## MCH-FP Extension Project (Urban)

Urban FP/MCH Working Paper No. 26


# Information Systems for Urban Health: Findings from the Clinic Information System Intervention

S M Tariq Azim
Sangeeta Mookherji
Cris Tunon
Anwara Begum
Rafia Rasul
Abdullah Hel Baqui

International Centre for Diarrhoeal Disease Research, Bangladesh
Mohakhali, Dhaka 1212, Bangladesh.

1997

ICDDR,B Working Paper No. 78

Editing: M. Shamsul Islam Khan

Layout Design and Desktop Publishing: SAKM Mansur
Roselin Sarder
Md. Yousuf

Cover Design: Asem Ansari

*ISBN:* 984-551-099-X

1997

**Published by:**
**International Centre for Diarrhoeal Disease Research, Bangladesh**
GPO Box 128, Dhaka 1000, Bangladesh
Telephone: 880-2-871751 (10 lines): Cable: CHOLERA DHAKA, Telex: 675612 ICDDBJ;
Fax: 880-2-883116,880-2-886050 and 880-2-871568

*Printed by: Adprint in Dhaka, Bangladesh.*

# Foreword

I am pleased to release these reports on urban Maternal and Child Health and Family Planning issues which are based on the operations research activities of the MCH-FP Extension Project (Urban) of the Centre. Over the years, the Centre has acquired a unique expertise on urban development matters that ranges from operations research on reproductive health, child survival and environmental issues to providing technical assistance for capacity building to service delivery organizations working in urban areas.

This work has produced important findings on the health conditions and needs of city dwellers, particularly the poor and those living in slums. The research has also identified service delivery areas in which improvements need to be made to enhance effectiveness. Together, these research findings have been translated into interventions currently being applied in government and non-government settings.

In order to carry out this innovative work, the Centre has established a partnership effort known as the Urban MCH-FP Initiative, with different ministries and agencies of the Government of Bangladesh and national non-government organizations, notably Concerned Women for Family Planning, a national NGO with wide experience in the delivery of MCH-FP services. The partnership receives financial and technical support from the United States Agency for International Development (USAID).

The overall goal of the partnership is to contribute to the reduction of mortality and fertility in urban areas. In practice, this joint work has already resulted in the development and design of interventions to improve access, coordination and sustainability of quality basic health services to urban dwellers with emphasis on the needs of the poor and those living in slum areas.

The Centre looks forward to continuing this collaboration and to assist in the wider dissemination and application of sustainable service delivery strategies in collaboration with providers in government, the NGOs and the private sector.

Syed Shamim Ahsan
Senior Adviser and Director
Health & Population Extension Division, ICDDR,B

# Acknowledgements

The MCH-FP Extension Project (Urban) is funded by the United States of Agency for International Development (USAID) under the Cooperative Agreement No. 388-0071-A-00-3016-00 with the International Centre for Diarrhoeal disease Research, Bangladesh (ICDDR,B). The 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 organizations including Arab Gulf Fund, 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, Ford Foundation, Population Council, Rockefeller Foundation, Thrasher Research Foundation and the George Mason Foundation; and private organizations including, East West Center, Helen Keller International, International Atomic Energy Agency, International Centre for Research on Women, International Development Research Centre, International Life Sciences Institute, Karolinska Institute, London School of Hygiene and Tropical Medicine, Lederle Praxis, National Institute of Health (NIH), New England Medical Centre, Procter & Gamble, RAND Corporation, Social Development Center of Philippines, Swiss Red Cross, the Johns Hopkins University, the University of Alabama at Birmingham, the University of Iowa, University of Goteborg, UCB Osmotics Ltd., Wander A.G. and others.

The authors would like to express their appreciation to Mrs. Mufaweza Khan, Executive Director, Concerned Women for Family Planning (CWFP) for her support to the study. Appreciation is accorded to Mrs. Selina Mohsin and Mrs. Zarjina Begum, Unit Coordinators of two intervention clinics and to the staff of the intervention clinics who participated in this study. Dr. Tahmina Sarker, Medical Director, CWFP, and Dr. Shams El Arifeen of the MCH-FP Extension Project (Urban) at ICDDR,B gave helpful assistance during the design and implementation of the intervention. Valuable comments on earlier drafts of this paper were provided by Dr. Zahiruddin Ahmed, Dr. Aminul Islam, Mr. Zahidul Quayyum, and Mr. Toslim Khan. The assistance of Ms. Moarrita Begum and Mrs. Hasin Sultana during the monitoring and evaluation activities is acknowledged.

## GLOSSARY

| | |
|---|---|
| ANC | Antenatal Care |
| CHC | Child Health Card |
| CIS | Clinic Information System |
| CPR | Contraceptive Prevalence Rate |
| CRB | Client Registration Book |
| CWFP | Concerned Women for Family Planning |
| DOV | Date of Visit |
| EPI | Expanded Programme on Immunization |
| FHC | Family Health Card |
| FP | Family Planning |
| GoB | Government of Bangladesh |
| HW | Health Worker |
| ICDDR,B | International Centre for Diarrhoeal Disease Research, Bangladesh |
| ICPD | International Conference on Population and Development |
| IUD | Intra Uterine Device |
| LMP | Last Menstrual Period |
| MCH | Maternal and Child Health |
| MIS | Management Information System |
| NGO | Non-Governmental Organization |
| ORS | Operation Research Section of Concerned Women for Family Planning |
| PID | Pelvic Inflammatory Disease |
| PNC | Postnatal Care |
| RTI | Reproductive Tract Infection |
| Tk. | Taka (Currency of Bangladesh) |
| TT | Tetanus Toxoid |
| UEP | Urban Extension Project (MCH-FP Extension Project - Urban, of ICDDR,B) |
| USAID | United Nations Agency for International Development |
| WHC | Woman's Health Card |

# Table of Contents

**Annexes**

## Summary

Traditionally, the maternal and child health and family planning (MCH-FP) clinics developed record-keeping systems to enable them to report service outputs. Nevertheless, after the International Conference on Population and Development (ICPD) held in 1994, well established providers of MCH-FP services, particularly those with clinics in the urban environment, developed additional information needs. In the case of most urban NGOs, for example the Concerned Women for Family Planning (CWFP), the need was to develop an integrated information system to promote the provision of essential clinical services for child survival and reproductive health and to assist the staff members to provide quality services without added paper work.

As part of the activities of the Urban MCH-FP Initiative, a clinic-based management information system (MIS) was introduced late in 1995 in two clinics of CWFP in two different areas of Dhaka City. The Clinic Information System (CIS) was designed to replace the existing method requiring the staff members to record the clinic activities in separate registers. The existing system requires relatively little technical skills and less cost. However, it did not assist monitoring of service quality, did not support the continuity of care, and did not promote a client or family-centred approach.

CIS involved clinic and client-held cards that contain information on the health of family members and the services received by them during visits to local clinics. It had the following elements: a Family Health Card, which was kept by the client, and three cards (Woman's Health Card, Child Health Card, and Antenatal/Postnatal Care Card) that were maintained in clinic files.

Evaluation of the system has demonstrated that the use of CIS has actually improved the quality of services provided at the clinics. The system has also been used by the local managers and the supervisors to monitor the quality and to identify problems in service delivery which was followed by decisions and necessary actions.

The Family Health Card can potentially replace the current two immunization cards for women and children and be used by providers as part of a system for client referrals. The clinic cards allow clinicians to follow basic procedures in managing common conditions, such as child diarrhoea, acute respiratory infections (ARI), pregnancy care, treatment of reproductive tract infections (RTI) and for delivery of clinical contraceptive services, thereby ensuring the maintenance of quality during service delivery.

A cost analysis of the CIS has been done to determine the incremental cost required for implementing CIS. Other implications of CIS, particularly the storage needs, are being monitored.

# 1. Background

The Urban MCH-FP Initiative is a partnership project of agencies of the Government of Bangladesh, the Concerned Women for Family Planning (CWFP) and the Urban MCH-FP Extension Project (UEP) of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B). The purpose of the Initiative is to develop a mechanism for local-level planning, coordination and implementation of health and family planning services in urban Bangladesh and to improve management, quality and continuity of service delivery. The activities of the Initiative, began in August 1994, with a series of needs assessment studies conducted in the initial project area, Zone 3 of Dhaka city. After reviewing the needs assessment findings, appropriate interventions were designed with inputs from all the partners involved.

One of the resulting interventions involves the design and field-testing of a Clinic Information System (CIS) intervention. CIS represents an evolution in the clinic-based management information systems (MIS) used at the primary-care level in Bangladesh. The clinic-based information system has been given less emphasis than MIS for field activities, and is used primarily for monitoring the performance of an individual clinic. Most of the existing information systems for the primary-care level clinics are, therefore, records of clinic outputs, not records of individual client. By and large, the only information that is readily available from these systems is tallies of the services provided, with little information available about the quality of services or the continuity of care for any one client.

At a primary-care level MCH-FP clinic setting, in government and non-government facilities, the information system used currently is based on multiple registers that are separated according to the type of service. In

this system, each service is recorded separately though they may have been for the same client. The information system of MCH-FP clinics of CWFP is a typical example. In these clinics, there are at least 10 different registers maintained at each clinic site (Annex 1). With the register-based system, there is much duplication in the information recorded and very little linkage among the registers. A client's history of clinic service use can only be determined through verbal accounts from the client and the service provider's own recollections. Only the registers for injectable contraceptive and IUD users are client-based, but there is no linkage with registers for other services. Each time a client returns for follow-up, her basic information must be re-recorded, and the health worker must inquire again about the client's health, family planning, and immunization status. This is extremely taxing for both the service providers and the clients, who often become impatient about being asked the same questions every time they come to the clinic. Typically, the MCH-FP clinics are multi-service providers, yet any client's use patterns of multiple services cannot be readily determined. Furthermore, needs assessment conducted by UEP in Dhaka show that service providers did not do the full screening of the clients. Sometimes clients were screened twice for family planning methods: once by the health worker and again by the paramedic, since there is no system to record the screening procedure. As such, the current register-based information system for the MCH-FP clinics does not support the quality or continuity of care or a client-centred approach.

From the perspective of MCH-FP programme, traditionally, the field worker-based system of regular household visitation serves as the backbone of the MCH-FP programme of Bangladesh. The primary-care level MCH-FP clinics operate as the first-level referral facilities. This has a bearing on the MIS too, with the field-based information system functioning as the mainstream MIS used for monitoring the programme

performance. Furthermore, the linkage between the field programme and the clinic has been loosely knitted. The two sources of information have also developed independently, and there is a lack of linkage between field and clinic service information. As the national health and family planning programme considers the issues of sustainability, the shift to static-clinic based service-delivery systems is seen as a more cost-effective approach to the future service-delivery structure. The clinic-based MIS has to respond concurrently by improving its effectiveness.

The lack of attention to the clinic-based MIS has also limited its utility as a decision-making tool for programme managers, and as a monitoring and supervision tool for clinic service quality and performance. To improve the clinic's role in the service-delivery system, clinic managers and providers require a more effective information system, one that is also easy to use, and that minimizes record-keeping and reporting time. The information system must also support quality assurance and provide data for management decision-making. This is becoming more pertinent, since the clinic is seen as the future centre of the service-delivery system.

On the basis of these programme needs, a new MIS for the primary-care level MCH-FP clinic was designed and introduced.

## 2. Purpose and Objectives of the Intervention

The overall purpose of the CIS intervention is to improve clinic management, service quality, and client satisfaction through improving the information system in the clinic setting.

**Objectives**

CIS, therefore, has the following specific objective:

To design and implement a client-centred clinic information system that supports:

- Easy use by clinic staff
- Continuity of care
- Quality assurance
- Reduction of missed opportunities
- Greater use of information for management decision-making

## 3. Research Design and Methodology

The CIS intervention is based on a quasi-experimental time series design. In October 1995, the intervention was pre-tested. Subsequently, in January 1996, the system was established in two primary-level MCH-FP clinics operated by the Concerned Women for Family Planning (CWFP), an NGO. These two clinics are located at Gandaria and Rayerbazar in Dhaka city. Two other CWFP clinics located in the Lalbagh and Bakshibazar areas of Dhaka served as the comparison clinics. The description of the clinic setup is given in the Annex 2.

