | • Plan meeting dates well ahead | • Improved monitoring of union and ward level outputs<br>• Meetings foster systematic performance review. Process develops meaningful information exchange among FWA | • MCH and family planning performance must be reviewed systematically at all levels | | |
| • No prespecified agenda for meetings | | • Gradual improvement in the thana supervision and management of fieldworker performance | • Management training is needed for THC officer | | |
| • Meetings lack problem solving & performance monitoring perspective | • Introduce concept of MIS based meetings<br>• Good workers receive praise for performance | • Meetings important for conflict resolution | | | |

Table 4.3: Developing Supervision Guidelines and Checklists

| Problem | Intervention | Finding | Lessons learned | GoB Action | Reference |
|---|---|---|---|---|---|
| • SFWVs lacked supervisory tool for monitoring FWVs<br>• FWVs technical competence needed improvement | • Prototype of supervisory checklists developed on 8 topics field tested | • Checklists are long and time consuming to fill out<br>• Without checklists, SFWV unsure of many MCH-FP procedures<br>• IUD and antenatal checklists most helpful<br>• Checklists were found to be a useful supervisory tool<br>• Supervisory record-keeping system showed enough promise to ensure quality prototype and data recorded in the field trial in 4 thanas | • SFWV and thana managers should be trained on use of checklist<br>• Gradual introduction with constant dialogue<br>• Training for SFWV on when it is appropriate and necessary to use checklists<br>• Follow-up by MO-MCH of the findings of SFWVs, based on the checklist, is a precondition for improved performance | GoB has developed a supervisory checklist, partially based on the supervisory checklist developed by the Project | Sullivan AD, et.al., 1993. MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 83). |

Table 4.4: Putting MIS to Use for Frontline Supervision

| Problem | Diagnostic Research (Intervention) | Finding | Lessons learned | GoB Action | Reference |
|---|---|---|---|---|---|
| • No standardised supervisory system | • FWA Registers developed and adapted to clarify pattern of work. Register tested in two thanas to provide foundation for monitoring fieldworker activities<br><br>• Simplify first generation FWA Register in 1991 field trial in 4 thanas | • Implementation is multifaced and complex<br><br>• Inadequate training of trainers and workers<br><br>• Training programmes poor - retention of knowledge declines our time<br><br>• Field observations show FWAs record some information correctly (reproductive history contraceptive status) some incorrectly side-effects, follow up etc).<br><br>• Provisions to evaluate FWAs within the register was found to be useful in improving quality of work performance | • Document and regularise new procedures for hiring and training<br><br>• Gradually scale up FWA based MIS; phase in supervisory training<br><br>• Need for refresher training and adequate supervision support after training<br><br>• Need for supervisory tools to measure workers' performance<br><br>• Use counterpart support for FWA hiring<br><br>• Use counterpart support for FWA hiring | Recommendations implemented in 8 thanas, then scaled up to national level<br><br>GoB adopted training curriculum to train fieldworkers and supervisors nationwide on MIS developed by the Project<br><br>Scaling-up of FPI Diary has begun in Chittagong district<br><br>1993 Revised Register distributed nationwide<br><br>GoB hired 10,000 workers with TA of the Project | Ashraf, *et al.* 1990, 1993, 1994, 1996;<br><br>Bhatnagar, *et al.* 1992<br><br>Brechin, 1986 |

Table 4.5: FPI's Opinion About the FPI Diary (1990-94)

| Sl. No. | Opinion About FPI Diary | Percent of FPIs' Saying "Yes" | | |
|---|---|---|---|---|
| | | Abhoynagar | Sirajganj | Monohordi |
| 1. | Diary related to job description | 100% | 91% | 100% |
| 2. | Necessary information on FWAs work documented in this diary | 88% | 73% | 82% |
| 3. | Diary helps in the field | 100% | 64% | 100% |
| 4. | Possible to provide support to the FWA | 75% | 100% | 100% |
| 5. | Possible to evaluate the performance of FWA | 100% | 100% | 100% |
| 6. | Possible to record necessary information on all meetings | 88% | 73% | 82% |
| 7. | Possible to monitor the supply of FWAs | 50% | 73% | 91% |

Table 4.6: Developing MIS for Health Assistant Outreach

| Problem | Intervention | Finding | Lessons learned | GoB Action | Reference |
|---|---|---|---|---|---|
| No record-keeping tool to monitor HA performance | Develop and test client-oriented, longitudinal register developed and field tested (HA Register) in 1991 | • Field test evaluation indicates HA Register well accepted by HAs and AHIs | • National implementation should be phased-in | MOHFW to implement modified Register in national programme | Rahman M. et. al., 1992. MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 75). |
| | | • Register found useful for routine HA field work | • Training should be a thana level by a team of trainers | First phase of implementation Register introduced in Project sites in early 1996 | |
| | | • Register can be implemented without additional inputs | • All HA vacancies should be filled to enhance HA Register implemented<br>• Need to coordinate HA and FWA work routines | Evaluation early 1997 for full national implementation | |

Table 4.7: Improving Service Worker Mobility

| Problem | Intervention | Finding | Lessons learned | GoB Action | Reference |
|---|---|---|---|---|---|
| • No provision of transportation for FWVs proved to be a significant barrier to the functioning of satellite clinics | Two different approaches developed:<br>• Local government purchased rickshaw vans (Rickshaw vans procured locally with the financial assistance of the Project[1]). Contracted with pullers to transport FWVs to SCs in the vans | • Although rental of vans is more feasible than outright purchase of equipment, either of the two approaches tested fulfilled all of the desired conditions: conveyance, low cost, and low management requirements. As an alternative to these two approaches, a direct reimbursement scheme was implemented, which offered greater promise for meeting transportation needs. | • The FWV receives the entire Tk. 100 for each SC but didn't always allocate the aya money and kerosene money as planned. Thus:<br>- Ayas sometimes were dissatisfied with arrangement<br>- Sterility of equipment was not always maintained due to lack of kerosene | GoB adopted transport plan for FWVs:<br>- Tk. 60 goes to FWV for transport<br>- 15 Tk. to an aya for transport<br>- Tk. 25 goes for kerosene and supplies | Rahman F, et. al., 1989. MCH-FP Ext. Project (Rural), ICDDR,B, (Documentation Note 135).<br>ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 13, 1990; |
| | • Contract is made with a puller who has a van for a fixed rate | • The GoB prescribed a fixed rate direct reimbursement to FWVs for transport to each SC. | • Making sure the money is used properly is a necessary follow-up activity. | Money is distributed via Medical Officer of the thana | |

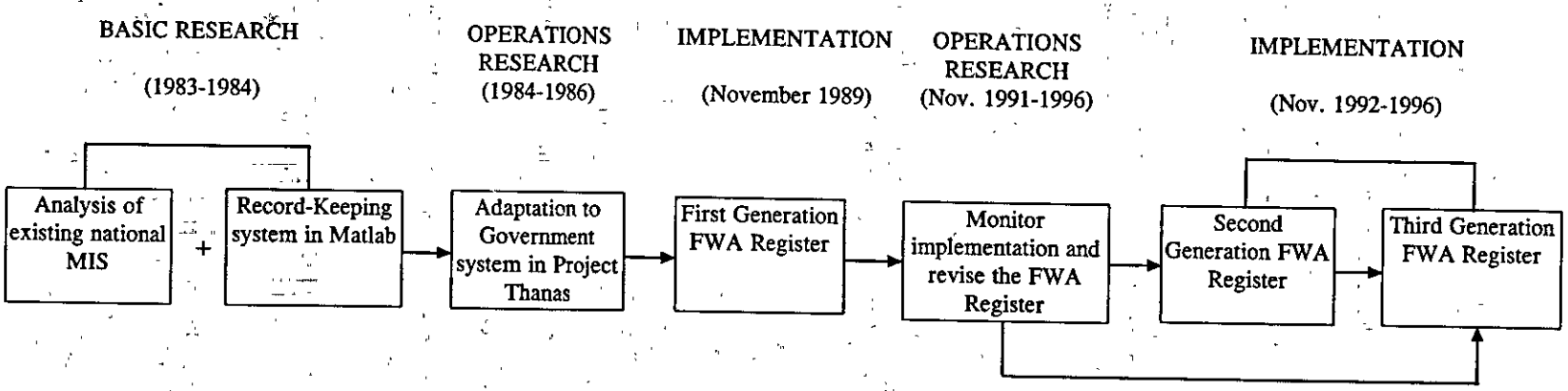
[1]The second time at Abhoynagar local government purchased rickshaw vans with its own funds

## 4.8 Supply and Logistics Interventions

| Problem | Intervention | Finding | Lessons learned | Action | Reference |
|---|---|---|---|---|---|
| Stockouts of drugs and other supplies was a serious barrier to clinic functioning<br><br>• Disruption in supply of contraceptives leads to method discontinuation<br><br>• Shortage of drugs leads to low attendance<br><br>• Govt. "push" and "pull" system inadequate<br><br>• Inadequate supply major factor in low performance in Chittagong<br><br>• Limited availability of supplies a weakness in Chittagong | • Improve procedures for supplying drugs<br><br>• Transportation of supplies dealt with via transport intervention (see page 74)<br><br>• Packing supplies<br>- FWVs provided with packing lists<br>- Project provided some items in short supply for 3 years<br><br>• Training provided to field staff on projecting needed supplies<br><br>• Project staff worked with store keepers to help project supplies required<br><br>• Format for supplies designed and put in FWA Register to indicate stock, consumption and required amounts<br><br>• Developed checklist for supplies | • Flow of supplies improved<br><br>• Reduced supply disruption<br><br>• Improved efficiency of storage<br><br>• Monthly stock and distribution format in FWA Register enabled workers to monitor supplies and assess upcoming requirements, minimising arbitrary allocation of supplies and improving supply<br><br>• LMIS format in FWA Register improved supply<br><br>• After training FWA's performance improved and supply system was considerably improved | • Project recommended increased numbers of DDS kits, some drugs and equipment<br><br>• Recommended separate drug kit for SC<br><br>• Thana managers need to constantly monitor stock at thana store<br><br>• Timely indent of supplies in the "pull" system are needed<br><br>• Reminders are needed for items in the "push" system<br><br>• Director of supply & logistics at national level needs to project and indent appropriately to foreign manufacturers with sufficient lead time. | • Drug supplies to FWV increased in 1992<br><br>• Special SC kits provided - 4 per year. | ICDDR,B, MCH-FP Extension Project (R) (Briefing paper 13)<br><br>ICDDR,B, MCH-FP Extension Project (R) (Documentation Note 84)<br><br>ICDDR,B, MCH-FP Extension Project (R) (Documentation Note 135)<br><br>Wolft JA, et. al. 1991. Family Planning Managers Handbook. p.254<br><br>Tunon C, et. al., 1992. (Working paper 79)<br><br>Needs Assessment for MCH-FP in Mirsarai, 1994<br><br>MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 104) |

Figure 4.4

## FWA Register Development Process



## References

Ashraf A. et al., 1989. "An Evaluation of Training on FWA Register (Evidence from 22 Thanas)." Dhaka: MCH-FP Extension Project (Rural) ICDDR,B, (Documentation Note 104).

Ashraf A, et al. 1990. "National Implementation of FWA Register and Reporting Formats." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 104 - unpublished).

Ashraf A, Maru RM, Hasan Y, Chowdhuri SR. 1991. "Family Planning, Maternal and Child Health Information System in Bangladesh." Proceedings of the Australian Tropical Health & Nutrition Conference 1991 (eds. Wendy Gardiner and Wendy Foley), Tropical Health Programme, University of Queensland, Australia, pp 154-171.

Ashraf A, Maru RM, Rahman F, Islam M, Hasan T, Taher MA, Islam AZN, Ahmed T, Ali S. 1992. "The Second Generation FWA Register (Report of a Field Trial)." Dhaka: MCH-FP Extension Project, ICDDR,B, in collaboration with Management Information System Unit, Directorate of Family Planning. (Working paper 77).

Ashraf A, Maru RM, Yousuf H. 1993. "Supervision: A Missing Link in the Bangladesh Family Planning Programme." Paper presented at the Second Annual Scientific Conference of the ICDDR,B, January 16-18, Dhaka.

Ashraf A, Maru RM, Yousuf H, Islam M. 1993. "Strengthening the Management Information System for Family Planning: The Role of the MCH-FP Extension Project." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B (Working paper 94).

Ashraf A, Maru RM, Hasan Y, Dunston AG. 1994. "Strengthening Front-line Supervision to Improve Performance of Family Planning Field Workers in Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 106 - unpublished).

Ashraf A, Dunston AG, Hasan Y, Khuda B, Maru RM. 1996. "Strengthening Front-line Supervision to Improve Performance of Family Planning Field Workers in Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 110 - published).

Bhatnagar SC, Hasan Y, Maru RM. 1992. "Strengthening the Existing MCH-FP MIS Through Performance Monitoring and Activity Planning." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 68 - unpublished).

Brechin, SJG, Hurrell M. 1986. Woman's Reproductive Health Booklet: Background and Plan for Implementation. Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 49 - unpublished).

Hasan Y, Koblinsky MA. 1986. "FWA Level Counterpart Support Strategy in MCH-FP Extension Project Upazilas." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 43).

Huque Z, Yunus Md. 1983."Course Outlines for Training Courses in the MCH-FP Extension Project." Dhaka: MCH-FP Extension Project (Rural). ICDDR,B, (Documentation Note 18)

Huque Z, Phillips JF. 1985. "Guidelines for Orientation of Senior Staff of the MCH-FP Extension Project in Matlab to Management Issues Relevant to the MCH-FP Extension Project." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, Documentation Note 16).

Hurrell M. 1985. "LFPV Counterpart Support Strategy- 1983-85." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 35).

ICDDR,B MCH-FP Extension Project (Rural). 1987. "The Role of Domiciliary Injectable Contraception in the Government of Bangladesh System: A Mid-Term Assessment." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Briefing paper 2).

ICDDR,B MCH-FP Extension Project (Rural). 1988. "Functioning Satellite Clinics: The Experience of the ICDDR,B Extension Project." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Briefing paper 5).

ICDDR,B MCH-FP Extension Project (Rural). 1990. "A Cost-Effective Analysis of Alternative Approaches to Providing Satellite Clinic Transport." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Briefing paper 13).

ICDDR,B MCH-FP Extension Project (Rural). 1991. "Increasing the Effectiveness of Satellite Clinics: Improving the Supply of Drugs and Equipment." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Briefing paper 15).

ICDDR,B MCH-FP Extension Project (Rural). 1994. "Needs Assessment Volume 1. "Need Assessment for MCH-FP Program in Mirsarai." A Collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B.

Islam M, Hasan Y, Ashraf A, Maru RM. 1991. " FWC and Mid-Level Supervisory Meetings at the Extension Project Upazilas." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 110 - unpublished).

Islam M, Maru RM, Ashraf A. 1993. "Overlap in the National Family Planning Management Information System." Poster paper presentation at the Second Annual Scientific Conference of the ICDDR,B, January 16-18, Dhaka.

Khuda B. Mirza T, Ahmed S. 1994. "Lessons Learned on Doorstep Delivery of Injectable Contraceptives." Workshop Proceedings September 28, 1994. ICDDR,B.

Koblinsky MA, Huque Z, Baqee L, Islam T, Rahman A, Ali S. March 1985. "Operational Research in the Public Sector: Implementation and Priorities." Diarrhoea Dialogue, Issue 20: 2-5.

Munro M, Nessa F, Ahmed M. 1990. "The Introduction of Packing List for Satellite Clinics." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 84 - unpublished).

Munro M, Rahman F, Wazed A, Kabir H. 1991. "Antenatal Care Training Sessions - Sirajganj Upazila." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 111).

Munro M, Rahman F, Whittaker M. 1991. "Medical Officer Side Effect Training Workshops." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 113).

Nessa F, Whittaker M, Rahman F, Koenig MA. 1989. "LFPV Counterpart Support Strategy - Analysis of the Findings and Future Directions." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 75).

Patterson DW, Chowdhuri SR, Phillips JF, Rahman M. 1990. "An Examination of the Results of the Integrated Reporting System Field Trial." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 54).

Phillips JF, Claquin P, Rob U, Rahman M, Akbar J, Huq M. 1982. "Final Version of the Project Protocol." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 2).

Phillips JF, Simmons R, Simmons G, Yunus Md. 1984. "Transferring Health and Family Planning Service Innovations to the Public Sector; An Experiment in Organization Development in Bangladesh". *Studies in Family Planning*, Vol. 15, No. 2: 62-73.

Phillips JF, Simmons R, Chakraborty J, Chowdhury AI. 1984. "Integrating Health Services into an MCH-FP Program: Lessons from Matlab, Bangladesh." *Studies in Family Planning*, Vol. 15. No. 4: 153-161.

Phillips JF. 1988. "A Review of a Field Trail of the Integrated Reporting System, An Experimental Management Information System of the Bangladesh Ministry of Health and Family Planning." The office of the Population and Human Resources Division Asia Region, the World Bank.

Rahman M, Marjorie A, Koblinsky MA. 1985. "The Reporting System in the Population Control Wing." Dhaka: MCH-FP Extension Project, ICDDR,B, (unpublished manuscript).

Rahman F, Hasan Y, Islam M, Whittaker M. 1989. "Functioning Satellite Clinics through Rickshaw Scheme: The Experience of the ICDDR,B Extension Project." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Documentation Note 135).

Rahman M, Maru RM, Ahmed I, Rouf A, Siddique AB, Ahmed KU, Khan HM, Musa SAJM, Ali S. 1992. "Field Test of the Health Assistant Register: An Evaluation." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 75 - unpublished).

Simmons R, Phillips JF, Rahman M. 1984. "Strengthening Government Health and Family Planning Programs: Findings from an Action Research Project in Rural Bangladesh." *Studies in Family Planning*, Vol. 15, No. 5: 212-221.

Sullivan AD, Haaga JG, Hossain MB, Rahman F, Ahmed IU, Wazed A. 1993. "Satellite Clinics: An Overview of Research From the MCH-FP Extension Project." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 83).

Tunon C, Maru RM, Haaga JG. 1992. "Management Issues and Family Planning Performance in Chittagong Division." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 79, pp. 17-19).

Whittaker M (editor). 1989. "Proceedings of National Workshop on Service Delivery Aspects of Injectable Contraceptives in Bangladesh (held on 14th November 1989, Dhaka). pp. 5-7.

Wolff JA, Suttenfield LJ, Binzen SC (Editors). 1991. *The Family Planning Managers Handbook* Kumarian Press: West Hartford CT. p. 254

# CHAPTER 5

# ACHIEVING SUSTAINABILITY OF HEALTH AND FAMILY PLANNING SERVICES

Thomas T. Kane
Barkat-e-Khuda
Ann Levin
Yousuf Hasan
Mizanur Rahman

## 5.1 Introduction

With the maturing of the national programme, the rapid increase in the population of Bangladesh, the growing demand for family planning and other health services, and diminishing prospects for sustained international donor support, the need for more cost-effective and sustainable service delivery has become a necessity for the GoB national health and family planning programme. Since the early 1990s, the Project has designed and begun testing a number of innovative alternative service delivery strategies and cost recovery approaches to help make the national programme more sustainable in the years ahead. This chapter discusses some of these recent Project interventions, many of which are still underway, and presents some of the preliminary findings which have been critical to the strategic planning process for the GoB's Health and Population Sector Strategy (HPSS), and the upcoming National Integrated Population and Health Program (NIPHP) supported by USAID, and the fifth five-year Health and Population Program (HAPP-V) to begin in 1998 with financial support from the World Bank and other donors.

## 5.2 Essential Service Package

**Statement of the Problem:** In Bangladesh, the health and family planning infrastructure has developed a range of services provided through a tiered system which includes: community level services provided by HAs and FWAs; Satellite Clinic; Health and Family Welfare Centre; and Thana Health Complex. In practice, most services are not linked to other services, especially at the periphery, and are, therefore, less cost-effective.

**Intervention:** By providing a package of key preventative and curative services and health education from fixed sites at different levels and linking them with each other, the Project intervention will address key health problems in terms of disease burden, major risk factors and important national priorities such as reproductive health. The package offered at the thana level and below will vary with available resources and infrastructure. Strong vertical links, however, will ensure that the targeted population (women and children and men, when appropriate) receives appropriate services from the higher levels when certain services are not available at the lower levels.

This tiered delivery of services requires a strong referral system extending from the community level to the thana, so that clients may receive higher level services quickly. The introduction of referral slips, especially for EOC and side effect management, will ease the

handling of referred cases. There will also be a system to refer complicated cases to the district hospital or another nearby larger or specialised hospital.

Implementation of the package requires staff training for enhancing the quality of services, improving the clinical skills of the providers, and further improving management capabilities. Simple and replicable changes in the current system of record-keeping and reporting will be needed for these extended services.

The intervention began in August 1996 in Khorona and Bagutia unions of Patiya and Abhoynagar thanas, respectively. Orientation has been completed, and HAs and FWAs have started to deliver services. Two manuals have been prepared and supplied to the fieldworkers: (1) Guidelines on services to be developed at fixed sites and services to be offered under the ESP; and (2) Guidelines on record-keeping for ESP fieldworkers.

The services provided at the different tiers include the following:

**(a) Community Level:** The current services provided at the community level by the Health Assistant (HA) and the Family Welfare Assistant (FWA) need to be widened to provide a more coherent mix of services. For this purpose, the current doorstep services will need to be shifted to fixed points. Rescheduling the work routine and re-allocation of work area is essential for coordinated services from same sites. The FWAs and female HAs will provide FP methods to female clients, iron and folate tablets, ORS, anti-scabies medication, de-worming tablets, and Vitamin A capsules. Male HAs may provide the remaining services, including condoms to males and counseling for vasectomy. Limited medication for malaria and ARI may be provided by any of the fieldworkers.

**(b) Combined Satellite Clinic + EPI Spots:**. SCs combined within EPI spots have been established in each union to provide antenatal care, first aid EOC, post-natal care, child health including sick child management, immunisation of children and women, growth monitoring of children, and clinical and other family planning services, including side-effects management. This will involve some rescheduling of existing EPI and satellite days.

**(c) Health & Family Welfare Centre (H&FWC):** Diagnostic capabilities such as testing of urine for sugar and albumin has been strengthened. The H&FWC provides basic EOC with appropriate delivery facilities; immunisation; management of second degree malnourished children and referral for third degree; sick child management, including the use of intravenous fluids for severe cases of diarrhoea; management of RTIs; treatment of tuberculosis, malaria and other local endemic diseases; and management of post-abortion complications.

**(d) Thana Level**

**Thana Health Complex (THC):** Technical assistance to THCs has been provided on basic or comprehensive EOC services, depending on availability of specialists, including blood transfusion facilities and appropriate logistic support.

**Preliminary findings**

- There is a need to standarise the ideal number of service delivery spots for each fieldworker.
- A meaningful role for the immediate supervisor needs to be determined.
- Two types of record-keeping books lead to a waste of resources.
- Drugs should be supplied from the H&FWC to lessen the burden of carrying them. Fieldworkers should be provided with a bag to carry supplies and the record-keeping book.
- Attention should be given to maintaining uniformity by supplying one type of drug for smooth administration and record-keeping.
- Thana managers should review the performance of the fieldworkers working under them in one venue until other management issues are addressed.

**Lessons Learned**

Preliminary experience from the implementation process indicates a need to redefine the role of the fieldworkers. The capacity of these workers to provide the expected quantity and quality of services, the elements of record-keeping for fieldworkers and uniformity in monitoring and reporting all need to be investigated. To be successful, key management issues such as supervision, logistics and supplies, training, record-keeping and IEC need to be adequately addressed. This is important for an overall systems improvement needed for implementing an appropriate essential service package.

The provision of this essential service package is already influencing the mandate of the NIPHP and the HPSS.

## 5.3 Alternative Service Delivery: Cluster Spots

**Statement of the Problem:** Under the existing service delivery system, basic MCH-FP services are provided at the homes of rural women. Surveys such as the 1993-1994 Bangladesh Demographic and Health Survey, however, have found that only about 40 percent of eligible women in rural areas are actually visited by FWAs. FWAs often do not have the time to counsel and monitor the individuals they do see. There is also increasing concern among policy makers and programme managers about the sustainability of the existing doorstep delivery system.

**Intervention:** Alternative service delivery strategies are being sought that will be more cost-effective and allow fieldworkers to concentrate on motivating nonusers. One such strategy is the Cluster Visitation intervention, which has been designed as an alternative to the existing system of Community-based Delivery (CBD). Under this approach, services are provided by the FWA to a group of about 50 women at a centrally located house, a cluster spot (CS), rather than at the homes of the individual clients. This system allows the FWA

to serve more clients per day and spend more time interacting with clients and providing health and nutrition education.

The intervention began in January 1995 at Mirsarai and Abhoynagar. CSs have been initiated in two unions in each of the field sites. The number of clusters in the intervention unions ranges from 64 to 112. Fieldworkers provide services at the clusters on a monthly basis. At present, FWAs are still required to visit the homes of women to invite them to attend the clusters. This is considered to be an additional burden for the FWAs.

**Preliminary findings**

- The initial findings of the field test are encouraging. Awareness of CS increased from 16 percent to nearly 100 percent in both the intervention unions. Between 35 and 45 percent of eligible women are receiving their services from the cluster spots.

- Contrary to initial fears that contraceptive use would decline, it has stayed at about the same level at Abhoynagar and increased at Mirsarai.

- The relative share of CSs as a source of contraceptive supplies is increasing, while the share of supplies provided at homes is decreasing.

**Lessons Learned**

(1) To attract more women to CS, some additional services may need to be added and the service providing capacity of the FWAs should be increased with appropriate training.

(2) For clusters to succeed, different IEC strategies involving the home-owners of the CS should be organised.

The approach seems to be cost-effective and sustainable. Encouraged by the initial findings of the Cluster Visitation Approach, some NGOs have already introduced this approach in their project areas, and some are contemplating adopting it soon. The Directorate of FP has already adopted this approach for replication in the national programme, as a GoB policy under the HPSS, HAPP-V and the NIPHP.

## 5.4 Cost Recovery

**Statement of Problem:** Programme costs are rising with the increase in population, the emergence of new diseases such as HIV/AIDS and re-emerging diseases, and the growing demand for family planning and other reproductive health services. Additionally, the family planning programme is heavily dependent on donor funds which are not likely to keep pace with rising programme costs.

**Intervention:** One mechanism through which the programme can address rising costs and withstand possible fund reduction is by judicious application of user fees at service delivery points. The cost recovery intervention has been designed to initiate fees for supplies and services and to shift services from the doorstep and encourage clients to seek services at fixed sites outside their homes.

This intervention began in August 1996 at Abhoynagar and in September 1996 at Mirsarai. During the intervention, nominal fees are being charged for short- and medium-term methods (pills, condoms and injectables). Users of long-term methods (IUDs and sterilisation) are not being charged to promote increased use of these methods. Lower prices are being charged at outlets that require clients to leave their homes in order to encourage contraceptive-seeking behavior. Prices at the SC are half of those at the doorstep and contraceptives are provided free of charge at the H&FWC as a safety net. Clients were informed about the fees before the intervention began. Information on contraceptive pricing is being displayed at SCs, H&FWCs and other locations.

**Preliminary findings**

With the provision of intensive Information, Education and Communication (IEC) activities, informal discussions with the clients suggest that there is no major objection to paying a nominal fee for contraceptives. Early results of the intervention, however, indicate an increased use of the H&FWCs.

## 5.5 Networking

**Statement of the Problem:** Seven separate Government agencies provide family welfare services at the community level in rural Bangladesh. NGOs also provide family welfare services. The staff of these different agencies, however, often work in isolation, without any coordination among themselves.

**Intervention:** The Networking intervention is an attempt to develop effective coordination between the different sectors of the Government and the NGOs which provide family welfare services at the community level. It is designed to increase client, accessibility to various family welfare services, make services more convenient for clients, and ease service delivery mechanisms of service providers through horizontal linkages. It is hoped that the intervention will improve both programme management and programme sustainability as well enhance interaction between the local government and workers of various service providing agencies.

This intervention began in May 1996 to network the union-level workers of seven Government agencies in Muradpur Union of Sitakunda Thana and Sreedharpur in Union of Abhoynagar Thana. Three forums have been formed to plan, operationalise, review and monitor activities that are being undertaken in the intervention. The intervention is being implemented in three phases. First, existing messages are modified to create IEC activities for all workers to use. Arrangements are made so that providers from several different agencies can provide services from a common place. Second, depot-holders will be recruited from various target groups and given training, so that they can assist their peers in achieving smaller families. Third, networking of NGOs with the GO agencies and the depot-holders will be encouraged.

**Preliminary findings**

As the intervention is in its initial stages, quantitative outcome indicators are not available. Some baseline results indicate that although villagers have some knowledge of service providers, their use of available services remains low. Over half of the users reported that they would be willing to collect pills or condoms from the depot-holders.

