Directorate General of Family Planning

TECHNICAL REPORT

INTRODUCING MEDICAL MR IN BANGLADESH

MRM FINAL REPORT

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EXECUTIVE SUMMARY

BACKGROUND

Despite relatively high contraceptive prevalence (61%) compared to other developing countries, Bangladesh continues to have a low utilization of long term or permanent contraceptive methods, a high discontinuation rate, and unmet needs for family planning (NIPORT, Mitra and Associates, and ICF International 2013). Some women in Bangladesh resort to menstrual regulation (MR) to avoid unwanted and unplanned childbearing (Piet-Pelon 1998). Bangladesh's Ministry of Health and Family Welfare (MoHFW) reports that approximately 200,000 MR procedures using Manual Vacuum Aspiration (MVA) peformed each year, mostly by Family Welfare Visitors (DGFP MIS 2011). Because only MRs performed at government facilities are accounted in this statistic, actual MRs peformed are significantly underreported. Indirect estimates suggest more than 1.2 million annual MRs and induced abortions each year in Bangladesh (Singh et al. 2012). During the past three decades MR has been legally provided through MVA by Family Welfare Visitors (FWVs), and physicians in primary, secondary, and tertiary government health facilities, selected NGOs, and private clinics. Accessibility of safe MR services can be increased by introducing a combination of Mifepristone and Misoprostol, which are both safe and effective and registered in Bangladesh. This operations research tested the feasibility of introducing MR with medication (MRM) in Bangladesh and assessed accessibility of the combination regimen of Mifepristone and Misoprostol in urban and rural health facilities.

METHODOLOGY

The Population Council Bangladesh, in collaboration with the Directorate General of Family Planning (DGFP) and Marie Stopes Bangladesh (MSB), with funding from the World Health Organization (WHO) and the DfID supported STEP UP project, conducted an 18 month operations research (OR) study from January 2012 to June 2013. Fourteen study sites (12 governmental and 2 MSB) were purposively selected from eight Dhaka Division districts, but one site did not participate due to transfers of its trained service providers. Government health facilities in the study comprised three maternal and child welfare centers (MCWCs) and eight Union Health and Family Welfare Centers (UHFWCs) outside Dhaka city. These health facilities were selected by high MR performance and trained service provider availability. The study population consists of all women who visited the 13 selected health facilities for MR services between October 2012 and May 2013 who chose to use MRM rather than MVA. A call center was established at the central MSB health facility in Dhaka to assist clients who had concerns about MRM or experienced complications after MRM and needed to speak with health professionals.

Women who visited the selected health facilities for MR services were counseled by trained service providers on the advantages, disadvantages, and side effects of MR conducted by MVA and by MRM, and were given the choice between MVA or MRM for menstrual regulation. MRM clients received the first dose of Mifepristone 200 mg orally during their first visit and were requested to stay at the health facility for four hours for side effect monitoring. MRM clients were then given the choice of taking the second dose, Misoprostol 800 mcg, at the health facility or at home. Clients who chose to have the second dose administered at the health facility were asked to return after 24 to 48 hours (depending upon time of first dose). If clients chose self administration of the second dose at home, they were given the Misoprostol tablet, counseled on proper bucal technique, educated on possible side effects, and informed of the safety procedure in case of an emergency.

Service providers collected MRM acceptors' telephone numbers, and acceptors were provided providers' and project staff telephone numbers for emergency contact. MRM acceptors were also provided contact information of their area Family Welfare Assistants (FWAs). Service providers were trained to ascertain whether clients had telephone access and would be able to call the health facility, project staff, their FWA, or the call center without compromising their privacy. If there were any privacy concerns, clients had to return to the health facility for the second dose. Clients were also clearly instructed to return to the facility or seek immediate medical attention from the call center for any heavy or prolonged vaginal bleeding, severe cramping, fever, chills or malaise lasting more than six hours, any abnormal vaginal discharge, or severe abdominal pain or nausea.

Service providers informed MRM acceptors to return to the health facility within 10 to 14 days after the second dose. At this follow up visit, providers confirmed MRM procedure completion with a bimanual pelvic examination. If MRM was incomplete, clients were treated by MVA or referred to higher level facilities for MVA or Dilation and Curettage (D&C) services. Clients who did not return to their respective health facilities within two weeks were contacted by assigned field staff and FWAs to determine their medication statuses. In total, 1,882 women received MRM services from these health facilities, and information was collected from 44 service provides and 836 MRM acceptors to assess impact. Data collection instruments comprised:

Evaluation Component	Frequency of Data Collection	Content of Data Collection Instrument
Service Provider Interview	Pre MRM Training and Post MRM Provision	Attitude towards providing MR services, extent of MR training, reasons for not providing MR, advantages and disadvantages to MR and MRM, knowledge of MRM
Client Exit Interview	Pre and Post MRM Service Provision	Demographics, reproductive health characteristics, family planning intention, knowledge of MR and MRM, attitude towards MRM services
Client-Provider Interaction	During MRM Service Provision	Medical history, physical examination, counseling, and contraceptive options
Service Statistics	Monthly	Number of MR and MRM clients, number of complications related to MR and MRM services, number of incomplete MRMs, number of follow-up MRM visits

FINDINGS

Service providers were interviewed before and after MRM training to assess their MRM knowledge and attitude toward providing MR services. At baseline, 68 percent of service providers provided MR services; the most common reasons cited for not providing MR were personal and religious. One fourth of service providers had heard of MRM at baseline compared to 100 percent at endline.