As a baseline, indicators were taken from the clinic monthly reports from the two years prior to implementation of the intervention. Evaluations were conducted in 3-monthly cycles for the first six months of implementation, and continued for one year after the start of the implementation phase. The baseline data have been used as comparison, as is concurrent information from the two comparison clinics. There are

restrictions regarding this methodology. CIS has the capacity to measure some indicators that the old system does not allow. Therefore, neither all the indicators of the evaluation plan could be measured from the pre-intervention period, nor they could directly be compared with the non-intervention clinics. Proxies for these indicators were sought and measured when possible. In the absence of proxy comparison indicators, the analysis was limited to time series comparison or simply cross-sectional description. The unit of analysis is the individual clinic, and the CWFP unit for family card retention rates.

Because of the complexity involved in re-structuring the clinic recording and reporting system, one level of evaluation was the feasibility of implementing the proposed system, focussing primarily on how the card-based system functions. Other areas have also been evaluated, such as impact on clinic use patterns, support of quality assurance, and the extent to which the providers and their supervisors use information in decision-making.

## 4. Sources of Data

Multiple methodologies were used for data collection, depending on the indicator involved. The principal sources of information were: independent observations of processes and practices in the clinic and review of the clinic-retained client cards. Two researchers from the Urban MCH-FP Extension Project of ICDDR,B were observing the staff using CIS since the pre-testing period, minimizing the possibility of the clinic providers changing their behaviour in presence of the observers. The retention rates of the client-retained family health cards were obtained through field-based data collection by the CWFP field workers.

Additional information has been gathered from regular intervention review meetings (attended by the intervention clinic staff and clinic managers, as well as the intervention team) and an in-house seminar organized by CWFP on CIS in July 1996.

## 5. Description of the intervention

CIS is a card-based clinic record-keeping system, and it replaces the traditional register-based record-keeping system.

### 5.a Elements of the system

#### 5.a.1 The Family Health Card

FHC is retained by the client at her home. It is brought to the clinic by the client during her visit to the clinic. The card records the information on family planning status and family planning services availed by the client, immunization status of the woman and her children, antenatal check-up information, and information on clinic service use by the card holder and her family. In the intervention areas, FHC replaces the government immunization cards.

#### 5.a.2 Clinic-retained Cards

#### 5.a.2.i Woman's Health Card

WHC records services availed by the woman, e.g. family planning, reproductive tract infections (RTI), and general health. Checklists for the necessary family planning screening procedures for new users of pill,

injectables and IUDs are part of the card format. Laboratory findings and per vaginal examination findings are also recorded in designated sections.

### 5.a.2.ii ANC/PNC Card

This card is used for recording the assessment findings of pregnant women coming for an antenatal check-up. It has sections for recording immunization status of the woman, her obstetric history, assessment of risk factors, history of past obstetric complications and the check-up findings. Each section has a checklist to ensure that minimal information essential for assessment of the pregnant woman is recorded on the card.

### 5.a.2.iii Child Health Card

One CHC is used per each child in the family. The information on immunization status of the child is recorded on this card. There are separate sections on assessment of a child with diarrhoeal diseases and acute respiratory infection to allow more focus on these areas. The assessment steps for these illnesses conform to the WHO/GoB guidelines for a primary health-care level facility.

On the days when immunization services are available, the client load is too high to allow the health worker to issue new CHC to every child. Furthermore, not every child may return to the clinic for other services. Therefore, the Child Health Card is not issued to children coming only for their EPI vaccines. Their status is recorded on the Family Health cards, and the purpose of their visit on the Index cards.

### 5.a.3 Indexing system

The indexing system was designed as a back-up client identification system to facilitate retrieval of client records when FHC is not available. The index card is part of the indexing system, and contains the basic identification information about the client and the date of her clinic visitations. Index cards are filed in a separate cabinet according to the date of last visit.

Information on fees collected from the client and the purpose of the visit are also recorded on the index card.

### 5.a.4 The family folder

The clinic-retained cards are filed according to the registration number. All the cards of one family members use the same registration number, and these are kept in a Family Folder which has the registration number written on it. The Family Folders are filed serially. Whenever a client returns for service, the Family Folder is retrieved and the records are updated accordingly. The folders are then refiled by the registration number. If new cards are required by any family member, these cards are also put in the same Family Folder.

### 5.a.5 Reporting formats

The monthly reporting format was revised to correspond with the new recording formats. The reporting formats fulfilled the external reporting requirements to donor agency and to the government. Weekly compilation of the reports was excluded, and a daily tally sheet for the whole month was introduced. This format has now been adopted by all the clinics of CWFP in Dhaka City.

Some of the reporting/recording formats were maintained. For example, GoB requires an audit register to be maintained for IUDs; similarly, the government has issued a tally sheet for EPI. Both of these reporting formats were maintained, with care taken not to duplicate information while incorporating it into the overall clinic performance reports.

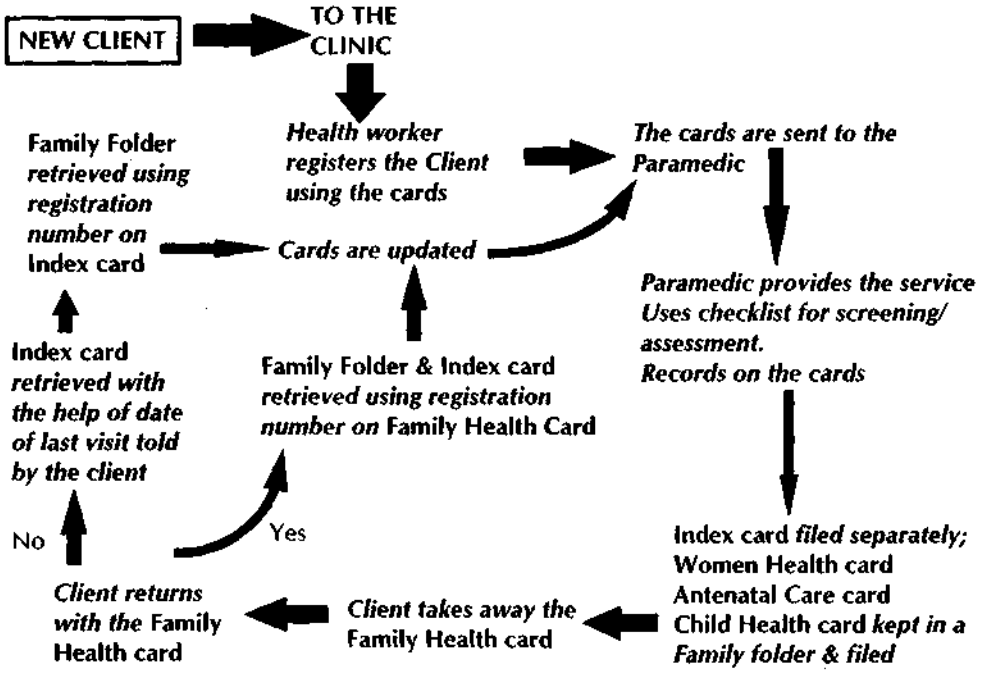
The clinics were maintaining different stock-keeping formats for medicines from three different sources. During the course of CIS testing, uniform formats for medicine stock keeping and reporting were introduced.

### 5.b How CIS works

This section describes the flow of cards from the initial registration of the client to provision of service by the paramedic and then filing and retrieval of the cards (Fig. 1).

When a client first comes to the clinic, her/his basic information is recorded on the Index card, the Family Health card, and on any one or more of the service record cards as appropriate for the concerned client, and a new family folder is created. A new registration number is given to the cards and the folder. A charge of Tk. 5 is taken from the client during this initial registration. (This charge is enforced every time the family health card is lost and a new one is to be issued).

**Fig.1: Record Keeping flow at the clinic**




This registration is usually the responsibility of the health worker; however, when attendance is high, particularly on immunization days, the office secretary and occasionally the field supervisors, have assisted with client registration. The health worker (or the office secretary or supervisors) fills in the registration section of the cards only, and provides health education or counseling to the clients. The cards are then sent to the paramedic.

The paramedic provides services to the clients, and records the necessary information on the cards. She uses the family planning method-screening checklist to screen any new injectable or IUD acceptors. Follow-

up of injectable or IUD users is recorded in the general visit information section. Similarly, the ANC/PNC card or child health card is used for recording relevant information.

After providing the services and making the appropriate records, the paramedic gives the Family Health card to the client and puts all the other cards into the Family Folder. All the Family Folders are stacked together. At the end of the day, both the paramedic and the health worker sit together to fill in the daily reporting tally sheet. After that, the folders are filed according to the registration number in the file cabinet, and the index cards are filed by the date of last visit separately in another cabinet.

When the client returns to the clinic on another day, she brings the family health card with her. With the help of the registration number and the date of last visit recorded on the family health card, the health worker retrieves the family folder and the index card. Minimal amount of registration information is required to be updated during these revisits. However, a new card may have to be issued if the client is seeking a different type of service during this visit. Whatever the case, all the cards for the same family are kept in a single family folder. The cards are then sent to the paramedic, and the whole procedure as mentioned above is repeated.

If the client does not bring the family health card to the clinic it is difficult to retrieve her records from the file cabinet. In such cases, the index card serves as the back-up. The index cards are filed by the date of last visit of the clients. By knowing from the client the date of her last visit to the clinic, the index card can be retrieved. The registration number on the index card then guides the retrieval of the family folder.

### 5.c How the Intervention is being Implemented

The intervention was tested in two CWFP clinics in Dhaka City (Annex 2). Testing of the intervention began from January 1996. Based on the pre-testing findings, a few modifications/revisions of the formats/system were made. The clinic staff, including the unit coordinators and office secretaries, received a half-day training on the system, particularly on how to record in different sections of the cards.

The respective unit coordinators were directly responsible for the supervision of the implementation of the intervention. Regular monitoring of the implementation of the intervention was done, and necessary technical assistance was provided accordingly by the UEP staff. Staff from the Operations Research section (ORS) of CWFP were also involved in monitoring the intervention. Regular CIS review meetings were also held with the participation of staff from the intervention clinics, managers from central office and the Operations Research section (ORS) of CWFP and staff from UEP. During these meetings, the implementation of the intervention was reviewed, and important decisions were taken. Training and workshops were also held during the course of CIS implementation.

## 6. Evaluation of the Intervention

The research questions related to the intervention were:

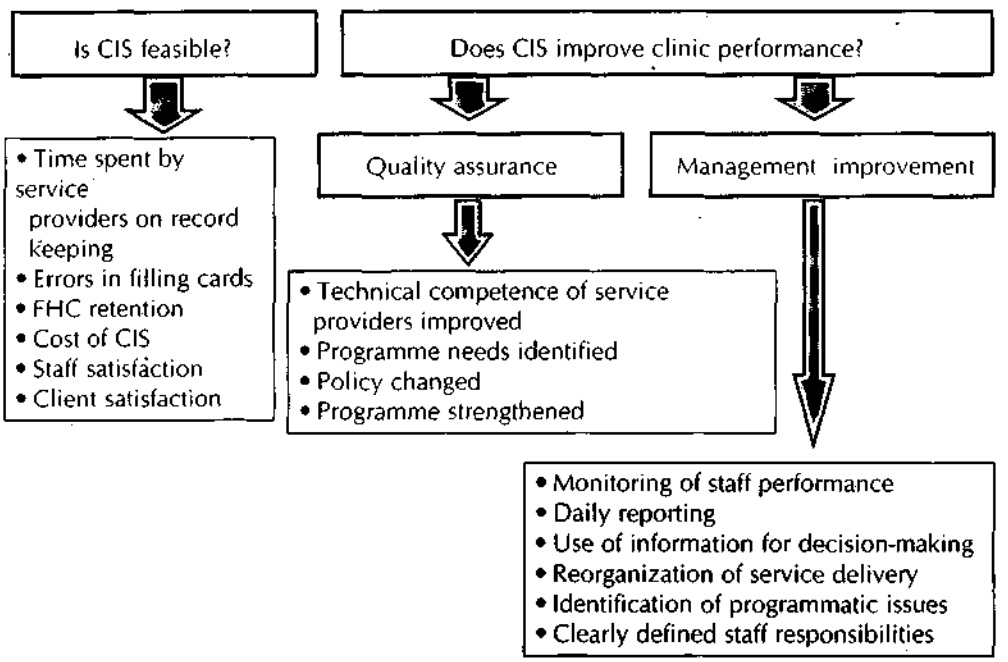
I) Is CIS feasible? And

ii) Does CIS improve the clinic performance?

The impact of CIS on clinic performance was evaluated according to two broad categories (Fig. 2):

a) Quality of service, and
b) Management of the clinic/programme.