### *Lessons Learned*

The network concept is appreciated by district and thana managers and union-level workers of all agencies for several reasons. Advantages include: the involvement of a bottom-up approach where grass-roots workers can plan activities to achieve a common goal. The district and thana managers find the network forums useful in coordination and multisectoral development planning. The intervention promotes the idea of participatory planning and team work. And finally, the network will be able to reduce duplication of activities among the agencies so that more work can be accomplished with existing manpower and resources.

The local governments have been kept informed about the various intervention activities. This has helped to enhance the sense of accountability of service providers to the elected representatives and allowed service providers to be able to depend on an increase in community support through the local government.

## 5.6 Conclusions

Preliminary results of the various interventions addressing the issues of sustainability of health and family planning services are encouraging, suggesting that interventions designed to increase the utilisation of fixed-site service centres, the use of cluster spots, and to provide combined health and family planning services from one spot provide cost-effective alternatives to the existing community-based delivery of family planning and MCH services at the doorstep by fieldworkers, without adversely affecting the CPR. Furthermore, people have been found to be generally willing to pay for health and family planning services, and the introduction of pricing schemes and a formal system for charging fees for services have proven to be, by and large, acceptable and feasible. The current sustainability interventions being tested by the Project will be continued into the NIPHP. The NIPHP and the HAPP-V projects are relying on the final results of these Project interventions to shape the service strategies and other efforts to sustain the national health and family planning programme in the future.

Nevertheless, it is appropriate to ensure that a safety net of free services for the poor is provided as part of any cost recovery system that is established.

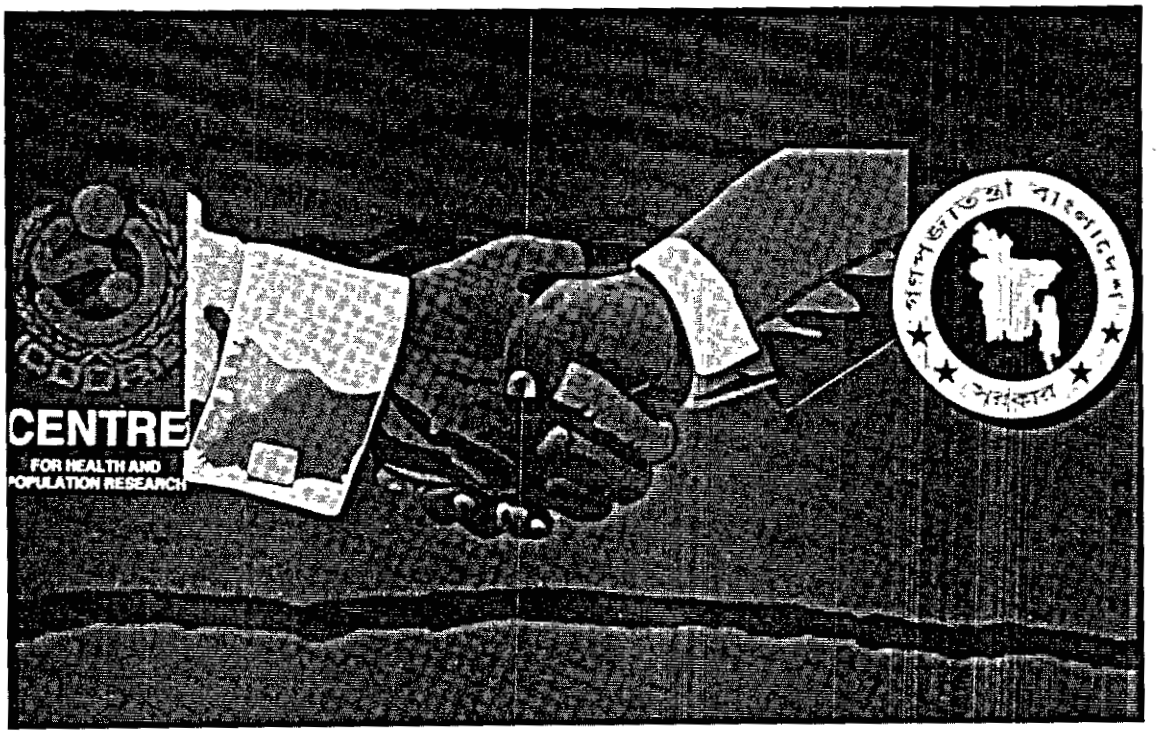
### References

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Cluster Visitation." Intervention Update, Vol. 3, No. 2 (published, October), Dhaka.

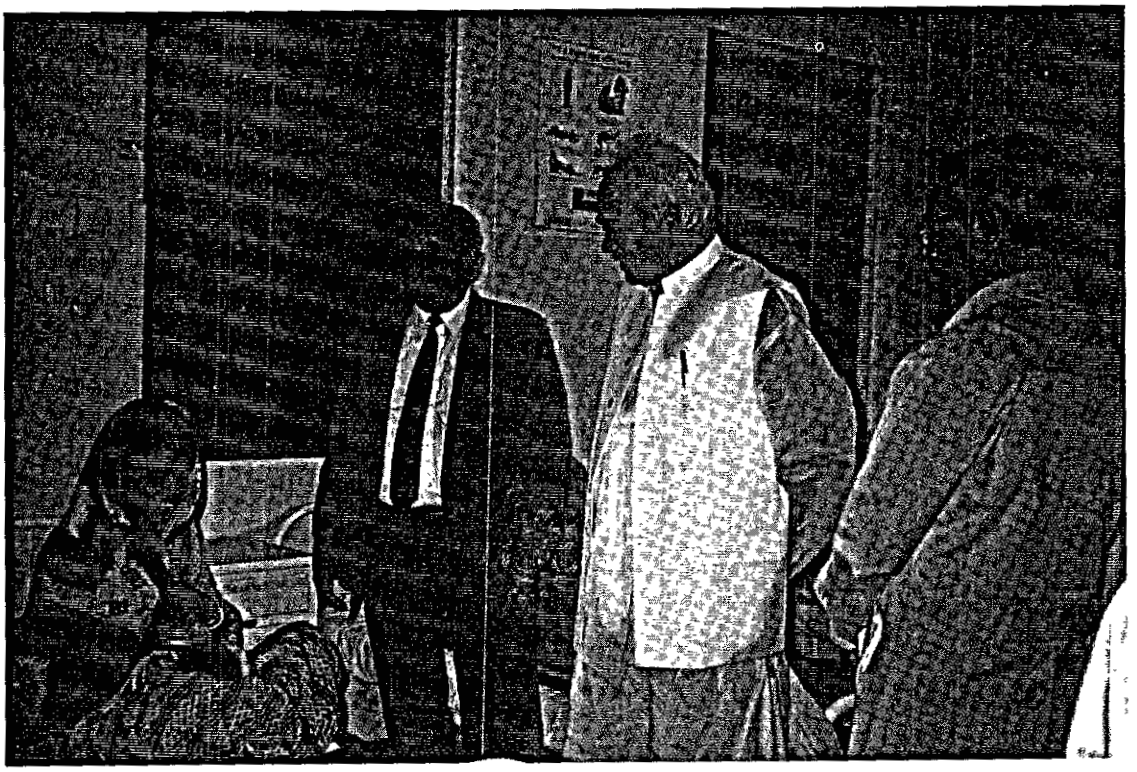
ICDDR,B MCH-FP Extension Project (Rural). 1996. "Networking of Government and Non-Government Family Welfare Service Providing Agencies." Intervention Update, Vol. 3, No. 10 (published, October), Dhaka.

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Charging for FP-MCH Commodities and Services." Intervention Update, Vol. 3, No. 11 (published, October), Dhaka.

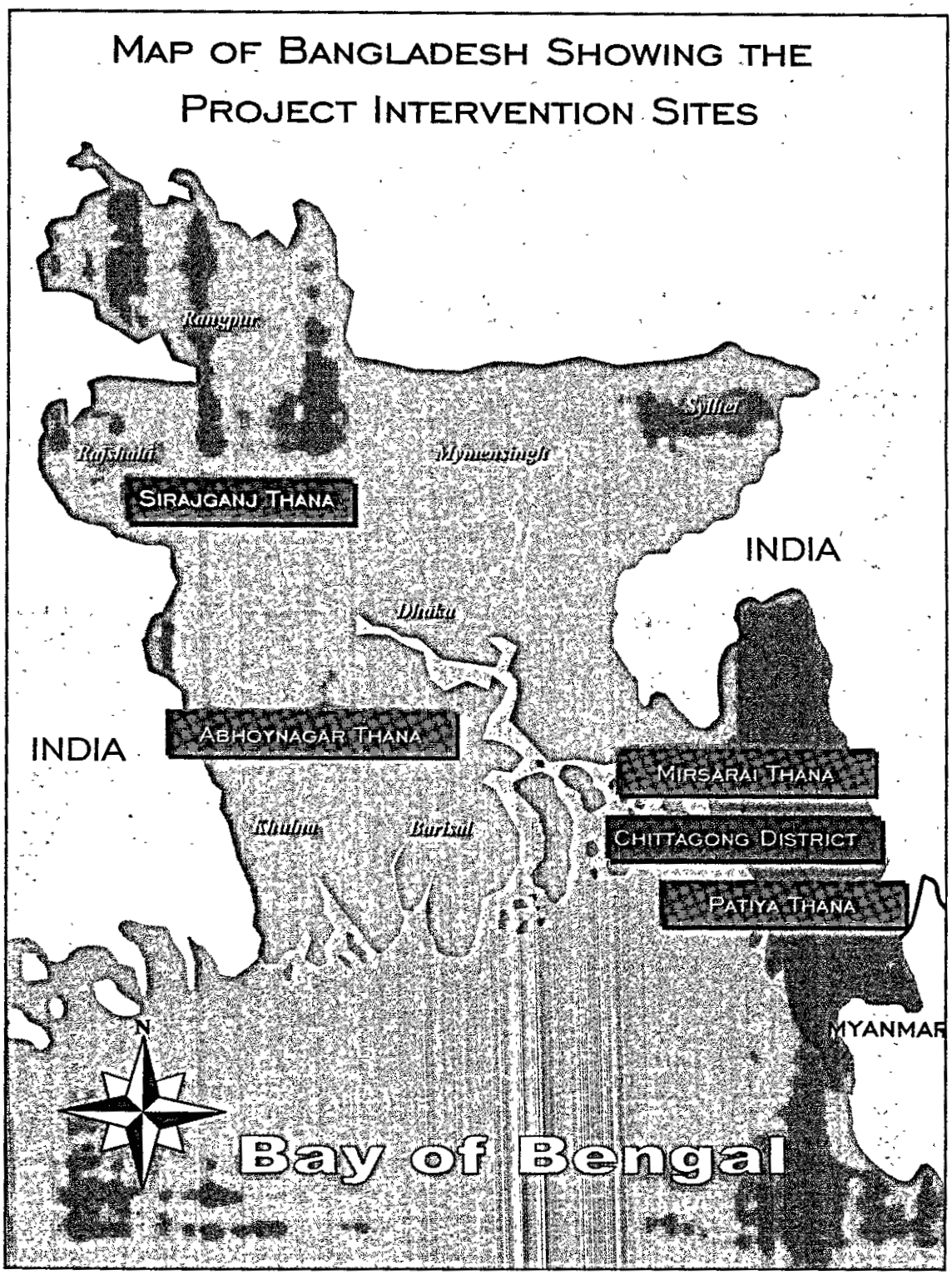
ICDDR,B MCH-FP Extension Project (Rural). 1996. "Basic Service Package." Intervention Update, Vol. 3, No. 12 (published, October), Dhaka.




**Partnership in progress:** Strong support of the Bangladesh Government has played a key role in ICDDR,B's achievement in the last few decades.

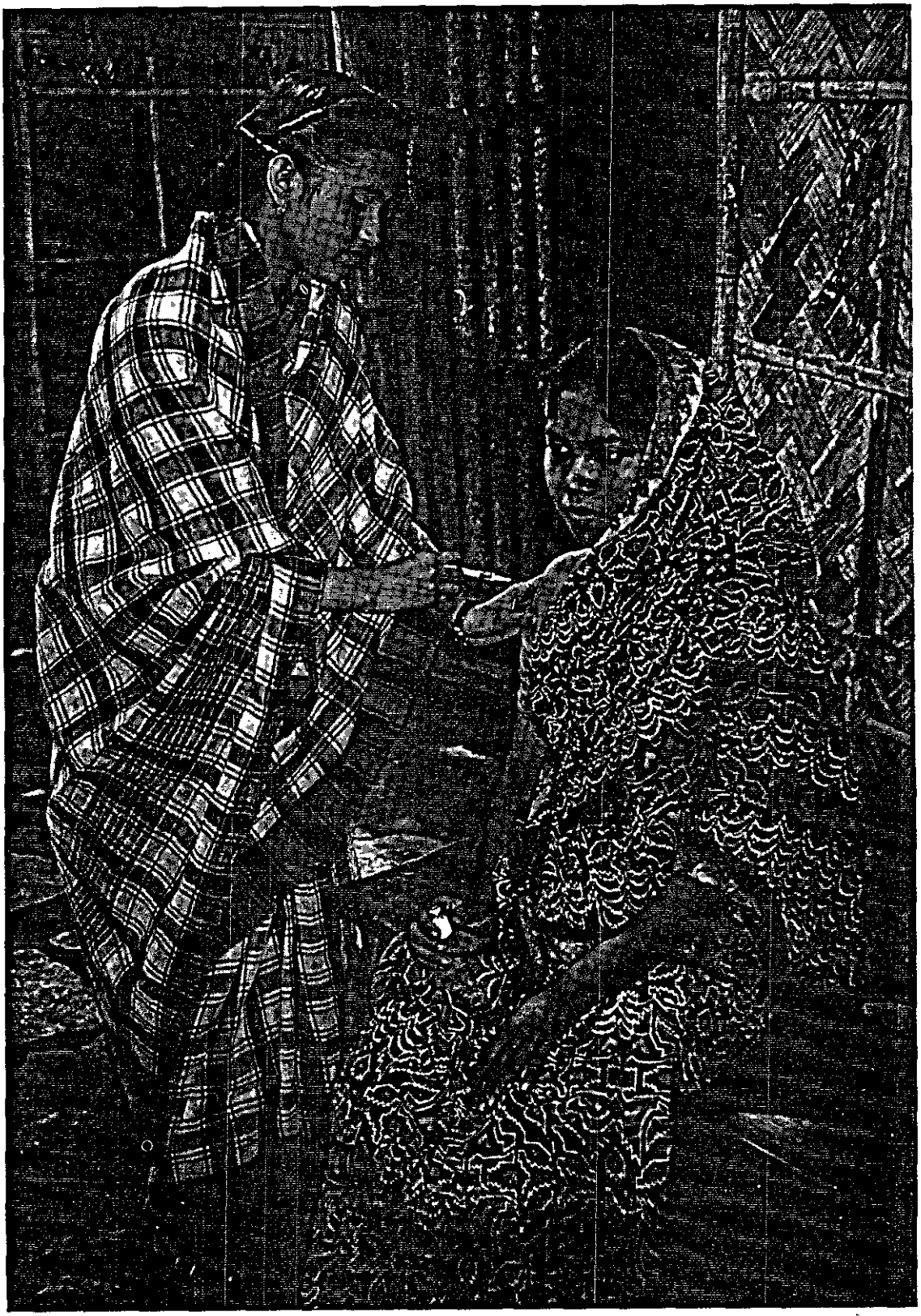


**Ensuring policy impact by working closely with the Government:** The Honourable Health Minister, Honourable Member of Parliament, and the Secretary, MOHFW visited the Project intervention at Mirsarai THC.

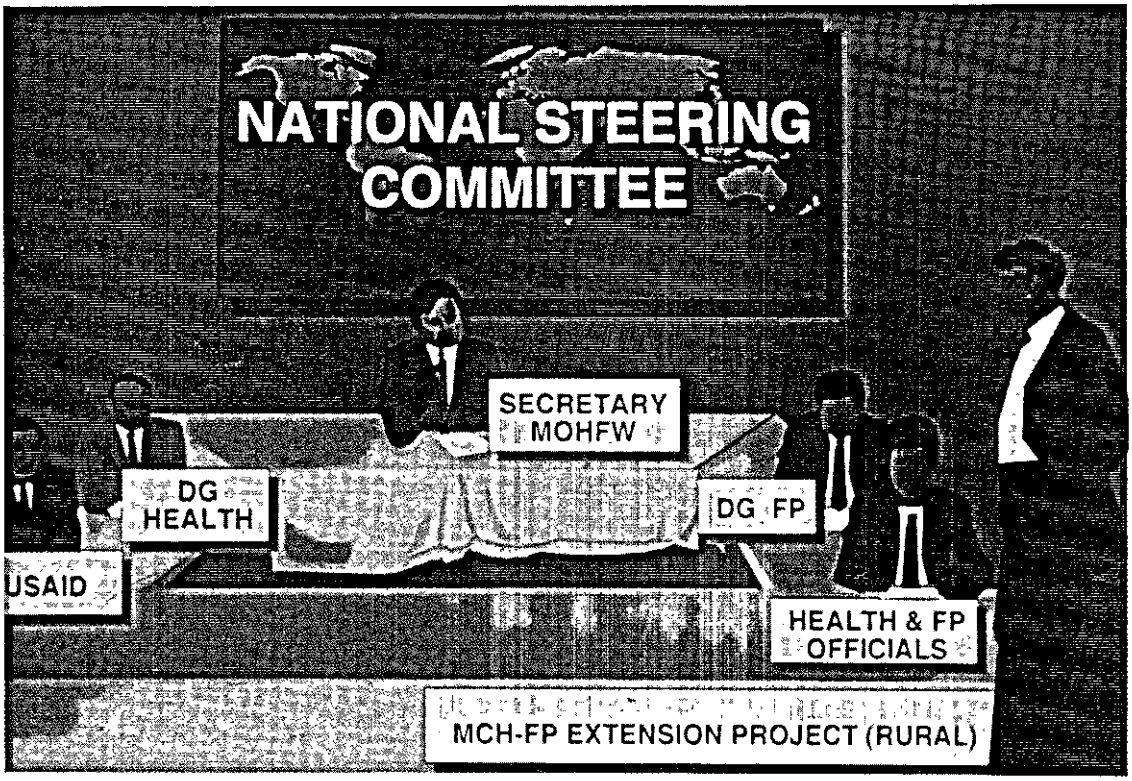

MAP OF BANGLADESH SHOWING THE PROJECT INTERVENTION SITES
Rangpur
Sylhet
Rajshahi
Mymensingh
SIRAJGANJ THANA
INDIA
Dhaka
ABHOYNAGAR THANA
INDIA
MIRSARAI THANA
Khulna
Barisal
CHITTAGONG DISTRICT
PATIYA THANA
MYANMAR
N
Bay of Bengal

9RR.


**Pictorial Card:** The Project designed the pictorial card which explains the warning signs of pregnancy, and developed a proper linkage and referral system.



**Expanding method choice:** The Project developed an intervention for FWA - administered injectable contraceptives at women's doorsteps.




**National Steering Committee (NSC):** The NSC, headed by the Health Secretary, provides overall policy guidance to the Project and reviews its activities.

**Government and Donor Support:** The success of the Project could not have been achieved without generous support of the Government of Bangladesh and donors.



98E

**Preventing death caused by obstetric complications:** The Project designed comprehensive emergency obstetric care (EOC) at Mirsarai THC, and is currently upgrading the Abhoynagar THC to provide comprehensive EOC services. This intervention will be scaled up countrywide in phases.


**Successfully scaling up interventions:** The Project's District Approach workshops in Chittagong, promote interactions among the national level policy makers and district and thana level programme managers.

**Cluster Visitation:** The Project has designed and tested cost-effective alternative service delivery strategies that help achieve programme sustainability.

# ESSENTIAL SERVICE PACKAGE (ESP)
## MCH-FP EXTENSION PROJECT (RURAL) INTERVENTION

| Components of ESP | Service Delivery Points | Providers | Existing | Proposed |
|---|---|---|---|---|
| **Child Health** | | | | |
| Child Immunisation | SC+EPI | HA | EPI Spot | SC+EPI |
| Vit-A capsule supplementation | SC+EPI, Cluster | HA | Doorstep | Cluster |
| Integrated management of child illness (ARI, diarrhoeal disease, malnutrition, others) | H&FWC, THC | MA, FWV | THC | H&FWC |
| CDD/ARI | Cluster | HA, FWA | Doorstep<br>SC+EPI | Cluster, SC+EPI<br>Cluster, SC+EPI, H&FWC |
| Curative care of other common diseases like scabies and worm infestation | Cluster, SC+EPI, H&FWC | FWA, FWV | H&FWC | |
| **Maternal Health** | | | | |
| Iron folate supplementation to pregnant women | Cluster, SC+EPI, H&FWC | FWA, FWV | SC, H&FWC | Cluster |
| TT Immunisation | SC+EPI | HA,FWA | EPI spot | SC+EPI |
| First aid, EOC | H&FWC | FWV | HFWC | H&FWC |
| Basic EOC | THC | MO-MCH/Ob.Gyn | THC | SC+EPI, H&FWC |
| ANC/PNC | SC+EPI, H&FWC | FWA, FWV | SC, H&FWC, THC | |
| **FP & Reproductive Health** | | | | |
| Oral pill and condom | Cluster, H&FWC | FWA | Doorstep | Cluster |
| Injectable contraceptives | Cluster, H&FWC | FWV | SC, H&FWC | Cluster, SC+EPI, H&FWC |
| IUD | SC+EPI, H&FWC | FWV | SC, H&FWC | SC+EPI, H&FWC |
| Sterilisation/Norplant | THC & selected camps | | THC | THC & selected camps |
| Side-effect management | SC+EPI, H&FWC, | FWV, MO-MCH | SC, H&FWC | SC+EPI, THC, H&FWC |
| Syndromic management of RTI/STD | THC, H&FWC | FWV, MO-MCH | Nil | H&FWC, THC |
| Partner notification of RTI/STD | Doorstep | FPI, FWA, FWV MA | Nil | Doorstep |
| Partner treatment of RTI/STD | H&FWC, THC | FWV, MA, MO-MCH | | H&FWC, THC |

# CHAPTER 6

# DEMOGRAPHIC CHANGE

Mizanur Rahman
Khorshed Mozumder
Thomas T. Kane
Barkat-e-Khuda
Mian Bazle Hossain

## 6.1 Introduction

Beginning in 1983, the Project initiated a number of interventions at Abhoynagar and Sirajganj to enhance the accessibility and utilisation of the MCH-FP services provided by the MOHFW. The interventions were fielded in an incremental fashion, concentrating on the improvement of programme management and quality of services. The purpose of these interventions was to enhance the use of MCH-FP services, that would to lead to fertility reduction and improvement in maternal and child health.

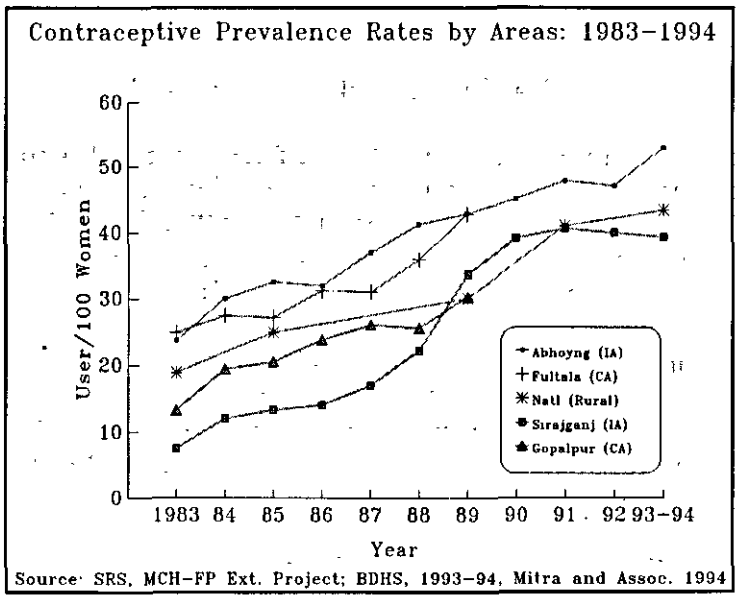
This chapter discusses changes in contraceptive use, contraceptive continuation, fertility, and infant and child mortality in the Project areas over the 1983-96 period. Positive changes in key family planning variables and demographic parameters are linked to Project interventions. The major focus of the discussion relates to Abhoynagar and Sirajganj areas, because of the Project's continuous activities there over a period of more than a decade. Wherever possible, data from Project sites are compared with those of the national estimates.

## 6.2 Contraceptive Use

### 6.2.1 Contraceptive Prevalence Rate (CPR)

Table 6.1 (see page 108) shows the level of contraceptive use at Abhoynagar (intervention), Fultala (comparison), Gopalpur (comparison), and Sirajganj (intervention), along with that of the country as a whole. Abhoynagar is in Khulna division, and Sirajganj is in Rajshahi division. Rajshahi division has experienced the highest contraceptive use in the country since 1983, followed by Khulna division (Mitra et al., 1994). However, Sirajganj was a low-performing thana located in the highest-performing division. In 1983, the CPR at Sirajganj was only 8 percent, while the national CPR for all rural areas was about 19 percent (Figure 6.1). Gopalpur, the comparison area for Sirajganj, had a considerably higher CPR (13 percent) than Sirajganj. The CPR at Abhoynagar and Fultala was 24 percent and 25 percent, respectively in 1983.

Figure 6.1




Source: SRS, MCH-FP Ext. Project; BDHS, 1993-94, Mitra and Assoc. 1994

The CPR increased in all Project intervention and comparison areas, as is true for the country as a whole; however, the rate of increase varied for areas as well as for time periods. For example, between 1983 and 1989, the CPR increased from 7 percent to 33 percent with an increase of 4.3 percentage points per annum at Sirajganj, and increased from 23 percent to 44 percent with an increase of 3.4 percentage points per annum at Abhoynagar (Figure 6.1). In contrast, the national increase was from 19 percent to 31 percent, with about 2 percentage points per annum. The CPR increase in the Fultala comparison area was slightly less than the increase at Abhoynagar, but the rate of increase in the Gopalpur comparison area was much lower than the increase at Sirajganj. Fultala and Gopalpur were dropped from the SRS in 1989 because the MCH-FP activities of various NGOs in these areas were responsible for considerable progress in health and family planning. These areas were, thus, no longer appropriate comparison areas (for more details see footnote 1 on page 5 in Chapter 1).

The increase in CPR at Sirajganj continued and surpassed the national CPR in 1989 and further increased to 40 percent. Thereafter, it plateaued for several years. The CPR at Abhoynagar increased steadily to 58 percent in 1996. It is our impression that the Project interventions that were implemented over the period of a decade had cumulative effects on the increase in contraceptive use.

The most significant findings from the results presented in Figure 6.5 (see page 111) are that the CPR increased more rapidly in the intervention areas than in the comparison areas during the reference period. The estimates of the Project impact are given by the differentials in CPR increase, which was 8 percentage points higher for Mirsarai, compared to Satkania; 5 percentage points higher for Sirajganj compared to Gopalpur; 3 percentage points higher for Abhoynagar compared to Fultala; and 3 percentage points higher for Abhoynagar compared to Bagherpara during the reference periods.

### 6.2.2 FWA Contact and Contraceptive Use

The Project has shown that the frequency of FWA contact with MWRA plays a significant and substantial role in acceptance and continuation of contraceptive methods (Phillips and Hossain 1993; Hossain and Phillips 1996). The quality of the contact (in terms of regularity of contact, FWA's time spent with the client, information provided by FWA, counselling on side-effects, etc) also significantly influences acceptance and continuation of contraceptive methods (Koenig and Hossain 1992). The frequency of FWA contact with MWRA increased more rapidly at Abhoynagar, Sirajganj and Mirsarai intervention areas than at their respective comparison areas, Bagherpara, Gopalpur, and Satkania (Figure 6.6 - see page 112). The only exception is the comparison area Fultala, where the fieldworker contact rate increased more rapidly than at Abhoynagar due to an intensive NGO effort in that thana during the Project period.

FWA contact rates in the Bagherpara and Gopalpur comparison areas were substantially lower than at Abhoynagar and Sirajganj.

### 6.2.3 Doorstep Injectable Intervention

The Project's impact on demographic change goes far beyond the Project intervention areas. Several of the Project interventions (e.g., FWA recruitment, FWA Register for monitoring

performance, doorstep delivery of injectables, etc.) have been scaled up to the national programme, which has resulted in improved programme performance for the country as a whole. This is reflected in dramatic increases in the country's CPR over the Project period. FWA-administered doorstep injectables serves here as an example of the scope of the Extension Project's impact.

To expand the choice of contraceptive methods delivered at greater convenience to women, the Project tested the acceptability and feasibility of having FWAs deliver injectable contraceptives at women's homes. To make injectable contraceptives widely available to rural women, the Project trained FWAs to safely administer the injection during their routine home visits. The results of the operations research showed a dramatic increase in the use of injectables and improved continuation rates, which led to a considerable increase in the overall CPR in Project areas. Doorstep injectables were provided in two Project thanas beginning in 1984. Subsequently, this was expanded to eight non-Project thanas and further to Mirsarai in 1994. The total number of married women of reproductive age (MWRA) covered in all of the doorstep injectable intervention areas is over 500,000, about 10 percent of whom are injectable users.