Of the 2,976 women visiting health facilities seeking MR services during the study period and provided the option between MRM and MVA, 63 percent of women selected MRM. An eight percent loss to follow up, between first dose and two week follow up visit, was recorded, primarily due to normal menstruation without complications. Most clients interviewed (76.5%) were between the ages of 20 and 34, and 95 percent are Muslim. Over one third (36.7%) completed secondary education or higher, and the majority (82%) are housewives. Clients who choose MRM over MVA did so because they felt MRM was less invasive (54%), less expensive (52%), did not require surgery (34%), and perceived it as less risky (29%). For less than five percent

of women, MRM was not sufficient and MVA was required or they were referred for D&C to establish normal menstruation, with approximately 83 percent of these women receiving MVA at the facility and the remaining 17 percent referred to higher facilities.

Approximately 19 percent of clients experienced side effects after taking Mifepristone (first dose), and most were UHFWC clients. Side effects reported by MRM acceptors included nausea (58%), fever or chills (36%), flushes or sweats (28%), headaches (11%), and vomiting (16%), while only one third needed medication or further treatment for side effects. Nearly two thirds of MRM acceptors experienced side effects after taking Misoprostol (second dose), with frequently cited side effects including fever (54%), nausea (40%), vomiting (28%), headaches (23%), diarrhea (15%), and dizziness (14%), and approximately one third needed medication for side effect management.

The most frequently discussed contraceptive methods during follow up visits were contraceptive pills (77%), IUDs (29%), and condoms (24%). Findings suggest that 69 percent of MRM clients accepted contraceptive pills, while 12 percent did not accept any form of contraception, and the remaining 19 percent selected condoms, IUDs, injectables, or implants. Approximately one fifth of MSB and MCWC clients did not accept any contraceptive methods after MRM, while only three percent in UHFWCs did not.

Service providers were observed during MRM administration to assess service quality. Nearly all providers determined LMP, and 70 percent took a menstrual history. Providers screened for history of ectopic pregnancy (47%), hemorrhagic disorder (60%), severe anemia (57%), drug allergies (77%), and hypertension (65%). These observations were quantified and computed with composite quality score (CQS), and each category of health facility (MCWC, UHFWC, and MSB) was given a normalized score. The overall quality of services at these health facilities was high: 0.80 out of one (1). The most apparent difference was between MCWC (0.85) and UHFWC (0.73), while MSB had the highest score (0.88). This disparity in quality scores emphasizes the need for additional service provider training and more stringent monitoring and supervision at rural health facilities.

Nearly two thirds of clients reported the service as satisfactory, and one third stated they were very satisfied with their services. Almost all MRM acceptors (97%) report that they would suggest MRM to friends and relatives, and 95 percent would refer a friend to the same health facility.

RECOMMENDATIONS

Based on this OR study's results, the feasibility of introducing MRM services in Bangladesh is clear, and women receiving MRM were satisfied with their overall quality of care. The service is non-invasive and can be provided safely and confidentially at a health facility or at home. Given the option between MRM and MVA, the majority of women selected MRM. It is imperative that this service be incorporated into the national family planning (FP) program for the safety, health, and well being of Bangladeshi women.

Before introducing MRM services nationwide, a scale up strategy should be developed for including MRM in phases, starting with urban health facilities such as MCWCs and gradually including rural areas. In addition, a comprehensive training program will be needed to train more than 6,000 public sector service providers. These providers must be adequately supervised to ensure they provide quality services. The country's Management Information System (MIS) also needs revision and updating for inclusion of MRM information. Policymakers and program managers need assistance in developing strategies for scaling up MRM services in MCWCs and developing plans for capacity building, monitoring, and dissemination.