**Fig. 2: Research questions and indicators for evaluation of CIS**



## 6.a Feasibility of Using CIS

### 6.a.i Time spent by service providers on record keeping

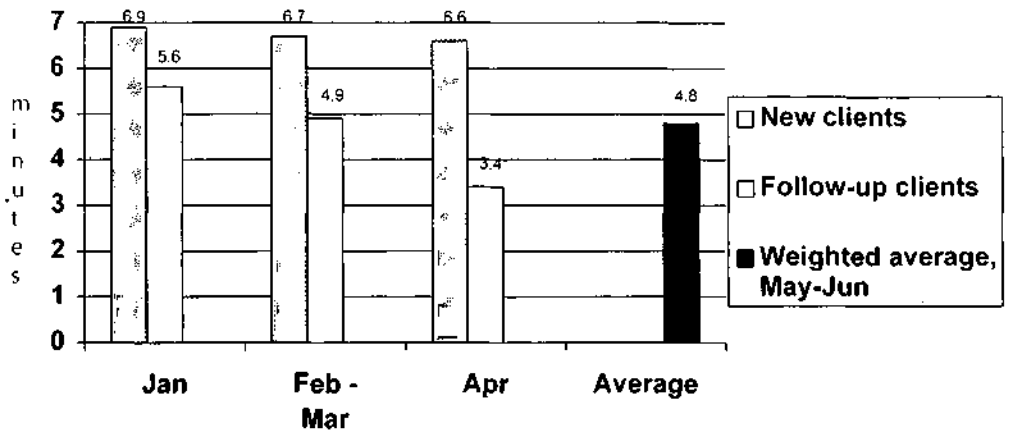
#### 6.a.i.1 Time for registration of clients

Both the health worker and the paramedic have to record on specific sections of the cards. The health worker completes the registration section of the cards. The paramedic is primarily responsible for providing services to the clients and records on the relevant sections of the cards while doing so. The time taken by the paramedic to record on the cards includes the total time taken by her to provide service and record client information. Therefore, findings from observations on the time taken by health worker and paramedic to record on the cards have different connotations.

It is worth to point out here that there are two types of clinic users: the first time clinic visitors, and the returning clients. With the register-based system, the registration procedures were the same for the both; all clients had to be registered during each visit. However, with CIS the time taken to register a new client is the time taken to record basic information about the client on different cards. The time taken for registering the returning clients includes the time taken to retrieve the Index Card and the Family Folder, and to update the information on the cards (including the Family Health Card).

**Fig. 3: Time taken during registration of clients at clinics using CIS**

1996




Source: Observation of health workers in intervention clinics

Figure 3 shows that the time required for registering both the new and returning clients has decreased since the beginning of CIS testing. Furthermore, with a substantial increase in the ratio of follow-up clients over the new clients, the overall average time required to register a client has decreased considerably, to less than five minutes. This time also includes the time for counseling/health education done by the health worker during the registration process.

### 6.a.i.2 Distribution of time spent per day by service providers

The overall time spent by the health worker for client registration or updating client information was also observed.

**Table 1. Distribution of time spent per day by health worker, Sep-Oct 1996**

| Daily activities | Average time spent by health worker each day | | | |
|---|---|---|---|---|
| | CIS clinics | | Comparison clinics | |
| | Time (in minutes) | % | Time (in minutes) | % |
| Preparatory work | 24 | 6.1 | 34 | 9.1 |
| Client registration, updating information | 144.3 | 36.6 | 95.1 | 25.5 |
| Service delivery by health worker | 69.1 | 17.5 | 50.5 | 13.5 |
| Reporting and filing | 50 | 12.7 | 35.8 | 9.6 |
| Other activities | 106.7 | 27.1 | 157.6 | 42.3 |
| Total time | 394.1 | | 373 | |
| Average client per day | 31 | | 18 | |

Source: Observation of health workers in intervention and comparison clinics.

Table 1 shows that though in the CIS clinics the health worker is spending more time for record keeping, she is also spending more time in service delivery. The time spent in other activities, which includes leisure time, is about 27% in the CIS clinics in contrast to above 42% in the comparison clinics.

The number of average clients seen by the health worker in the comparison clinic is less than the average number of clients served by the paramedic there. This is because some of the clients are attended directly by the paramedic who also does recording on client cards and clinic registers.

Similarly, the overall time spent by the paramedic in record keeping was observed. However, since the service delivery and recording on the cards were done simultaneously, it was not possible to separate out the time taken by the paramedics to complete the cards. Table 2 presents the distribution of the paramedics' time for different activities during a day.

**Table 2. Distribution of time spent per day by paramedic, Sep-Oct 1996**

| | Average time spent by health worker each day | | | |
|---|---|---|---|---|
| | CIS clinics | | Comparison clinics | |
| Daily activities | Time (in minutes) | % | Time (in minutes) | % |
| Preparatory work | 32.5 | 8.3 | 36 | 9.2 |
| Service delivery, including recording | 203.6 | 52.2 | 159.9 | 41 |
| Reporting and filing | 27.7 | 7.1 | 53.4 | 13.7 |
| Other activities | 126.2 | 32.4 | 140.7 | 36.1 |
| Total time | 390 | | 390 | |
| Average client per day | 29 | | 30 | |

Source: Observation of paramedics in intervention and comparison clinics.

In the CIS clinics, the paramedic was spending more time for service delivery and record keeping, but she spent less time for daily reporting and filing. In both the intervention and comparison clinics, the paramedics have 32% and 36% respectively of her time that she can

dedicate for service delivery. Spending more time for service delivery and record keeping did not affect the average number of clients a paramedic served per day in the CIS clinic.

### 6.a.ii Errors in filling cards

To assess how comfortable the clinic staff are in filling the cards, the errors (both errors of omissions and mistakes) in filling the cards were evaluated.

#### 6.a.ii.1 Errors in completing the registration section of cards

Errors made by the clinic staff in completing the registration section from the beginning of the testing period were very few. In the first month of CIS implementation, out of the 6,656 entries recorded, 191 errors (2.9%) were made by staff (health worker, office secretary, or field supervisors) during the initial registration of clients. During the initial three months of CIS implementation, these errors were pointed out to the service providers. Over time, the number of errors decreased further. In April 1996, of the 5,680 entries recorded, the staff made 48 errors (0.8%); whereas in December 1996, it was about only 22 errors (0.7% of 3,227 entries).

#### 6.a.ii.2 Errors by paramedic in filling cards

The paramedic must record all the information gathered during service provision in the correct place in each card. This includes making appropriate marks on the various check-lists and writing the advice/treatment and the due date on both the clinic and the Family Health cards. The paramedics were trained on these topics and were given instructions during regular intervention-monitoring activities.

Review of sections of the cards to be completed by the paramedics showed that the number of errors made was relatively small. In the initial month of CIS testing, it was 2.9% (129 errors) of the total 4,462 entries recorded; in April 1996, it was 228 errors (5.4% of 4,236 entries recorded), and in December 1996, 1.0% (26 errors of 2,485 entries). Since certain procedures may not be applicable in case of a particular client during a particular visit, the paramedics were instructed to put a dash (-) in the appropriate box to denote that the examination was not considered necessary. Most errors observed were omissions of putting dashes where applicable.

### 6.a.iii Family Health Card (FHC) retention

One of the indicators for the evaluation of intervention was to assess whether clients actually retain the Family Health Cards. A cohort of clients visiting the clinic in January 1996 were registered. Since the follow-up of the selected clients was to be done by the field workers, those residing outside the area served by the field workers of the unit at the time of their visit were excluded. The selected clients were followed-up at their homes during April 1996 to assess how many of these clients have retained their Family Health Cards three months after issue.

A total of 711 clients were registered. Those who were residing outside the area served by the field workers of the unit were excluded. Of the rest, 300 clients were randomly selected. Among these selected clients, houses of 44 clients in one area could not be visited because of the absence of a field worker during the follow-up period. Therefore, the actual sample size was 256. However, during the home-visits to these selected clients, only 136 clients could be followed up. The rest 120 had migrated out or were not present at home during the visit by the

interviewers. In a few cases their address was wrong and could not be traced down. (Annex 3: Distribution of clients who could not be followed during the FHC retention study).

Similarly, the same cohort was followed up after six months , i.e. in August 1996. Clients were selected randomly. Those who, according to the field workers' records, have migrated out of the area served by the field workers of the unit during the past six months or were residing outside that area, were excluded. Among those selected for this follow-up visit, 120 clients could not be followed due mostly to out-migration or their absence during the visit by the interviewers. A few had wrong address written on the cards.

During February 1997, another sample study was conducted on clients who were registered in January 1996. All those who were excluded during the previous follow-ups due to change in address, wrong address, or residing outside the project area were excluded. Among the rest those clients who were known to the field workers to have recently out-migrated were also excluded. Thereby, 309 clients were selected for study. Of them, 230 were randomly selected. Among them, only 133 could be followed up. The rest 97 clients had their address changed or were absent during the visit by the interviewers.

Table 3 shows the distribution of clients who could be followed at their home by the status of retention of FHC by them.

**Table 3. Family Health Card (FHC) retention, January 1996-February 1997**

| Status of FHC retention | Distribution of clients followed at home during the visit by interviewer* | | | | | |
|---|---|---|---|---|---|---|
| | **After three months of issue** (n = 136) | | **After six months of issue** (n = 134) | | **After a year of issue** (n = 133) | |
| FHC Found | 130 | (95.5%) | 122 | (91.0%) | 104 | (78.2%) |
| FHC lost | 4 | (2.9%) | 6 | (4.5%) | 17 | (12.8%) |
| Card not found | 2 | (1.5%) | 6 | (4.5%) | 12 | (9.0%) |

*Distribution of clients who could not be followed during the survey is given in Annex 3.
Source: FHC retention study

The retention of FHC was also studied by observing the number of revisiting clients bringing FHCs with them to the clinic. During April-May 1996, 343 of the revisiting clients were observed. Of them, 341 (99.4%) brought FHC with them, while 2 (0.6%) did not bring it. In case of these 2 clients who did not bring FHC, both of their index cards were retrieved by the health worker using the date of their last visit as the reference, and the Family Folders were retrieved.

### 6.a.iv Cost of CIS

This section deals with the operational cost of implementing CIS, and presents a comparison with the register-based information system for the clinics. The main focus of this section is to analyze the cost that would be necessary for implementing the system in other clinic setting.

Table 4 lists the different inputs by their category that incurred cost for CIS.

**Table 4. Items incurring capital and recurrent cost for implementation of CIS**

| Category | Input | |
|---|---|---|
| A. Capital | 1. Furniture | a. 4-drawer file cabinet<br>b. 12-drawer cabinet for index cards |
| | 2. Basic Training - | non-recurrent |
| B. Recurrent | 1. Supplies | Family Health Cards<br>Index Cards<br>Woman's Health Cards<br>Child Health Cards<br>ANC/PNC Cards<br>Plastic covers for FHC<br>Family Folders |
| | 2. Personnel | Paramedic, Health Worker, Other field staff |

## A. Capital Cost

**1. Furniture:** In each intervention clinic, two types of file cabinets were needed, one for storing the Family Folders and the other for index cards. The cost of these items is shown in table 5.

**Table 5. Costs of file cabinets for CIS, per clinic (taka)**

| Item | Cost per piece | Pieces needed | Total Cost |
|---|---|---|---|
| 4-drawer file cabinet | 3500 | 1 | 3500 |
| 12-drawer index file cabinet | 6950 | 1 | 6950 |
| TOTAL | | | 10450 |

Source: ICDDR,B

Because the capital costs are incurred periodically, but the benefits are enjoyed over time, the capital expenditures must be adjusted to determine what portion of the total cost should be included in the annual cost. The most commonly used method is "Straight Line Depreciation," in which the total cost is spread evenly over the life of the equipment by simply dividing the cost by the expected years of useful life and allocating this cost to the annual cost of the activities.[1]

Annual Cost = Total Cost/Useful Life

The useful life for furniture, e.g. the steel drawers in this case have been estimated as 10 years. Therefore, the annual cost of the two drawers would be:

Annual cost of drawers = Tk 10,450 / 10 = Tk 1,045. per year

**2. Basic Training - Non-Recurrent:** The staff of the intervention clinics were provided a half-day training on CIS before the pre-testing. Later, another half-day orientation was organized for the staff before the testing. The training was facilitated by staff from UEP and ORS of CWFP. About Tk.1000 was spent on stationeries and refreshment during the training. Since the training was held after the usual clinic hours, the clinic activity was not hampered. No per diem was provided to the participants or the facilitators.