The doorstep injectable programme has played an important role in raising the CPR, as this service involves broadening of contraceptive method-mix. Khan and Rahman (1996) and Rahman et al. (1996) report that most of the increase in CPR at both Abhoynagar and Sirajganj can be explained by the increase in pills and injectables. In 1983, one and two percent of MWRA were currently using oral pills at Abhoynagar and Sirajganj, respectively, which increased to 19 percent at Abhoynagar in 1996 and to 16 percent in Sirajganj at 1992. There was virtually no use of injectable contraceptives in these areas in 1983, but 19 percent of MWRA were using injectables at Abhoynagar in 1996 and 12 percent were using injectables in 1992 at Sirajganj. One could argue that contraceptive use would be lower if there were no doorstep injectable services available. The prevalence estimates for injectable use in the Project areas are significantly higher than the national estimates (4.5 percent in 1993-1994), which demonstrates the great impact the doorstep injectable intervention has had in the Project areas.

The impact of this intervention at the national level would be considerably larger in absolute terms. Before the intervention began, the prevalence of injectables was 0.2 percent in 1983, increasing to 4.5 in 1993-1994. Also, the relative share of fieldworkers providing injectables has increased considerably from 5.3 percent in 1985 to 36.2 percent in 1993-1994.

### 6.2.4 Other Methods

Method specific contraceptive prevalence data show that the use of permanent methods did not change at Sirajganj from 1983 to 1992, and declined at Abhoynagar from 11 percent to 9 percent form 1983 to 1996 (Table 6.1). At Sirajganj, only two percent of couples used permanent methods in 1983 and 1992.

The use of IUDs remained below two percent at Sirajganj in 1992, and four percent at Abhoynagar in 1996.

The use of condoms increased from about one percent in 1983 to about four percent in 1996 at Abhoynagar. At Sirajganj, condom use increased from below one percent in 1983 to two percent in 1992.

The use of traditional methods declined from six percent in 1983 to about three percent in 1996 at Abhoynagar. It slightly increased at Sirajganj from three percent in 1983 to over four percent in 1992.

### 6.2.5 Relative Share of Modern Methods

The share of effective contraceptive methods has increased at both Abhoynagar and Sirajganj as well as in rural Bangladesh over the 1983-1996 period (Table 6.2 - see page 108), but the relative increase was much higher at Abhoynagar and Sirajganj than in Bangladesh. For example, the share of modern methods increased from 60 to 90 percent at Sirajganj and from 74 percent to 95 percent at Abhoynagar between 1983 and 1996. For all of rural Bangladesh, the share of modern methods increased from 71 percent in 1983 to 81 percent in 1993-94. The share of condoms remained at about the same level at Abhoynagar, but declined slightly at Sirajganj as well as in rural Bangladesh as a whole. It is therefore expected that, given the level of contraceptive use and the method mix, the impact of contraceptive use in effectively preventing pregnancies would be higher at Abhoynagar and Sirajganj than for the nation (rural areas) as a whole.

### 6.2.6 Contraceptive Use Dynamics

It is not possible to identify the specific reasons for the stabilisation in contraceptive use at Sirajganj. The CPR did not increase from 1990-93 with the Project's presence there; neither did it change in the two years following the withdrawal of Project activities in 1994.

The level of CPR depends on three aspects of contraceptive use dynamics: (a) the level of demand or unmet need for contraceptive services; (b) recruitment of new contraceptive acceptors; and (c) duration of use of methods. The increase in the CPR at Abhoynagar and Sirajganj depended on these three factors. Because of the regularity of contact between FWAs and MWRA and activities related to appropriate screening of clients, counselling, and side-effects management, it was likely that discontinuation of pills, injectables, and IUDs would have declined and average duration of use would have increased at Abhoynagar and Sirajganj.

Figure 6.7 (see page 113) compares 12-month discontinuation of pills, injectables, and IUDs by area. The results show very important features of contraceptive use dynamics. It seems, as expected, that contraceptive discontinuation is inversely related to the level of contraceptive use. Discontinuation was substantially higher at Sirajganj than at Abhoynagar both in 1984-1986 and in the later period (1990-1992 or 1994-1995). Within each area, discontinuation of oral pills and injectables declined by more than one-third in the 1984-1986 period to 1990-1992 at Sirajganj and 1994 to 1995 at Abhoynagar. Higher discontinuation at Sirajganj than at Abhoynagar persisted in the 1990s. During the 1990s, Sirajganj also experienced lower CPR than Abhoynagar. The decline in discontinuation may have been associated with various Project activities as well as an increase in the demand for contraceptive use. Demand for contraceptives increased in both Project sites. For example, 50 and 56 percent of MWRA did not want to have additional children at Abhoynagar and Sirajganj respectively in 1982, which increased to 68 and 65 percent in 1993. The decline in the level of desired fertility can also be attributed to the influence of improved FWA-client contact.

### 6.2.7 Differentials of Contraceptive Use

Studies have been conducted at Abhoynagar and Sirajganj on the differentials of contraceptive use, which document the role of non-programmatic factors on contraceptive use. In both the low and high performing periods (1983 and 1992/94 respectively), contraceptive use increased with age, reaching its height in the late 30s and then declining after age 40 (Figure 6.8 - see page 114). The onset of menopause starts around age 40 years for some women and increases with age. Moreover, many older women think that they do not need contraceptives because they feel they are not at risk for conception. There is also a cohort effect; the older cohort are generally more conservative and less educated and may have lower use of contraceptives than the relatively younger cohort. The Project research shows that older women preferred traditional methods over modern methods (Khan and Rahman, 1996). Pills, injectables and IUDs are preferred by relatively young or low-parity women, while permanent methods are used more by relatively older or high-parity women.

Among other socio-economic and cultural factors, economic conditions, maternal education, gender preference, and religion were found to be associated with contraceptive use (Barkat-e-Khuda and Hossain, 1996; Khan and Rahman, 1996; and Mozumder et al., 1996). Women with primary or higher education have higher contraceptive use than uneducated women. Pills, condoms, and traditional methods were preferred by educated women, while injectables and permanent methods were used more by uneducated women (Khan and Rahman 1996). Contraceptive use was significantly lower among women in households possessing cultivable land compared to those having no cultivable land (Barkat-e-Khuda and Hossain, 1996). Use of permanent methods, condoms, and traditional methods was less frequent among Muslims than Hindus. Both the husband and wife approving of family planning positively influenced contraceptive adoption; however, the woman's approval was more important for adoption of temporary methods than for the permanent methods (usually tubectomy). Mozumder et al. (1996) show that contraceptive use remained low for those couples who do not have a balanced gender composition of children. Couples with only son(s) or only daughter(s) experienced lower contraceptive use than those with children of both sexes. Couples with only daughters experienced lower contraceptive use than those with only sons.

## 6.3 Fertility

Fertility was high at Sirajganj and moderate at Abhoynagar, when the Project started its activities in the early 1980s. During the 1983-1989 period, the total fertility rate (TFR) was over 6.4 and 4.1 births per woman at Sirajganj and Abhoynagar, respectively. The concomitant fertility decline, as expected, occurred at both the Project sites (Table 6.3 - see page 109 and Figure 6.9 - see page 115). The TFR at Abhoynagar declined from about 4.1 in 1983-1985 to 2.7 in 1993-1995, and appears to have stabilised at that level. The Abhoynagar TFR is quite close to the area's mean desired family size of 2.9 children. The stabilisation of TFR, and reduction of unmet need may imply that simple maternal and child health and family planning programme improvement may not bring about any further appreciable reduction in fertility. Activities or programmes that lead to reduction in desired family size should be undertaken to further increase contraceptive use and fertility reduction.

There was a sharp decline in the TFR at Sirajganj from about 6.4 in 1983-85 to about 3.8 in 1990-92. However, this has probably stabilised, as the CPR stabilised at about 40

percent during the period 1990-95 (Figure 6.1). Desired family size at Sirajganj was over 3.0 in 1993, and has declined slightly since then. There is potential to raise contraceptive use at Sirajganj through programme improvement, since there is a substantial gap there between desired fertility and actual fertility.

Table 6.3 shows age-specific marital fertility rates by area and time period. Any change in marital fertility can be attributed to deliberate control of fertility (usually through use of contraception). There may also be some effect of international adult migration on marital fertility, but the incidence of such migration is negligible at Abhoynagar and Sirajganj. Between 1983-85 and 1990-92, the total marital fertility rate (TMFR) declined by about 29 percent, from 5.1 to 3.6 births per married woman at Abhoynagar and by 37 percent, from 7.8 to 4.9, at Sirajganj. The TFR, in contrast, declined by 34 and 41 percent during the above period at Abhoynagar and Sirajganj, respectively (Table 6.4- see page 109). The larger decline of TFR compared to TMFR is explained by the increase in age at marriage. Marital fertility decline was higher than 50 percent among women 35 years and over in both areas (except for age group 45-49 at Abhoynagar). In the younger age groups, fertility decline was between 11 and 46 percent; decline was considerably lower among teenagers.

A fertility-differential study shows that marital fertility, at Abhoynagar and Sirajganj, was lower among women with primary or higher education than uneducated women, among non-Muslims than Muslims, and among relatively richer women than poorer women (Khuda and Hossain, 1996). These differentials are consistent with the differentials in contraceptive use.

## 6.4 Infant and Child Mortality

There has been an expected improvement in infant and child health associated with the decline in fertility due to contraceptive use, as well as improved maternal and child health services. In fact, there has been a substantial decline in infant and child mortality in both areas. During the design of the SRS, sample size was determined mainly based on the rates

Figure 6.2

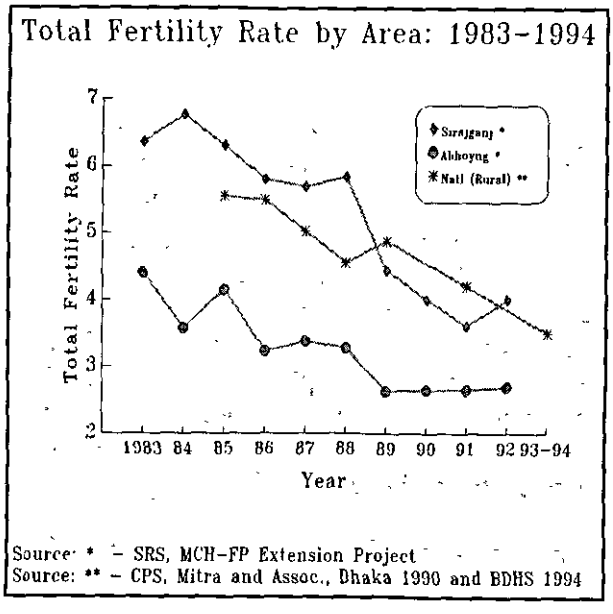



Figure 6.3

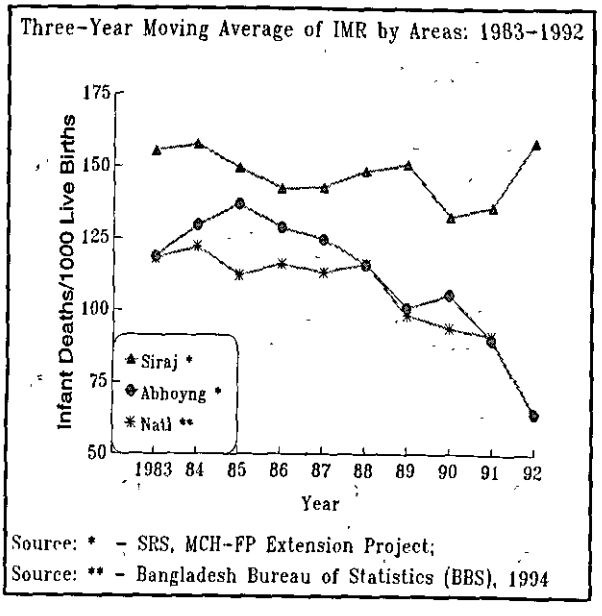
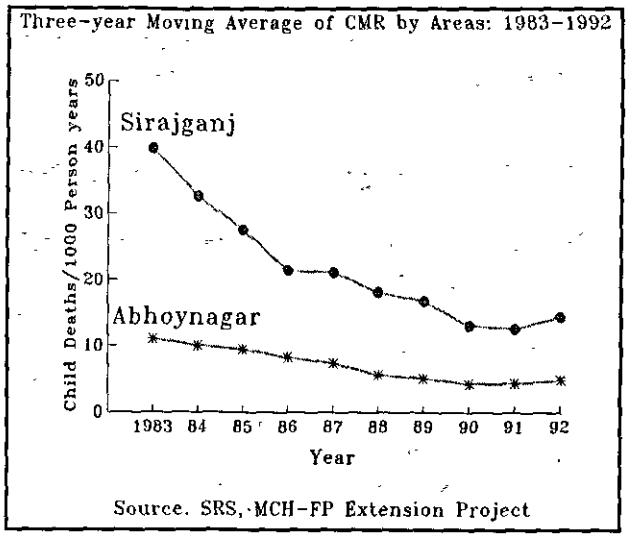


Figure 6.4




of contraceptive use and fertility. A study on infant and child mortality generally needs a much larger sample size than that needed for studies of contraceptive use and fertility. Therefore, it has not been possible to investigate the infant and child mortality decline over single year periods. Figure 6.2 and Figure 6.3 show infant and child mortality trends by area. Both infant and child mortality was markedly higher at Sirajganj than Abhoynagar, which probably indicates a positive correlation between childhood (under 5) mortality and fertility at an aggregate level. Except for some fluctuations, the infant mortality rate of nearly 125 per 1,000 during the early 1980s at Abhoynagar declined to about 60 per 1,000 during the early 1990s. However, infant mortality at Sirajganj was quite high and did not decline, but fluctuated at around 150. Child mortality at Sirajganj, in contrast, declined substantially from over 30 per 1,000 during the early 1980s to about 20 per 1,000 during the early 1990s. At Abhoynagar, however, it was low, just over 10 per 1,000 during the early 1980s, and steadily declined to around 6-7 per 1,000 during the early 1990's (Figure 6.4).

Most of the infant mortality decline in Abhoynagar was in the postneonatal period. Neonatal mortality at Abhoynagar and neonatal and postneonatal mortality at Sirajganj did not decline appreciably. Table 6.5 (see page 110) shows that, during 1983-85 at Abhoynagar, neonatal and postneonatal mortality had an equal share, while during 1990-92 the proportion of neonatal mortality was much higher than that of postneonatal mortality. This indicates a decline in postneonatal mortality. At Sirajganj, in contrast, the distribution of neonatal and post-neonatal mortality remained nearly similar. Greater concentration of infant deaths in the neonatal period indicates a shift to those due mostly to endogenous causes.

The reduction in child and postneonatal mortality at Sirajganj and Abhoynagar may be attributable to fertility reduction, high coverage of child immunisation, especially measles, and widespread use of ORS for diarrhoea. Mozumder and Koenig (1996) and Mozumder (1996) show that birth spacing has a beneficial impact on child health, measured by both mortality and nutrition. The remarkable fertility decline in both areas influenced child health. The Project's management improvement interventions jointly with health and MCH-FP programmes at Abhoynagar and Sirajganj also contributed to child health improvement. The Project has helped thana health managers, in addition to MCH-FP managers, in identifying programme weaknesses, planning service delivery, setting priorities for preventive and curative services, and monitoring and supervising field activities, mainly through the Project Implementation Committees of Abhoynagar (PICA) and Sirajganj (PICS). Moreover, the monthly mid-level supervisory meetings held jointly with union-level supervisors and thana managers of both Health and MCH-FP programmes were the venues where planning and performance review of activities were routinely conducted. The Project also facilitated the local health programme in effectively organising EPI activities, procuring ORS and other drugs in case of diarrhoea epidemics and other disasters like flooding. These efforts have made an important contribution to the reduction of childhood mortality in both areas.

Despite these gains, neonatal mortality at Abhoynagar and neonatal and postneonatal mortality at Sirajganj did not decline. These puzzling findings require further research. The findings presented here and experience with other projects in Matlab and elsewhere indicate, however, that it is very difficult to reduce neonatal mortality.

## 6.5 Other Programmes Relevant to Demographic Research of the Project

In addition to conducting research directly related to Project interventions using operations research designs, the Project has taken advantage of its unique body of data (including SRS surveillance data, in-depth surveys, and qualitative data) to examine a number of programmatic and policy issues of relevance to the national programme. Over 300 scientific papers, journal articles and reports, based on secondary analysis of Project data, have been produced. A detailed review of these findings and their impact on the national programme, however, is beyond the scope of this report. These studies have been included in the comprehensive bibliography at the end of this report.

## 6.6 Discussion and Conclusions

The Project activities at Abhoynagar, Sirajganj, and Mirsarai led to a substantial increase in contraceptive use, and thus, to a reduction in fertility. Infant and child mortality also declined in the Project sites. The doorstep injectable intervention resulted in improved programme performance for the intervention sites and for the country as a whole, as this intervention had an impact on the national CPR. The success of the Extension Project should not only be seen from the demographic changes in the Project sites but also its impact on policy and programmatic changes in the national programme. The next chapter discusses various aspects of the Project's impacts on national policies, but the summary below also address areas of demographic impact with policy implications.

In every case, increase in contraceptive prevalence was more rapid in the Project intervention areas than in the comparison areas. These findings provide a basis for developing programmatic actions that may be undertaken to increase contraceptive use in low-performing areas of the country. Chittagong division still experiences a low level of contraceptive use where client-FWA contact is lower than other divisions of the country (Mitra et. al., 1994). The Extension Project research indicates that contraceptive use at Chittagong district in 1996 varied from a low 25 percent in one thana to a high of about 50 percent in another (Rahman et. al, 1996). Regularity of client-worker contact also varied considerably between thanas. It has been shown that, in four thanas of Chittagong, the CPR could be raised from 39 percent to 50 percent by assuring the regularity of client-FWA contact.

Thus, it seems that improvement in client-FWA contact, in terms of regularity and quality of contact, can increase the CPR in low-performing areas of the country. The Extension Project work has identified alternative service delivery strategies to increase client-worker contact and utilisation of fixed service sites and has been involved in interventions in the areas of strengthening supervision of FWA work, introducing services from Cluster Spots, and combining Satellite Clinics with EPI Spots (Rahman et. al., 1996, Project Update, May 1996).

With regard to contraceptive use dynamics, as expected, there has been an inverse association, at an aggregate level, between the level of contraceptive use and discontinuation. Discontinuation of pill use, the most commonly used method, is very high in Bangladesh. About 50 percent of users discontinue within a year; about 40 percent of pill users and 60 percent of injectable and IUD users discontinue because of side-effects (Mitra et. al., 1994). Thus, further research on contraceptive discontinuation is warranted. Additionally, the quality of MCH-FP services is of prime importance. Project efforts contributed to substantial reductions in pill and injectable discontinuation rates in Project intervention sites.

Adding a new method in the cafeteria of contraceptive services provides clients an opportunity for broader choice, as does offering alternative sources of delivery of methods already available in the programme. Abhoynagar and Sirajganj clients had the opportunity to use injectable contraceptives at the doorstep in addition to what is available in the rest of the country. Use of both pills and injectables rose equally and in parallel in the Project areas.

In Bangladesh, there are many more areas with considerable unmet contraceptive need. Identification of these areas and development of strategies for improving the quality, accessibility and use of health services is now a priority of the national MCH-FP programme. The recent tendency of stabilisation of CPR, and thus TFR, indicates that a reorganisation of the MCH-FP programme better suited to the needs of the population may be necessary.

Child mortality has declined remarkably, and is most likely been associated with both fertility decline and increased preventive and curative health services, both at Abhoynagar and Sirajganj. Postneonatal mortality has also declined at Abhoynagar, but not as much at Sirajganj. Neonatal mortality did not decline appreciably at either Abhoynagar or Sirajganj. Systematic and rigorous efforts are needed to further reduce neonatal and postneonatal mortality in rural Bangladesh. Antenatal, postnatal, and obstetric care services, supported by a strong, family health education programme, are necessary.

In conclusion, it is clear that the project interventions have had a significant impact on improving the management and quality of MCH-FP services in the Project intervention areas, leading to greater utilisation of services and more positive family planning and health outcomes. There is ample quantitative evidence to document the significant increase in contraceptive use and decrease in fertility in the Project intervention areas when compared to the comparison areas or to the country as a whole.

Table 6.1: Percentage of Currently Married Women aged 15-49 years Currently Using Contraception by Method, Year, and Area

| Method | Sirajganj | | Abhoynagar | | Bangladesh (Rural) | |
|---|---|---|---|---|---|---|
| | 1983 | 1992 | 1983 | 1996 | 1983 | 1993-94 |
| **Modern** | **4.5** | **35.1** | **17.4** | **54.9** | **13.4** | **35.1** |
| Pill | 1.1 | 16.3 | 2.2 | 18.9 | 3.3 | 16.9 |
| Condom | 0.6 | 2.3 | 1.2 | 3.6 | 1.5 | 2.3 |
| Injection | 0.0 | 12.5 | 0.2 | 19.0 | 0.2 | 4.5 |
| IUD | 0.5 | 1.6 | 2.5 | 4.0 | 1.0 | 2.0 |
| Sterilisation | 2.3 | 2.4 | 11.3 | 9.4 | 7.4 | 9.4 |
| **Traditional** | **3.0** | **4.4** | **6.0** | **2.7** | **5.4** | **8.2** |
| CPR | 7.5 | 39.5 | 23.4 | 57.6 | 18.8 | 43.3 |

Source: SRS, CPS 1983, BDHS 1994

Table 6.2: Contraceptive Method-mix by Year and Area (Percentage Distribution)

| Method | Sirajganj | | Abhoynagar | | Bangladesh (Rural) | |
|---|---|---|---|---|---|---|
| | 1983 | 1992 | 1983 | 1996 | 1983 | 1993-94 |
| **Modern** | **60.0** | **88.9** | **74.4** | **95.3** | **71.3** | **81.1** |
| Pill | 14.7 | 41.3 | 9.4 | 32.8 | 17.8 | 39.0 |
| Condom | 8.0 | 5.8 | 5.1 | 6.3 | 8.0 | 5.3 |
| Injection | 0.0 | 31.6 | 0.9 | 33.0 | 1.1 | 10.4 |
| IUD | 6.7 | 0.4 | 10.7 | 6.9 | 5.3 | 4.6 |
| Sterilisation | 30.7 | 6.7 | 48.3 | 16.3 | 39.4 | 21.7 |
| **Traditional** | **40.0** | **11.1** | **25.6** | **4.7** | **28.7** | **18.9** |
| Total | 100 | 100 | 100 | 100 | 100 | 100 |
| CPR | 7.5 | 39.5 | 23.4 | 57.6 | 18.8 | 43.3 |

Source: SRS, CPS 1983, BDHS 1994

Table 6.3: Age-specific Marital Fertility Rate by Period and Area

| Age Group | Sirajganj | | | Abhoynagar | | | National (Rural) | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1983-85 | 1990-92 | % Reduction | 1983-85 | 1990-92 | % Reduction | 1983-CPS | 1991-93 | % Reduction/ (Increase) |
| 15-19 | 292.9 | 259.7 | 11.3 | 265.8 | 227.9 | 14.3 | 256.0 | 313.0 | (22.3)* |
| 20-24 | 338.1 | 233.3 | 31.0 | 269.3 | 198.5 | 26.3 | 283.0 | 249.0 | 12.0 |
| 25-29 | 308.0 | 202.1 | 34.4 | 191.7 | 143.8 | 24.9 | 250.0 | 186.0 | 25.6 |
| 30-34 | 261.3 | 139.9 | 46.5 | 147.8 | 82.9 | 43.9 | 202.0 | 124.0 | 38.6 |
| 35-39 | 245.2 | 98.9 | 59.7 | 103.2 | 50.2 | 51.4 | 125.0 | 70.0 | 44.0 |
| 40-44 | 104.5 | 32.8 | 68.6 | 32.9 | 14.9 | 54.7 | 63.0 | 24.0 | 61.9 |
| 45-49 | 19.8 | 7.4 | 62.6 | 2.3 | 1.5 | 34.8 | 9.0 | 18.0 | (100.0)* |
| TMFR | 7.8 | 4.9 | 37.2 | 5.1 | 3.6 | 29.4 | 5.9 | 4.9 | 16.9 |

Notes: Age-specific Marital Fertility Rates shown per 1000 married women aged 15-49.
TMFR shown per woman.
Source: SRS, CPS 1983, BDHS 1994
* Percentage in parenthesis indicates increase in ASMFR in later period.

Table 6.4: Age-specific Fertility Rate by Period and Area

| Age Group | Sirajganj | | | Abhoynagar | | | National | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1983-85 | 1990-92 | % Change | 1983-85 | 1990-92 | % Change | 1984-88 | 1991-93 | % Change |
| 15-19 | 161.7 | 108.3 | 33.0 | 136.6 | 107.1 | 21.6 | 182 | 140 | 23.1 |
| 20-24 | 296.2 | 200.9 | 32.0 | 228.4 | 166.5 | 27.2 | 260 | 196 | 24.6 |
| 25-29 | 280.0 | 189.2 | 32.4 | 173.1 | 129.7 | 27.4 | 225 | 158 | 30.6 |
| 30-34 | 243.8 | 129.6 | 46.8 | 129.6 | 77.1 | 40.5 | 169 | 105 | 37.9 |
| 35-39 | 211.4 | 87.0 | 58.9 | 90.7 | 44.1 | 51.4 | 114 | 56 | 50.1 |
| 40-44 | 86.5 | 48.1 | 44.4 | 47.3 | 12.5 | 73.6 | 56 | 19 | 66.1 |
| 45-49 | 13.6 | 5.6 | 58.6 | 1.6 | 1.2 | 21.5 | 18 | 14 | 22.2 |
| TFR | 6.4 | 3.8 | 40.6 | 4.1 | 2.7 | 34.1 | 5.1 | 3.4 | 33.3 |

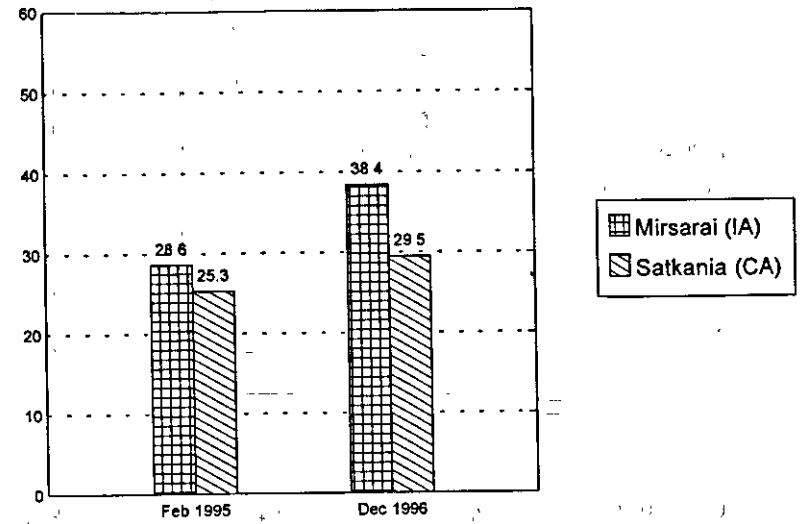
otes: Age-specific Fertility Rates shown per 1000 women (married and unmarried) aged 15-49.
TFR shown per woman.