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ABBREVIATIONS

BCC	Behavior Change Communication
D&C	Dilation and Curettage
DDFP	Deputy Director Family Planning
DfID	Department for International Development
DGFP	Directorate General of Family Planning
FWA	Family Welfare Assistant
FWV	Family Welfare Visitor
GoB	Government of Bangladesh
HA	Health Assistant
LMP	Last Menstrual Period
MCWC	Maternal and Child Welfare Center
MIS	Management Information System
MOMCH	Medical Officer, Maternal and Child Health
MR	Menstrual Regulation
MRM	Menstrual Regulation with Medication
MSB	Marie Stopes Bangladesh
MSI	Marie Stopes International
MVA	Manual Vacuumed Aspiration
MoHFW	Ministry of Health and Family Welfare
NGO	Non-governmental Organization
OGSB	Obstetrical and Gynecological Society of Bangladesh
OR	Operations Research
PI	Principal Investigator
RA	Research Assistant
SACMO	Sub Assistant Community Medical Officer
UHFWC	Union Health and Family Welfare Center
UHC	Upazila Health Complex
UFPO	Upazila Family Planning Officer
WHO	World Health Organization

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INTRODUCTION

Despite a high contraceptive prevalence rate (61%) compared to other developing countries, Bangladesh continues to have low utilization of long term or permanent methods, a high frequency of discontinuation, and unmet FP needs (NIPORT, Mitra and Associates, and ICF International 2013). Because of this, some Bangladeshi women resort to menstrual regulation (MR) to avoid unwanted and unplanned childbearing. Menstrual regulation comprises any chemical, mechanical, or surgical process inducing menstruation to establish non-pregnancy either at the time of, or within a few weeks of, their normal menstrual period. In the late 1970s, the Government of Bangladesh (GoB) declared MR an "interim method of establishing non-pregnancy" for a woman at risk of pregnancy, regardless of whether a woman is actually pregnant. As a result, MR is not regulated by the penal code that restricts abortions to cases in which continuing a pregnancy jeopardizes a woman's life (Kay and Kabir 1988).

Menstrual regulstion (MR) services are available throughout the country in more than 5,000 health facilities, primarily performed by paramedics known as Family Welfare Visitors (FWV) at Union Health and Family Welfare Centers (UHFWCs), Upazila Health Complexes (UHCs), and Maternal and Child Welfare Centers (MCWCs). Curently, FWVs at 3,827 UHFWCs and 96 MCWCs provide MR services to women at eight weeks of amenorrhea of less, and Medical Officers at UHCs and MCWCs provide MR up to 10 weeks of amenorrhea. In addition to government facilities, some NGO clinics also provide MR services in urban areas.

Available hospital and clinic records suggest a rising trend in MR and abortion, which was expected to decline as contraceptives became more prevalent and method proficiency was attained (Islam, Rob and Chakroborty 2004). Increasing MR could be partly due to a decline in desired family size as well as poor use effectiveness resulting in high method failure and discontinuation rates (Piet-Pelon and Rob 1999). No accurate estimate is available for pregnancy terminations, including both MR and traditional or clandestine abortion procedures. An early study suggested approximately 800,000 annual pregnancy terminations (Rochat et al. 1981) during a period well before the FP program achieved its current successes. The most recent annual estimate is 1.2 million including 650,000 MRs (Singh et al. 2012). MoHFW reports about 200,000 annual MRs with MVA, mostly by FWVs (DGFP MIS 2011), but because only MRs performed at UHFWCs and MCWCs are recorded, the number of MRs performed in the country are profoundly underreported.

In Bangladesh, MR is legally provided through MVA by registered service providers (e.g. paramedics, FWVs, physicians) in primary, secondary, and tertiary government facilities, select NGOs, and private facilities. Because of the stigma, shame, and fear of disclosure associated with MR, however, women often turn to illegal measures and substances for abortion that are ineffective, harmful, and life threatening. Unofficial agents or middlemen (*dalal*) are reportedly paid by unscrupulous providers to recruit fearful, helpless, and embarrassed women for their MR services. This underground network of unregulated MR poses a major public health threat because it is almost impossible to determine who are performing MRs, as well as discerning the stages at which women seek MR and assessing the quality of services. Furthermore, MR procedures performed by unskilled providers in unhygienic conditions have contributed to more than one third of the country's reported post-MR complications (Hena et al. 2013, Singh et al. 2012) and have been attributed to the country's increased maternal morbidity.

Research in ommunities reveals a growing number of women who do not want to undergo invasive procedures such as MVA and who seek abortifacient drugs to establish normal menstruation (Piet-Pelon 1999). A recent MSB survey in 62 pharmacies reveals that 51 percent of drug sellers and pharmacists know of drugs that can be used to induce medical abortion, and 30 percent of drug stores and pharmacies sell these

drugs to the public (Rasul 2009). When asked to name abortifacient drugs, 24 percent of drug sellers or pharmacists identified Misoprostol, 26 percent named other drugs such as anti-helminthes, anti-malarial drugs or oral contraceptives, but the majority (51%) identified Gynococid as an abortification drug.

Population Council Bangladesh, in collaboration with DGFP and MSB, and with funding from WHO and the DfID supported STEP UP project, conducted this OR study to test the feasibility and accessibility of introducing menstrual regulation with medication (MRM) in Bangladesh. This study's findings are expected to help revise policies for MRM provision in the public health sector.