In August 1996, the health worker of one of the intervention clinics was replaced by a health worker from another unit of CWFP. No formal training was organized for that staff. The unit coordinator and the paramedic provided her hands-on training.

---

[1]Hanson K, Gilson L: Cost, resources and financing methodology: a practical manual. UNICEF, Bamako Initiative technical report series number 16; 64-65

## B. Recurrent Costs

### 1. Supplies - Cost of cards and folders

Table 6 gives the number of different types of cards that were required during one year in the two intervention clinics.

**Table 6. Cost of printing and procuring cards for Intervention Clinics: 1996**

| Item | One year | Cost per piece * | Total cost |
|---|---|---|---|
| FHC | 5,148 | Tk 6.6 | Tk 33976.8 |
| Plastic | 5,148 | Tk 7.00 | Tk 36036 |
| Index Card | 5,148 | Tk 4.00 | Tk 20592 |
| Family Folder | 3,401 | Tk 5.1 | Tk 17345.1 |
| WHC | 2,513 | Tk 7.00 | Tk 17591 |
| CHC | 423 | Tk 7.00 | Tk 2961 |
| ANC | 647 | Tk 7.00 | Tk 4529 |
| Total | | | Tk 133031 |

Source: CIS, *ICDDR,B

Therefore, the average annual cost of supplies unique for CIS in each clinic is:

Tk 133,030.9 / 2 clinic = Tk 66,515.5 per clinic.

The total cost of CIS per clinic would be:

| | | |
|---|---|---|
| Annual capital cost: | Tk | 1,045 |
| Training cost: | Tk | 500 |
| Cost of supplies: | Tk | 66,515.5 |
| **Total:** | **Tk** | **68,060.5** |

The average of annual client load per intervention clinic has been estimated as 2,574 clients. Therefore, the unit cost per client is:

Tk 68,060.5 /2,574 = Tk 26.44 per client

Data from CIS cards show that, on an average, each client has visited the clinic 1.9 time during the 7-month period of CIS implementation. Considering this as an standard practice over a year, the cost per service or client visit would be:

Tk 26.44 / 1.9 = Tk 13.9 per visit.

The implication is, therefore, that the unit cost of CIS per visit would decrease further if the average number of visits per client increases. It would be interesting to follow the client visit pattern to see the proportion of clients who continue to visit the clinic for more than a year's period. In which case the annualization factor for the cards has to be considered as well.

It should be mentioned here that, the unit cost for each type of cards used in the analysis above is the cost of printing and procurement from ICDDR,B sources. The printing and procurement cost of these cards from local printers is much lower. Also, with the increase in volume the cost of printing goes down. The gains from printing in large numbers suggest that the overall costs for the organization will be less if more clinics use the card system and orders are placed from the central level.

## 2. Personnel Cost

The personnel involved in the intervention clinics have remained the same as in the pre-intervention period. Also, their type and number is similar to the staff in the comparison clinics. However, data show that in the CIS intervention clinics the service providers take more time per client than in the comparison clinics. Hence, it seems rational to consider the personnel cost added to CIS cost per unit, i.e. per client served. This cost analysis is done keeping in mind that, particularly in case of the paramedics, the actual record-keeping activity cannot be separated out from the service-delivery activity. Nevertheless, it should be mentioned that, since the implementation of CIS, the technical quality of services, particularly screening of new family planning clients, antenatal check-up clients and assessment of children with diarrhoea or acute respiratory infections, have improved. Furthermore, the laboratory test, e.g. tests for albumin and sugar in urine, which hitherto was done by the untrained staff ('aya') of the clinic, is being done by the paramedics themselves. All these have an incremental effect on the time the paramedic spends for each client.

In this backdrop, the analysis of the personnel cost for CIS is presented in table 7.

**Table 7. Personnel cost per client in intervention clinics 1996**

| Clinic staff | Staff salary per working minute* in taka | Average time spent per client* in minutes | Personnel cost per client in taka |
|---|---|---|---|
| **Gandaria** | | | |
| Paramedic | 0.65 | 10.4 | 6.76 |
| Health worker | 0.38 | 5.9 | 2.24 |
| Total | | | 9 |
| **Rayerbazar** | | | |
| Paramedic | 0.55 | 10.4 | 5.72 |
| Health worker | 0.34 | 5.9 | 2 |
| Total | | | 7.72 |

* The calculations have been presented in the Annex 4.

In the comparison clinics, the weighted average of the time spent by the paramedic and the health worker for each client is 6.7 minutes and 5.8 minutes respectively.

**Table 8. Total incremental cost (material, basic training and personnel costs combined) for CIS clinics 1996**

| Clinic | Incremental material and training cost* in taka | Incremental personnel cost* in taka | Total incremental cost per client in taka |
|---|---|---|---|
| Gandaria | 23.93 | 2.44 | 26.37 |
| Rayerbazar | 23.93 | 2.07 | 26 |

*The calculations have been presented in the annex 5.

### 6.a.v Staff satisfaction

During the regular CIS review meetings, and more importantly during the in-house seminar at the CWFP central office, staff of the intervention clinics expressed their willingness to continue using CIS. The intervention clinic staff, who were previously using registers, found the card system user-friendly and suitable for their setting.

## 6.b Does CIS Improve Programme Performance

### 6.b.i Quality assurance

#### 6.b.i.1 Technical competence of the service providers improved

Direct observations of the paramedics of both the intervention clinics and the comparison clinics were done using the checklists for screening/ check-up on the CIS cards as the standard for comparison. The percentage of clients receiving all (100%) of the minimum required screening and check-up procedures was in the range of 75% - 92% in the CIS clinics, in contrast to 0 - 39% in the comparison clinics.

**Table 9. Percent of clients receiving all (100%) of the minimum required* screening procedures for injectables, 1996-97**

| | CIS Clinic | | Comparison Clinic | |
|---|---|---|---|---|
| Type of service | Mar-Apr 96 (n=47) | Jan-Feb 97 (n=30) | Mar-Apr 96 (n=18) | Jan-Feb 97 (n=22) |
| New injectable acceptor | 91.5% | 96.7% | 0 | 0 |

* Minimum required at both national and international levels and conforming to the organizational policies for standards.

Source: Observation of paramedics

Table 9 shows that, in the intervention clinics, in almost 96% of the new FP clients coming for injectable, the paramedics carried out the minimum required screening of the clients. In comparison clinics, none of the potential injectable contraceptive clients received all of the minimum required screening procedures.

**Table 10. Percent of clients receiving all (100%) of the minimum required* Screening Procedures for IUD, 1996-1997**

| | CIS Clinic | | Comparison Clinic | |
|---|---|---|---|---|
| Type of Service | Mar-Apr 96 (n = 6) | Jan-Feb 97 (n = 5) | Mar-Apr 96 (n = 11) | Jan-Feb 97 (n = 3) |
| New IUD Acceptor | 83.3% | 100% | 0 | 0 |

* Minimum required at both national and international levels and conforming to the organizational policies for standards.

The number of clients in all the columns is very small for any analysis.

Source: Observation of paramedics

**Table 11. Percent of clients receiving all (100%) of the minimum required* antenatal check-up procedures, 1996-1997**

| Type of Service | CIS Clinic | | Comparison Clinic | |
|---|---|---|---|---|
| | Mar-Apr 96 (n = 24) | Jan-Feb 97 (n = 24) | Mar-Apr 96 (n = 13) | Jan-Feb 97 (n = 9) |
| LMP assessed | 100% | 100% | 100% | 100% |
| Past obstetric history taken | 95.8% | 100% | 76.9% | 0 |
| Risk factors assessed | 95.8% | 100% | 0 | 0 |
| History of past obstetric complications taken | 100% | 100% | 0 | 0 |
| Essential ANC exam done** | 75%† | 100% | 38.5% | 0 ✿ |

* Minimum Required at both national and international levels and conforming to the organizational policies for standards.

** Includes: assessing duration of pregnancy; weight, blood pressure, haemoglobin, and urine albumin measurement; jaundice assessment; and abdominal examination.

† Of the 25% (6 clients) who did not receive the full exam, all did not either receive anaemia assessment/testing or urine albumin tests.

✿ The paramedic did not ask about the past obstetric history in any of the clients; among the essential ANC exams the paramedic did not assess jaundice in any case. Other examinations were done.

Source: Observation of paramedics

Table 11 shows that, the paramedics in the intervention clinics followed all the minimal essential procedures for antenatal check-up in almost all the cases. This practice improved over time.

As part of the Essential Service Package intervention, testing of protocol on syndromic management of reproductive tract infections (RTI) started in the two CIS intervention clinics. Training on the protocol was given in June 1996. Later on in January 1997, based on the experiences with CIS implementation, a checklist for assessment of RTI cases was also incorporated in the CIS cards with the objective to help providers in following the protocol for syndromic management of RTI cases. Table 12 presents the practices of the paramedics in diagnosing cases with vaginal discharge.

**Table 12. Procedures followed by paramedics to make diagnosis in cases with vaginal discharge attending the CIS intervention clinics**

| | Before training on RTI protocol Jan-Jun 96 n = 53 | | After training on RTI protocol Jul-Dec 96 n = 50 | | After checklist on RTI was introduced Jan-Feb 97 n = 21 | |
|---|---|---|---|---|---|---|
| **I. Examinations essential for syndromic diagnosis of RTI cases** | | | | | | |
| a. Characteristics of vaginal discharge: white/purulent/ offensive | 10 | (18.9%) | 3 | (6.0%) | 18 | (85.7%) |
| b. Partner's symptoms | 0 | | 1 | (2.0%) | 12 | (57.1%) |
| c. Findings justifying referral | 0 | | 0 | | 0 | |
| **II. Other examinations** | | | | | | |
| a. Amount of vaginal discharge | 40 | (75.5%) | 33 | (66.0%) | 0 | |
| b. Condition of cervix | 46 | (86.8%) | 43 | (86.0%) | 1* | (4.8%) |

* This case was examined by visiting physician who did not use the checklist

Source: CIS clinic cards

In the protocol for syndromic management of cases with vaginal discharge, emphasis has been given on making syndromic diagnosis based on characteristic of the vaginal discharge and presence of partner's symptoms. For the primary care-level clinic, presence of certain symptoms or signs would necessitate referral to a higher level facility. The table above shows that before the introduction of the protocol and even after the training on the protocol, the diagnosis made by the paramedics was based mostly on the amount of vaginal discharge and the condition of cervix. With the introduction of the checklist, syndromic diagnosis of cases with vaginal discharge was done according to the protocol based primarily on the characteristic of vaginal discharge and the partner's symptoms.

### 6.b.ii Program needs identified

#### 6.b.ii.1 Training needs were confirmed

The CIS cards also assist the service providers to reach a proper diagnosis. An initial examination of the CIS cards revealed that the logical sequence in diagnosing a client (i.e. asking/recording the symptoms, doing physical/laboratory examination, diagnosing based on the findings and providing the treatment based on the diagnosis) was not well followed.

Similarly, the checklist for assessing of a child with diarrhoea or cough and cold was not properly used by the paramedic, mainly due to a lack of training on the assessment procedures. Furthermore, the dysentery cases were not classified as diarrhoea and, therefore, dehydration assessment was not seen as necessary.

The need for training in these areas was identified during the development of CIS. However, these needs were confirmed by the findings from review of the CIS cards. Informal training for paramedics was organized to explain how to record relevant information on the card and how it should help in properly diagnosing a client. Furthermore, in response to the above finding, staff from both the CIS clinics were included in training/orientation programme on diarrhoeal diseases, RTI, ANC/PNC, and family planning organized by the project as part of the intervention to design and implement a basic package of essential reproductive health and child survival services.

### 6.b.iii Policy changed

#### 6.b.iii.1 Changes in organizational policies regarding quality of care

The introduction of CIS has led to two major policy changes in the organization. Analysis of the cards from pre-testing period showed that despite their refusal to undergo pelvic examinations, injectable contraceptive was provided to new prospective acceptors. The clinic staff would not refuse the woman if she was found otherwise eligible for injectable. Since then, the organization has made it a policy matter that all prospective injectable acceptors must have a pelvic examination as a part of the screening procedure.

The second policy decision on the quality issue was to re-screen the injectable clients who had their previous doses from some other service providers. The screening checklist on the Woman's Health Card would be used for ruling out any contraindications, since such clients do not always have records of their previous doses, and the reliability of the screening done at the other service points may be questionable.