Table 6.5: Distribution of Neonatal and Post-neonatal Death by Area and Period: 1983-1985 and 1990-1992

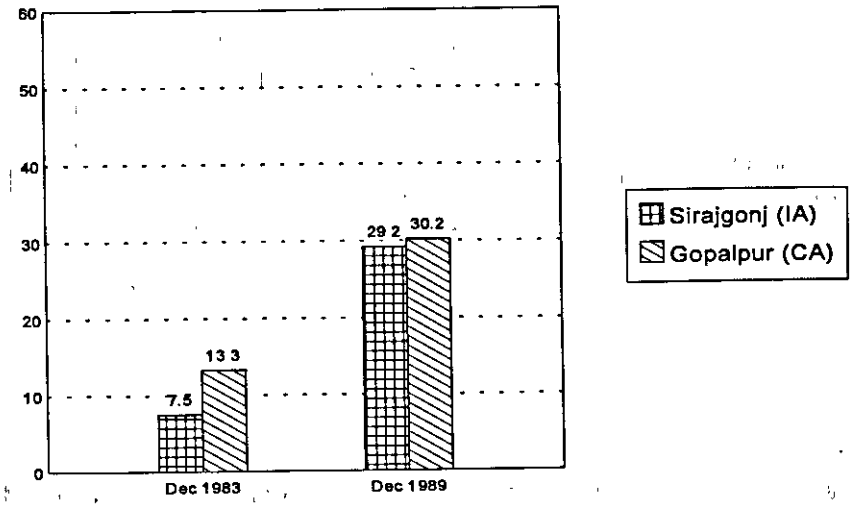
| Deaths | Sirajganj | | | | Abhoynagar | | | |
|---|---|---|---|---|---|---|---|---|
| | 1983-1985 | | 1990-1992 | | 1983-1985 | | 1990-1992 | |
| | N | % | N | % | N | % | N | % |
| Neonatal deaths | 211 | 53.3 | 116 | 56.6 | 86 | 50.0 | 63 | 69.2 |
| Post-neonatal deaths | 185 | 46.7 | 89 | 43.4 | 86 | 50.0 | 28 | 30.8 |
| Infant deaths | 396 | 100.0 | 205 | 100.0 | 172 | 100.0 | 91 | 100.0 |

# Figure 6.5

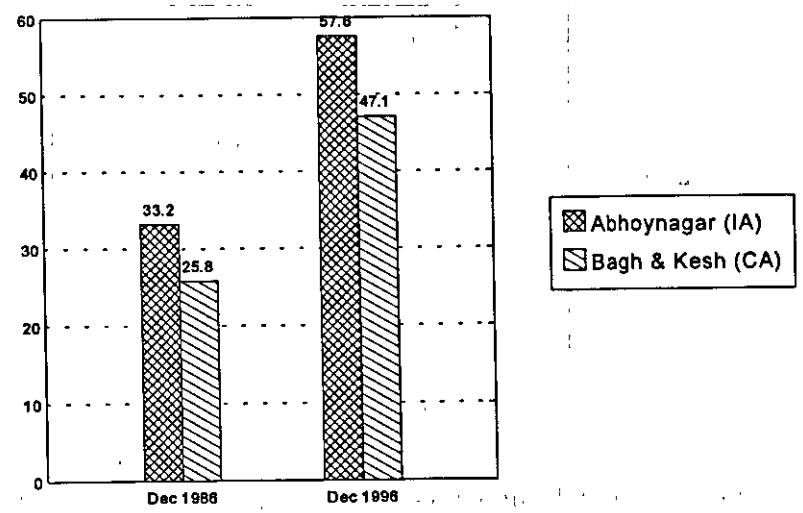
Contraceptive Prevalence Rates by Areas: February 1995 - December 1996



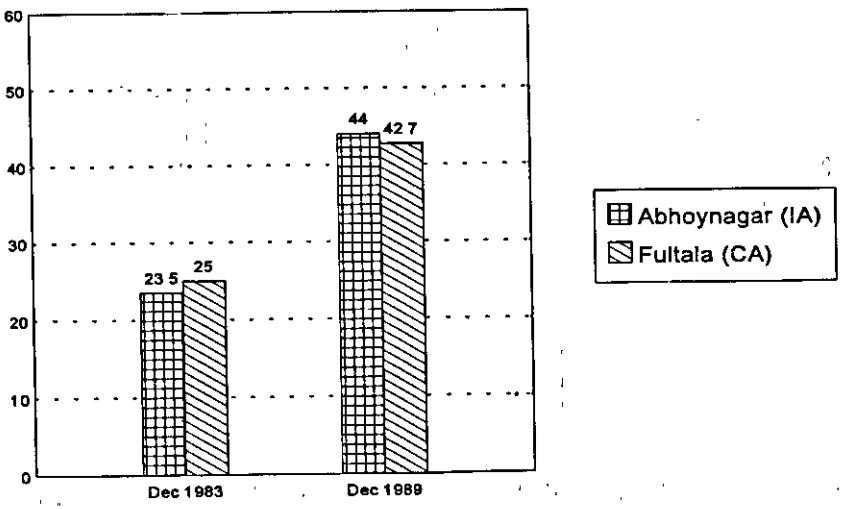

Contraceptive Prevalence Rates by Areas: December 1983 - December 1989




Contraceptive Prevalence Rates by Areas: December 1986 - December 1996




Contraceptive Prevalence Rates by Areas: December 1983 - December 1989

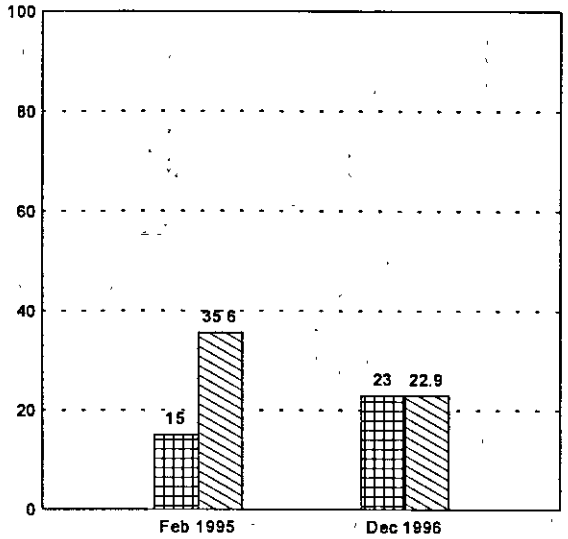



Source: SRS Dec 1983 - Dec 1996

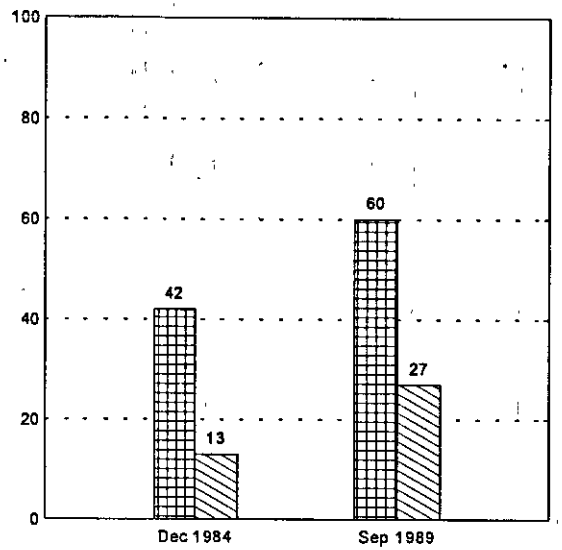
IA= Intervention Area, CA= Comparison Area

Figure 6.6

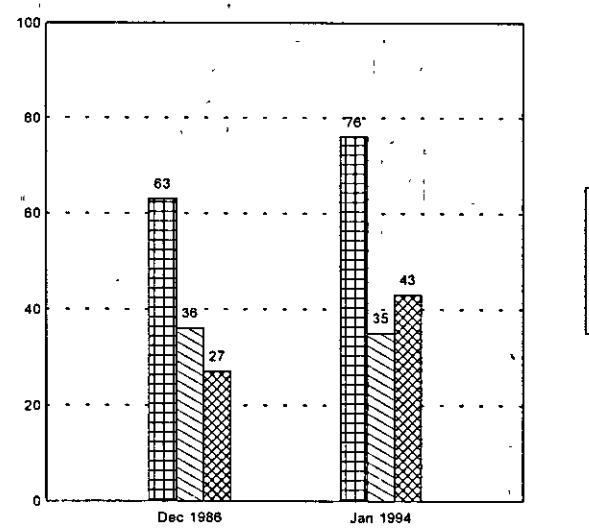
FWA 2-Month Contact Rate by Area: February 1995 - December 1996



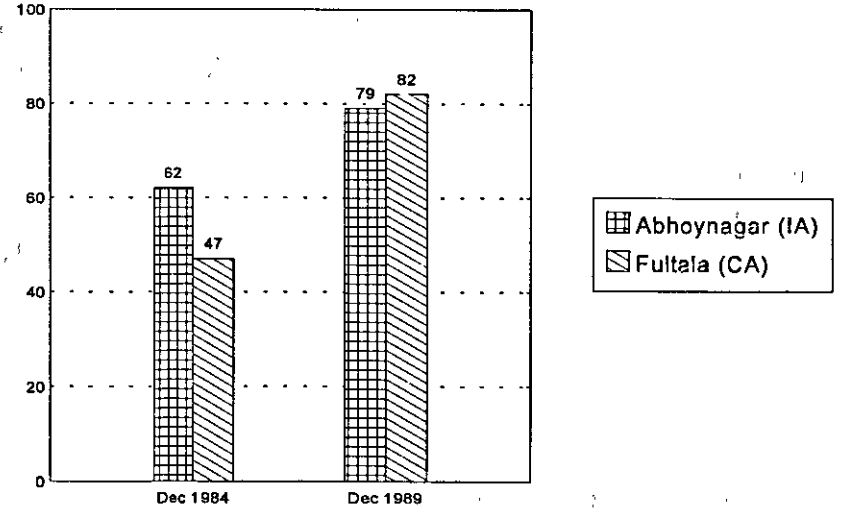

FWA 3-Month Contact Rate by Area: December 1984 - September 1989




FWA 3-Month* Contact Rate by Area: December 1986 - January 1994




FWA 3-Month Contact Rate by Area and Period: December 1984 - December 1989




National estimates are 6-month contact rate

IA= Intervention Area, CA= Comparison Area

12

## Figure 6.7: 12-Month Discontinuation Rate by Method, Area and Year

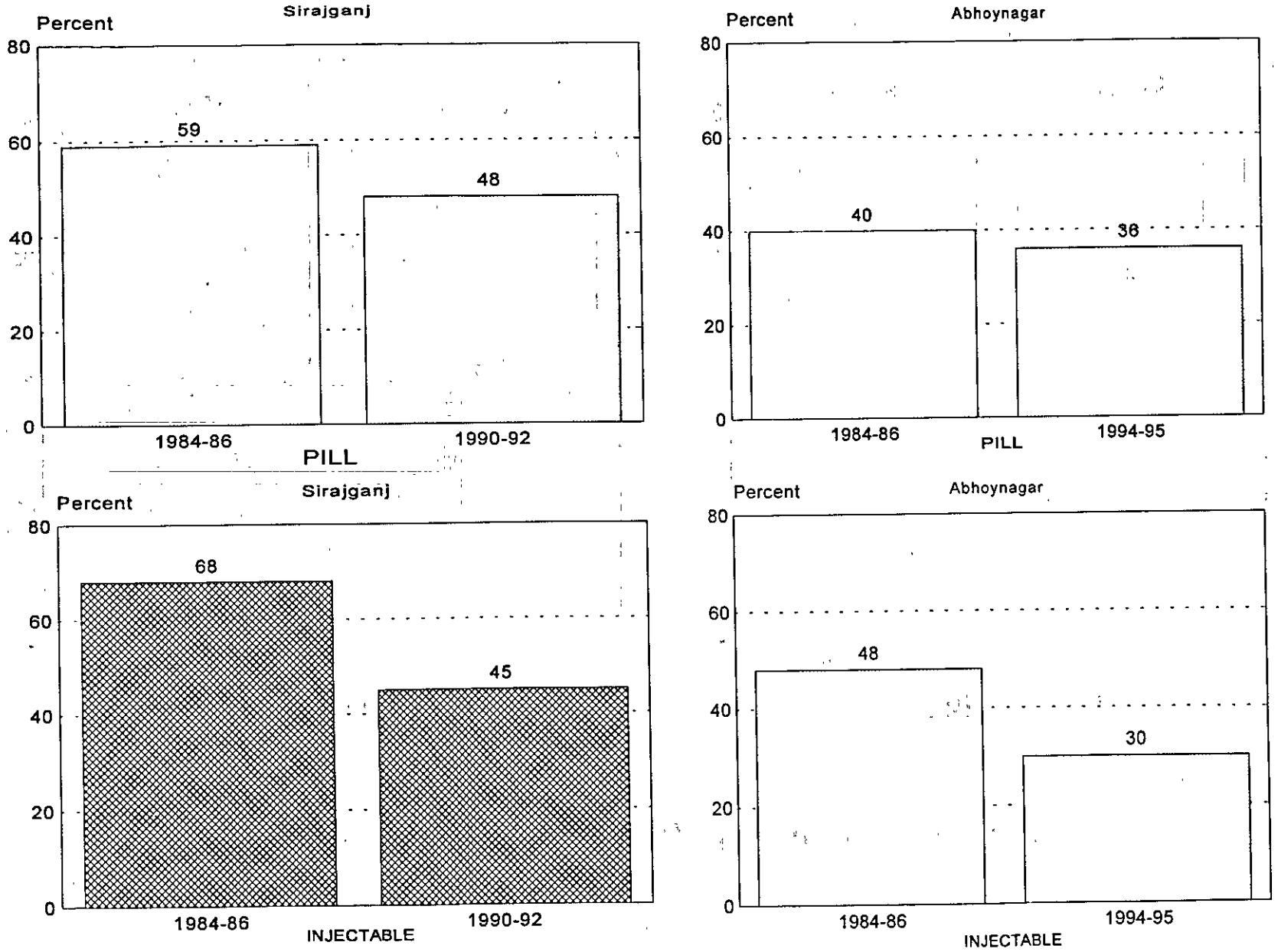


Fig 6.8: 12-Month Discontinuation Rate by Method, Area and Year

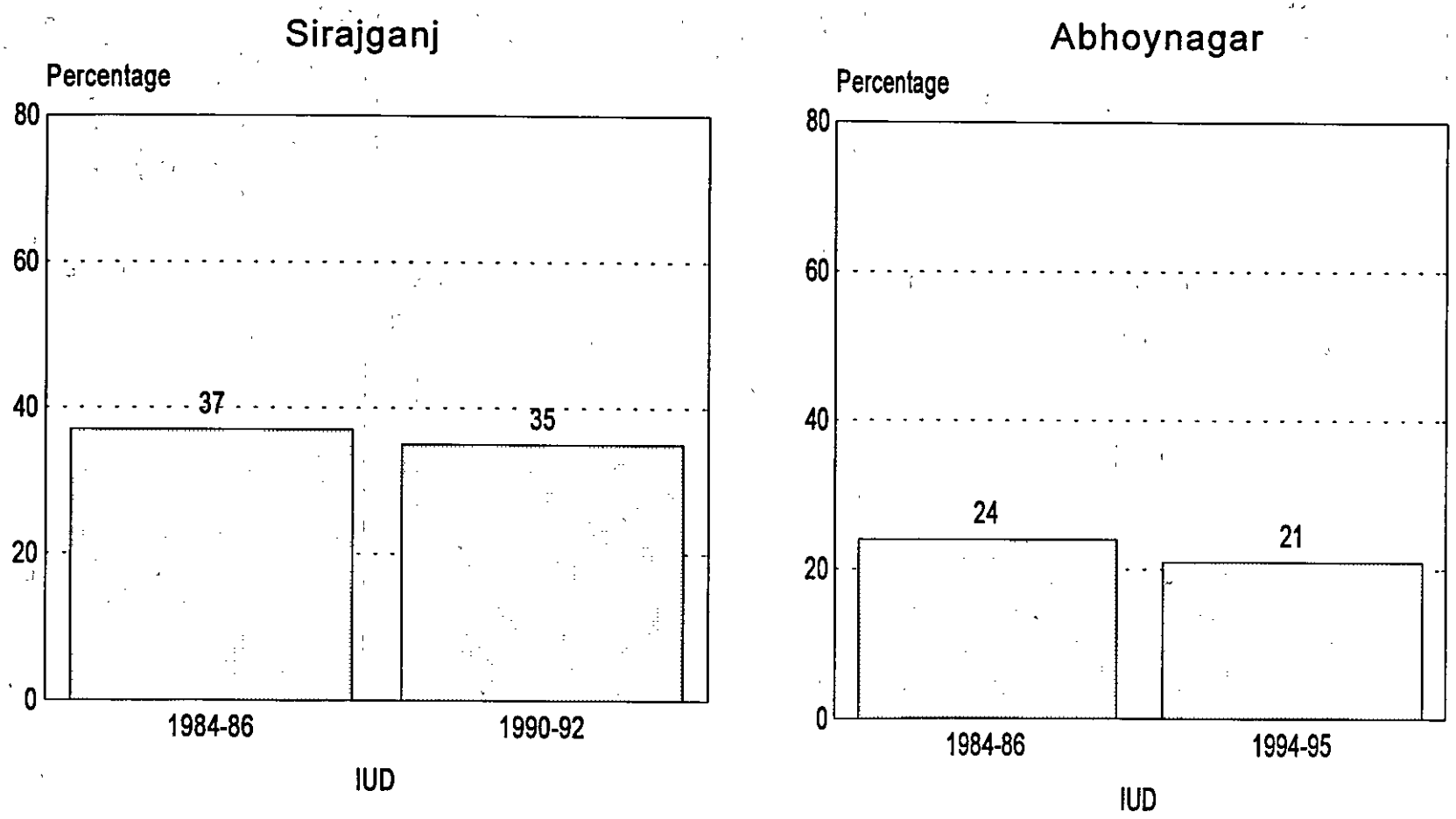
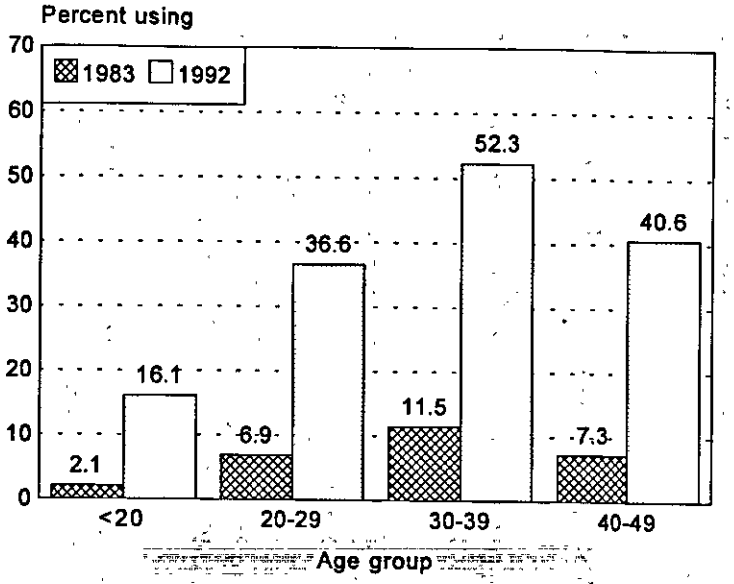
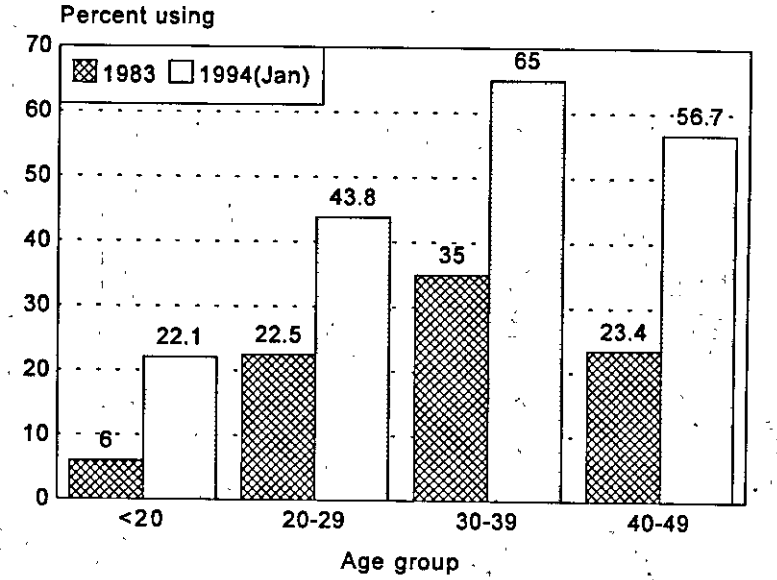


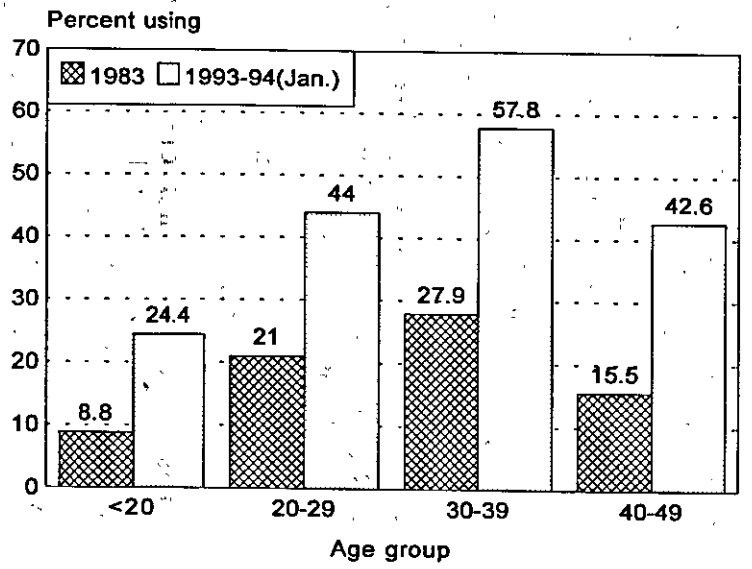
Figure 6.9: Contraceptive Prevalence Rates by Age, Area, and Year




Sirajganj




Abhoynagar




National

115

## References:

Hossain MB, Phillips JF, Haaga JG. 1993. "The Impact of Field Worker Visits on Contraceptive Discontinuation in Two Rural Areas of Bangladesh." Dhaka: MCH-FP Extension Project, ICDDR,B, (Working paper 93).

Hossain MB, Phillips JF, 1996. "The Impact of Outreach on the Continuity of Contraceptive Use in Rural Bangladesh". *Studies In Family Planning*; 27,2: 98-106.

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Satellite Clinic Combined with EPI." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, Intervention Update Vol. 2, No. 1 (May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Cluster Visitation." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, Intervention Update Vol. 2, No. 2 (May).

Khan MA, Rahman M. 1996. "Determinants of Contraceptive Method-Choice in Rural Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 117).

Khuda B, Hossain MB. 1996. "Fertility Decline In Bangladesh: An Investigation of the Major Factors." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 111).

Koenig M, Mozumder ABMKA, Cleland J, Rahman DMM, Rahman F. 1991. "Birth Interval, Prematurity and Childhood Mortality: Further Evidence from Rural Bangladesh". Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 64).

Koenig MA, Hossain MB, Whittaker M. 1992. "The Influence of Field worker Quality of Care Upon Contraceptive Adoption in Rural Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 73).

Mitra and Associates, "Bangladesh Contraceptive Prevalence Survey - 1989", July 1990 and "Bangladesh Contraceptive Prevalence Survey - 1991", July 1993.

Mitra SN, Ali MN, Islam S, Cross AR, Saha T. 1994. "Bangladesh Demographic and Health Survey: 1993-1994." NIPORT and Mitra and Associates, Dhaka and Macro International Inc., Calverton, MD, U.S.A.

Mozumder ABMKA, Sarker AH, Khuda B, Rahman DMM. 1996. "Gender Composition of Surviving Children and Contraceptive use in Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 122).

Mozumder ABMKA, Khuda B, Kane TT, Levin A, Ahmed A. 1997. "The Effects of Birth Interval on Malnutrition in Infant and Young Children." Dhaka: MCH-FP Extension Project. (Rural), ICDDR,B, (Working paper - Forthcoming).

Mozumder ABMKA, Khuda B, Kane TT, Hill K. 1997. "Differentials of Infant and Child Mortality in the MCH-FP Extension Project Areas." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper - Forthcoming).

Rahman M, Khuda B, Hossain MB. 1996. "An Assessment of Health and Family Planning needs in Rural Chittagong." Volume 2. Dhaka: MCH-FP (Rural), ICDDR,B, (Special Publication No. 56).

# CHAPTER 7

# POLICY IMPACT OF THE PROJECT

Mafizur Rahman
Barkat-e-Khuda
Thomas T. Kane
James F. Phillips

## 7.1 Introduction

The Project has developed and tested many innovative interventions and approaches in its field sites, a number of which have significantly influenced the policy decisions of the MOHFW, and resulted in programmatic changes in the national health and family planning programme. In addition to specific policy initiatives that came about as a result of Project research, the Project has also been able to demonstrate mechanisms for translating Project research into policy and action. Extension Project experience demonstrates ways in which a large-scale public bureaucracy can be changed and developed, despite formal rules and organisational traditions that work against change. The most important single lesson to emerge from the Extension Project is that achieving research-based change is possible, despite severe constraints to research utilisation.

Some of the important policy and programme changes in the MOHFW are documented below. The process of bringing project research findings into national policies and programme implementation is also discussed.

## 7.2 Overview - Thematic Areas of Policy Impact

Table 7.1 (see page 125) thematically lists the areas of policy impact noted in Chapters 2, 3, and 4. The Project has had a substantial impact on the management, quality of care, and suatainability of the national programme. In the area of management, the Project has had an impact on the size, composition, and deployment of workers at the periphery. Research has fostered a major increase in the number of women employed and provided guidance to the process of staff development, training and supervision. Consistent attention has been directed to developing, testing, and scaling up management systems that are worker-oriented. Long standing traditions of top down mechanistic management have been replaced, whenever possible, by systems that support frontline workers with information, technical support, and supervisory backup. Support systems for logistic and other needs have also been the subject of investigation, intervention, and policy development.

The quality of services has been a major focus of work leading to clinical procedural change, revised referral procedures, and other service improvements. Method accessibility represents an important aspect of programme quality that resulted in the doorstep injectable intervention. The Emergency Obstetric Care (EOC) intervention, clinical waste disposal and safe needle disposal are other areas of quality in which the Project has affected programmatic change.

Finally, programme sustainability has been addressed by careful appraisal of problems and practical demonstration of ways to improve clinical outreach care.

The breadth of the thematic areas outlined in Table 7.1 demonstrates the systemic impact of the Extension Project approach. No single finding, component, or activity characterises the Project's role and design. Rather, the general MOHFW system, its problems, and interlocking components are the subjects of investigation. The systems approach has required the Project to adapt its design to changing programme needs. As such, it is an evolving initiative managed by a team of investigators who shift their attention as changes require new priorities.

The major policy changes that have come about as a result of Project interventions are briefly summarised below. For more detailed information about specific interventions, please refer to the chapters in which these interventions are first described (Chapters 2, 3, and 4).

### 7.2.1 Management Improvement

The following represent policy changes that were a result of Project interventions in the area of management improvement.

#### 7.2.1.1 Increasing Density of Fieldworkers

Findings of research carried out in Matlab and the Extension Project areas showing the positive effects of fieldworker contact on the CPR were shared with Government of Bangladesh officials as well as representatives of donor agencies through informal and formal meetings and research reports during the first half of the 1980s (Simmons, Koblinsky, and Phillips, 1986; Simmons et al., 1988). Based on these findings, the Government of Bangladesh, during its Third Five Year Plan period, adopted a policy in 1986 of improving the density of Family Planning fieldworkers and decided to recruit an additional 10,000 fieldworkers, Family Welfare Assistants (FWAs), to provide one worker for about 4,000 population. Also, a donor consortium agreed to fund the new positions. The GoB requested that the Project provide technical assistance to this endeavor to ensure recruitment of appropriate workers. Accordingly, the Project designed a recruitment strategy, and provided technical assistance to the MOHFW to ensure recruitment of appropriate candidates. The process, which began in 1986, was completed in 1991, resulting in the recruitment of 9,914 additional FWAs (Hussain et al., 1991; Rahman et al., 1991).

During 1986 -1990, the major technical assistance activities of the project were directed toward helping the Directorate of Family Planning in planning and implementing recruitment and subsequent training of the newly-recruited FWAs.

The Project tested and recommended a two-month-visitation round, instead of the existing three to four-month round for FWAs. In 1987, the government accepted the recommendation and introduced the two-month round in the national programme in the same year.

#### 7.2.1.2 Record-Keeping System for FWAs

In late 1983, the Project undertook an initiative to develop a record-keeping system for family planning fieldworkers. Based on the Matlab record-keeping system, the Project, in

collaboration with the MIS Unit of the Directorate of Family Planning, designed a client-oriented longitudinal record-keeping system, called the FWA Register, and field-tested it in the Project field sites prior to its national implementation in late 1989.

During the field-test, the FWA Register was modified a couple of times to tailor it to the needs of the national programme. The MIS Unit of the Directorate of FP had been actively involved with the process of development, modification and field testing of the Register. The Director and other senior officials of the MIS made several visits to the Project field sites to participate in the process of development of the Register. By 1988, the Register was considered appropriate and useful for the national programme. Subsequently, in late 1989, the Register was adopted by the MOHFW and was introduced throughout the country. During the nation-wide introduction of the Register in 1990, the Project provided technical assistance to the MIS Unit of the Directorate of Family Planning in training the fieldworkers on the use of the Register. The Project developed a training manual, a training curriculum and a systematic training programme, which was adopted by the MIS Unit of the Directorate of FP in 1990.

Further, introduction of the new record-keeping system necessitated changes in the reporting system. The project provided technical assistance in the design and field test of revised reporting formats in 1990. The revised reporting formats were introduced in the national programme in November, 1990.