OBJECTIVES

This study examined the feasibility and accessibility of introducing MRM through government and NGO providers in Bangladesh.

More specifically, the study:

- Explored the willingness of service providers to offer MRM;
- Assessed MRM acceptability and satisfaction among women seeking to regulate their menstruation;
- Documented the introduction of MRM services, including the implementation process and challenges;
- Analyzed MRM service cost and assessed the financial implications of scaling up MRM services nationally;
- Generated evidence for policymakers and program managers for scaling up MRM services.

METHODS

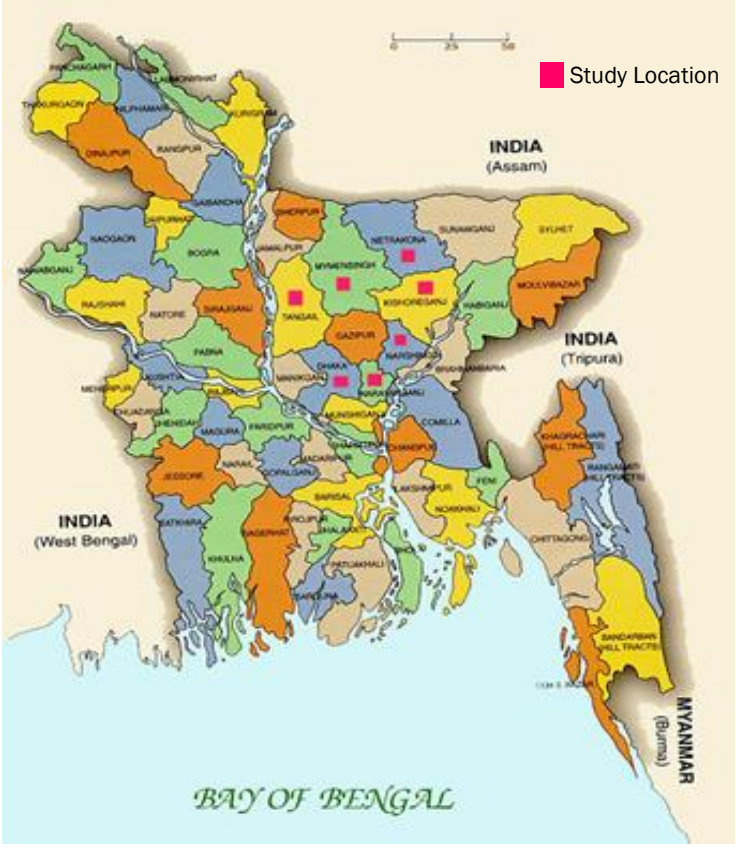
STUDY DESIGN

This OR tested the feasibility of introducing MRM in Bangladesh and assessed accessibility, for providing the combination regimen of Mifepristone and Misoprostol in urban and rural health facilities. The study lasted 18 months, from January 2012 to June 2013, in three phases: preparatory, intervention, and evaluation.

STUDY LOCATIONS

Fourteen study sites (12 government and 2 MSB clinics) were purposively selected from eight Dhaka Division districts, but one government site did not participate because of transfers of trained service providers. Government health facilities comprised three MCWCs (one from each of the three urban districts) and eight UHFWCs (two from each of the four rural districts). Health facilities were selected because of high MR performance during the previous year and trained service providers. Monthly MIS reports identified facilities. Figure 1 illustrates the locations of the selected facilities.

Figure 1. Study locations



STUDY PARTICIPANTS

The study population consisted of all women who visited the 13 selected health facilities for MR services between October 2012 and May 2013 who chose to receive MR with medication. In total, 2,976 women visited these facilities for MR, and 1,882 women received MRM. Table 2 provides the distribution of women who accepted MR and MRM, according to facility type.

Client eligibility criteria comprised:

- Amenorrhea for eight weeks or less;
- No IUD in place, nor chronic adrenal failure, severe anemia, pre-existing heart diseases, or cardiovascular disease; and
- No history of previous allergic reaction to any other drugs, ectopic pregnancy or suspicion of ectopic pregnancy, porphyria, long term steroid use, asthma, or hemorrhagic disorder.

Clients who did not meet the criteria for MRM services or declined to participate accepted MR services (e.g. MVA) from the selected study facilities.

Table 1. Distribution of MR and MRM acceptors, by facility type

Category	MCWC	UHFWC	Marie Stopes	Total
Number of women who requested MR services	808	938	1,230	2,976
Number of women who received MR services	150	205	739	1,094
Number of women who received MRM services	658	733	491	1,882

SAMPLE SIZE

Sample size was calculated using the service statistics from the past year to estimate the average number of MR clients at each selected sites. Considering the performance of these facilities, it was estimated that on average a minimum of 10 clients would seek MRM services from each government health facility per month and an average of 50 clients per month at MSB health facilities. In total, it was expected that approximately 1,760 women would receive MRM services from the 13 health facilities during the study period. 660 MRM acceptors would be interviewed to collect the required information. In addition, 400 client-provider interactions would be observed to determine the quality of services provided to MRM acceptors.