### 6.b.iv Program strenghtened

#### 6.b.iv.1 Follow up of injectable clients established

The index cards were initially designed as a back up for client identification. However, over the course of time the index cards were also used for other management purposes. For example, the index cards were used for identifying those contraceptive clients who did not show up at the clinic within the due date for their next dose of injectable contraceptive - the "no-show" injectable clients. The names and addresses of these clients were then provided to the field workers by their supervisors. The field workers maintain Couple Registration Books (CRB) which contain information about individual clients in a given area. Those "no-show" injectable clients who were registered in CRB were identified and followed up at their homes.

**Case Study: 1**

In July and August 1996, the field supervisors in the two intervention areas browsed through the index cards of clients who had visited the clinic in March or April 1996 and had not revisited the clinic later. The filing of index cards by the date of last visit in a separate cabinet makes that easy. Table 13 shows the results of this exercise.

**Table 13. Status of "no-show" injectable clients after follow-up by field workers, July-August 1996**

| Status of No-Show Injectable Clients after Follow-up by Field Workers. | n = 63* |
|---|---|
| Changed address | 29 |
| Switched to another method | 8 |
| Dropped-out due to side-effects | 7 |
| Want child | 1 |
| Residing outside project area | 6 |
| Motivated by field workers and returned for injectable contraceptive | 4 |
| Could not be identified | 3 |
| Received due dose but information not updated on index card | 5 |
| **Total** | **63** |

* Those no-show injectable clients who were identified by their address on the index cards as residing outside the project area are not included.

Source: CIS clinic cards

This exercise of identifying injectable no-show clients by reviewing the index cards have become a routine activity for the supervisors.

## 6.c Management Improvement

### 6.c.i Monitoring of staff performance

The unit coordinators of the CIS intervention clinics consider that CIS helps monitor the clinic staff. With CIS, the unit coordinators say they often use the index cards to check what is happening in the clinic. Since these are kept separately, they can do this without disturbing the clinic activity, or making the staff members aware of that she is checking. Similarly, she can check, at random, the family folders at any time, and

review whether the screening steps are being done properly; this can also be done without the inconvenience of the paramedic.

### 6.c.ii Reporting

Previously, the clinic performance reports were completed using only the general register. Usually this had to be done by the paramedic, since she wrote reasons for visit and the methods/medicine/advice given. This meant that services could not be given while reporting was being done. As a consequence, the paramedic completed the daily repoting formats once at the end of the week or the month. With CIS, more than one person could do the reporting at the same time. In addition, because of the format of the cards from which the report is filled, it was easy for any staff member, particularly the health worker, to understand and correctly complete the report. This had an important implication for the daily reporting exercise; the health worker could assist the paramedic in compiling the daily reports. The usual time for providing services was not compromised, and the daily report was completed on a daily basis.

The information from the daily report was compiled to prepare a monthly report for submission to the central office of the organization. The same information was used for completing the GoB reporting format.

### 6.c.iii Use of information for decision making

The following examples portray ways in which the managers and the supervisors used the data generated from CIS.

### 6.c.iii.1 Reorganization of service delivery

**Case Study: 2**

In all the CWFP clinics, one day of the week is designated as the EPI day, i.e. on this day only immunization is provided. Since there is a large client load on this day, other services are usually not provided. Pregnant women coming for TT doses were advised to come at a later date for antenatal check-up. However, many pregnant women came for TT doses but did not return for ANC check-up or vice versa. This was an issue the clinic staff and mangers were aware of. They had tried to reorganize service delivery to pregnant women on the immunization days, but could not carry on with that due to heavy client load on those days. Review of the CIS cards revealed the same issue. This was again presented at a CIS review meeting attended by the clinic staff, Unit Coordinator and the staff from central level of CWFP. It was decided in that meeting to provide ANC services to pregnant women on EPI days. This was implemented in one of the intervention clinics. During July 1996, 82 ANC visits were recorded. This number is almost 4 times the number of ANC visits recorded during the entire previous year for that clinic. In addition, 42 of these visits were follow-up visits which meant that the ratio of first to follow-up the ANC visits has also been improving.

This reorganization of antenatal services on immunization days was possible due to a number of reasons. Registration of clients with CIS is relatively easy. The office secretary and the field supervisors could assist the health worker with client registration. As a result, the roles of clinic work could be redefined on immunization days to allow health workers to provide EPI doses as much as possible, sparing the paramedic to perform ANC check-ups. Pregnant women coming for TT doses were

informed at the registration desk about the availability of antenatal services and those willing to avail of the service were provided antenatal check-up by the paramedic. The field workers also disseminated the information to their clients. All of this influenced the ANC performance of the clinic.

### 6.c.iv Identification of programmatic issues

With the help of the CIS cards, the clinic/unit managers could identify and analyze the issue of high rejection of potential injectable acceptors at the clinic. CIS provided information base for an in-depth analysis of the problem, which helped take a logical decision.

Two case studies are presented here to illustrate how objective information from CIS were used for management decision-taking. The two cases illustrated are the work of the two intervention units staff and show the process by which information generated by CIS was used by the local managers in identifying and analyzing the problem issues.

#### Case Study: 3

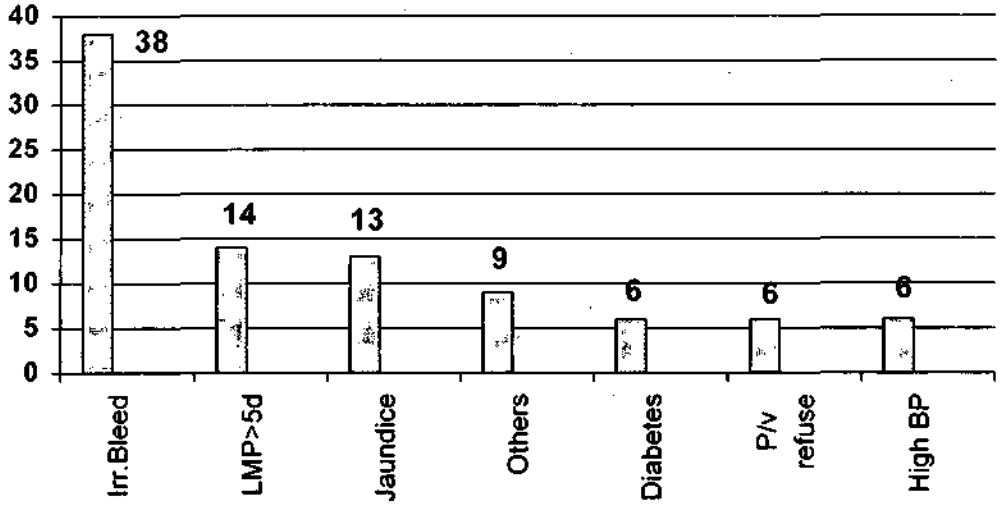
Increasing the proportion of clinical method users has always been a major programme focus. Reporting and review of monthly method mix are a routine exercise done at the unit level. When the unit staff reviewed the month-wise percentage of clinical method users during the past five months, i.e. from January to May 1996, they could see that the proportion of clinical users has remained static at 27-28% of CPR.

The unit coordinator and the supervisors decided to go into the depth of the issue, and had an option that will provide them more objective information. It was to review the woman health cards of all those new clients who came to the clinic for clinical methods.

What they found is that during the past five months, 100 of the 252 potential injectable acceptors, were rejected at the clinic; while 11 of the 39 potential IUD acceptors were rejected the method.

This alerted the unit coordinator and supervisors. They wanted to have more information as to why so many potential injectable clients were rejected. Simple tallying and plotting in a graph the reasons of rejection as recorded on the woman's health cards of the rejected clients gave them the answer (Fig. 4). Thirty-eight clients were rejected due to reasons recorded as irregular bleeding; 14 were 5 days past their last menstrual period (LMP); 13 has had jaundice and then there other reasons recorded for rejection.

**Fig. 4: Unit A - Causes of rejection of potential injectable acceptors (n = 100) Jan-May 1996**




Source: CIS Cards

Discussions by the unit coordinator and the supervisors with the paramedic and the field workers revealed that most of these clients who were rejected were using pills and came to the clinic for injectables after stopping taking pills at the middle of the cycle. Some came because they were not aware that injectable is contraindicated for them because of their irregular menstruation history. But then why clients on pills come at the middle of their cycle after stopping taking pills? The reasons that the unit staff thought of were:

i. that counseling was not properly done to these clients,
ii. there is a provision for the field workers to have a reminder visit to potential clinical method users before the next menstruation date; such visits were not always carried out;
iii. field workers were also not aware of the issue.

Taking into consideration all the possible issues identified through the exercise, the unit decided:

- To provide on-the-job training to the field workers on counseling;
- That supervisors will assist field workers to ensure the reminder visits to potential clinical method users; and
- Proper counseling will be ensured to the potential injectable users who are currently using pills.
- One important lesson that the unit learned from the exercise was that having necessary data available helps in going into the depth of a problem issue. And recording the information correctly is one of the pre-requisites. Had the paramedic recorded that potential clients were rejected because of stopping pills at the middle of the cycle instead of tagging them as having irregular bleeding, the unit could have a more

firm basis for taking decision. So, one of the decisions was that the paramedic will record the reason of rejection specifically.

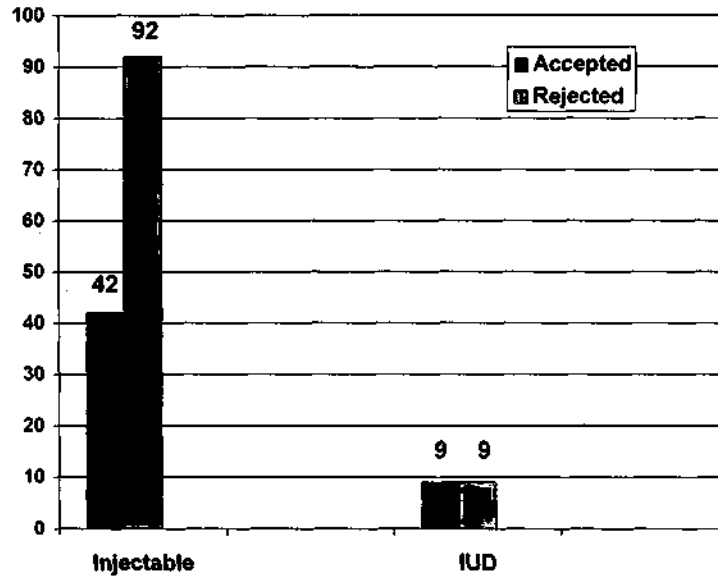
- Having realized the usefulness of the exercise, the unit also decided to have a similar exercise after five months to monitor the changes that may have happened by implementing their decisions.

## Case Study: 4

It may be noted that in case 3 the issue was identified through a data-based routine monitoring activity. In case 4, which is in another clinic setting, the issue was raised as a general complaint by the field workers of the unit that clients referred by them to the clinic for clinical method were rejected at the clinic. The unit coordinator, supervisors and paramedic wanted to verify it. They reviewed the woman's health cards of the new FP clients coming to the clinic for clinical methods.

Of the 134 potential injectable clients coming to the clinic during the past five months, 92 were rejected, i.e. almost two-thirds of such clients were rejected. And 50% of the potential IUD clients were rejected (Fig. 5).

**Fig. 5: Unit B - Distribution of new FP clients by rejection Jan-May 1996**

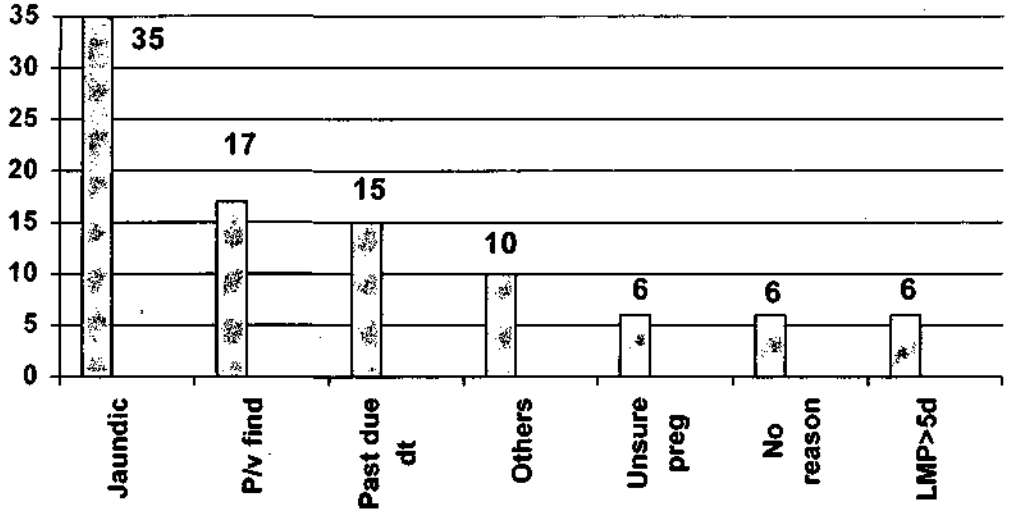



Source: CIS Card

In this case also, the unit staff used CIS to get into further details of the issue. From the records on the woman's health cards of the rejected injectable clients they were able to identify that 35 of the 92 such clients the cause of rejection was recorded as jaundice, 17 were rejected during per vaginal examination and then there were other reasons as well (Fig 6).