The second generation FWA Register was designed and submitted to the DG, Directorate of Family Planning for his approval in 1991. After careful review and field testing by a committee which included the DG of FP, headed by the Director, MIS unit with representatives from ICDDR,B and district, thana and field level family planning officials and staff, the revised Register (second generation) was approved and adopted for national implementation. The manual of the Register and reporting formats were also revised (by the Project) and adopted for national implementation. Accordingly, by March 1993, the second generation FWA Register, manual for the Register and reporting formats were introduced throughout the country.

The Project also assisted the Directorate of Family Planning in revising the second generation FWA Register for its third generation, before its expiration in 1996 (each generation Register is for three years). It was determined that the FWA Register could be further simplified. The third generation Register draft and its manual prepared by the Project was reviewed and approved by a committee headed by the DG, FP and constituting representatives from various levels of the programme and from NGOs in first half of 1996. The third generation Register and the revised manual were introduced in the national programme in mid-1996.

#### 7.2.1.3 Record-Keeping System for Health Assistants

The need for an effective management information system (MIS) for the national primary health care programme was strongly expressed by the policy makers and programme managers at the national level. A record-keeping system for the health fieldworkers was seen as a pre-requisite for an effective health MIS. However, until very recently, there was no record-keeping system for the Health Assistants (HAs). In 1991, an effort was undertaken jointly by the Extension Project and the Health Information Unit (HIU) of the Directorate of Health Services to develop a record-keeping system for the HAs.

In early 1994, based on the experience of the Project's field tests, the GoB decided to implement the HA Register in the national programme with minor modifications. In October 1994, the Project, in close collaboration with the HIU and Management Development Unit (MDU), finalised the Register. In November 1994, the MOHFW, after a thorough review of the Register, approved it for nation-wide implementation. As part of the first phase of nationwide implementation, the HA Register was introduced in the Extension Project field sites in early 1996.

### 7.2.1.4 Satellite Clinics - Operational Issues

The Project identified various operational barriers to holding regular Satellite Clinics, including inadequate transportation, inadequate and/or irregular supply of medicine and other logistics, absence of formal linkage between FWV and fieldworkers, and weak administrative and technical supervision by the thana officials. The Project assisted in improving drug supplies to the Satellite Clinics and in the introduction of injectable contraceptive services at the SCs.

The lack of transportation to enable FWVs to travel to SCs was found to be the critical operational barrier to holding regular SCs in the national programme. To overcome this problem, the Project experimented with a scheme to provide transportation (rickshaw van) to the FWVs during 1987- 92. This scheme proved to be cost-effective and feasible for implementation at the local level. However, in anticipation of management problems inherent in its implementation in a large national programme, the GoB could not adopt this scheme; instead, in 1992, the GoB adopted a policy of direct reimbursement to the FWVs, administered through the TFPOs, for transportation costs to and from the Satellite Clinic. At present, a FWV receives Tk. 100.00 as transportation and contingencies allowance for each SC session.

In September 1992, a circular was issued from the DG, Family Planning, directing that one of the SCs be held on Monday every week throughout the country. This created supervision, monitoring and logistic problems for the thana managers. In order to facilitate supervision and monitoring of the Satellite Clinics, the Project recommended that the mandatory Monday SC provision be waived, so that SCs could be held on different days in different unions. The GoB responded positively to this recommendation, and scrapped the mandatory Monday SC provision in October 1994.

### 7.2.1.5 Logistics and Supplies

The Project has studied the logistics and supplies situation in the Project areas over the past decade, and has made specific recommendations to the government at various points in time to improve the situation. Based on the Project recommendations, the following changes have taken place in the national programme:

(1) The transportation and contingencies allowance for attending SC has been introduced in the national programme (see above, Section 7.2.1.4).

(2) Both the quantity of Drugs and Dietary Supplement (DDS) kits and the amount of drugs in a DDS kit have been significantly increased over the years. The number of DDS kits

provided to a H&FWC has now increased to 8 from 3-4 per annum during the 1980s. Similarly, the types of drugs in the DDS kit have significantly increased.

(3) Provision for a separate SC kit has been introduced in the national programme. Also, the number of SC kits has increased over the years, with four SC kits per union being currently provided to each union.

(4) Repacking of SC kits has been implemented in line with the recommendations made by the Project.

### 7.2.2 Quality of Care

The following represent policy changes, resulting from the Project interventions in the area of quality of care.

#### 7.2.2.1 Improving Contraceptive Choice (doorstep injectable contraceptive programme)

In the national programme, prior to 1992, injectables (a clinical contraceptive method), could only be administered by the FWVs. The FWAs were not allowed to administer injectables. This intervention, called door-step injectable programme, was introduced in the Extension Project field sites in 1984-85, and was followed by a rapid growth in the CPR. Feedback on the effect of this intervention was given regularly to the high officials of the MOHFW and Directorate of Family Planning, and donor agencies and NGO communities through field visits to the Project field sites, meetings, seminars and briefing papers. Impressed with the effects of home delivery of injectables by FWAs, the GoB programme managers have been eager to expand this method of delivery to the rest of the country as rapidly as possible. Also, many NGOs show keen interest in this method of delivery of injectable contraceptives. However, professional groups and the medical staff of the government programme itself object that FWAs can not be trusted, without careful monitoring, supervision and backup support, to screen and counsel clients correctly and administer injections safely on a large scale (Haaga and Maru, 1996). In 1989, a national seminar brought together officials of the MOHFW and FP Directorate, NGOs, donor agencies, and researchers, and adopted a resolution calling for a phased-in expansion (Whittaker, 1990).

Accordingly, the MOHFW decided to expand the programme to eight thanas, which would allow time to implement training and safeguards before a nationwide expansion. This test was carried out in eight thanas during 1992-94 by the Directorate of Family Planning with technical assistance from the Project in the areas of management, training, and monitoring. In 1994, a Task Force formed by the government reviewed the results of the test and recommended continued expansion of the programme; but this recommendation could not be implemented because of concerns about cost, and many in the government and donor agencies were more interested in expansion of the SC programme and/or the cluster visitation approach of service delivery, rather than expanding doorstep delivery of services. The policy impact of this intervention is that FWAs, contrary to earlier fears, were found to be capable of providing injectables, safely and effectively including screening and counselling, and therefore, the programme could promote injectable use through the FWAs not necessarily at home, but at fixed sites such as clusters spots, and Satellite Clinics.

#### 7.2.2.2 Emergency Obstetric Care (EOC)

The Basic EOC intervention at Abhoynagar, which began in 1993, showed significant improvement in obstetric care at the THC level by 1995. Encouraged by this experience as well as the need to provide more comprehensive EOC, the Project decided to set up comprehensive EOC services at Mirsarai THC. With generous support from the MOHFW, a separate Obstetric Ward, with all necessary facilities for comprehensive EOC services was built by the Government in June, 1995. However, the intervention could not come into full operation until mid-1996 because of lack of professional staff. The intervention has been in full operation since mid-1996. The intervention has already shown encouraging results. Based on the positive outcomes of the intervention, the GoB has adopted a policy of introducing comprehensive EOC nationwide; and as a first phase of this programme, the GoB has undertaken plans to replicate it soon in five other thanas of the country. The Project notes with pride that the first C-section in rural Bangladesh took place at Mirsarai in June 1996, and since then more C-sections have been performed successfully.

#### 7.2.2.3 Clinical Waste Disposal at THC

Disposal of clinical waste is a serious problem in all Thana Health Complexes (THCs) in Bangladesh. There is no safe mechanism at the THC for disposal of infected waste. In order to resolve this problem, the Project undertook an initiative at the Abhoynagar THC to test the mechanism for collection and disposal of clinical waste of the THC in 1993. Under this initiative, a simple incinerator was built at the Abhoynagar THC at a cost of TK. 22,000 in October, 1993 for disposal of clinical waste. Also, a set of guidelines on collection, incineration and disposal of waste was developed and implemented.

The incinerator was found to be very useful in disposing clinical waste on a daily basis, which prompted the Civil Surgeon of Jessore to request the Project to help him set up the same waste disposal system in an another thana of Jessore district. Accordingly, the Project assisted the Civil Surgeon in building an incinerator and setting up of waste disposal system at Gigargachha THC in Jessore district in early 1994. In June 1995, a waste disposal system was also established at the Mirsarai THC.

#### 7.2.2.4 Safe Disposal of Needles and Syringes Used for Injectable Contraceptives

With the introduction of injectable contraceptives in the national family planning programme, the risk of infection from Hepatitis and STDs through used syringes increased. In order to avoid this public health hazard, the Project, as part of the doorstep injectable programme, tested a system to destroy used needles and syringes.

A system of needle and syringe disposal was recommended to the MOHFW for replication in the national programme through meetings and informal discussions with MOHFW high officials. As a result, it was adopted by the government; and a circular was issued to this effect in 1989 with some modifications in the disposal policy in 1992 and again in 1994.

#### 7.2.2.5 Multi-Chambered IUD Steriliser

The IUD has become one of the least popular contraceptive methods due to the high number of RTIs associated with improper cleaning, disinfection and sterilisation of the instruments

used for insertion. The Project, in close collaboration with AVSC, experimented with a new IUD steriliser developed by AVSC that is easy to use, convenient and ensures the sterility of IUD equipment. Based on the Project and AVSC's experience with the steriliser, the GoB has agreed to introduce the multi-chambered IUD steriliser in each union under the National Programme.

### 7.2.3 Sustainability

The following represent policy changes, resulting from the Project interventions in the area of sustainability.

#### 7.2.3.1 Increasing the Number of Satellite Clinics Combined with EPI Spots

With the objective of increasing the availability of MCH-FP and EPI services to women and children and providing these services from conveniently located spots in the community, an intervention, called "Satellite Clinic combined with EPI" has been underway in Project areas since the beginning of 1995. In this intervention, the number of Satellite Clinics has increased from the existing 8 to 16-24 per union per month and are now combined with EPI spots. An additional FWV has been posted in each intervention union, so that one of the FWVs can remain in the H&FWC on all working days. Based on the findings of this field test, the GoB issued a circular to merge all Satellite Clinics with EPI spots in October, 1995.

#### 7.2.3.2 NIPHP and HPSS

The Project's operations research has had a significant influence in shaping the mandate of the National Integrated Population and Health Program (NIPHP), to be funded by USAID, and the Health and Population Sector Strategy (HPSS) for the GoB by testing the Essential Service Package and alternative strategies to move from the doorstep to fixed sites: operationalising comprehensive EOC services at the thana level; and increasing the emphasis on providing services in low-performing areas.

## 7.3 Conclusions

Influencing policy decisions in a bureaucratic system in a South Asian country by a non-governmental research organisation (like the Extension Project) is a difficult task. For several interventions which were field-tested in the Project sites successfully, it took several years to get them adopted by the national programme. For example, the FWA Register was implemented in the national programme after six years of field testing. Similarly, the doorstep injectable programme was considered for experimental expansion (in a modified way) in 8 thanas after 5 to 6 years of successful field testing in the Project field sites. The other important interventions such as HA Register, transportation for FWVs to Satellite Clinics, Client Screening Checklist, Antenatal Checklist, and combining Satellite Clinics with EPI spots, were also successfully field tested for a period of two to four years, before they were adopted by the national programme.

The easiest, and probably the best way to influence government policy is to involve the relevant government officials, both from Dhaka and in the field, with the intervention from

the design stage to the final evaluation. In the case of the interventions which were adopted by the national programme such as FWA Register, HA Register, comprehensive EOC, and Satellite Clinic combined with EPI, the relevant officials were actively involved in designing and testing of the interventions.

Lastly, operations research findings, which are not conflicting with the existing power relations and organisational culture, have a better chance of influencing policy decisions and national implementation. For example, the FWA Register, the HA Register, and Screening Checklists were in conformity with the existing organisational culture, and as such they were easily implemented in the national programme. However, some interventions like combining of services of health and family planning workers or the use of rickshaw vans for FWVs to attend Satellite Clinics, which were in conflict with the existing organisational culture, were more difficult to implement.

During the past three years (1994-96), the Project has increased its effectiveness in influencing national family planning and health policies and programmes, through active collaboration and consultation with the MOHFW, participation in regularly-held meetings with senior government officials and donors (e.g., National Steering Committee, Special Working Groups and Task Forces). By including local and national MOHFW managers in the process and bringing senior health officials (e.g., Minister of Health, Health Secretaries, Director Generals of Health and Family Planning and others), to the Project field sites, the Project has provided the MOHFW with an increased sense of ownership of the project interventions which are conducted at government health facilities and with government health care providers.

In addition to the many policy impacts of Project operations research on the MOHFW, the Project has also influenced the programme activities of many NGOs. For example, NGOs have adopted several service strategies that were first tested by the Project (e.g., use of cluster spots in communities, and FWA-administered injectables at the doorstep).

And finally, the Project's policy and programmatic impact has spanned across international boundaries. For example, the Project's Sample Registration System (SRS) to monitor demographic events, OR interventions, health and family planning services and behavioural outcomes has already been replicated outside of Bangladesh, first in the Navrango Project in Ghana, and more recently in the Gambia, Tanzania, Uganda, and Indonesia.

**Table 7.1** Thematic Areas of Extension Project Impact on GoB Policy

| *Type of impact* | *Policy change* |
|---|---|
| Management Improvement | • Increasing Density of Fieldworkers<br>• Record-Keeping System for FWAs<br>• Record-Keeping System for Health Assistants<br>• Satellite Clinic - removing operational barriers (introduction of injectable contraceptives at SCs; removal of mandatory Monday SCs requirement)<br>• Logistics and Supplies (reimbursement of FWVs for transport costs; improving drug supply kits to SCs) |
| Quality of Care | • Improving Contraceptive Choice: FWA administered injectables<br>• EOC Intervention<br>• Clinical Waste Disposal<br>• Safe Disposal of needles |
| Sustainability | • one stop-shopping for health and family planning services (e.g., through cluster spots)<br>• Satellite Clinics + EPI<br>• Essential Service Package |

## References:

Haaga JG, Maru RM. 1996. "The Effect of Operations Research on Programme Changes in Bangladesh." *Studies in Family Planning*, 27,2: 76-87.

Hussein S, Maru RM, Hossain MB, Rahman M. 1991. "Recruiting Appropriate Field Workers: Experience from a National Recruitment Process in Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 59).

Rahman M, Maru RM, Hossain S, Hossain MB. 1991. "Evaluating Increased Worker Density in Bangladesh Family Planning Programme: Managers' and Workers' Perspectives." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 60).

Ruth S, Baqee L, Koenig MA, Phillips JA. 1988. "Beyond supply: The importance of female family planning workers in rural Bangladesh." *Studies in Family Planning*, 19,1: 29-38

Simmons R, Koblinsky MA, Phillips JF. 1986. "Client Relations in South Asia; Programmatic and Societal Determinants." *Studies in Family Planning*, 17 (6): 257-267

Whittaker M (ed.). 1990. "Proceedings of the National Workshop on Service Delivery Aspects of Injectable Contraceptives in Bangladesh." Dhaka: ICDDR,B and the Association for Voluntary Surgical Contraception.

# CHAPTER 8

# VISIONS FOR THE FUTURE

Barkat-e-Khuda
Thomas T. Kane
James F. Phillips

## 8.1 Introduction

The socio-demographic situation in Bangladesh is changing rapidly. Fertility has declined by half in less than a generation; child survival has improved, causing significant increases in life expectancy; and contraceptive prevalence has increased from about 7 percent in 1975 to over 49 percent in 1996. Health needs and preferences at the grassroots level have also changed. The intense family planning drive over the years has greatly improved the awareness level of the population with regard to contraceptives. However, other reproductive health problems, posed by high-risk diseases, environmental degradation, and changing lifestyles in an impoverished country are creating health needs that also require urgent attention. At the same time, greater social mobility of women through education improvements and employment opportunities outside the home, have raised the prospects for improving the health of the whole family.

In response to the International Conference on Population and Development (ICPD), health and population policy and priorities have undergone major changes everywhere. In Bangladesh, the national Health and Family Planning Programme will not only have to work to sustain the successes it has already achieved but also improve and strengthen these advances and meet the new demands mentioned above. Accordingly, the national programme has taken steps to meet the changing needs and priorities of the country. In response, ICDDR,B, in is Strategic Plan for the Year 2000, has committed itself to women's reproductive health, safe motherhood, child survival and the prevention of sexually transmitted diseases.

Over the next seven years, the Project will be working closely with the GoB, NGOs and the private sector, conducting operations research that is essential for ensuring the success of Health and Population Sector Strategy, the NIPHP and HAPP-V.

## 8.2 The Health and Population Sector Strategy (HPSS): A Common Vision

Bangladesh's Health and Population Sector's longer-term vision is to be responsive to clients' needs, to provide better quality services, to become financially sustainable, and to develop adequate service delivery capacity. These initiatives would contribute to further reductions in morbidity, mortality and fertility. The Government has committed itself to the overall objectives of "Health for All", the "World Summit for Children", and the Programme of Action of the International Conference on Population and Development (ICPD) held in Cairo in 1994 (Abedin, 1997).

The Health and Population Sector's vision is an important element of Bangladesh's poverty reduction strategy. The belief is that improvements in the health and family welfare status of the population will help alleviate poverty through increased labour productivity, through specific targeting of underserved population groups, through interactions with complementary activities, especially education of girls, water supply and sanitation, and improvements in the environment, infrastructure, and communication (Abedin, 1997).

The client-centred reproductive health approach is the most effective way to reduce unwanted fertility. Bangladesh's development policies are also encouraging delayed age at marriage, and delayed first and subsequent births.

Over the next five to seven years, the MOHFW will pursue at least five strategies in pursuit of the HPSS vision: (1) design and implement the Essential Service Package (ESP); (2) re-organise public sector service provision; (3) improve financial sustainability; (4) build a greater role for the private sector and NGOs; and (5) review and update the National Drug Policy. The MCH-FP Extension Project (Rural) will play an important role in conducting operations research for three of these five strategies: namely, the design and implementation of the ESP, improving financial sustainability, and building a greater role for the private sector and NGOs.

### 8.2.1 Designing and Implementing the ESP and EOC Services

The GoB's vision focusses on the Essential Service Package. The ICDDR,B MCH-FP Extension Project (Rural), at the request of the Health Ministry, has already begun working in the areas of operationalising the ESP. An essential service package has been developed, in close collaboration with the Directorates of Health and Family Planning; and the ICDDR,B has begun field testing the package. Results from the field testing of this intervention will provide useful insights for finalising the essential service delivery package for full-scale implementation in the national programme. Measures have also been undertaken to provide comprehensive EOC at the thana level. Encouraged by the positive results of the ICDDR,B MCH-FP Extension Project at Mirsarai, the Government has adopted a policy of phased-in nationwide introduction of EOC at thana level. As a first step, the Health Ministry is introducing comprehensive EOC in five thanas, one from each division, following the Mirsarai Model.

### 8.2.2 Improving Financial Sustainability

Because health spending per capita is very low in Bangladesh, current levels cannot possibly cover the costs of the proposed ESP, and donor funding cannot be expected to rise in the future as a proportion of total expenditure (Abedin, 1997). The resource constraints require ways to expand cost recovery and improve the efficiency of resource use in the public sector. The principle of "user pays" has already gained wide acceptance in private sector health care in Bangladesh. Health care service charges will need to be increased, on the basis of ability to pay, while ensuring a safety net, especially for poor women. Operations research is needed to develop sustainable delivery and cost-recovery strategies.

### 8.2.3 Building a Greater Role for the Private Sector and NGOs

The private sector and NGOs already play a significant role in some areas of health care delivery, supplementing public sector health care efforts. To ensure optimal use of resources,

a division of labour between public and private health care roles is necessary. To provide the full range of health services in one spot, preventative care will need to be added to existing private sector and NGO curative care services. Again, OR will be needed to find effective ways to expand the health and family planning services provided by the private sector and NGOs.

## 8.3 The National Integrated Population and Health Program Mission and Vision

As indicated in the NIPHP mission statement: "The NIPHP is a partnership between USAID, its seven cooperating agencies and the GoB. The partners operate within Bangladesh's national health and population programme to contribute to the nation's immediate health and demographic objectives - and its longer term development objective of self-reliance" (NIPHP, 1996). The ICDDR,B Rural MCH-FP Extension Project, together with the Urban MCH-FP Extension Project, will play a key role in the new National Integrated Population and Health Program to be funded by USAID for the 1997-2004 period. The ICDDR,B has been selected as the Operations Research Partner for NIPHP and will be responsible for conducting all of the operations research with the GoB and the NGO partners for the new Project.

The primary purpose of the NIPHP is "to enhance the quality of life of poor and under-privileged members of society by helping to reduce fertility and improve family health" (NIPHP, 1996). This will be accomplished by: (a) delivering an essential package of high quality, high impact family planning and health services to the areas of greatest need; (b) promoting awareness and use of those services through a variety of information, education and communication methods; (c) enhancing the ability of individuals, families, and communities to protect and to provide for their own health; (d) building a strong NIPHP organisation and supporting systems to maximise integration of services to clients and coordination among the partners; (e) promoting sustainability throughout the delivery chain, from commodity procurement to a provider/customer interface which is client-centred; and (f) encouraging the GoB to develop and implement a policy framework that facilitates and mobilizes GoB and non-government resources in support of the NIPHP to the community level (NIPHP, 1996).

The NIPHP's purpose is to improve the quality of life in Bangladesh by directly supporting the GoB's National Population and Health Programme. This will be achieved by working closely with the GoB on contraceptive logistics and urban immunisation, operations research, and information, education and communication (IEC) programmes, and through support of selected MOHFW thana/union-level service delivery programmes during the 1997-2004 period (NIPHP, 1996).

The highest NIPHP priority is on serving areas of low health performance in Bangladesh, characterized by high proportions of unmet need, resistance to, and/or unavailability of both family planning and basic health services. This means a focus on Chittagong and Sylhet divisions and slums in urban areas; high priority is also being given to under-served pockets and specialised services in higher performing areas. Special attention is being given to discontinuers in family planning and EPI, non-users of the range of services within the ESP, and special groups like newly-weds, adolescents, men, and post-partum women. The primary concern is with the poor and socially disadvantaged segments of the population and the aim is to respond to their needs.

Within this scope, the NIPHP's performance objectives are to contribute to helping the GoB reduce high rates of fertility and mortality by: (a) raising contraceptive prevalence (all methods); (b) increasing the rate of immunisation against EPI diseases for children and women; (c) increasing the proportion of pregnancies attended by trained providers; (d) raising provision of Vitamin-A supplements; and (e) increasing knowledge of youths, men and women about the risks and prevention of STDs/HIV/AIDS (NIPHP, 1996).

The NIPHP has identified five **Intermediate Results (IRs)**, that it wants to achieve by the end of the Project period. These are: (1) Increased use of high-impact family health services in target population; (2) Increased capabilities of individuals, families and communities to protect and provide for their own health; (3) Improved quality of information, services, products, and customer satisfaction; (4) Strengthened and improved local service delivery organisations and support systems for the high-impact family health services; and (5) Improved sustainability of family health services and support systems.

## 8.4 The Project's Vision for the Future

The primary purpose of the MCH-FP Extension Project (Rural) is to improve the national population and health programme (GoB, NGO, and commercial sector) through operations research, technical assistance and dissemination to effect appropriate programmatic and policy changes. The Project, working with other NIPHP partners, will contribute towards the achievement of four Intermediate Results (IRs 1, 3, 4, 5) and the Strategic Objectives (SO) of the NIPHP.

In collaboration with other NIPHP partners and the commercial sector, the Project will design and test sustainable service delivery systems. This will include conducting applied research to operationalise the essential package of services and to strengthen the support systems (e.g., management, quality) for a sustainable national population and health programme. A high priority will be given to disseminating and utilising results to ensure that appropriate policy changes are made and successful interventions are scaled-up.

This will require close collaboration with all NIPHP partners from the onset of the project, including continued collaboration with the GoB. New interventions and strategies will be tested in the OR field sites, using the systems approach. Another important element of the Project's activities will be the facilitation of scaling-up of successful interventions. The Project will assist other partners in designing and testing special OR interventions in selected NGO/GoB areas. This may include pilot testing a systems approach to improve delivery of long-acting contraceptive methods, RTI/STD screening and treatment in primary care clinics, provision of injectables, integrated sick child management, IUDs, and non-scalpel vasectomy by private practitioners, testing quality improvement approaches, and other programmatic issues identified through ongoing diagnostic/needs assessment studies. Based on the specific OR issues and the needs of the other NIPHP partners, the OR activities will use different methodologies such as rapid assessment procedures, quasi-experimental designs, situation analyses, and other OR methods.

Within this scope, the Project's performance objectives by the year 2004 will be to: (a) have addressed a number of critical programmatic issues related to implementation of the essential package of services and strengthen support systems, using the systems approach; (b) have developed and tested sustainable service delivery systems through various cost-effective service delivery strategies (transition from doorstep delivery to static sites) and cost recovery schemes; (c) have provided technical assistance to the other partners to replicate interventions successfully tested in the Project's field sites; (d) have provided technical assistance to the partners to design specialised interventions, conduct evaluations of those interventions, and utilise the OR findings; (e) have worked closely with the quality improvement partner to design, test, and implement effective approaches to improving quality of the different components of the programme; (f) have assisted the GoB toward the formulation and implementation of a number of programmatic and policy changes that will ensure a sustainable, high quality, customer-oriented service delivery system; and (g) have helped to build the capacity of national and local organisations (GoB, NGOs) in participating in operations research and in utilising the findings of operations research.

The current vision for the Project and the national programmes, is to ensure better health for the whole family. The changing needs and priorities of families and the desire to ensure better health for all have prompted the Project to design a number of new interventions which include: providing a broader Essential Service Package; strengthening maternal and neonatal health; promotion of clinical contraceptives; promoting the prevention and treatment of RTI and STDs, including HIV/AIDS; improving nutrition; reaching out to underserved groups, mainly men, newly weds, and adolescents; and focusing on male involvement in reproductive health. Many of the interventions to be tested by the Project over the next seven years will be for the NIPHP. However, it is anticipated that the Project will become increasingly involved in conducting OR for the HAPP-V and other important health projects and initiatives in Bangladesh in the years ahead. The Project is committed to improving programme quality, effectiveness, and sustainability through testing the interventions outlined below.

### 8.4.1 Ensuring Better Health for All

The following initiatives have been designed by the Project to ensure better health for all. The testing of some of these interventions has already begun. The results will help shape the national health and population programme of the country as it enters the 21st century.

#### 8.4.1.1 Providing the Essential Service Package

Using the systems approach, the Project will continue conducting operations research at all tiers of service delivery to ensure successful implementation of the Essential Service Package in the national health and family planning programme. The Project's OR on the ESP is critical to the success of the national NIPHP and the HPSS. Chapter 3 discusses some of the preliminary results of the ESP intervention.

#### 8.4.1.2 Strengthening Maternal and Neonatal Health

Strengthening Maternal and Neonatal Health is at the top of the Project's reproductive health agenda. The Government has decided to phase in Comprehensive EOC services nationally

and the Project is committed to providing technical assistance to this process. Based on experience from the EOC intervention, the Project aims to further strengthen referral and linkages from the grassroots to the various levels of service providers and facilities.

#### 8.4.1.3 Promotion of Clinical Contraceptives

In Bangladesh, the rise in contraceptive prevalence has been largely due to the increased use of short-term methods like pills. In line with the Government's decision to make clinical contraceptives a priority, the Project's intervention on the Promotion of Clinical Contraceptives will have a broader method mix with emphasis on increasing the use of longer-acting clinical methods, including IUD, Norplant and non-scalpel vasectomy.

#### 8.4.1.4 Preventing RTI/STD/HIV/AIDS

Reproductive Tract Infections (RTIs) and Sexually Transmitted Diseases (STDs) are a serious threat to the health and well-being of both men and women. The prevalence of HIV/AIDS is becoming a major public health concern for Bangladesh. A substantial number of people already suffer from RTI/STD. As STD infection increases the risk of HIV transmission, the Project will introduce awareness-raising programmes on modes of transmission and means of prevention and may also test cost-effective strategies for RTI/STD diagnosis and treatment.

#### 8.4.1.5 Improving Child Nutrition

Low birth weight is one of the major causes of neonatal and perinatal mortality and morbidity in Bangladesh. The Project will be working to reduce the incidence of low birth weight as well as malnutrition among children under two years of age as part of its Nutrition Intervention. This will be accomplished through health education, emphasising extra food intake during pregnancy, breastfeeding and growth monitoring of children.

#### 8.4.1.6 Reaching Under-served Groups

**Adolescents**

Despite the progress made, some segments of the population, mainly men and adolescents, have remained largely excluded from the service delivery system. The Project has assigned priority to these under-served groups. To date, efforts have not targeted adolescents, who constitute a large proportion of the country's population. Adolescent girls gain access to health care only after they are married and pregnant. The Project aims to improve knowledge of reproductive health among adolescent girls and boys through health education initiatives in schools and the community. It is expected that this intervention will help prepare adolescents for more responsible and meaningful reproductive lives.