STUDY ACTIVITIES

PREPARATORY ACTIVITIES

CENTRAL AND LOCAL ADVOCACY MEETINGS

An advocacy meeting informed DGFP program managers and policymakers about the project's objectives and briefed them on neighboring countries' experiences. Regular meetings with the Deputy Director of Family Planning (DDFP), Medical Officer for Maternal and Child Health (MOMCH), and the Upazila Family Planning Officer (UFPO) informed them about MRM and sought their support and cooperation in implementing project activities. To better coordinate efforts, research assistants (RAs) and study coordinators met with district and upazila FP officials and service providers.

TECHNICAL COMMITTEE FORMATION

A Technical Committee was formed with representation from the DGFP, national and international NGOs, research organizations, OGSB, and the study's Principal Investigator (PI) and Co-Principal Investigators (Co-PIs). The committee's major responsibilities were to provide technical suggestions for developing MRM service guideline and a complications management protocol, and advocating for MR policy change based on the study's findings.

TRANSLATION OF MRM SERVICE GUIDELINES MANUAL

WHO's Safe Abortion Guidelines were used to develop a Bengali MRM Service Guideline manual, which was reviewed by members of the Technical Committee for culturally sensitivity and relevance (WHO 2013, WHO 2006). This manual was distributed and used by service providers who participated in the study.

BEHAVIORAL CHANGE COMMUNICATION (BCC) MATERIALS

Behavioral change communication (BCC) materials were developed and given to service providers and field workers for distributing to prospective MRM clients. BCC materials comprised:

- A pictorial pamphlet describing the proper technique for taking the MRM drugs, possible side effects, and post MRM complications;
- A card with contact information for the call center and referral centers; and
- A wheel calendar for calculating last menstrual period (LMP).

STAFF RECRUITMENT AND TRAINING

RESEARCH ASSISTANTS

Thirteen RAs were recruited and trained to conduct interviews with both MRM acceptors and service providers, and for observing client-provider interactions. RAs were also responsible for monitoring post-MRM clients, and maintaining monthly service statistics. RAs received a 10 day training on the study methodology, data collection instruments, study activities, data collection techniques, and complication management protocol.

SERVICE PROVIDERS

Thirty two service providers (11 doctors, 20 FWVs, and one Sub-Assistant Community Medical Officer) attended a one day training facilitated by staff from Marie Stopes International (MSI), MSB, Population Council, and OGSB. The MRM Service Guidelines manual was used during the training.

FAMILY WELFARE ASSISTANTS (FWAs)

FWAs at each health facility were oriented on MRM services, eligibility, potential side effects, and referral systems. These orientation sessions were facilitated by two trainers, one technical and one programmatic. In total, 80 FWAs attended orientation sessions in four sub-districts. The training sessions were attended by the DDFP, MOMCH, and UFPO, who shared their suggestions for generating MRM demand.

INTERVENTION ACTIVITIES

ENSURING MRM SERVICES AT FACILITIES

MEDABON, a combination pack of Mifepristone 200 mg and Misoprostol 800 mcg, was donated by the Concept Foundation and distributed by MSB to each participating health facility at the beginning of the study. This drug combination was not available anywhere else in Bangladesh, so project staff was responsible for maintaining stock at each facility during the study period.

MRM SERVICE PROVISION

Because abortion is illegal in Bangladesh, MR is restricted to non-diagnosed pregnancy and provided only for menstrual regulation. Women visiting participating facilities for MR services were counseled by the trained providers on the advantages, disadvantages, and side effects of both MR and MRM and were given the choice between MR or MRM for menstrual regulation. Women who selected MRM were screened for study eligibility by RAs and clinically assessed by providers. The clinical assessments comprised comprehensive medical histories, LMP calculations, and physical examinations for confirming uterine size of eight weeks or less. Eligible women were given a pictorial pamphlet explaining the MRM procedure, and after counseling and consenting to the study were provided the MRM regimen according to WHO guidelines (WHO 2006).

MRM DRUG ADMINISTRATION

MRM clients received the first dose of Mifepristone 200 mg orally and were asked to stay at the health facility for four hours for monitoring potential side effects. Clients were given a choice of taking the second dose, of Misoprostol 800 mcg, at the health facility or at home 24 to 48 hours after the first dose. Clients who chose second dose administration at the health facility were asked to then return to the facility after 24 to 48 hours (depending on time of first dose), while clients who chose self-administration of the second dose were given the Misoprostol tablet, counseled on proper buccal technique (placing tablets between teeth and cheek), educated on possible side effects, and informed of the safety procedure in case of an emergency.