The high number of rejection due to jaundice got the attention of the unit staff. The unit coordinator along with the supervisors, paramedic and the field workers tried to look into the possible reasons of so many clients coming with history of jaundice.

**Fig. 6: Unit B - Causes of rejection of potential injectable acceptors (n = 92) Jan-May 1996**




Source: CIS Card

From the clients' perspective it may be that jaundice was endemic in the area, or that clients were not providing correct information to the field workers and the paramedic. From the service providers' perspective, there could be two possible reasons; one that the field workers were not asking certain screening questions before referring clients to the clinic, or, the paramedic was having difficulty in assessing jaundice.

For the first two, the unit staff could do very little. So, they picked up the latter two issues to be addressed. They decided that:

- the unit coordinator would seek technical assistance from the Medical Director of the organization,
- proper counseling of the clients would be ensured through supervision and on-job training of the field workers, and
- the unit coordinator would monitor the paramedic giving appropriate counseling to rejected clients.

The above case studies portray how CIS helped the local managers by highlighting areas that need attention, and by providing the information base for in-depth analysis of a programme situation to pin-point the root cause of the problem necessary for decision-making.

## 7. Discussion

The traditional emphasis of the MCH-FP programme in Bangladesh - in government and non-government agencies - has been the distribution of contraceptives and other services in the community, as close as possible to the clients household. This approach has relegated clinical activities to a relatively marginal role: a complement of the community services. As a result, up to now, clinic information systems have not really been the focus of attention of the programme managers.

But the in urban areas, where nearly 40% of the couples using oral contraceptives and condoms obtain their supplies from pharmacies and clinics[2], there is a growing interest in the role of clinics and on the information systems needed for the delivery of essential clinical services.

[2]Mookherji S, et al. The Role of Pharmacies in Providing Family Planning and Health services to Residents of Dhaka, Bangladesh. Working Paper No. 21, ICDDR,B; 1996

Among other factors, this interest in the urban clinics is motivated by the following :

a) the need to ensure the wide availability and accessibility of a basic package of quality essential services which includes clinic-based management of conditions, such as RTI and ARI, to all socio-economic urban groups;

b) the need to promote more reliable contraceptive methods; and above all,

c) the need to institutionalize more sustainable service-delivery strategies.

The standard practice - in most government and NGO clinics - is to maintain separate register books in which staff record individual services provided to clients. This method is relatively inexpensive, easy to install, and despite the double recording of information, it is very useful for reporting daily clinic outputs. On the other hand, the registers tend to inhibit the ability of clinic staff to provide continuity of care, do not encourage the identification of individual clients' needs nor enable staff to track down the clients' past attendances to the clinic. From the overall perspective of the clinic managers, service registers have a very limited use in promoting and monitoring the quality issues. Finally, the current system of registers has the added limitation of relying on separate entries per registry and, thus, creating duplication of information and paper work for staff.

The separate clinic registers reflect a stage in the development of the health and family planning programme in which the primary organizational concern is the reporting of outputs and coverage rather than the use of the information by staff or their immediate supervisors. Also, at this stage the use of information by the client or staff tends to be only considered to remind clients about the next vaccine or injectable contraceptive dose. Thus, in most cases, in addition to the clinic registers, service providers have used also single-service client-held cards for users of IUDs, injectable clients, pregnant women and children receiving vaccines under the Expanded Programme on Immunization. But past attempts to replace registers and develop an integrated card system have been quickly abandoned on grounds of costs and space requirements without adequate evaluations of the benefits of the system.

Nevertheless, for those organizations, like CWFP who adhere to the principles formulated in Cairo by ICPD, programme requirements have changed, and more information is needed to monitor the quality of services. In practice, this means developing user-friendly systems with information that enable the identification of unmet needs, the reduction of missed opportunities, the application of clinical protocols and the provision of continuity of care.

### 7.a Support for shift in programme emphasis

CIS represents an evolution from the service statistics-based clinic record-keeping system to a client-centred information system. The preliminary assessments clearly indicate that CIS supports a shift in programme emphasis toward the implementation of a Essential Service Package and the provision of customized services to match client needs The results also indicate that clinic staff find the card system easy to use.

### 7.b Family Health Cards

The high retention rate of FHC indicates the importance attached to this card by the clients. The retention rate of FHC is similar to that of the EPI cards.[3]

FHC contains more information than the EPI card, and its use would last probably for a much longer period. The EPI card has a nationwide recognition and acceptability by all providers of immunization services. FHC, on the other hand, was provided only to clients coming to the intervention clinics. Since not all clients could be followed, the results of the study on the retention rate of FHC have some limitations. While the retention rates were high among those clients who could be followed, the retention rates among those who out-migrated or were absent are not known.

One of the steps taken by the CWFP clinic managers to promote a wider acceptability of FHC was to brief managers from other organizations through the respective Zonal Health and Family Planning Coordination Committees. However, it has been recognized that much more needs to be done at the higher management levels and - including at the level of government organization - to promote the wider acceptability of FHC.

---

[3] The Urban Panel Survey (UPS) finding on immunization shows that the EPI card retention rate for children aged less than two years receiving any vaccination is 72.5%.

### 7.c Clinic cards

Needs assessment in Dhaka City revealed that procedures for assessment of the clients were not being properly followed in the clinics. It was also noted that in the clinics, existing check-lists for service procedures were not being used, since they were on separate sheets or flip charts. Recording on the clinic cards of CIS requires the paramedic to check each step of assessment and screening checklist. Individual observations and review of cards have shown that the service providers are using the screening/assessment checklists, and completing assessment procedures.

The original cards, however, did not have checklists for reproductive tract infections (RTI) and infant feeding. Staff from the intervention clinics were later trained on the syndromic diagnosis of RTI at primary health care level and counseling for the promotion, protection and support of appropriate infant feeding. The availability of these additional services allowed for refinements to the card system. The findings on practices of paramedics for diagnosing RTI cases indicate that the RTI checklist supported the use of RTI protocol and reinforced the training provided to the paramedics on the syndromic management of RTI. Therefore, together with protocols and training, the service providers require a user-friendly information system that support good management practices.

### 7.d Health workers' assignments and time

As a result of implementing CIS, a clear division of tasks between health worker and paramedic was possible. Also, the tasks of the health worker could be specified. In the non-CIS clinics, the tasks of health worker are not clearly delineated, and as such, the tasks tend to vary

between clinic settings. The health workers's tasks in the comparison clinics are, therefore, not equivalent to that of the CIS clinics. As a result, the time required for registration in the non-CIS comparison clinics cannot be quantitatively compared with that of the CIS clinics. Nevertheless, in the CIS clinics the staff also feel that, compared to the register-based system, the time required for writing and record keeping has reduced since the implementation of CIS.

### 7.e Time Required by Paramedic for Service Delivery

The time needed by the paramedic to serve an individual client increased in the CIS clinics. The largest differences can be seen for new acceptors of family planning and antenatal check-up clients. The increase in time needed to serve these clients can largely be attributed to the fact that the CIS cards include comprerhensive check-lists for family planning screening and antenatal check-ups, and require that the process of screening be recorded on the cards. This may have required more time from the paramedic, but it has a positive bearing on the quality of service provided as well.

The experience of CIS in the intervention clinics has demonstrated that the system can keep its basic user-friendly features indeed, while allowing scope for introducing more changes in the card system and more sophisticated use of information by the managers. Example of this versatility is the application of CIS, by the managers , to identify no-show injectable clients and to pass on this information for targeted visits by field staff. It is also possible to adapt this experience as the basis for the development of an integrated MIS to support a service-delivery system that does not depend on the routine distribution of contraceptives at the household level.

### 7.f Requests for Special Reports

With CIS it was not easy to respond quickly to ad-hoc data request. Routine information was readily available from the system in the form of monthly reports. However, at times the programme managers might have special data needs. The register system served this need better since it was designed to provide tallies of outputs for single services at the expense of the extra record-keeping work load for the service provider. It is difficult for CIS, but not impossible, to meet such sporadic special needs which come once in a while.

### 7.g Conclusion

The results of the evaluation of the intervention show that CIS promotes a client-centred approach to reproductive health and child survival services. At the same time, it can be an effective management support system.

### 7.h The Next Steps: Simpler Information System

The results of this assessment were encouraging, notwithstanding, the implementation team worked with the clinic staff, their supervisors and the relevant sections of CWFP on the identification of practical, sustainable and replicable solutions to a number of limitations exhibited by CIS during this phase. As expected, CIS involved higher costs per client than the method of registers. The cost of CIS per client was relatively high. The incremental cost for CIS was about Tk. 24 per client. The main element responsible for this high cost was the cards. Whatever be the effectiveness of the system, high cost of the system in a way inhibited the programme managers to expand CIS to other clinic settings. Therefore, attempts were made to simplify the cards and reduce the cost as well. Two cards were

developed: one the Family Health Card; and the other, a clinic-retained card. The FHC was redesigned as complementary to the clinic-retained cards, so that it contained sufficient information to ensure, by itself, the continuity of care and the identification of unmet needs. The clinic-retained client card was designed to be used for recording basic family data, supply of contraceptives, woman's health services, ANC/PNC services and child health services, as well as fee collected during each visit. The result was a reduction of about Tk 14 per client. So that the cost of cards used per client in the CIS clinics is reduced from Tk.26 to Tk.12.

The index cards were originally designed to assist the clinic staff retrieve Family Folder in case the client did not bring FHC. However, it was found that almost every client revisiting the clinic brought FHC with her. Use of index cards as a back-up support was minimal. Therefore, with the simplified CIS, the use of index cards was deferred.

Introduction of a single clinic-retained client card also eliminated the use of Family Folders to hold the cards. Also, being smaller and slimmer in size, space requirement for filing the single client card was less. All these added to the reduction of the overall cost of CIS.

Pre-testing of the simplified version of CIS was begun since April 1997.

**Annexes:**

## Annex 1: Registers used for record keeping by non-CIS CWFP clinics

| Register Type | Who is registered | What information is recorded |
|---|---|---|
| 1. General Register | Every clinic client | Name, age, address, reason of visit, treatment/advice given, client number |
| 2. Injectable Register | All new and follow-up injectable users | Name, age, address, client number (different from general register), vital statistics, dose number |
| 3. IUD Register | All new and follow-up IUD users | Name, age, address, client number (different from general register), vital statistics |
| 4. IUD Complication Register | All IUD users who experience a complication or who have a complication during routine follow-up | Name, age, address, type of complication, advice/ treatment given |
| 5. IUD Removal Register | All IUD users who have the device removed | Name, age, address, reason for removal, before expiration date or not |
| 6. Pill Register | All pill users who receive a cycle of pills from the clinic setting | Name, age, address, reason for getting pill from clinic, money received, number of cycles given |

| Register Type | Who is registered | What information is recorded |
|---|---|---|
| 7. Condom Register | All condom users who receive supplies from the clinic setting | Name, age, address, reason for getting supplies from clinic, money received, number of pieces given |
| 8. Donation Register | All clients who make a donation to the clinic | Name, address, amount given |
| 9. Health Education Register | All clients who receive some sort of health education from the health worker | Name, address, topic of health education |
| 10. EPI Register | All women and children who receive an immunization | Name, address, age, type of dose received, whether pregnant or not |

## Annex 2: The CWFP clinic setup

The CWFP clinics selected for testing the intervention are primary health-care level MCH-FP clinics, which provide the following types of services: injectable contraceptives, IUDs, follow-up for any contraceptive side-effects, pill and condom supply, antenatal and postnatal check-ups, immunizations for both women and children, and general curative care for women and children.