**Male Involvement**

Contraceptive methods have been mainly targeted to female clients. Family planning service providers are also usually women. As a result, only 4 percent of the contraceptives used are male methods. The Project is, therefore, focussing on male involvement as critical, not only

to the attainment of replacement level fertility, but also to improving reproductive health among men and women. This intervention is expected to increase the adoption of male contraceptive methods, like condoms and vasectomy, and motivate men to be more supportive of their wives' reproductive choices and method use. It will also educate men on the modes of STD/HIV/AIDS transmission and means of prevention.

#### 8.4.1.7 Towards Sustainability: Maximising Resources, Recovering Costs, and Improving Programme Efficiency

The challenge in implementing the necessary programme expansion is in finding ways to minimise programme expense of additional resources, recovering costs, and maximising the use of existing resources to make the system optimally efficient. Operations research of the Project will identify ways to make this possible, through: an Alternative Service Delivery Approach; Cost Recovery; and Networking. These interventions are ongoing, and have been briefly discussed in Chapter 5.

## 8.5 Other Critical Areas for Operations Research in the Future

In addition to the specific interventions, ongoing and planned, mentioned above, there are many other issues that will be of concern to the Project over the next few years. These are summarised below.

As the programme matures and grows in size, ensuring both quality and cost, without compromising either one, is a priority issue. For example, improving the quality of clinical contraceptive services can improve cost-effectiveness by increasing continuation rates and client satisfaction and creating further demand for services. The challenge for the Project is to find the optimal mix of quality improvements using cost-effective strategies.

In the past, the Project has conducted operations research primarily for the public sector, although many NGOs have benefited from research findings. The Project anticipates a greater need for OR assistance in the NGO sector as they move into a broader reproductive health agenda. Working with NGOs will create new challenges for the Project in conducting OR for the NGOs' specific and varied programmatic needs. As part of this process, the Project will help build the operations research capacity of the NGOs.

The inability to make financial and programmatic decisions at the local level interferes with programme management such as recruitment and training, readjustment of work areas, logistics and supplies, and IEC. All of these affect the timely and appropriate delivery of quality services. Delegation of authority to the District and Thana level will help remedy this situation.

At present, many of the service providers are not well motivated and have little incentive to do their jobs efficiently and effectively. Frequent transfers of programme managers, high vacancies of service providers, non-residency of providers and high population-to-service provider ratios are also important barriers to improving the effectiveness of services at the local level. Significant improvements in work environments are needed to improve programme performance.

In addition, inadequate training of service providers continues to affect their technical competence and programme performance. Inadequate supervision affects fieldworker performance. Inadequate or inappropriate IEC accounts for continued low awareness of some health and family planning services. Finally, efforts to mobilise and maintain community involvement in family planning and health service activities remains a great challenge for programme success.

## 8.6 Conclusions

The efforts over the past fifteen years by the ICDDR,B MCH-FP Extension Project (Rural) have contributed to the success story that has emerged from the Bangladesh Health and Family Planning Programme. New challenges face the national Health and Family Planning Programme, as a broader range of quality health services are offered to the increasing population of Bangladesh and as emerging diseases such as HIV/AIDS become more prevalent throughout the country. The MCH-FP Extension Project (Rural) operations research will test, fine tune and help improve the management, quality and sustainability of the service delivery system, working hand in hand with the Government, NGOs and donors in the critical years ahead.

### References

Abedin N. 1997. "Health and Population Sector: An Overview and Vision." *Logical Framework* Workshop for the Fifth Health and Population Program (HAPP-V), February 23-25, 1997: Dhaka.

ICDDR,B MCH-FP Extension Projects (Rural and Urban), 1997. NIPHP Operations Research Proposal, March, 1997.

NIPHP Partners, 1996. The National Integrated Population and Health Program (NIPHP) Design Workshop: Rajendrapur, Dhaka, October 13-24, 1996.

# APPENDIX - 1

## Project Publications and Reports

Ahmed, M.W.M., Whittaker, M., Munro, M., Rahman, F. 1991. Referral Systems in the Extension Project - An Improvement on the System. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 103 (unpublished, January).

Ahmed, S., I. Haque, Barkat-e-Khuda, M.B. Hossain, S. Alam. 1996. "Abortion in Rural Bangladesh: Evidence from the MCH-FP Extension Project." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 121 (published).

Ahmed, S., D. Mitra, M.U. Ahmed, A. Wazed, J. Khyang. 1996. Introduction of Comprehensive Emergency Obstetric Care at the Thana Level: Experience from Mirsarai, Chittagong. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 145 (unpublished, August).

Akbar, J., Phillips, J.F. 1982. Husband and Wife English and Bangla Language Questionnaire for the Baseline Survey of Fertility Family Planning KAP. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 4 (unpublished, September).

Akbar, J., J. Chakraborty, N. Jahan, J.F. Phillips, A.P. Satterthwaite. 1982. "Dynamics of Depot Medroxy Projesterone Acetate (DMPA) Use Effectiveness in the Matlab Family Planning Health Services Project." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 1 (unpublished, December).

Akbar, J., J. Chakraborty, N. Jahan, J.F. Phillips. 1984. "The Use-Effectiveness of Tubal Ligations Performed in the Matlab Family Planning Health Services Project, 1978-82." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 2 (unpublished, January).

Akbar, J., J.F. Phillips, M.A. Koenig. 1991. "Trends in Contraceptive Method Mix, Continuation Rates, and Failure Rates in Matlab, Bangladesh: 1978-87." Proceedings of the United Nations Expert Group Meeting on Measuring the Dynamics of Contraceptive Use, New York, 5-7 December, 1988, United Nations, pp 123-136.

Alam, Md. S., M.B. Hossain, J.G. Haaga. 1992. Technical Manual Version 2.1. The Microcomputer Software Component of the Sample Registration System (SRS) and Operations Research Sample Registration System (ORSRS). Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 132 (unpublished, June).

Alam, Md. S., M.B. Hossain, J.G. Haaga. 1992. User Manual Version 2.1. The Microcomputer Software Component of the Sample Registration System (SRS) and Operations Research Sample Registration System (ORSRS). Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 133 (unpublished, June).

Ashraf, A., R. Simmons, Y. Hasan, F. Rahman, M.A. Koenig, M. Rahman. 1989. "The Work Pattern of the Domiciliary Male Health Workers of the National Health and Family Planning Program: Evidence from two Rural Upazilas of Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 47 (unpublished, March).

Ashraf, A., R.M. Maru, F. Rahman, M. Islam, Y. Hasan, M. Abu Taher, A.Z.N. Islam, T. Ahmed, S. Ali. 1992. "The Second Generation FWA Register (Report of a Field Trial)." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 77 (unpublished, April).

Ashraf, A., R.M. Maru, Y. Hasan, M. Islam. 1993. "Strengthening the Management Information System for Family Planning: The Role of the MCH-FP Extension Project." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 94 (unpublished, November).

Ashraf, A., R. Maru, Y. Hasan, A. Dunston. 1994. "Strengthening Front-line Supervision to Improve Performance of Family Planning Field Workers in Bangladesh." (Please see revised version - WP 110), Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 106 (unpublished, June).

Ashraf, A., R. Simmons, Y. Hasan, F. Rahman, M.A. Koenig, M. Rahman. 1994. "Community-Based Health Workers in a Public Bureaucracy: A Case Study of Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 107 (unpublished, July).

Ashraf, A., A.G. Dunston, Y. Hasan, Barkat-e-Khuda, R. Maru. 1996. "Strengthening Front-line Supervision to Improve Performance of Family Planning Field Workers in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 110 (published).

Ashraf, A., et al. Operations Research in the Context of the MCH-FP Extension Project - A Documentation Note. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 36 (unpublished).

Ashraf, A., et al. 1990. National Implementation of FWA Register and Reporting Formats. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 104 (unpublished).

Ashraf, A., et al. 1991. Family Planning Assistant's Diary (A record keeping system for the front-line supervisor). Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 118 (unpublished, June).

Ashraf, A., Rushikesh Maru, Y. Hasan, S.R. Chowdhuri. 1992. "Family Planning, Maternal and Child Health Information System in Bangladesh." Proceedings of the Australian Tropical Health & Nutrition Conference 1991 (Eds. Wendy Gardiner & Wendy Foley), Tropical Health Program, University of Queensland, Australian, pp 154-171.

Bairagi, R., M.A. Koenig, K.A. Mozumder. 1993. "Mortality-discriminating Power of Some Nutritional, Socio-demographic, and Diarrhoeal Disease Indices." American Journal of Epidemiology, Vol. 138, No. 5: 310-317.

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Notes -- Introduction and Index. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54a (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Note # 1: Oral Rehydration Solution. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54b (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Note # 2: Methods of Family Planning. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54c (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Note # 3: Additional Medicines. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54d (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Note # 4: Personnel. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54e (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Note # 5: Expanded Programme on Immunization. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54f (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Note # 6: Building Costs. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54g (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Note # 7: Transport . Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54h (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Note # 8: Equipments and Furniture. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54i (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Background Note # 9: Supplies. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54j (unpublished, July).

Balk, D. 1986. Cost-Effectiveness Analysis of the Matlab MCH-FP Extension Project Appendices to Background Notes: 1986. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 54k (unpublished, July).

Balk, D., M. Hurrell. 1986. "Injectable Contraceptives: The Use of Reuseable Versus Disposable Needles and Syringes." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 17 (unpublished, April).

Balk, D., K.K. Faiz, U. Rob, J. Chakraborty, G. Simmons. 1988. An Analysis of Costs and Cost-Effectiveness of the Matlab Family Planning-Health Services Project in Matlab, Bangladesh.

Balk, D. 1994. "Individual and Community Aspects of Women's Status and Fertility in Rural Bangladesh." Population Studies, 48, 21-45.

Banu, H., Hossain, A. 1988. Marginals for Male KAP Survey - 1986. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 60 (unpublished, May).

Banu, H.; J. Akbar. 1987. "Contraceptive Use in Matlab Treatment and Comparison Areas: A Multivariate Analysis of the Determinants of Contraception." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 34 (unpublished, September).

Banu, H., J.F. Phillips, D.S. DeGraff, M.A. Koenig. 1987. "Baseline Social, Economic, and Demographic Differentials in Contraceptive Behaviour in Intervention and Comparison Areas of the MCH-FP Extension Project" (March).

Baqee, L., Koblinsky, M.A., Rahman, F. 1988. Satellite Clinic. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 45 (unpublished, January).

Barkat-e-Khuda, T. Mirza and S. Ahmed (Eds.). 1994. "Lessons Learned on Doorstep Delivery of Injectable Contraceptives." Dhaka: ICDDR,B MCH-FP (Rural), Workshop proceedings (September 28).

Barkat-e-Khuda, M.B. Hossain. 1996. "Fertility Decline in Bangladesh: Toward an Understanding of major Causes." *Health Transition Review*, Supplement 6, 155-167, Canberra: The Australian National University.

Barkat-e-Khuda, M.B. Hossain. 1996. "Fertility Decline in Bangladesh: An Investigation of the Major Factors." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 111

Bhatnagar, S.C., Y. Hasan, R.M. Maru. 1992. "Strengthening the Existing MCH-FP MIS Through Performance Monitoring and Activity Planning." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 68 (unpublished, April).

Brechin, S.J.G., Huque, A.A.Z. English Translations of MCH-FP Extension Project Training Materials of Union Level Workers by Subject. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 42 (unpublished).

Brechin, S.J.G. 1986. Observation of the Family Welfare Assistant (FWA): Research Design for Data Collection on the Daily and Monthly Work Routine of Existing and New FWAs. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 48 (unpublished, June).

Brechin, S.J.G., Hurrell, M. 1986. Woman's Reproductive Health Booklet: Background and Plan for Implementation. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 49 (unpublished, July).

Brechin, S.J.G. FWA Screening Checklists and Home Visit Procedure and Guidelines for Use. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 50 (unpublished).

Brechin, S.J.G., M.A. Koblinsky. 1987. "Working at National Level: Bringing Field Experiences into the National Family Welfare Assistant (FWA) Training." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 36 (unpublished, October).

Brechin, S.J.G., M.A. Koblinsky. 1990. "Quality of Care in Community-Based MCH-FP Programs: The Field Worker's Perspective." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 56 (unpublished, July).

Caldwell, B., Barkat-e-Khuda, B. Hossain. 1997. "The first generation to control family size: Understanding Bangladesh's fertility decline from the perspective of the participants." Paper presented at 1997 PAA Meeting, Washington D.C., March 27-29.

Caldwell, B., Barkat-e-Khuda, S. Ahmed, F. Nessa, I. Haque. 1997. "The determinants and consequences of pregnancy termination in rural Bangladesh: A client's perspective." Paper presented at 1997 PAA Meeting, Washington D.C., March 27-29.

Chakraborty, J., Stewart, K., Whittaker, M. 1989. Investigation of Women's Experience and Management of IUDs in Rural Bangladesh. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 66 (unpublished, July).

Chakraborty, J., Stewart, K., Whittaker, M. 1989. Research to Identify Health Problems Experienced by Women in a Rural Area of Bangladesh. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 67 (unpublished, July).

Choe, M.K., N.C. Roy. 1994. "Family Planning and Child Survival in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 102 (unpublished, May).

Chowdhury, A.I., Phillips, J.F., Chakraborty, J. 1985. Matlab Time Series Data on Contraceptive Use Dynamics. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 28 (unpublished, May).

Chowdhury, A.I., M.A. Koenig, J.F. Phillips, Md. Shahidullah. 1986. "Sex Composition and Fertility Behaviour Matlab, Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 28 (unpublished, November).

Chowdhury, A.I., J.F. Phillips, A.K. Shaikh. 1986. "The Trends in Neonatal, Infant and Child Mortality in Matlab Project Period." *Demography India*, Vol. XV1:26-33.

Clark, S., M.B. Hossain. 1985. "A Brief Assessment of Condom and Pill Users Based on the December '82 - June '83 Baseline KAP Survey for the MCH-FP Extension Project." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 11 (unpublished, August).

Corbett, M., M.A. Koblinsky, M. Rahman, A.M. Khan, F. Rahman, M.A. Zaman. 1986. "Implementation of the Maternal Child Health and Family Planning Logistics System at Upazila Level: Supplies at the Health & Family Welfare Centre." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 12 (unpublished, February).

DeGraff, D., Hasan, Y., Rahman, M. 1985. Cost Effectiveness Analysis of Matlab MCH-FP Purpose and Study Design. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 26 (unpublished, April)

DeGraff, D.S., J.F. Phillips, R.Simmons, J. Chakraborty. 1986. "Integrating Health Services into an MCH-FP Program in Matlab, Bangladesh: An Analytical Update." *Studies in Family Planning*, Vol. 17, No. 5: 228-234. (September/October).

DeGraff, D.S. 1991. "Increasing Contraceptive Use in Bangladesh: The Role of Demand and Supply Factors." *Demography*, Vol. 28, No. 1: 65-81. (February).

Haaga, J.G., M.B. Hossain, A. Wazed, I.U. Ahmed. 1993. "Comparing Information from the FWA Registers and a Demographic Surveillance System." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 91 (unpublished, October).

Haaga, J.G., R. Bairagi, R.M. Maru, M. Strong, D. Habte. 1993. "The Contribution of ICDDR,B Research to Family Planning Programs." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 95 (unpublished, October).

Haaga, J.G., R.M. Maru. 1993. "Promoting Sustainability of the Bangladesh Family Planning Program by Reducing Illegal Income Generation." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 97 (unpublished, December).

Haaga, J.G. 1993. "The MCH-FP Extension Project: Lessons Learned and Plans for the Future." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 96 (unpublished).

Haaga, J.G., R.M. Maru. 1994. "How, and When, Do Operations Research Projects Contribute to Population Policy? Experience of the MCH-FP Extension Project in Bangladesh, 1983-93." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 101 (unpublished, May).

Haaga, J., R.M. Maru. 1996. "The Effect of Operations Research on Program Changes in Bangladesh." *Studies in Family Planning*, Vol. 27, No. 2: 76-87. (March/April).

Haque, I., T.T. Kane, N.C. Roy. 1997. "Contraceptive switching patterns in rural areas of Bangladesh." Paper presented at 1997 PAA Meeting, Washington D.C., March 27-29.

Hasan, Y., Koblinsky, M.A. FWA Level Counterpart Support Strategy in MCH-FP Extension Project Upazilas. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 43 (unpublished).

Hasan, Y., Koblinsky, M.A. 1991. Work Routine of Female Family Planning Field Workers (FWA) in Rural Bangladesh. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 119 (unpublished, June).

Hasan, Y., M.A. Koblinsky. 1991. "Work Routine of Female Family Planning Field Workers (FWA) in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 58 (unpublished, October).

Hasan, Y., R.M. Maru, R. Simmons, A. Ashraf. 1992. "Supply Side Determinants of Sterilization Trends in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 72 (unpublished, April).

Hasan, M.Y., R.M. Maru. 1993. "Performance Improvement Through Local Planning: Findings from an Action Research Project in Bangladesh." Dhaka: ICDDR,B Maternal Child Health and Family Planning Extension Project (Rural), Working Paper No. 89 (unpublished, September).

Hasan, M.Y., Md. F. Rahman, M.H. Khan, A. Wazed. 1994. "Accessibility and Services in Satellite Clinics: Findings from Exit Interview." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 98 (unpublished, January).

Hasan, Y., Barkat-e-Khuda, A. Ashraf, M.U. Ahmed, Md. M. Reza. 1996. "Basic Service Delivery Package: Key Findings from Baseline Survey." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), (unpublished, December).

Haque I., T. T. Kane, N.C. Roy, K. A. Mazumder, Barkat-e-Khuda. 1997. "Contraceptive Switching Patterns in Rural Bangladesh". MCH-FP Extension Project (Rural), ICDDR,B. Working Paper (forthcoming, 1997).

Hossain, B., Rob, U., Phillips, J.F. 1983. Frequency Distributions for Socio-Economic Status Variables by Area and Treatment. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 13 (unpublished, February).

Hossain, B., Rob, U., Phillips, J.F. 1983. Code Plan for Enumeration and SES Data. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 11 (unpublished, January).

Hossain, M.B., J.F. Phillips. 1984. "A Factor Analysis of Economic Status Indicators from Four Rural Upazilas of Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 5 (unpublished, August).

Hossain, M.B., Phillips, J.F., Koblinsky, M.A. 1986. Code Book and Frequency Distributions for the Travel Time Data of Govt. Health and Family Planning Worker to Clients Residence, MCH-FP Extension Project, Feb 1985 - April 1985. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 44 (unpublished, January).

Hossain, A., Roy, N., Khan, S., Alam, S., Murad, S., Clark, Sam. 1987. HOHFP Worker Coverage Rates: The Proportion of Eligible Women Contacted One or More Times Each Round by Worker Gender for Rounds 7 through 16 by Treatment Area, Upazila, Union and FWA Work Area. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 59 (unpublished, July).

Hossain, A., S. Clark, Y. Hasan, M.A. Koblinsky. 1987. "The Household Delivery of MCH-FP Services in Rural Bangladesh: An 18-month Longitudinal Assessment During 1984 and 1985." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 33 (unpublished, September).

Hossain, M.B., Koenig, M.A. 1989. Marginals of Female KAP Survey in Bagherpara and Keshobpur Upazila - 1986. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 70 (unpublished, August).

Hossain, M.B., Koenig, M.A. 1989. Questionnaire, Code Plan and Marginals of Women's Socio-Economic Status, Family Planning and Health Behavior Survey - 1988-1989. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 71 (unpublished, August).

Hossain, B., et al. 1990. Questionnaire, Code Plan, Edit Plan, and Frequency Distribution for the Quality of Care Survey - 1989. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 96 (unpublished, September).

Hossain, M.B., Sohel, N., Koenig, M.A. 1991. KAP Survey - 1990: Questionnaire (Bangla and English), Code Plan and Frequency Distribution. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 129 (unpublished, December).

Hossain, M.B., Hussain, S., Sohel, N., Maru, R.M. 1991. New FWA Recruitment Regular Batches Data: Code Plan and Frequency Distribution by Division. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 130 (unpublished, December).

Hossain, M.B., Hussain, S., Sohel, N., Maru, R.M. 1991. New FWA Recruitment Re-advertisement Batches Data: Code Plan and Frequency Distribution by Division. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 131 (unpublished, December).

Hossain, M.B., R. Mita, J.G. Haaga. 1991. "Quality of Care and Contraceptive Adoption in Rural Bangladesh: MCH-FP Extension Project Areas." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 61 (unpublished, October).

Hossain, M.B., A. Kabir, A. Rahim, S.C. Das, J.G. Haaga. 1992. A Guide to Interviewers: Rules and Field Procedures for Interviewing and Recording Data on Operations Research of the Sample Registration System. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 134 (unpublished, June).

Hossain, M.B., K.A. Mozumder, A Kabir, A. Rahim, S.C. Das, G.J. Haaga. 1992. Sample Registration System - Interviewers Manual: Procedures and Rules for Interviewing and Recording Vital Events. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 138 (unpublished, October).

Hossain, M.B., et al. 1993. Survey on Exposure to Family Planning - 1993. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 140 (unpublished, December).

Hossain, M.B., J.F. Phillips, J.G. Haaga. 1993. "The Impact of Field Worker Visits on Contraceptive Discontinuation in Two Rural Areas of Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 93 (unpublished, October).

Hossain, M.B., K.A. Mozumder, S.C. Das, S. Alam, Barkat-e-Khuda. 1994. Demographic Events and Rates: MCH-FP Extension Project Areas (Rural), 1983-92. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 141 (unpublished, November).

Hossain, M.B., K.A. Mozumder, S.C. Das, S. Alam, Barkat-e-Khuda. 1994. Contraceptive Prevalence and FWA Contact Rates: MCH-FP Extension Project Areas (Rural), 1983-92. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 142 (Unpublished, November).

Hossain, M.B., Barkat-e-Khuda. 1995. Indepth Survey-1994 in Mirsarai and Satkania Thanas. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 144 (unpublished, December).

Hossain, M.B., J.F. Phillips. 1996. "The Impact of Outreach on the Continuity of Contraceptive Use in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 112 (published).

Hossain, M.B., Phillips, J.F., Mozumder, K.A., Koblinsky, M.A. Variable List and Code Format for Client Questionnaire. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 21 (unpublished).

Hossain, B., Phillips, J.F. Indepth Survey in Extension Areas. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 30 (unpublished).

Hossain, B., Phillips, J.F. Code Plan for Service History File. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 31 (unpublished).

Hossain, B., Koblinsky, M.A. Code Plan for Worker's Questionnaire. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 32 (unpublished).

Hossain, M.B., et al. Survey on Satellite Clinic. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 139 (unpublished).

Hossain, M.B., J.F. Phillips. 1996. "The Impact of Outreach on the Continuity of Contraceptive Use in Rural Bangladesh. *Studies in Family Planning*, Vol. 27, No. 2: 98-106. (March/April).

Hossain, B., Phillips, J.F. Frequency Distributions for the Baseline Socio-Demographic Survey of Women of Reproductive Age and their Husbands, Oct 1982 - June 1983. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 27 (unpublished).

Hossain, M.B., Phillips, J.F., Koblinsky, M.A. Frequency Distribution for the Client Survey of Eligible Women, MCH-FP Extension Project, Oct 1983 - April 1984. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 41 (unpublished).

Hossain, M.B., et al. The MOHPC Worker Questionnaire: A Survey of Health Workers Serving in Abhoynagar, Sirajganj and Comparison Areas from 1983 to 1985. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 38 (unpublished).

Huque, Z., Phillips, J.F. Guidelines for Orientation of Senior Staff of the MCH-FP Extension Project in Matlab to Management Issues Relevant to the MCH-FP Extension Project. Dhaka: ICDDR,B Maternal and Child Health and Family Planning Extension Project (Rural), Documentation Note No. 16 (unpublished).

Huque, Z., Rahman, A. Workplan for a Tetanus Toxoid Immunization Programme in the Demonstration Union of Abhoynagar Upazila: First Draft of a Procedures Manual. Dhaka: ICDDR,B Maternal and Child Health and Family Planning Extension Project (Rural), Documentation Note No. 17 (unpublished).

Huque, Z., Yunus, Md. 1983. Course Outlines for Training Courses in the MCH-FP Extension Project. Dhaka: ICDDR,B Maternal and Child Health and Family Planning Extension Project (Rural), Documentation Note No. 18 (unpublished, October).

Huque, Z., Phillips, J.F. Guidelines for Conducting Health and Family Welfare Centre Meetings (English Language Version). Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 24 (unpublished).

Huque, Z., Fermo, A., Koblinsky, M.A., Smith, C. Client Satisfaction Survey: A Domiciliary Injectable Contraceptive Programme. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 29 (unpublished).

Huque, A.A.Z., M.A. Koblinsky, J.F. Phillips. 1984. "Operational Barriers to Implementing a Domiciliary Injectable Contraceptive Programme in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 4 (unpublished, August).

Huque, A.A. Zahidul, T. Islam, F. Rahman, J. Hossain, M.A. Koblinsky. 1986. "An Operational Study of Expanded Programme on Immunization in Two Rural Upazilas of Bangladesh: Lessons Learned." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 14 (unpublished, April).

Huque, A.A.Z., M.A. Koblinsky. 1988. "Interventions Towards Improving Quality of MCH-FP Care: A Case Study in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 41 (unpublished, May).

Huque, A.A.Z., M.A. Koblinsky, M. Yunus, M. Hurrell, M. Islam, F. Rahman. 1988. "Can Model Projects Inform Larger Systems? Part II: Interventions to Effect Change." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 42 (unpublished, June).

Huque, A.A.Z. 1986. "Universal Child Immunization (UCI) by 1990 - Bangladesh Perspective." *Bangladesh Medical Journal*, Vol. 15, No. 4, (October).

Hurrell, M. FWV/MA Training Workshop. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 34 (unpublished).

Hurrell, M. LFPV Counterpart Support Strategy - 1983-85. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 35 (unpublished).

Hurrell, M. LFPV Strategy - Phase II: July 1985 to July 1986. Dhaka: ICDDR,B Maternal and Child Health and Family Planning Extension Project (Rural), Documentation Note No. 55 (unpublished).

Hussain, S., R.M. Maru, M.B. Hossain, M. Rahman. 1991. "Recruiting Appropriate Female Field Workers: Experiences from a National Recruitment Process in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 59 (unpublished, October).

ICDDR,B MCH-FP Extension Project (Rural). 1987. "The Matlab Project: Lessons for Policy." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 1 (unpublished, December).

ICDDR,B MCH-FP Extension Project (Rural). 1987. "The Role of Domiciliary Injectable Contraception In the Government of Bangladesh System: A Mid-term Assessment." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 2 (unpublished, December).

ICDDR,B MCH-FP Extension Project (Rural). 1987. "Injectable Contraceptives: The Use of Reusable Versus Disposable Needles and Syringes." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 3 (unpublished, December).

ICDDR,B MCH-FP Extension Project (Rural). 1988. "The Impact of Increased FWA Density Upon MOHFP Program Performance: Preliminary Evidence From the ICDDR,B Extension Areas." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 4 (unpublished, March).

ICDDR,B MCH-FP Extension Project (Rural). 1988. "Functioning Satellite Clinics: The Experience of the ICDDR,B Extension Project." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 5 (unpublished, March).

ICDDR,B MCH-FP Extension Project (Rural). 1988. "ORS Distribution in the MOHFP Program: The Experience of the ICDDR,B Extension Project ." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 6 (unpublished, September).

ICDDR,B MCH-FP Extension Project (Rural). 1988. "Expiration of the Copper T 200 IUD: User Status and Operational Concerns in the Bangladesh Program. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 7 (unpublished, September).

ICDDR,B MCH-FP Extension Project (Rural). 1988. "Worker-Client Contacts and Contraceptive Adoption: Experience from the MCH-FP Extension Project." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 8 (unpublished, October).

ICDDR,B MCH-FP Extension Project (Rural). 1988. "The Relationship Between MCH Service Development and Contraceptive Use: Evidence from Matlab, Bangladesh ." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 9 (unpublished, October).

ICDDR,B MCH-FP Extension Project (Rural). 1989. "The Cost and Cost-Effectiveness of the Matlab Family Planning Health Services Project." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 10 (unpublished, June).

ICDDR,B MCH-FP Extension Project (Rural). 1989. "Why Contraceptive Prevalence Estimates Based on Service Statistics and Sample Surveys Do Not Agree." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 11 (unpublished, July).

ICDDR,B MCH-FP Extension Project (Rural). 1990. "Coordination Between NGOs and the MOHFP in the Delivery of Family Planning Services in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 12 (unpublished, February).

ICDDR,B MCH-FP Extension Project (Rural). 1990. "A Cost-Effectiveness Analysis of Alternative Approaches to Providing Satellite Clinic Transport." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 13 (unpublished, February).

ICDDR,B MCH-FP Extension Project (Rural). 1990. "Reductions in Childhood Mortality from Measles Vaccination: New Evidence from Matlab, Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 14 (unpublished, August).

ICDDR,B MCH-FP Extension Project (Rural). 1991. "Increasing the Effectiveness of Satellite Clinics: Improving the Supply of Drugs and Equipment." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 15 (unpublished, January).