Service providers collected client contact telephone numbers, and clients were provided providers' and RAs' telephone numbers. MRM acceptors were also given their area FWAs' contact information. Providers were trained to confirm whether clients had telephone access and would be able to call the health facility, RA, FWA, or call center without compromising their privacy. If there were any privacy concerns, clients had to return to the health facility for the second dose. Additionally, clients were clearly instructed to return to the facility or seek immediate medical attention from a call center if experiencing heavy or prolonged vaginal bleeding, severe cramping, fever, chills or malaise lasting more than six hours, any abnormal vaginal discharge, or severe abdominal pain or nausea.

FOLLOW UP MECHANISM

Providers were responsible for informing clients to return to the health facility within 10 to 14 days after the first dose. At this follow up visit, providers confirmed MRM completion with a bimanual pelvic examination. If MRM was incomplete, clients were treated with MVA or referred to higher facilities for MVA or D&C. Clients who did not return to their respective health facilities within 14 days were contacted by their assigned RAs and FWAs for their medication and MRM status.

COMPLICATIONS MANAGEMENT

Safety procedures for monitoring study particpants' health and well being were developed by the Technical Committee and implemented as complications management prior to the beginning of the study. Safety procedures included close study participant monitoring for adverse MRM drug side effects and recording and responding to MRM complications. Government health facilities such as UHCs, MCWCs, and District Hospitals were designated as referral centers for managing post-MRM complications because these facilities are open 24 hours a day for emergency services. A call center was established at the central MSB health facility in Dhaka to assist clients with concerns about MRM or complications after MRM and who needed to speak with a trained health professional. RAs and service providers were expected to report all post-MRM emergencies, complications, and measures to the PI or Co-PIs, who would then report to the Technical Committee within 24 hours of the event. Participating health facilities used a standard report form to record complications and adverse events, which were regularly reviewed by the Technical Committee.

MRM SERVICE COSTS

In private health facilities, MSB cost estimates indicate that MR costs can range from BDT 500 to 4,500 (80 BDT is equivalent to US $1). Government health facilities provide MR for free, but it is widely known that most FWVs unofficially charge clients for MR services. In this study, both government and MSB health facilities offered free MRM services to clients. In addition, expenses related to complication management, including transportation, were covered by MSB. Participating providers who provided MRM services were paid BDT 300 per case. At the community level, FWAs received monthly honoraria of BDT 1,000 to cover transportation costs and incidental expenses for behavior change communication (BCC) activities.

EVALUATION

VARIABLES

The four major activities introduced in the study were:

- MRM service delivery training for service providers;
- BCC materials distributed to prospective MRM clients;
- Training for FWAs and RAs;
- Establishment of the call center and referral centers for emergency response.

The dependent variables in this study were:

- MRM service exposure;
- MRM knowledge, attitude, and satisfaction;
- MRM use;
- Service providers' attitudes for offering MRM services;
- Service quality.

To assess the feasibility and financial implications of introducing MRM in Bangladesh, both qualitative and quantitative data were collected using techniques including:

- Pre- and post MRM training interviews with providers;
- Observations of client-provider interactions during MRM service provision;
- Review of MRM clients' case records;
- Collection and review of service statistics on MVA and MRM complication management;
- Pre- and post MRM interviews with clients.

DATA COLLECTION INSTRUMENTS

Three data collection instruments were developed for this study: service provider interviews, client exit interviews, and client-provider interactions; additionally, service statistics were extracted from clinic records.

Table 2. Description of data collection instruments

Evaluation Component	Frequency of Data Collection	Content of Data Collection Instrument
Service Provider Interview	Pre MRM Training and Post MRM Provision	Attitude about providing MR services, extent of MR training, reasons for not providing MR, advantages and disadvantages of MR and MRM, and MRM knowledge
Client Exit Interview	Pre- and Post MRM Service Provision	Demographics, RH characteristics, FP intention, knowledge of MR and MRM, attitude towards MRM
Client-Provider Interaction	During MRM Service Provision	Medical history, physical examination, counseling, and contraceptive options
Service Statistics	Monthly	Number of MR and MRM clients, number of complications related to MR and MRM services, number of incomplete MRMs, number of follow up MRM visits

SERVICE PROVIDER INTERVIEW

In depth interviews, using a semi-structured questionnaire, with 44 providers before introduction of MRM assessed their knowledge, attitude, and interest in its provision. At endline, 40 providers were interviewed about the MRM process and experiences; among these 40 providers, 31 were interviewed at baseline as well.