The two female service providers are: one paramedic, who has received the standard Government of Bangladesh-approved 18 months training, plus some additional training from CWFP; and one health worker. The health worker is a former field worker who has received additional training on technical topics, such as giving injections. The health worker

assists the paramedic in providing clinical services, and provides EPI vaccinations and follow-up injectable contraceptives along with the paramedic on busy days. Only the paramedic can perform physical examinations and prescribe medicines.

The clinic is supervised by a unit coordinator who is also responsible to supervise field-based activities of the unit. The clinic is situated in the same premises as the unit office and, therefore, the clinic and the field staff have ample opportunity to communicate with each other. The clinic and field staff also participate in the monthly unit meeting.

## Annex 3: Distribution of clients who could not be followed during the FHC retention study

| | Family Health Card (FHC) Retention | | | | | |
|---|---|---|---|---|---|---|
| | After three months of issue (n = 256) | | After six months of issue (n = 254) | | After a year of issue (n = 309) | |
| Client absent | 27 | (10.5%) | 28 | (11.0%) | 23 | (7.4%) |
| Address changed | 49 | (19.2%) | 80 | (31.5%) | 71 | (23.0%) |
| Wrong address on Index card | 22 | (8.6%) | 5 | (1.9%) | 3 | (1.0%) |
| Reside outside FW's area* | 22 | (8.6%) | 7 | (2.8%) | 0 | |
| **Total** | **120** | **(47%)** | **120** | **(47.3%)** | **97** | **(31.4%)** |

(* These were first thought to be within the field worker's catchment area and hence selected. However, later during the FW's visit they were found to be residing outside the area).

## Annex 4: Calculation of staff salary per minute

### Annual time spent by the paramedic for service provision

| Type of service | Average time* in minutes | Projected annual client load** | Total annual time spent in minutes |
|---|---|---|---|
| FP (new) | 21.3 | 826 | 17593.8 |
| FP (follow-up) | 8.5 | 3427 | 29129.5 |
| ANC (new) | 21.5 | 658 | 14147 |
| ANC (follow-up) | 18.2 | 394 | 7170.8 |
| General Health | 9.3 | 973 | 9048.9 |
| Child Health | 7.8 | 832 | 6489.6 |
| Immunization | 5.7 | 7477 | 42618.9 |
| PNC | 22.0 | 73 | 1606 |
| Total | | 14660 | 127804.5 |

Source: * Direct observation of the paramedic providing service in January 1997

** Extrapolation of data from the CIS cards.

Therefore, the average time spent by the paramedic for each client is:

127804.5 min /14660 = 8.72 min per client

**Annual time spent by the health worker for the clients**

| Client | Average time* in minutes | Projected annual client load** | Total annual time spent in minutes |
|---|---|---|---|
| New client | 8.1 | 3074 | 24899.4 |
| Follow-up | 4.4 | 2587 | 11382.8 |
| EPI/TT client | 5.2 | 5114 | 26592.8 |
| Total | | 10775 | 62875 |

Source: Direct observations in October 1996, CIS cards

Therefore, the average time spent by the health worker for each client is:
62875 min / 10775 = 5.8 min per client

**The staff salary per working minute is as follows**

| Clinic Staff | Total annual working time in minutes* | Annual salary (allowances inclusive) in taka | Staff salary per minute in taka |
|---|---|---|---|
| **Gandaria** | | | |
| Paramedic | 97500 | 63480 | 0.65 |
| Health worker | 97500 | 37380 | 0.38 |
| **Rayerbazar** | | | |
| Paramedic | 97500 | 53913.60 | 0.55 |
| Health worker | 97500 | 33331.2 | 0.34 |

Source: Intervention clinics

* Daily working time = 390 minutes
Total working days = 250 per year
Therefore, total annual working time = 390 x 250 = 97500 minutes

## Annex 5: Calculation of incremental personnel and other costs for CIS

**The incremental time spent in the intervention clinics is as follows**

| Staff | Average time spent in intervention clinic in minutes | Average time spent in comparison clinic in minutes | Incremental time required per client in CIS clinic in minutes |
|---|---|---|---|
| Paramedic | 8.72 | 6.7 | 2.02 |
| Health worker | 5.8 | 5.8 | 0 |

**The incremental personnel cost, or in other words the opportunity cost, spent for CIS is:**

| | Incremental time required per client in minutes | Staff salary per minute in taka | Incremental personnel cost in taka |
|---|---|---|---|
| **Gandaria** | | | |
| Paramedic | 2.02 | 0.65 | 1.37 |
| Health | 0 | 0.38 | 0 |
| Total | | | 1.37 |
| **Rayerbazar** | | | |
| Paramedic | 2.02 | 0.55 | 1.47 |
| Health | 0 | 0.34 | 0 |
| Total | | | 1.47 |

**The incremental material* and basic training cost for CIS clinic is:**

| Annual material and basic training cost in CIS clinic in taka | Annual cost of supplies (registers and client cards, excluding EPI cards) in comparison clinic in taka | Difference in taka | Incremental material and training cost for CIS clinic per client in taka (n =2,574 ) |
|---|---|---|---|
| 68,060.5 | 6467.5 | 61593 | 23.93 |

* Material includes drawers, cards, folders and plastic covers.

## Annex 6: Clinic-retained client card

REGISTRATION NO._____

### HEALTH AND FAMILY PLANNING CARD

| Woman's name: | Age: | Live children |
|---|---|---|
| Husband's/father's name: | | M: F: |
| Address: | | FP status : |
| TT status: 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ | | |

| Injectable | Brand | Due | Due | Due | Due | Due | Due | Due |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | |

| IUD | Type | Insertion date | Removal date | Type | Insertion date | Removal date |
|---|---|---|---|---|---|---|
| | 1 | | | 2 | | |

Pil/Condom

| Date | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Method/bran | | | | | | | | | |
| Quantity | | | | | | | | | |

### EPI AND VITAMIN A

| Child name | Birth date | Date of EPI doses | | | | | | Vitamin A doses | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | BCG | DPT/polio | | | Polio | Measles | 1 | 2 | 3 |
| | | | 1 | 2 | 3 | 4 | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Lab examination:

| Date | | | | | | | |
|---|---|---|---|---|---|---|---|
| Urine sugar | | | | | | | |
| Urine albumin | | | | | | | |
| Hb% | | | | | | | |
| Others | | | | | | | |

## GENERAL VISIT INFORMATION

| DOV | Symptoms/ Purpose | Exam | Diagnosis | Treatment /Action |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## GENERAL VISIT INFORMATION (CHILDREN)

| Child name | DOV | Symptoms/ Purpose | Exam | Diagnosis | Treatment /Action |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

## DIARRHOEA (child with loose or watery stool)

| NAME OF THE CHILD | DOV | DURATION (DAYS) | FREQ | BLOOD | TEMP | DEHYDRATION | | | | | | | TREATMENT/ ACTION |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | IRRITABLE | LETHARGIC | POOR SKIN ELASTICITY | H/O THIRST | SUNKEN EYES | DRY TONGUE/ MOUTH | OVERALL DEHYDRATION STATUS | |
| | | | | Y N | | Y N | Y N | Y N | Y N | Y N | Y N | N + ++ | |
| | | | | Y N | | Y N | Y N | Y N | Y N | Y N | Y N | N + ++ | |
| | | | | Y N | | Y N | Y N | Y N | Y N | Y N | Y N | N + ++ | |
| | | | | Y N | | Y N | Y N | Y N | Y N | Y N | Y N | N + ++ | |
| | | | | Y N | | Y N | Y N | Y N | Y N | Y N | Y N | N + ++ | |

## ARI (child with cough or difficult breathing)

| NAME OF THE CHILD | DOV | RESP RATE | CHEST IN DRAWING | DO NOT EAT/ DRINK WELL | SLEEPY | CONVULSIONS | BREATH SOUND | TEMP | DIAGNOSIS | TREATMENT/ACTION |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Y N | Y N | Y N | Y N | | | | |
| | | | Y N | Y N | Y N | Y N | | | | |
| | | | Y N | Y N | Y N | Y N | | | | |
| | | | Y N | Y N | Y N | Y N | | | | |
| | | | Y N | Y N | Y N | Y N | | | | |

**Antenatal Checkup** LMP:———— EDD:————

| DOV | Wt. | BP | Oedema o/+/++ | Hb%, anaemia | Jaundice | Fundal height | Presentation | Foetal movement | Foetal heart sound | Breast/ nipple | Urine albumin o/+/++ | Urine sugar o/+/++ | Any complaint | Treatment /advice |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

| | | |
|---|---|---|
| **Delivery information** | Date of Delivery: | Place of Delivery: ☐ Home ☐ Hospital/Clinic |
| | Outcome of pregnancy: ☐ Live birth ☐ Still birth ☐ Neonatal death ☐ Premature | |

| **Postnatal check-up:** | Date | Temp | BP | Hb%, anaemia | Oedema | Breast/ nipple | Uterus height | P/V bleed /discharge | Perineal tear | Vit A given | Advice /treatment |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | |
| | | | | | | | | | | | |

| **Check-up of New born** | Date | Eye infection | Cord infection | Any | Breast feeding | Advice/treatme |
|---|---|---|---|---|---|---|
| | | | | | | |
| | | | | | | |

## FAMILY PLANNING SCREENING

Date of visit:: 1._____ 2._____ 3._____ 4._____

| FAMILY PLANNING SCREENING | PILL | INJ | IUD |
|---|---|---|---|
| Last menst. Period | | | |
| Breastfeed child < 6 mon. | ☐ ☐ | | |
| Jaundice in past 1 year | ☐ ☐ | ☐ ☐ | |
| H/O severe leg pain | ☐ ☐ | ☐ ☐ | |
| H/O chest pain/difficult breath on mild work | ☐ ☐ | ☐ ☐ | ☐ ☐ |
| Bleeds between menses or after coitus | ☐ ☐ | ☐ ☐ | ☐ ☐ |
| Unexplained vaginal bleed | ☐ ☐ | ☐ ☐ | ☐ ☐ |
| Severe low abdominal /back pain | | | ☐ ☐ |
| Severe menstrual cramps | | | ☐ ☐ |
| Offensive/purulent vaginal discharge | | | ☐ ☐ |
| H/o ectopic pregnancy | | | ☐ ☐ |
| Uncontrolled diabetes | ☐ ☐ | ☐ ☐ | ☐ ☐ |
| **PHYSICAL and LAB EXAMINATION** | | | |
| Blood pressure | | | |
| Weight | | | |
| Lump in breast | ☐ ☐ | ☐ ☐ | |
| Uterus bigger size or soft | ☐ ☐ | ☐ ☐ | ☐ ☐ |
| Cervical bleed on touch | ☐ ☐ | ☐ ☐ | ☐ ☐ |
| Cervical motion tenderness | | | ☐ ☐ |
| Hb% < 45% | | | ☐ ☐ |

*** Put ✓ for "YES" and ✗ for "NO"**
**If any of the boxes is marked✓ (YES), then the corresponding method is not suitable for the woman.**

## RTI CHECKLIST

Date of visit: 1:_____ 2:_____ 3:_____ 4:_____

Presenting Symptoms:
Vaginal Discharge: ☐ ☐ ☐ ☐
Genital Ulcer*: ☐ ☐ ☐ ☐
Lower abdominal pain: ☐ ☐ ☐ ☐
Inguinal swelling*: ☐ ☐ ☐ ☐
Missed/delayed period* ☐ ☐ ☐ ☐
Recent abortion/delivery*: ☐ ☐ ☐ ☐
Vaginal bleeding*: ☐ ☐ ☐ ☐
Partner symptoms:
Genital ulcer: ☐ ☐ ☐ ☐
Urethral discharge: ☐ ☐ ☐ ☐
Swollen scrotum*: ☐ ☐ ☐ ☐
Enlarged Inguinal nodes* ☐ ☐ ☐ ☐
None: ☐ ☐ ☐ ☐

PHYSICAL EXAMINATION:
Severe abdomen tender* ☐ ☐ ☐ ☐
Abdominal mass*: ☐ ☐ ☐ ☐
Pelvic tenderness: ☐ ☐ ☐ ☐
Cervical motion tender: ☐ ☐ ☐ ☐
Discharge:
Profuse/offensive/frothy: ☐ ☐ ☐ ☐
Yellow/purulent (cervical): ☐ ☐ ☐ ☐
White curd like: ☐ ☐ ☐ ☐