ICDDR,B MCH-FP Extension Project (Rural). 1991. "The Case for One Brand of Injectables within the Bangladesh Family Planning Program." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 16 (unpublished, March).

ICDDR,B MCH-FP Extension Project (Rural). 1991. "Recruiting Appropriate Female Field Workers: Experiences from a National Recruitment Process in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 17 (unpublished, April).

ICDDR,B MCH-FP Extension Project (Rural). 1991. "Improving Contraceptive Side Effects Management." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 18 (unpublished, May).

ICDDR,B MCH-FP Extension Project (Rural). 1992. "Evaluation of Iron Supplementation Intervention Among Pregnant Women." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 19 (unpublished, July).

ICDDR,B MCH-FP Extension Project (Rural). 1992. "The Impact of Increased Field Worker Density on Family Planning Programme Implementation ." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 20 (unpublished, October).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Management Issues and Family Planning Performance in Chittagong Division." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 21 (unpublished, April).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Female Health Assistants: A Qualitative Study in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 22 (unpublished, May).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Provision of Antenatal Care by Family Planning Field Workers." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 23 (unpublished, May).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Utilization of Trained Traditional Birth Attendants." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 24 (unpublished, June).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Satellite Clinics: An Overview of Extension Project Findings." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 25 (unpublished, June).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Effects of Family Planning on Children's Schooling." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 26 (unpublished, August).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Supply Side Determinants of Sterilization Acceptance in Bangladesh: Lessons Learned, Future Directions." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 27 (unpublished, August).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Availability and Use of Reference Manuals at the Union Health and Family Welfare Centers." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 28 (unpublished, September).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "The Influence of Fieldworker Quality of Care Upon Contraceptive Adoption in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 29 (unpublished, October).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Maternal Mortality and Deaths of Women Due to Violence in Rural Bangladesh, 1982 - 1990." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 30 (unpublished, November).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Performance Improvement Through Local Planning." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 31 (unpublished, November).

ICDDR,B MCH-FP Extension Project (Rural). 1993. "Strengthening the Management Information System for Family Planning." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Briefing Paper No. 32 (unpublished, November).

ICDDR,B MCH-FP Extension Project (Rural). 1994. An Assessment of MCH-FP Programme Needs in Mirsarai, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, July).

ICDDR,B MCH-FP Extension Project (Rural). 1995. An Assessment of MCH-FP Program Needs in Sitakunda, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, August).

ICDDR,B MCH-FP Extension Project (Rural). 1995. An Assessment of MCH-FP Program Needs in Boalkhali, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, September).

ICDDR,B MCH-FP Extension Project (Rural). 1995. An Assessment of the MCH-FP Program Needs in Rangunia, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, October).

ICDDR,B MCH-FP Extension Project (Rural). 1995. An Assessment of the MCH-FP Program Needs in Lohagora, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, November).

ICDDR,B MCH-FP Extension Project (Rural). 1995. "Satellite Clinic Combined with EPI." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 1, No. 1 (published, November).

ICDDR,B MCH-FP Extension Project (Rural). 1995. "Cluster Visitation." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 1, No. 2 (published, November).

ICDDR,B MCH-FP Extension Project (Rural). 1995. "District Approach." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 1, No. 3 (published, November).

ICDDR,B MCH-FP Extension Project (Rural). 1995. "Maternal and Neonatal Health: Emergency Obstetric Care at Thana Level." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 1, No. 4 (published, November).

ICDDR,B MCH-FP Extension Project (Rural). 1995. "Performance Planning and Monitoring at the Local Level." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 1, No. 5 (published, November).

ICDDR,B MCH-FP Extension Project (Rural). 1995. "Strengthening Maternal and Neonatal Health: Improving Linkages at all levels". Concept Paper. MOHFW and MCH-FP Extension Project (Rural), ICDDR,B. (unpublished, December).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Satellite Clinic Combined with EPI." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update Vol. 2, No. 1 (published, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Cluster Visitation." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 2, No. 2 (published, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "District Approach: Capacity Building of Local Level Managers on Needs Assessment." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 2, No. 3 (published, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Maternal and Neonatal Health: Emergency Obstetric Care at the Thana Level." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 2, No. 4 (published, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Performance Planning and Monitoring at the Local Level." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 2, No. 5 (published, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Limited Technical Assistance to Monitor Health and MCH-FP Program Performance in Sirajganj." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 2, No. 6 (published, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "A Rapid Assessment Procedure to Assess Accessibility to and Utilization of Family Planning and Maternal and Child Health Services at the Local Level." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 2, No. 7 (published, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Health Assistant Register: Record-Keeping System for the Health Field Workers." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 2, No. 8 (published, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Maternal and Neonatal Health: Referral and Linkages from Community to Higher Levels." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 2, No. 9 (published, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Satellite Clinic Combined with EPI". Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 3, No. 1 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Cluster Visitation." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 3, No. 2 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "District Approach: Capacity Building of Local Level Managers on Program Improvement." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 3, No. 3 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Maternal and Neonatal Health: Emergency Obstetric Care at the Thana Level." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 3, No. 4 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Health Assistant Register: Record-Keeping System for the Health Field Workers." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 3, No. 8 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Maternal and Neonatal Health: Referral and Linkages from Community to Higher Levels." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 3, No. 9 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Networking of Government and Non-Government Family Welfare Service Providing Agencies." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 3, No. 10 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Charging for FP-MCH Commodities and Services." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 3, No. 11 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Basic Service Package." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Intervention Update (Flyer), Vol. 3, No. 12 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Sample Registration System." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), SRS Update, Report No. 1 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. "Sample Registration System." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), SRS Update, Report No. 2 (published, October).

ICDDR,B MCH-FP Extension Project (Rural). 1996. An Assessment of the MCH-FP Program Needs in Anowara, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, January).

ICDDR,B MCH-FP Extension Project (Rural). 1996. An Assessment of the MCH-FP Program Needs in Patiya, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, March).

ICDDR,B MCH-FP Extension Project (Rural). 1996. An Assessment of the MCH-FP Program Needs in Sandwip, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. An Assessment of the MCH-FP Program Needs in Raozan, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. An Assessment of the MCH-FP Program Needs in Hathazari, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, May).

ICDDR,B MCH-FP Extension Project (Rural). 1996. An Assessment of the MCH-FP Program Needs in Fatikchhari, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, June).

ICDDR,B MCH-FP Extension Project (Rural). 1996. An Assessment of the MCH-FP Program Needs in Chandanaish, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, July).

ICDDR,B MCH-FP Extension Project (Rural). 1996. An Assessment of the MCH-FP Program Needs in Banshkhali, Chittagong. A collaborative Effort of the Ministry of Health and Family Welfare and MCH-FP Extension Project (Rural) of ICDDR,B (unpublished, July).

Isenberg, D., Ashraf, A., Corbett, M. 1985. The SHA Counterpart Support. Dhaka: ICDDR,B Maternal and Child Health and Family Planning Extension Project (Rural), Documentation Note No. 25 (unpublished, March).

Islam, M., Hasan, Y., Ashraf, A., Maru, R. 1991. FWC and Mid-Level Supervisory Meetings at the Extension Project Upazilas. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 110 (unpublished, January).

Islam, M., Zaman, M.A., Ashraf, A., Alam, M. 1991. A Summary of the Training of Trainers for NIPORT-RTC Trainers. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 117 (unpublished, May).

Islam, S., Karim, R., Wazed, A., Khyang, J., Rahman, F., Jamieson, N. 1991. Sirajgonj Vaccination Campaign: November, 1990. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 120 (unpublished, June).

Islam, M., T.T. Kane, Barkat-e-Khuda, M.B. Hossain, M.M. Reza. 1997. "Determinants of Low Contraceptive Use Among Young and Newly-wed Couples." MCH-FP Extension Project (Rural), ICDDR,B. Working Paper (forthcoming, 1997).

Jamieson, N. 1991. Rational Antenatal Care. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 127 (unpublished, June).

Jonas, Edna, M. Koblinsky, Z. Huque, D. Balk. 1986. "An Overview of Injectable Contraceptives with Special Application to Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 13 (unpublished, March).

Juncker, T., T. Mirza, J. Haaga, R. Mita. 1992. "Evaluation of Iron Supplementation Intervention Among Pregnant Women." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 74 (unpublished, May).

Juncker, T. 1994. "Clientele and Types of Services at the Family Welfare Centres and Satellite Clinics in Rural Areas of Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 109 (unpublished, December).

Juncker, T. P. A. Khanum, Md. Jasim Uddin, S.C. Das. 1996. "FWA's New Role in Antenatal Care and Use of a Pictorial Card for Creating Awareness About Obstetric Emergencies." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 113 (published).

Juncker, T., M.H. Khan, S. Ahmed. 1996. "Interventions in Obstetric Care: Lessons Learned from Abhoynagar." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 124 (published).

Kane, T.T., B. Hossain, Barkat-e-Khuda, S. Ahmed. 1997. "Quality of care, client satisfaction, and contraceptive use in rural Bangladesh." Paper presented at 1997 PAA Meeting, Washington D.C., March 27-29.

Karmaker, S., Munro, M. 1990. The Introduction of FWA Lists of Antenatal Women to Assist in the Referral of Pregnant Women to FWVs. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 87 (unpublished, July).

Khan, Md. A.L., T. Islam, A. Rahman. 1984. "A Case Study of the Government's IUD Programme: Barriers to Implementation." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 9 (unpublished, November).

Khan, M.A., C. Smith, J. Akbar, M.A. Koenig. 1989. "Contraceptive Use Patterns in Matlab, Bangladesh: Insights from a 1984 Survey." *Journal of Biosocial Science*, Vol. 21, 47-58.

Khan, M.A., Nazma Begum, U. Rob, M.A. Koenig. Matlab KAP Survey 1990. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 136 (unpublished).

Khan, M.A.. 1993. "Factors Affecting Use of Contraception in Matlab, Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 92 (unpublished, October).

Khan, M.A. 1996. "Factors Affecting Use of Contraception in Matlab, Bangladesh. *Journal of Biosocial Science*, Vol. 28, 265-279.

Khan, M.A., Mizanur Rahman. 1996. "Determinants of Contraceptive Method-Choice in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 117 (published).

Khan, M.A., M. Rahman, P.A. Khanum, Barkat-e-Khuda, T.T. Kane, A. Ashraf. 1996. "Awareness of Sexually Transmitted Disease among Women and Service Providers in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 123 (published).

Khan, M.A., M. Rahman, P.A. Khanum, Barkat-e-Khuda, T.T. Kane, A. Ashraf. 1997. "Awareness of Sexually Transmitted Disease among Women and Service Providers in Rural Bangladesh." *International Journal of STD & AIDS*, **(forthcoming).**

Khanum, P.A., H. Wirzba, I. Haque, T. Mirza, T. Juncker. 1996. "Service Delivery at The Union Health and Family Welfare Centers: The Clients' Perspective." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 118 (published).

Koblinsky, M.A., Huque, Z., Islam, M., Smith, C., Rahman, A. The Increased FWA Density Study/Recruitment. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 37 (unpublished).

Koblinsky, M.A., R. Simmons, J.F. Phillips, Md. Yunus. 1984. "Barriers to Implementing an Effective National MCH-FP Program," in Selected Papers of the 1984 Annual Conference of the National Council for International Health, Debbie Kluge (Ed.), Arlington, Virginia, pp 195-207, (June 11-13).

Koblinsky, M.A., Z. Huque, L. Baqee, T. Islam, A. Rahman, S. Ali. 1985. "Operational Research in the Public Sector: Implementation and Priorities." *Diarrhoea Dialogue*, Issue 20: 2-5 (March).

Koblinsky, M.A., S.J.G. Brechin, S.D. Clark, M.Y. Hasan. 1989. "Helping Managers to Manage: Work Schedules of Field- Workers in Rural Bangladesh." *Studies in Family Planning*, Vol. 20, No. 4: 225-234 (July/August).

Koenig, M.A., J.F. Phillips, R. Simmons, M.A. Khan. 1987. "Trends in Family Size Preference and Contraceptive Use in Matlab, Bangladesh." *Studies in Family Planning*, Vol. 18, No. 3: 117-127. (May/June).

Koenig, M.A., B. Wojtyniak. 1987. "Excess Female Mortality During Infancy and Early Childhood: Evidence from Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 29 (unpublished, January).

Koenig, M.A., K.A. Mozumder, B. Wojtyniak. 1988. "An Overview of the ICDDR,B Sample Registration System." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 39 (unpublished, February).

Koenig, M.A., V. Fauveau, A.I. Chowdhury, J. Chakraborty, M.A. Khan. 1988. "Maternal Mortality in Matlab, Bangladesh: 1976-85." *Studies in Family Planning*, Vol. 19, No. 2: 69-80 (March/April).

Koenig, M.A., V. Fauveau, B. Wojtyniak. 1989. "Potential Reductions in Infant and Child Mortality Through Immunization Programmes: Evidence from Matlab, Bangladesh." In Proceedings of the XXIst International Population Conference, New Delhi, India: IUSSP: 433-448.

Koenig, M.A., M.B. Hossain, N.C. Roy, J.F. Phillips. 1989. "Programmatic and Non-Programmatic Determinants of Contraceptive Prevalence Levels in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 48 (unpublished, March).

Koenig, M.A., U. Rob, M.A. Khan, J. Chakraborty, V. Fauveau. 1990. "Contraceptive Use in Matlab, Bangladesh in 1990: Levels, Trends, and Explanations." *Studies in Family Planning*, Vol. 23, No. 6: 352-364 (November/December)

Koenig, M.A., Whittaker, M.A., Maru, R.M. 1990. Key Operational Findings from the ICDDR,B Extension Project Relevant for the 4th Population Health Project. (Presentation to the World Bank Consortium Pre-Appraisal Mission for the 4th Project). Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 100 (unpublished, February-March).

Koenig, M.A., M.A. Khan, B. Wojtyniak, J.D. Clemens, J. Chakraborty, V. Faveau, J.F. Phillips, J. Akbar & U.S. Barua. 1990. "The Impact of Measles Vaccination Upon Childhood Mortality in Matlab, Bangladesh." *Bulletin of the World Health Organization*, 68 (4): 441-447.

Koenig, M.A., J.F. Phillips, O. Campbell & S. D'Souza. 1990. "Birth Intervals and Childhood Mortality in Rural Bangladesh." *Demography*, Vol. 27, No. 2: 251-265 (May).

Koenig, M.A., K. Mozumder, J. Cleland, M. Rahman, F. Rahman. 1991. "Birth Intervals, Prematurity, and Childhood Mortality: Further Evidence from Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 64 (unpublished, December).

Koenig, M.A., F. Fauveau, B. Wojtyniak. 1991. "Mortality Reductions from Health Interventions: The Case of Immunization in Bangladesh." *Population and Development Review*, 17, No. 1: 87-104 (March).

Koenig, M.A., M. Whittaker. 1991. "Increasing the Application of Operations Research Findings in Public Sector Family Planning Programs: Lessons from the ICDDR,B Extension Project." In Operations Research: Helping Family Planning Programs Work Better, Wiley-Liss, Inc., pp 451-460.

Koenig, M.A., N. C. Roy, T. McElrath, M. Shahidullah. 1992. "Duration of Protective Immunity Conferred by Maternal Tetanus Toxoid Immunization: Further Evidence from Matlab, Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 70 (unpublished, April).

Koenig, M.A., M.B. Hossain, M. Whittaker. 1992. "The Influence of Fieldworker Quality of Care Upon Contraceptive Adoption in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 73 (unpublished, April).

Koenig, M.A., R. Simmons. 1992. "Constraints on Supply and Demand for Family Planning: Evidence from Rural Bangladesh." In Family Planning Programmes and Fertility, J.F. Phillips and J.A. Ross (eds.), Oxford: Oxford University Press: 259-275.

Koenig, Michael A., Ruth Simmons. 1992. "Constraints on supply and demand for family planning: Evidence from rural Bangladesh." In James F. Phillips and John A. Ross (eds.) *Family Planning Programmes and Fertility*. Oxford: Clarendon Press. pp 259-275.

Levin, A., M.A. Amin, Barkat-e-Khuda, R. Saifi, K. Mozumder, B. Caldwell. 1996. "Charging for MCH-FP Commodities and Services: Key Findings from Baseline Survey." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), (unpublished, October).

Levin, A., Md. A. Amin, K. Mozumder, R. Saifi, Barkat-e-Khuda. 1997. "Evaluation of cost-effectiveness of family planning and maternal and child health alternative service delivery strategies in rural Bangladesh." Paper presented at 1997 PAA Meeting, Washington D.C., March 27-29.

Maru, R., Ashraf, A., Islam, M., Jamieson, J., Chowdhuri, S.R., Ahmed, T., Ali, S. 1991. Family Welfare Assistant Register Training. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 114 (unpublished, May).

Maru, R. 1991. "Strategic Management of Bangladesh Population Programme." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 57 (unpublished, October).

Maru, R. 1992. "Scaling up of NGOs - The Experience of the Mother/Child-Health and Family Planning Extension Project." In NGO Management and Family Planning from Women's Perspectives. Proceedings from an International Seminar held on 10 - 18 November, 1991, at Bangladesh Academy for Rural Development, Comilla, Bangladesh. The Danish Family Planning Association, pp 72-76.

Maru, R., J.G. Haaga, M.B. Hossain, M. Rahman. 1992. "Extending MCH-FP Services to Rural Women in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 76 (unpublished, June).

Maru, R. 1993. "Management Perspectives on Manpower Development in Health and Family Planning Program." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 82 (unpublished, January).

Maru, R., J.G. Haaga. 1994. "Strategies to Improve Accessibility of MCH and Family Welfare Services in Bangladesh: Experience from the MCH-FP Extension Project." In Social Dimensions in Health: A South East Asia Perspective (Eds. J.P. Gupta, P.L. Trakroo, and Gita Bamezai), National Institute of Health and Family Welfare, New Delhi, pp. 82-102.

Maru, R. 1994. "Management Perspectives on Manpower Development in Health and Family Planning Programmes." In Managing a New Generation of Population Programmes Challenges of the Nineties (Eds. Jay Satia, Carl Schonmeyr & Sharifah Tahir), ICOMP, KualaLumpur: 135-149 (April).

Mirza, T., A. Ashraf, H. Kabir, J. Ahmed. 1996. "Training Experience in Domiciliary Injectable Contraceptive Services in the National Family Planning Programme." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 120 (published).

Mirza, T., T. Juncker, R. Mita. 1992. "Evaluation of Antenatal Care Provided by FWA in Abhoynagar Thana." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 80 (unpublished, November).

Mirza, T., P.A. Khanam, T. Juncker. 1993. "Utilization of Trained Traditional Birth Attendant." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 84 (unpublished, June).

Mirza, T., A. Ashraf, H. Kabir, A. Wazed, J. Ahmed. 1996. "Clinic Waste Disposal in the Rural Family Planning Programme of Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 119 (published).

Mita, R., R. Simmons. 1989. "Indirect Effects of Program Interventions: Family Planning Knowledge and Attitudes Among Female Teenagers in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 53 (unpublished, November).

Mita, R., Whittaker, M. 1990. Women's Status in Rural Bangladesh. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 81 (unpublished, January).

Mita, R., Whittaker, M. 1990. Rural Women's Thoughts on Maternity Care in Bangladesh. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 83 (unpublished, February).

Mita, R., T. McElrath, Md. S. Anwar. 1990. "Delivery Practices, Complication of Birth and Neo-Natal Mortality: Evidences from Matlab, Bangladesh." In Statistics in Health and Nutrition (Eds. K. Visweswara Rao, G. Radhaiah & V. Narayana). Proceedings of the National Seminar, October 27-29, 1988, Hyderabad. Indian Society for Medical Statistics, pp 245-251 (December).

Mita, R., M. Whittaker. 1990. "Listening to Women: An Attempt to Measure "Felt Need" for Maternity Care." *WIPHN News*, Vol. 7, p.5. (Spring).

Mita, R., R. Simmons. 1994. "Diffusion of the Culture of Contraception: Unanticipated Programmatic Effects on Young, Unmarried Women in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 99 (unpublished, April).

Mita, R., R. Simmons. 1995. "Diffusion of the Culture of Contraception: Program Effects on Young Women in Rural Bangladesh." *Studies in Family Planning*, Vol. 26, No. 1: 1-13. (January/February).

Mozumder, K.A., Phillips, J.F., Hossain, B. English Language Revised Field Instructions to Interviewers for the Demographic Data Component of the SRS. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 10 (unpublished).

Mozumder, K.A., Hossain, B., Phillips, J.F. 1983. Coding Plan for Vital Events and Other SRS Event Reporting Forms. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 14 (unpublished, December).

Mozumder, K.A., et al. Sample Registration System Procedures for Interviewing and Recording Data on Contacts Between MOHPC Workers and Eligible Women. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 40 (unpublished).

Mozumder, K.A., J.F. Phillips. 1984. "Baseline Vital Event Rates for Four Upazilas of the MCH-FP Extension Project for 1983 as Reported by a New Data Base System of Demographic Assessment." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 8 (unpublished, November).

Mozumder, K.A., Rob, U., Hossain, M.B., Phillips, J.F. 1985. A Comprehensive Overview of Rules and Field Procedures of the Demographic Data Component of the Sample Registration System. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 47 (unpublished, October).

Mozumder, K.A., et al. 1985. Frequency Distribution for the Supplement to Indepth Questionnaire Survey of Women of Reproductive Age. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 52 (unpublished, July-December).

Mozumder, K.A., J.F. Phillips, D. Leon, M.B. Hossain. 1986. "The Sample Registration System: A Microcomputer System for Monitoring Demographic Dynamics and Health and Family Planning Service Operations in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 15 (unpublished, April).

Mozumder, K.A., Wazed. A., Phillips, J.F., Koenig, M.A. 1989. A Guide to Interviewers: Rules and Field Procedures of the Demographic Data Component of the Sample Registration System. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 68 (unpublished, May).

Mozumder, K.A., M.A. Koenig, J.F. Phillips, S. Murad. 1990. "The Sample Registration System: An Innovative System for Monitoring Demographic Dynamics." *Asia-Pacific Population Journal*, Vol. 5, No. 3: 63-72 (September).

Mozumder, K.A., J.F. Phillips. 1990. "A Multivariate Analysis of Social and Economic Determinants of Neonatal and Infant Mortality in Four Rural Thanas of Northern Bangladesh." *Demography India*, Vol. 19, No. 2: 167-182.

Mozumder, K.A., J.G. Haaga, A. Hossain, DM M. Rahman. 1994. "Demographic Change in Field Sites of the MCH-FP Extension Project, 1983-92." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 100 (unpublished, May).

Mozumder, K.A., A.H. Sarker, Barkat-e-Khuda, DM M. Rahman. 1996. "Gender Composition of Surviving Children and Contraceptive Use in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 122 (published).

Mozumder K.A., Barkat-e-Khuda, T.T. Kane, A. Levin, S. Ahmed. 1997. "The Effect of Birth Interval on Malnutrition in Infants and Young Children". MCH-FP Extension Project (Rural), ICDDR,B. Working Paper (forthcoming, 1997).

Mozumder, K.A., A.H. Sarker, DM M. Rahman. 1997. "Gender composition of surviving children and contraceptive use in Bangladesh." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Working paper 122).

Mozumder K.A., Barkat-e-Khuda, T.T. Kane, K. Hill. 1997. "Differentials of Infant and Child Mortality in the MCH-FP Extension Project Areas." Dhaka: MCH-FP Extension Project (Rural), ICDDR,B, (Wroking Paper - Forthcoming).

Munro, M., Nessa, F., Ahmed, M. 1990. The Introduction of Packing List for Satellite Clinics. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 84 (unpublished, February).

Munro, M. 1990. Training and Teaching Materials Within the Government of Bangladesh Ministry of Health and Family Planning. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 85 (unpublished, June).

Munro, M., et al. 1990. Antenatal Care Training Sessions Abhoynagar Upazila. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 93 (unpublished, August).

Munro, M., et al. 1990. Perceptions of Breastfeeding Problems in Rural Bangladesh: A Preliminary Report. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 94 (unpublished, August).

Munro, M., et al. 1990. Breastfeeding Training in Sirajgonj. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 95 (unpublished, August).

Munro, M., Ahmed, M., Karmaker, S.C., Nessa, F. 1991. Senior Family Welfare Visitor Supervisory Checklists - Experiences from the MCH-FP Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 105 (unpublished, January).

Munro, M., Rahman, F., Whittaker, M. 1991. FWA Screening and Follow-up Checklists within the MOH&FP Program: History and Development of Algorithms. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 106 (unpublished, January).

Munro, M. 1991. Field Test of Instruction Poster for Copper T 380A IUCD. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 107 (unpublished, January).

Munro, M., Ahmed, I., Rouf, Md. A. 1991. Breastfeeding Training in Abhoynagar. Dhaka: ICDDR,B Maternal and Child Health and Family Planning Extension Project (Rural), Documentation Note No. 108 (unpublished, February).

Munro, M., Ahmed, M., Whittaker, M. 1991. Levels of Upazila Medical Officer Knowledge in the MCH-FP Project Areas. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 109 (unpublished, February).

Munro, M., Rahman, F., Wazed, A., Kabir, H. 1991. Antenatal Care Training Sessions - Sirajgonj Upazila. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 111 (unpublished, March).

Munro, M., Mita, R., Nessa, F. 1991. Antenatal Intervention Evaluation Thoughts and Guidelines. Dhaka: ICDDR,B Maternal and Child Health and Family Planning Extension Project (Rural), Documentation Note No. 112 (unpublished, April).

Munro, M., Rahman, F., Whittaker, M. 1991. Medical Officer Side Effect Training Workshops. Dhaka: ICDDR,B Maternal and Child Health and Family Planning Extension Project (Rural), Documentation Note No. 113 (unpublished, April).

Munro, M., Nessa, F. 1991. Evaluation of Senior Family Welfare Visitor Supervisory Checklists. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 115 (unpublished, May).

Munro, M., Nessa, F., Wazed, A., Akhtar, J., Ali, A., Kabir, H., Khyang, A., Khyang, J., Khatun, K., Rouf, A. 1991. Screening and Follow-up Checklist Evaluation. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 116 (unpublished, May).

Musa, A.Z.M., Rahman, M., Munro, M., Rahman, F., Whittaker, M. 1990. Develop-ment of a Health Assistant Record Keeping System - Identification of Needs. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 92 (unpublished, August).

Nessa, F., R. Simmons, M.A. Koenig. 1990. "Expiration of the Copper T 200: User Status and Operational Concerns." In Statistics in Health and Nutrition (Eds. K. Visweswara Rao, G. Radhaiah & V. Narayana). Proceedings of the National Seminar, October 27-29, 1988, Hyderabad, Indian Society for Medical Statistics, pp 230-234 (December).

Nessa, F., R. Maru, M. Whittaker. 1991. "Condom Pricing: Observations from MCH-FP Extension Areas." In Sustainability of Family Planning NGOs in Bangladesh, Workshop Report, August 27-28, 1991, Bangladesh Academy of Rural Development, Comilla. Pathfinder International.

Nessa, F., Koblinsky, M.A. History of IUD. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 58 (unpublished).

Nessa, F., Whittaker, M., Rahman, F., Koenig, M.A. 1989. LFPV Counterpart Support Strategy - Analysis of the Findings and Future Directions. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 75 (unpublished, August).

Nessa, F., Whittaker, M., Karmaker. S., Ahmed, M. 1989. A Review of the Functioning of Satellite Clinic - The MCH-FP Extension Project Experiences. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 76 (unpublished, August).

Nessa, F., Whittaker, M., Mita, R. 1989. Community Attitudes Towards Growth Monitoring. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 79 (unpublished, October).

Nessa, F., Whittaker, M. Brief Survey on Knowledge of FWVs About Injectable Contraceptives. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 86 (unpublished).

Nessa, F., Whittaker, M. 1990. An Analysis of Work Activities, Terms and Conditions for Female Health Assistants - A Study Outline. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 102 (unpublished, November).

Nessa, F. 1994. "Report on the Field Testing of the IUD Sterilizer." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 103 (unpublished, June).

Nessa, F. 1994. "Fertility Behaviour of Adolescent Women in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 104 (unpublished, June).

Nessa, F., R.M. Maru, H. Wirzba, A.G. Dunston. 1994. "The IUD Programme in Bangladesh: Knowledge, Attitudes, and Practices of Family Planning Service Providers." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 108 (unpublished, November).

Nessa, F., Maru, R., Whittaker, M. 1991. Condom Pricing: Observation from MCH-FP Extension Project Areas. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 121 (unpublished, June).

Patterson, D.W., S.R. Choudhuri, J.F. Phillips, M. Rahman. 1990. "An Examination of the Results of the Integrated Reporting System Field Trial." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 54 (unpublished, April).

Patterson, D., Ashraf, A., Hasan, Y., Islam, M., Rahman, M. 1990. Reference Manual for Maintaining the FWA Register - Version 4. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 101 (unpublished, November).