CLIENT EXIT INTERVIEW

Clients were interviewed immediately after the first dose of Mifepristone and at the follow up visit 10 to 15 days later. MRM clients were enrolled for interviews based on their availability and informed consent. All UHFWC MRM clients were requested to participate before leaving the facility. Due to the high volume of MCWC and MSB facility MRM recipients, every other client was requested to participate. RAs capped the number of interviews after enrolling 15 to 17 MRM clients each month at MCWC and MSB clinics. A total of 836 MRM clients were interviewed: 253 from MCWCs, 398 from UHFWCs, and 185 from MSB clinics.

PROVIDER-CLIENT INTERACTIONS

A total of 422 client-provider interactions were observed. RAs used a standardized checklist to record their observations of MRM service quality. The key assessment areas comprised: observing service provision procedures; offering clients a choice between MVA and MRM; screening clients' MRM eligibility; counseling clients on MRM dose, time, mode of administration, duration, and complications management; physical examinations ensuring MRM completeness; confirming post-MRM contraceptive adoption; appropriately referring clients to other health services; and upholding client privacy and confidentiality.

SERVICE STATISTICS AND CLIENT CASE RECORDS

Service statistics were collected throughout the study from all participating facilities. MRM information and complications management reports were collected and reviewed by project staff. A separate form was developed to collect information on MR and MRM procedures and contraceptive use.

MONITORING OF DATA COLLECTION AND DATA SAFETY MANAGEMENT

Co-PIs and the data manager supervised and maintained the quality and safety of collected data and supervised RAs' data collection. Data collection instruments were designed to maximize client privacy and confidentiality. Identifiable information such as names and addresses were not recorded on questionnaires; clients were assigned and tracked with ID numbers. Informed consent for participation in study activities (e.g. MRM services, interviews, and health status monitoring) was obtained at their first interview.

Before enrolling in study activities, RAs explained benefits and risks to MRM acceptors and asked for their signatures or thumbprints. Clients were reminded that their participation was voluntary and would not face any negative consequences if they decided not to participate after giving consent. Additionally, informed consent was obtained from providers for their participation in the interview and client-provider observation. Collected data were checked for consistency, edited and coded, and double-entered into a password protected computer program. All data (i.e. completed survey questionnaires, observation checklists, and data recording sheets) were stored in a locked cabinet and will be preserved for three years before being discarded, according to Population Council guidelines for data storage.

DATA ANALYSIS

Quantitative data were extracted from client exit and provider interviews and were analyzed using SPSS. Appropriate statistical tests measured the MRM intervention's effects and statistical significance (p values). MR service statistics were analyzed for better understanding the trends of comparative acceptability of MR and MRM over time. Qualitative data were extracted from questionnaires and were compiled and coded with content and thematic analysis.

FINDINGS

SERVICE PROVIDER INTERVIEWS

Service providers were interviewed before introducing MRM services to assess their MRM knowledge and attitudes about MR and to determine MR service barriers. Interviews were intended to be with the same providers before their MRM training and after MRM provision. It was not always possible to interview the same providers at a given facility, however, because of transfers and staff retirement. At baseline, 44 providers (13 doctors, one senior FWV, 28 FWVs, and 2 SACMOs) were interviewed, while 40 service providers (13 doctors, 2 senior FWVs, 22 FWVs, and 3 SACMOs) were interviewed at endline, with 31 service providers participating in both the baseline and endline surveys.

Table 3 shows that 68 percent of providers performed MR services at baseline, which declined to approximately 61 percent at endline. The two most important reasons for not providing MR services at the time of the baseline survey invluded personal and religious restrictions, as well as lack of training.

Table 3. Percent distribution of service providers, by MR practice

Issue	Baseline	Endline
Providing MR service	67.7	61.3
N	**31**	**31**
Reasons for not providing MR services		
Personal	70.0	38.5
Religious background	20.0	38.5
Lack of training	10.0	8.3
No answer	-	8.3
N	**10**	**12**
*Advantages of providing MR services**		
Completes in one day	80.6	83.9
Highly predictable outcome	41.9	32.3
Done within 10 weeks of amenorrhea by doctor	29.0	22.6
Done within 8 weeks of amenorrhea by paramedics	16.1	25.8
N	**31**	**31**
*Disadvantages of providing MR services**		
Risk of uterine perforation	77.4	71.0
Risk of infection	64.5	64.5
Invasive	45.2	51.6
Risk of incomplete MR	58.1	38.7
Usage of instrument	29.0	48.4
Risk of cervical laceration	35.5	29.0
Probability of becoming infertile	41.9	25.8
N	**31**	**31**

*** Multiple responses**

Nearly 84 percent of providers stated that the MR procedure takes less time, is highly predictable, and can be performed within 10 weeks of amenorrhea by a doctor (32%) and within eight weeks by a paramedic (26%). Providers mentioned a large number of disadvantages, however, including risk of uterine perforation (71–77%); risk of infection (65%); invasive procedure (45–52%); risk of incomplete procedure (39–58%); usage of instrument (29–48%); risk of cervical laceration (29–36%); and probability of patient infertility (26–42%). Findings suggest no variation in opinions about MR between the two interviews.