Syndromic diagnosis:
Cervicitis: ☐ ☐ ☐ ☐
Vaginitis: (Trichomoniasis): ☐ ☐ ☐ ☐
Vaginitis: (Candidiasis): ☐ ☐ ☐ ☐
PID: ☐ ☐ ☐ ☐

| Treatment: | Counseling done |
|---|---|
| 1._____ | ☐ |
| 2._____ | ☐ |
| 3._____ | ☐ |
| 4._____ | ☐ |

| Treatment of Partner: | (Partner attended) |
|---|---|
| 1._____ | ☐ |
| 2._____ | ☐ |
| 3._____ | ☐ |
| 4._____ | ☐ |

**Refer if * marked finding is present**

## Annex 7: Family health card

REGISTRATION NO._____

Concerned Women for Family Planning (CWFP)

# Family Health Card

| Woman's name: | Age: | Living children |
|---|---|---|
| Husband's/ /father's name: | | M: F: |
| Address: | **FP status:** | |
| TT status: 1._____ 2._____ 3._____ 4._____ 5._____ | | |

### FAMILY PLANNING

**Injectable:** Date of 1st injectable dose:_____

| Brand | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Due date | | | | | | | | | | |
| Actual date | | | | | | | | | | |

**Pill/Condom:**

| Date | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Brand | | | | | | | | | | |
| Amount supplied | | | | | | | | | | |

**IUD:**

| Type | Insertion date | Removal date | Type | Insertion date | Removal date |
|---|---|---|---|---|---|
| 1 | | | 2 | | |

### CHILD HEALTH: EPI AND VITAMIN A

| Name of the child | Date of birth | Date of EPI doses | | | | | | Vitamin A | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | BCG | DPT/Polio | | | Polio | Measles | 1 | 2 | 3 |
| | | | 1 | 2 | 3 | 4 | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

## GENERAL VISIT INFORMATION (CHILDREN)

| Name of child | Visit date | Reason of visit/diagnosis | Treatment/action | Date of follow-up visit |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

## ANTENATAL CHECK-UP

| | | |
|---|---|---|
| LMP: | H/O Hypertension: Y☐ N☐ | Height: ☐<4' 10" ☐>4' 10" |
| EDD: | H/O Diabetes: Y☐ N☐ | Age of youngest child: ☐<2 yrs ☐>2 yrs |
| | H/O Heart disease: Y☐ N☐ | Bleeding disorder: Y☐ N☐ |

**PAST OBSTETRIC HISTORY AND COMPLICATIONS**

| Pernancy | Year | Outcome |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |

Outcome:⇨ Live birth
Abortion
Still-birth
Premature Delivery

| Past obstetrical complications | |
|---|---|
| Bleeding during pregnancy | |
| Postpartum bleeding | |
| Prolonged labour | |
| Obstructed labour | |
| Caesarean section | |
| Retained placenta | |
| Neonatal death within 48 hrs. | |
| Eclampsia | |
| Pre-eclampsia | |
| Multiple pregnancy | |

**Antenatal check-up findings**

| Date | Fundal ht. | Wt. | BP | *Any other finding or complaint* | *Treatment/advice* |
|---|---|---|---|---|---|
| | | | | | |
| | | | | | |
| | | | | | |

**Outcome of present pregnancy**

| | |
|---|---|
| Date of Delivery: | Place of Delivery:☐ Home ☐ Hospital/Clinic ☐ Others |
| Outcome of pregnancy: ☐ Live-birth ☐ Still-birth ☐ Neonatal death ☐Premature | |

**Postnatal visits**

| Date | Any complaint | Treatment/advice |
|---|---|---|
| | | |
| | | |

## GENERAL VISIT INFORMATION

| Name | DOV | Reason of visit/diagnosis | Treatment/action | Date of follow-up visit |
|---|---|---|---|---|
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

# Publications List of MCH-FP Extension Project (Urban)

1. Paljor N, Baqui, AH, Lerman C, Silimperi DR. "Reaching the Urban Poor-the Case of the Urban Volunteers in Dhaka, Bangladesh". September 1994 (ICDDR,B Working Paper No 44), (Urban FP/MCH Working Paper No 1), *ISBN: 984-551-028-0*

2. Baqui AH, Jamil K, Jahangir NM, Nahar Q, Paljor N, Silimperi DR. "Urban Surveillance System: Dhaka Methods and Procedure". September 1994 (ICDDR,B Working Paper No 45) (Urban FP/MCH Working Paper No 2). *ISBN: 984-551-031-0*

3. Jamil K, Baqui AH, Paljor N. "Knowledge and Practice of Contraception in Dhaka Urban Slums: A Baseline Survey." May 1993 (ICDDR,B Working Paper No 31), (Urban FP/MCH Working Paper No 3), *ISBN: 984-551-006-10*

4. Baqui AH, Plajor N, Silimperi DR. "The Prevention and Treatment of Diarrhoea in Dhaka Slums" May 1993 (ICDDR,B Working Paper No 32), (Urban FP/MCH Working Paper No 4), *ISBN: 984-551-007*

5. Laston SL, Baqui AH, Paljor N, Silimperi DR. "Immunization Beliefs and Coverage in Dhaka Urban Slums."May 1993 (ICDDR,B Working Paper No 33), (Urban FP/MCH Working Paper No 5), *ISBN: 984-551-008-6*

6. Baqui AH, Paljor N, Nahar Q, Silimperi DR. "Infant and Child Feeding Practices in Dhaka Slums" May 1993 (ICDDR,B Working Paper No 34)(Urban FP/MCH Working Paper No 6), *ISBN: 984-551-009-4*

7. Chaudhury N, Mohiuddin QN, Mamtaz S, Ghosh KR, Silimperi DR, Lili FB, Leena MM, "Violence in the Slums of Dhaka City. "May 1993 (ICDDR,B Working Paper No 35), (Urban FP/MCH Working Paper No 7), *ISBN: 984-551-010-8.*

8. Baqui AH, Paljor N, Lerman C, Silimperi DR. " Mothers' Management of Diarrhoea: Do Urban Volunteers of Dhaka have an Impact?"May 1993 (ICDDR,B Working Paper No 36), (Urban FP/MCH Working Paper No 8), *ISBN: 984-551-011-6*

9. Salway S, Jamil K, Nahar Q, (editors). "Issues for Family Planning in the Urban Slums of Dhaka, Bangladesh: Opinions and Perceptions of Field-level Workers" May 1993 (ICDDR,B Working Paper No 37), (Urban FP/MCH Working Paper No 9), *ISBN 984-551-012-4*

10. Fronczak N, Amin S, Laston SL, Baqui AH. "An Evaluation of Community Based Nutrition Rehabilitation Centers". May 1993 (ICDDR,B Working Paper No 38), (Urban FP/MCH Working Paper No 10), *ISBN: 984-551-013-2*

11. Arifeen SE, Mahbub AQM (Editors), Baqui AH, Islam N, Jahangir NM, Mahbub AQM, Paljor N, Siddiqi SM (Contributors). "A Survey of Slums in Dhaka Metropolitan Area 1991". October 1993 (ICDDR,B Working Paper No 39), (Urban FP/MCH Working Paper No 11), *ISBN: 984-551-014-25*

12. Fronczak N, Amin S, Nahar Q. "Health Facility Survey in Selected Dhaka Slums". October 1993 (ICDDR,B Working Paper No 40), (Urban FP/MCH Working Paper No 12), *ISBN: 984-551-015-7*

13. Laston SL, Baqui AH, Paljor N. "Urban Volunteer Service in the Slums of Dhaka: Community and Volunteer Perceptions". October 1993 (ICDDR,B Working Paper No 41), (Urban FP/MCH Working Paper No 13), *ISBN: 984-551-016-25*

14. Baqui AH, Arifeen SE, Amin S, Black RE. "Levels and Correlates of Maternal Nutritional Status and Consequences for Child Survival in Urban Bangladesh". October 1993 (ICDDR,B Working Paper No 42), (Urban FP/MCH Working Paper No 14), *ISBN: 984-551-017-43*

15. Salway S, Jamil K, Nahar Q, Nurani S. "Perceptions of Pregnancy Risk and Contraceptive Use in the Postpartum Period Among Women in Dhaka Slums". November 1993 (ICDDR,B Working Paper No 43), (Urban FP/MCH Working Paper No 15), *ISBN: 984-551-020-5*

16. GoB, UEP/ICDDR,B, CWFP, Compiled & Edited by: Arifeen SE, Mookherji S. " The Urban MCH-FP Initiative: A Partnership for Urban Health and Family Planning in Bangladesh; An Assessment of Programme Needs in Zone 3 of Dhaka City". May 1995

17. Jamil K, Streatfield K, Salway S. "Modes of Family Planning Service Delivery in the Slums of Dhaka: Effects on Contraceptive Use". May 1996 (ICDDR,B Working Paper No 46), (Urban FP/MCH Working Paper No 16), *ISBN: 984-511-032-9*

18. Salway S, Nahar Q, Ishaque M. "Alternative Ways to Feed Infants: Knowledge and Views of Men and Women in the Slums of Dhaka City" May 1996 (ICDDR,B Working Paper No 58), (Urban FP/MCH Working Paper No 17), *ISBN: 984-551-056-6*

19. Salway S, Nahar Q, Ishaque M. "Women, Men and Infant Feeding in the Slums of Dhaka City: Exploring Sources of Information and Influence". May 1996 (ICDDR,B Working Paper No 59), (Urban FP/MCH Working Paper No 18), *ISBN: 984-551-057-4*

20. Quaiyum MA, Tunon C, Baqui AH, Quayyum Z, Khatun J. "The Impact of National Immunization Days on Polio Related Knowledge and Practice of Urban Women in Bangladesh". May 1996 (ICDDR,B Working Paper No 60), (Urban FP/MCH Working Paper No 19), *ISBN 984-511-058-2*

21. Perry HB 111, Begum S, Begum A, Kane TT, Quaiyum MA, Baqui AH. "Assessment of Quality of the MCH/FP Services Provided by Field Workers in Zone 3 of Dhaka City and Strategies for Improvement" May 1996 (ICDDR,B Working Paper No 62), (Urban FP/MCH Working Paper No 20), *ISBN:984-551-060-4*

22. Mookherji S, Kane TT, Arifeen SE, Baqui AH. "The Role of Pharmacies in Providing Family Planning and Health Services to Residents of Dhaka Bangladesh". May 1996 (ICDDR,B Working Paper No 61), (Urban FP/MCH Working Paper No 21), ISBN: 984-551-059-11

23. Thwin AA, Islam MA, Baqui AH, Reinke WA, Black RE. "Health and Demographic Profile of the Urban Population of Bangladesh: An Analysis of Selected Indicators" (Special Research Report) May 1996 (ICDDR,B Special Publication No 47), *ISBN: 984-551-061-2*

24. Thwin AA, Jahan SA. "Rapid Appraisal of Urban Health Needs and Priorities". October 1996 (ICDDR,B Working Paper No 67), (Urban MCH-FP Working Paper No 22), *ISBN 984-551-074-4*

25. Jahan SA, Thwin AA, Tunon C, Nasreen S. "Urban Men and their Participation in Modern Contraception: An Exploratory Study". October 1996 (ICDDR,B Working Paper No 68), (Urban MCH-FP Working Paper No 23), *ISBA 984-551-075-2*

26. Perry HB, Arifeen SE, Hossain I, Weierbach R. "The Quality of Urban EPI Services in Bangladesh: Findings from the Urban Initiative's; Needs Assessment Study in Zone 3 of Dhaka City". October 1996 (ICDDR,B Working Paper No 69), (Urban MCH-FP/Working Paper No 24), *ISBN 984-551-076-0*

27. Mazumder MA, Bhuiyan MA, Tunon C, Baqui AH, Chowdhury AI, Khan SE, Arifeen SE, Islam R. "An Inventory of Health and Family Planning Facilities in Dhaka City". March 1997 (Special Research Report) Urban MCH-FP Extension Project, International Centre for Diarrhoeal Disease Research (ICDDR,B), Bangladesh

28 Baqui AH, Black RE, Arifeen SE, Hill K, Mitra SN, Sabir AA, "Causes of Childhood Deaths in Bangladesh: Results of a Nation-Wide Verbal Autopsy Study: (Special Research Report) 1997 (ICDDR,B Special Publication No 60) *ISBN: 984-551- 083-3*

29. Perry H, Weierbach R, Hossain I, Islam R. "Immunization Coverage in Zone 3 of Dhaka City, Bangladesh". 1997 (ICDDR,B Working Paper No 76), (Urban FP/MCH Working Paper No 25), *ISBN:984-551-097-3*