Phillips, J.F. 1982. Pre-Project Agreement with the Government of Bangladesh and External Donors. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 1 (unpublished, July).

Phillips, J.F., Claquin, P., Rob, U., Rahman, M., Akbar, J., Huq, M. 1982. Final Version of the Project Protocol, MCH-FP Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 2 (unpublished, October).

Phillips, J.F. 1982. MCH-FP Extension Project Administration. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 5 (unpublished, July).

Phillips, J.F. 1983. MCH-FP Extension Project First Annual Report 1982. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 20 (unpublished, February).

Phillips, J.F., Koblinsky, M.A., Yunus, Md. 1984. The Matlab and MCH-FP Extension Project Second Annual Progress Report 1983. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 22 (unpublished, April).

Phillips, J.F., Koblinsky, M.A., Yunus, Md., Simmons, R. 1984. Proposal for Continuation of Matlab and the MCH-FP Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 23 (unpublished).

Phillips, J.F., J. Akbar, M.A. Khan, M.A. Koenig. Aims and Objective of the Matlab Indepth Survey - 1984. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 137 (unpublished)

Phillips, J.F., D. Leon, K.A. Mozumder. 1984. "The Design of Sample Registration System for Monitoring Demographic Dynamics and Health and Family Planning Service Operations in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 6 (unpublished, November).

Phillips, J.F., R. Simmons, M.A. Koblinsky. 1985. "Bureaucratic Transition: A Paradigm for Policy Development in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 10 (unpublished, April).

Phillips, J.F., M.A. Koenig. 1986. "Will Hiring More FWA Affect Contraceptive Prevalence in Rural Bangladesh? -- Analytical Evidence from the MCH-FP Extension Project." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 19 (unpublished, July).

Phillips, J.F., T.K. LeGrand, M.A. Koenig, J. Chakraborty. 1987. "The Effect of a Maternal and Child Health -- Family Planning Project on Infant and Child Mortality in Matlab, Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 30 (unpublished, April).

Phillips, J.F., K.A. Mozumder, D. Leon, M.A. Koenig. 1988. "The Application of Microcomputer Data-Base Technology to Longitudinal Studies of Health and Survival: Lessons from a Field Study in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 43 (unpublished, October).

Phillips, J.F., W.S. Stinson, S. Bhatia, M. Rahman, J. Chakraborty. 1982. "The Demographic Impact of the Family Planning-Health Services Project in Matlab, Bangladesh. *Studies in Family Planning*, Vol. 13, No. 5: 131-140. (May).

Phillips, J.F., R. Simmons, G. Simmons, Md. Yunus. 1984. "Transferring Health and Family Planning Service Innovations to the Public Sector: An Experiment in Organization Development in Bangladesh." *Studies in Family Planning*, Vol. 15, No. 2: 62- 73. (March/April).

Phillips, J.F., R. Simmons, J. Chakraborty, A. I. Chowdhury. 1984. "Integrating Health Services into an MCH-FP Program: Lessons from Matlab, Bangladesh." *Studies in Family Planning*, Vol. 15, No. 4: 153-161. (July/Aug).

Phillips, J.F. 1987. "Translating Pilot Project Success into National Policy Development: Two Projects in Bangladesh." *Asia-Pacific Population Journal*, Vol. 2, No. 4: 3-28. (December).

Phillips, J.F., R. Simmons, M.A. Koenig, J. Chakraborty. 1988. "Determinants of Reproductive Change in a Traditional Society: Evidence from Matlab, Bangladesh." *Studies in Family Planning*, Vol. 19, No. 6: 313-334. (November/December).

Phillips, J.F., M.B. Hossain, M.A. Koblinsky. 1989. "Improving the Climate of Choice: The Effect of Organization Change on Contraceptive Behavior in Rural Bangladesh." In Choosing a Contraceptive: Method Choice in Asia and the United States, R.A. Bulatao, J.A. Palmore and S.E. Ward (eds.), Westview Press: 212-233.

Phillips, J.F., M.B. Hossain, A.A.Z. Huque, J. Akbar. 1990. "A Case Study of Contraceptive Introduction: Domiciliary Depot-Medroxy Progesterone Acetate Services in Rural Bangladesh." In Demographic and Programmatic Consequences of Contraceptive Innovations, (Eds. S.J. Segal, A.O. Tsui and S. M. Rogers), Plenum Press. New York and London: 227-248.

Phillips, J.F., M.B. Hossain, R. Simmons, M.A. Koenig. 1993. "Worker-Client Exchanges and Contraceptive Use in Rural Bangladesh." *Studies in Family Planning*, Vol. 24, No. 6: 329-342 (November/December).

Phillips, J.F., M.A. Koblinsky, A.A.Z. Huque. 1995. "Researching the Utilization of Research for Health Policy Development: A Case Study in Bangladesh." Workshop Report No. 2 of the *Community Epidemiology*, Tamil Nadu, India, 25- 29 (March).

Phillips, J.F., M.B. Hossain, M. Arends-Kuenning. "The Long-Term Demographic Role of Community-Based Family Planning in Rural Bangladesh. *Studies in Family Planning*, Vol. 27, No. 4: 204-219 (July/August).

Rafiquzzaman, A.K.M., J.G. Haaga, Md. Alauddin, William Goldman. 1993. "Family Planning Challenges and Research Priorities for the 1990s." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 86 (unpublished, June).

Rahman, M., Phillips, J.F., Claquin, P. 1982. Households Listing in Selected Unions of MCH-FP Extension Project Areas: Procedures and Definitions. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 6 (unpublished, June).

Rahman, M. 1982 (a). Functional Analysis Plans for Govt. Primary Health Care Services Delivery Systems in Extension Projects, Sirajgonj and Noapara. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 8 (unpublished, July).

Rahman, M. 1982 (b). Health and Family Planning Activities in the Demonstration Unions. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 9 (unpublished, December).

Rahman, M., Koblinsky, M.A., Phillips, J.F., Simmons, R., Hossain, B., Baqee, L., Aeneid, F. 1984. Client's Survey in MCH-FP Extension Project Areas. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 15 (unpublished, January).

Rahman, M., Islam, M., Munro, M., Whittaker, M. 1990. Development of an FWV Record Keeping System: Identification of Needs. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 91 (unpublished, August).

Rahman, F., Munro, M., Wazed, A., Whittaker, M. 1990. Training FWAs to Provide Domiciliary Injectable Contraceptives: Experience of the MCH-FP Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 97 (unpublished, September).

Rahman, F., Whittaker, M. 1990. "Introduction of EPI into UHFWCs." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 98 (unpublished, October).

Rahman, M. 1991. FWA Recruitment Follow-up Survey, 1990 (Questionnaires and Manual for the Interviewers). Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 122 (unpublished, August).

Rahman, M., Hossain, B. 1991. Code Plan for the Worker Questionnaire of the FWA Recruitment Follow-up Survey, 1990. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 123 (unpublished, August).

Rahman, M., Hossain, B. 1991. Code Plan for the Supervisor Questionnaire of the FWA Recruitment Follow-up Survey, 1990. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 124 (unpublished, August).

Rahman, M., Musa, Md., Whittaker, M. 1991. Health Assistant Register (Record Keeping System for the Health Field Workers). Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 125 (unpublished, August).

Rahman, M. 1991. Manual for H.A. Register (Bengali Version). Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 126 (unpublished, August).

Rahman, F., Whittaker, M. 1991. Plans for the Expansion of the Home Delivery of Injectables in Eight Upazilas. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 128 (unpublished, May).

Rahman, F., Hasan, Y., Islam, M., Whittaker. 1989. Functioning Satellite Clinic Through Rickshaw Scheme: The Experience of the ICDDR,B Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 135 (unpublished, July).

Rahman, Md. M., R.M. Maru, M.B. Hossain, S. Hossain. 1991. "Evaluating Increased Worker Density in Bangladesh Family Planning Program: Field Managers and Workers' Perspectives." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 60 (unpublished, October).

Rahman, F., M. Islam, R. Maru. 1992. "Home Delivery of Injectable Contraceptives: An Operations Research Study in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 66 (unpublished, January).

Rahman, M., R.M. Maru, I. Ahmed, A. Rouf, A.B. Siddique, K.U. Ahmed, H.M. Khan, S.A.J.M. Musa, S. Ali. 1992. "Field Test of the Health Assistant Register: An Evaluation." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 75 (unpublished, May).

Rahman, F., M. Whittaker, M.B. Hossain. 1993. "Maternal Mortality in Rural Bangladesh, 1982-1990: Data from Verbal Autopsies." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 81 (unpublished, January).

Rahman, Md. M., J.G. Haaga, R.M. Maru, M.B. Hossain. 1993. "Access of Rural Women to Family Planning Service: A Study in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 87 (unpublished, April).

Rahman, F., M. Rahman, M.B. Hossain. 1993. "Deaths Due to Violence and Accidents to Women of Reproductive Age in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 90 (unpublished, August).

Rahman, M. 1996. "Child Mortality and Fertility Regulation Behaviour in Bangladesh: Implications for Family Planning Programs." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 115 (published).

Rahman, Md. M., M.B. Hossain, A. Hossain, S.C. Das. 1996. "Prevalence and Continuation of Injectable Contraceptives: Evidence from Extension Project Areas of ICDDR,B." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 116 (published).

Rahman M.M., Barkat-e-Khuda, T.T. Kane, K.A. Mozumder, M.M. Reza. "Antenatal Care Practices in Rural Bangladesh: Determinants of Antenatal Care-seeking Behaviour". MCH-FP Extension Project (Rural), ICDDR,B. Working Paper (forthcoming, 1997).

Rahman, M., Barkat-e-Khuda, M.B. Hossain. 1996. "An Assessment of Health and Family Planning needs in Rural Chittagong." Volume 1. Dhaka: ICDDR,B MCH-FP (Rural), Special Publication No. 49.

Rahman, M., Barkat-e-Khuda, M.B. Hossain. 1996. "An Assessment of Health and Family Planning needs in Rural Chittagong." Volume 2. Dhaka: ICDDR,B MCH-FP (Rural), Special Publication No. 56.

Rahman, Md. M., M.A. Koblinsky. 1986. "Supervision of the Front Line Workers in the National Family Planning Programme." Proceedings of the Sixth National Seminar of Integrated Family Planning, Nutrition and Parasite Control (IFPNPC) Project, Dhaka, Bangladesh, pp 41-62 (Dec. 7).

Rahman, M., J.F. Phillips. 1988. "An Investigation into Proximate Determinants Responsible for Fertility Differentials between two Rural Bangladesh Populations." *Journal of Biosocial Science*, Vol. 20, 411-421.

Rahman, M., J. Akbar, J.F. Phillips, S. Becker. 1992. "Contraceptive Use in Matlab, Bangladesh: The Role of Gender Preference." *Studies in Family Planning*, Vol. 23, No. 4: 229-242 (July/August).

Rahman, M., J. DaVanzo. 1993. "Gender Preference and Birth Spacing in Matlab, Bangladesh." *Demography*, Vol. 30, No. 3: 315-332. (August).

Rahman, M., Barkat-e-Khuda, M. Islam. 1996. "Networking of Family Welfare Service-Providing Agencies: Key Findings from Baseline Survey." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), (unpublished, December).

Rahman, M., M.A. Khan, B. Caldwell, T.T. Kane. 1997. "Factors associated with reported side-effects of oral pills and injectables in rural Bangladesh." Paper presented at 1997 PAA Meeting, Washington D.C., March 27-29.

Rob, U., Hossain, B., Phillips, J.F. 1983. Editing Instructions and Questionnaires for SES and Enumeration Data. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 12 (unpublished, January).

Rob.U., et al. 1986. Lactation and Spouse Separation Survey. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 51 (unpublished, July).

Rob, U. et al. 1986. Community Characteristics Survey. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 56 (unpublished, August).

Rob, U., J.F. Phillips, J. Chakraborty and M.A. Koenig. 1987. "The Use Effectiveness of the Copper T-200 in Matlab, Bangladesh." *International Journal of Gynaecology and Obstetrics*, Vol. 25: 315-322.

Rob, A.K.U. 1988. "Community Characteristics, Leaders, Fertility and Contraception in Bangladesh." *Asia-Pacific Population Journal*, Vol. 3, No. 2: 55-72 (June).

Roy, N.C., M.A. Koenig. 1990. "Areal Variation in Family Planning Service Performance and Contraceptive Use Prevalence in Rural Bangladesh." In Statistics in Health and Nutrition (Eds. K. Visweswara Rao, G. Radhaiah & V. Narayana). Proceedings of the National Seminar, October 27-29, 1988, Hyderabad. Indian Society for Medical Statistics, pp 311-317. (December).

Roy. N.C. 1996. "Determinants of Child Malnutrition in Rural Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 114 (published).

Roy. N.C., T.T. Kane, Barkat-e-Khuda, I. Haque. "Consequences of Adult Mortality in Rural Bangladesh: Economic and Social Implications for the Family". Poster presentation at 1997 PAA meetings in Washington D.C. March 28, 1997.

Saha, C., Hossain, M.B., Clark, S. Basic Frequency Distributions for the MOHPC Worker Questionnaire: A Survey of Health Workers Serving in Abhoynagar, Sirajganj and Comparison Areas from 1983 to 1985. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 46 (unpublished).

Saha, C. Hossain, M.B., Clark, S. 1986. A Basic Frequency Distributions for the MOHPC Worker Questionnaire: (a) Cross tabulation of Selected Categorical Variables by Worker Type. (b) Mean, Median and Range for Selected Continuous Variables by Worker Type. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 46A (unpublished, April).

Salway, S., M.B. Hossain. 1991. "A Review of Evidence on the Trends in Contraceptive Prevalence, Method Mix and Continuation Rates in Matlab and the MCH-FP Extension Project Sites: Implications for National Program Policy." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 62 (unpublished, October).

Salway, S. 1992. "Low-Dose and Standard-Dose Oral Pills in Rural Bangladesh: Utilization, Continuation and Failure." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 78 (unpublished, June).

Salway, S., N.C. Roy, M.A. Koenig, J. Cleland. 1993. "Levels and Trends in Post-partum Amenorrhoea, Breast-feeding and Birth Intervals in Matlab, Bangladesh: 1978-1989." *Asia-Pacific Population Journal*, Vol. 8, No. 2: 3-22 (June).

Shahidullah, Md., M.A. Koenig, B. Wojtyniak. 1986 "Reductions in Neonatal Mortality Reduction Achieved Through a Tetanus Immunization Program in Matlab, Bangladesh. I. The Impact of the 1974 Vaccine Trial." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 27 (unpublished, November).

Shahidullah, Md., J. Akbar, L.N. Bokul, M.A. Khan. 1987. "The Effect of Birth Spacing on Infant and Child Mortality in Matlab, Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 35 (unpublished, September).

Shahidullah, Md., M.A. Koenig, B. Wojtyniak. 1988. "Reductions in Neonatal Mortality Achieved Through a Tetanus Immunization Program in Matlab, Bangladesh. I. The Impact of the 1974 Vaccine Trial." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 45 (unpublished)

Simmons, R., J.F. Phillips, M. Rahman. 1984. "Strengthening Government Health and Family Planning Programs: Findings from an Action Research Project in Rural Bangladesh." *Studies in Family Planning*, Vol. 15, No. 5: 212-221 (September/October).

Simmons, R., M.A. Koblinsky, J.F. Phillips. 1986. "Client Relations in South Asia: Programmatic and Societal Determinants." *Studies in Family Planning*, Vol. 17, No. 6: 257-268 (November/December).

Simmons, R., L. Baqee, M.A. Koenig and J.F. Phillips. 1988. "Beyond Supply: The Importance of Female Family Planning Workers in Rural Bangladesh." *Studies in Family Planning*, Vol. 19, No. 1: 29-38 (January/February).

Simmons, Ruth, M.A. Koenig, A.A. Zahidul Huque. 1990. "MCH and Family Planning - User Perspectives and Service Constraints." *Studies in Family Planning*, Vol. 21, No. 4: 187-196 (July/August).

Simmons, G.B., D. Balk, K.K. Faiz. 1991. "Cost-Effectiveness Analysis of Family Planning Programs in Rural Bangladesh: Evidence from Matlab." *Studies in Family Planning*, Vol. 22, No. 2: 83-101 (March/April).

Simmons, R., R. Mita and M.A. Koenig. 1992. "Employment in Family Planning and Women's Status in Bangladesh." *Studies in Family Planning*, Vol. 23, No. 2: 97-109 (March/April).

Simmons, G. 1982. Consultation on MCH-FP Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 3 (unpublished, June/July).

Simmons, R., Koblinsky, M.A., Baquee, L., Aeneid, F. 1984. Client Organization Interface Methodology for Observation. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 19 (unpublished, February).

Simmons, G., Mojumder, K., Rahman, M., Muhuri, P., Phillips, J.F. The Application of Cost-Effectiveness Analysis to the MCH-FP Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 33 (unpublished).

Simmons, G., Balk, D., Rahman, M., Hasan, Y. Preliminary study Design: The "Upgradation of MCH-FP Services at the Upazila Level" as a Component of Cost- Effectiveness Analyses in the MCH-FP Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 39 (unpublished).

Simmons, R., et al. 1986. FWA Density Related Research. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 57 (unpublished, December).

Simmons, G., D. Balk, U. Rob. 1986. "The Economic Gains and Cost of Expanding the Number of FWAs Employed by the National Family Planning Program. " Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 25 (unpublished, October).

Simmons R., J.F. Phillips, M.A. Koenig, A.A.Z. Huque. 1987. "Implementation-Based Policy Development in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 31 (unpublished, April).

Smith, C., A.A.Z. Huque, M.A. Koblinsky, F. Rahman, A.A. Mollah, M. Alam, M. Rahman, W. Kamal, K.M. Rahman. 1986. "Domiciliary Injectable Contraceptive Programme in Abhoynagar and Sirajganj Upazila." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 24 (unpublished, October).

Smith, C., Huque, Z.. The Increased FWA Study/Government Liaison. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 37A (unpublished).

Smith, C., Rahman, M., Huque, A.A.Z. The Increased FWA Density Study/RKB and Injectable Training. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 37B (unpublished).

Smith, C., et al. 1986. Observation of the Health Assistant (HA): Research Methodology for Data Collection on the Daily and Monthly Work Routine of the HA. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 53 (unpublished, September).

Stewart, K., Whittaker, M. 1989. Reproductive Tract Infections - Developing a Community Based Management Approach. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 64 (unpublished, July).

Sullivan, Amy D., J. Haaga, M.B. Hossain, F. Rahman, I.U. Ahmed, A. Wazed. 1993. "Satellite Clinics: An Overview of Research from the MCH-FP Extension Project." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 83 (unpublished, June).

Tunon, C., R.M. Maru, J.G. Haaga. 1992. "Management Issues and Family Planning Performance in Chittagong Division." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 79 (unpublished, September).

Whittaker, M., Koenig, M., Mita, R. 1989. Quality of Care Questionnaire for SRS Rounds. [See revised version of *Documentation Note 96*]. *Dhaka: ICDDR,B MCH-FP Extension Project (Rural)*, Documentation Note No. 61 (unpublished, March).

Whittaker, M., Rahman, F. 1989. Improving the Quality of FWA Services - Improved Side- Effects Management. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 62 (unpublished, October).

Whittaker, M., Mita, R., Koenig, M. 1989. Research to Explore Unmet Need in Rural Bangladesh. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 63 (unpublished, April).

Whittaker, M., Karmaker, S., Ahmed, M., Rahman, F. 1989. Growth Monitoring - Barriers to Implementation at the Union Level. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 65 (unpublished, July).

Whittaker, M., Karmaker, S., Ahmed, M. 1989. Distribution of Vitamin A by FWAs - Field Experiences I. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 69 (unpublished, July).

Whittaker, M., Rahman, F., Hasan, Y. 1989. Government Collaboration in Family Planning - Proposed Models for Testing within the MCH-FP Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 72 (unpublished, August).

Whittaker, M. 1989. Review of FWA Work in Two Extension Upazilas with Documented Matlab CHW Work. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 73 (unpublished, August).

Whittaker, M., Hasan, Y. 1989. The Impact of "Leave Policies" Upon Work Performance. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 74 (unpublished, August).

Whittaker, M. 1989. The Role of MCH-FP Extension Project in the Introduction of "Norplant" in Bangladesh. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 77 (unpublished, September).

Whittaker, M., Munro, M. 1989. Management of Contraceptive Side Effects in the MOHFP Programme - Findings and Recommendations. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 78 (unpublished, September).

Whittaker, M., Rahman, F. 1990. Female Mortality in Rural Bangladesh: Data from SRS - 1984 - 1988. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 80 (unpublished, January).

Whittaker, M., Khan, M.A., Akbar, J. 1990. Side Effects Experienced with Family Planning: Their Incidence and Management Amongst Matlab Women Who Ceased Use of a Method. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 82 (unpublished, January).

Whittaker, M. 1990. Quality of Care - An Applied Operational Research Framework. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 88 (unpublished, July).

Whittaker, M., Ahmed, M.W.M. 1990. Causes of Below Age 5 Deaths - A 6 Upazila Review. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 89 (unpublished, August).

Whittaker, M., Ahmed, M.W.M., Rahman, F., Mozumder, K. 1990. The Use of the Verbal Autopsy Methodology for Recording Causes of Death in the MCH-FP Extension Project. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 90 (unpublished, August).

Whittaker, M., Islam, M., Rahman, F., Wazed, A., Uddin, I. 1990. A Summary of Forms and Registers Presently Supplied by the Extension Project to the Government. Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Documentation Note No. 99 (unpublished, October).

Whittaker, M., A. Neaz, U. Rob, P. Satterthwaite. 1989. "Survey of Injectable Contraceptive Programmes in Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 50 (unpublished, May).

Whittaker, M., M.B. Hossain, R. Mita, M.A. Koenig. 1993. "Rural Women's Perspectives on Quality of Family Planning Services." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 85 (unpublished, June).

Whittaker, M. (Ed.) 1989. "Proceedings of National Workshop on Service Delivery Aspects of Injectable Contraceptives in Bangladesh" held on 14th November at Dhaka. Dhaka: ICDDR,B MCH-FP (Rural) and Association for Voluntary Surgical Contraception.

Wirzba, H. 1993. "Availability and Use of Reference Manuals at the Union Health and Family Welfare Centers." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 88 (unpublished, September).

Wirzba, H., T. Juncker. 1994. "Disease Patterns, Treatment Practices and Drug Requirements in Rural MCH-FP Government Facilities of South-West Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Working Paper No. 105 (unpublished, June).

Wirzba, H., T. Juncker. 1995. "Disease Patterns, Treatment Practices and Drug Requirements in Rural MCH-FP Government Facilities of Bangladesh." Dhaka: ICDDR,B MCH-FP Extension Project (Rural), Special Publication No. 41 (May).

Yunus, Md., M. Koblinsky, R. Simmons, J.F. Phillips. 1984. "Strategies for Implementing Change in a Rural Health and Family Planning Program in Bangladesh," in Selected Papers of the 1984 Annual Conference of the National Council for International Health. Debbie Kluge (Ed.), Arlington, Virginia, pp 236-244. (June 11-13).

# INDEX

# G



# H



# I



# J



# L



# M



# N



# O

# P



# Q



# R



# S



# T



# U



# V



# W

## What is the Centre for Health and Population Research (ICDDR,B)?


ICDDR,B, or "The Centre", was established in 1978 as the successor to the Cholera Research Laboratory, which was created in 1960 to study the epidemiology, treatment, and prevention of cholera. The Centre is an independent, international, non-profit organization for research, education, training, and clinical services. Located in Dhaka, the capital of Bangladesh, the Centre is the only truly international health research institution based in a developing country. The results of research conducted over the years at the Centre provide, today, guidelines for policy-makers, implementing agencies, and health professionals in Bangladesh and around the globe. Researchers at the Centre have made major scientific achievements in diarrhoeal disease control, maternal and child health, nutrition, and population sciences. These significant contributions have been recognized worldwide.

### How is the Centre Organized?

The Centre is governed by a distinguished multinational Board of Trustees comprising researchers, educators, public health administrators, and representatives of the Government of Bangladesh. The Board appoints a Director and Division Directors who head the four scientific divisions and the support service divisions of Finance, and Administration and Personnel.

The **Clinical Sciences Division** has three major functions in addition to providing care and treatment to the patients with diarrhoeal disease at the Clinical Research and Service Centre in Dhaka: (1) implementation of clinical research in diarrhoeal diseases and related areas of nutrition, and operations research; (2) training of health care providers (both Bangladeshi and international) in the case management of diarrhoeal diseases and associated complications as well as in clinical and operational research methodology; and (3) preventive health activities directed toward children and their mothers.

The **Public Health Sciences Division**, staffed with public health professionals, epidemiologists, social scientists, and economists, focuses on the evaluation of population-based interventions to improve reproductive and child health. The Division is responsible for the primary health care services in rural Matlab where there is a population of about 210,000 under demographic surveillance. The Division also has programmes in: Reproductive and Sexual Health; Child Health; Health and Demographic Surveillance; Social and Behavioural Sciences; and Health Economics.

The **Laboratory Sciences Division** has a research programme with branches in enteric bacteriology, molecular genetics, environmental microbiology, immunology, virology, parasitology, reproductive tract infections, and nutritional biochemistry; and a laboratory service programme with branches in clinical pathology, histopathology, biochemistry, and microbiology.

The **Health and Population Extension Division** undertakes operations research in family planning, reproductive and child health, epidemic control, and environmental health, and provides technical assistance to the Government of Bangladesh and non-governmental organizations in the application of the Centre's research findings. The Division comprises the two MCH-FP Extension Projects (Rural and Urban), the Epidemic Control Preparedness Programme, and the Environmental Health Programme.

The **Training and Education Department** coordinates efforts to provide a broad-based training programme that aims at contributing toward the development of global human resources in child survival and population programme research, planning, and implementation.

**Computing Facilities**: The Centre operates an IBM 4361 mainframe computer with eight megabytes (MB) of real memory and an on-line storage capacity of 3,000 MB. It is connected

to 25 terminals. This system provides the capacity to analyze large data sets, and is complemented by over 300 personal computers and a few Local Area Network (LANs) throughout the Centre. New e-mail facilities have been established in the Centre. A new information technology (IT) strategy is in the process of implementation to replace the old mainframe.

**Dissemination and Information Services Centre**: The Dissemination and Information Services Centre (DISC) provides access to the scientific literature on diarrhoeal diseases, nutrition, population studies, health, environmental, and behavioural studies in general by means of Current Contents (Life Sciences and Clinical Medicine), MEDLINE, AIDS and POPLINE databases, books, bound journals, reprints of articles, documents, some four hundred current periodicals, etc. DISC publishes the quarterly Journal of Diarrhoeal Diseases Research (and bibliography on diarrhoeal diseases within the Journal), two quarterly newsletters Glimpse (in English) and Shasthya Sanglap (in Bangla), a bimonthly bilingual staff news bulletin--the ICDDR,B News, working papers, scientific reports, special publications, monographs, etc.

**Staff:** The Centre currently has over 200 researchers and medical staff from more than ten countries doing research and providing expertise in many disciplines related to the Centre's areas of research. One thousand two hundred personnel are working in the Centre.

## What is the Centre's Plan for the Future?

In the 37 years of its existence, ICDDR,B has evolved into a busy cosmopolitan research centre whose scientists have wide-ranging expertise. Future research will be directed toward finding cost-effective solutions to the health and population problems of the most disadvantaged people in the world. The Centre's Strategic Plan: "To The Year 2000" outlines work in the following key areas:

**Child Survival:** Diarrhoeal diseases are responsible for deaths of 3 million children every year. Acute and persistent diarrhoea and dysentery will remain priority areas for research on strategies for prevention, including modifications in personal and domestic hygiene behaviours, provision of appropriate water supply to and sanitation for the households, and the development of effective vaccines. The Centre's scientists will contribute to the improvement of the case management of diarrhoea based on better understanding of basic mechanisms, and national and international responses to epidemics. Risk factors for low birth rate and potential interventions, acute respiratory infections, nutritional deficiency states (including micronutrients), and immunization-preventable infectious diseases will also be examined, particularly as they interact with diarrhoea.

**Population and Reproductive Health:** The Centre has a long history of conducting pioneering research in the areas of population and family planning. The Centre played a key role in raising the contraceptive use rate among women of reproductive age in Bangladesh to almost 45% through technical assistance and operations research. So much so that the 1994 Cairo Conference hailed Bangladesh as a family planning success story. Matlab is now the model for MCH-FP programmes throughout the world, and the Centre is poised to make important contributions to maternal health and safe motherhood. In addition to continuing work in these areas, the Centre has initiated community-based research on reproductive health and STD/RTI/ HIV infections.

**Application and Policy:** The Centre will continue to play a major part in improving both supply of and demand for existing health technologies, and in replicating the successful interventions piloted in its projects through health systems research. The Centre will increase its communication, dissemination and training efforts to influence international and national health policies in the areas of its expertise. ICDDR,B recognizes, and has given a high priority to, the need to transform research findings into actions.