Table 4 illustrates service provider knowledge and actual MRM provision status. Only one fourth of providers had heard of MRM at baseline compared to 100 percent at endline. At baseline, 75 percent of providers who knew about MRM offered the service, and after being informed and trained on MRM, the number of MRM providers increased, but their percentage remains the same (71%).

Table 4. Percent distribution of service providers, by MRM knowledge and practice

Issue	Baseline	Endline
Knowledge about MRM service		
Heard about MRM	25.8	100.0
Don't know	74.2	-
N	**31**	**31**
Provide MRM service	75.0	71.0
N	**8**	**31**

SERVICE STATISTICS

Of the 2,976 women who visited health facilities seeking MR services during the study period and given the option of MRM or MVA, 1,882 selected MRM. There was an eight percent loss to follow up between the first dose and two week follow up visit, principally due the fact clients did not return to facilities after achieving normal menstruation without complications. Approximately four percent of acceptors experienced incomplete MRM and had to obtain further service for completion, with nearly 83 percent of those 71 women receiving MVA in a facility and the other 17 percent referred to another facility for D&C (Table 5).

Table 5. Distribution of MRM acceptors, by facility type

Issues	MCWC	UHFWC	Marie Stopes	Total
Number of women who received MRM services	658	733	491	1882
Number of women who received follow-up services after 14 days of first visit	581	696	447	1724
Number of incompleteness of MRM procedure	9	49	13	71
Performed MVA	7	39	13	59
Performed D&C	2	10	0	12

CLIENT EXIT INTERVIEWS

DEMOGRAPHIC CHARACTISTICS

Table 6 highlights the socio-demographic characteristics of the 836 MRM acceptors who participated in an exit interview after their first dose. The majority (76.5%) were between the ages of 20 and 34, and 95 percent were Muslim. Over one third (36.7%) completed secondary education or higher, and the majority (82%) were housewives.

Table 6. Percent distribution of MRM acceptors, by socio-demographic characteristics and by facility type

Background characteristics	MCWC	UHFWC	Marie Stopes	Total
Age (Years)				
15–19	4.7	7.8	5.4	6.3
20–24	26.5	23.9	30.8	26.2
25–29	28.9	29.1	34.6	30.3
30–34	21.7	19.6	18.4	20.0
35 +	18.2	19.6	10.8	17.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
Religion				
Muslim	90.9	97.2	94.1	94.6
Hinduism & Others	9.1	2.8	5.9	5.4
Total	**100.0**	**100.0**	**100.0**	**100.0**
Education				
None	22.1	19.9	-	16.1
Primary incomplete	8.3	13.9	1.6	9.5
Primary complete	17	22.5	1.1	16.1
Secondary incomplete	19.8	27.5	11.4	21.6
Secondary and higher	32.8	16.2	85.9	36.7
Total	**100.0**	**100.0**	**100.0**	**100.0**
Occupation				
Housewife	89.3	83.4	69.2	82.1
Service	3.2	4.0	18.9	7.1
Garment worker	0.8	4.3	0.5	2.4
Student	2.8	1.8	10.3	3.9
Others	4.0	6.5	1.1	4.5
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**253**	**398**	**185**	**836**

Table 7 describes the demographic backgrounds of MRM acceptors' husbands, of whom more than half completed secondary education, and nearly one third were employed in the service industry. Two thirds of MRM acceptors' family incomes were less than BD Taka 15,000 (fifteen thousand) per month.

Table 7. Percent distribution of MRM acceptors, by husbands' socio-demographic characteristics and by facility type

Background characteristics	MCWC	UHFWC	Marie Stopes	Total
Husband's education				
No education	16.2	24.4	0.5	16.6
Primary incomplete	4.3	4.5	-	3.5
Primary complete	9.5	14.1	-	9.6
Secondary incomplete	13.0	22.6	3.8	15.6
Secondary and higher	57.0	34.4	95.7	54.7
Total	**100.0**	**100.0**	**100.0**	**100.0**
Husband's occupation				
Service	29.7	15.1	65.4	30.7
Business	12.6	14.9	24.3	16.3

Small business	17.5	9.6	1.1	10.1
Skilled labor	11.4	20.7	5.4	14.5
Unskilled labor	16.3	11.9	-	10.5
Agriculture/Poultry	5.3	16.9	-	9.7
Others	7.2	10.9	3.8	8.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
Monthly family income (BD Taka)				
Less than 7000	37.1	33.1	2.1	24.5
7000–14999	29.2	41.1	6.6	29.0
15000–29999	21.3	20.2	33.9	24.5
30000+	12.4	5.6	57.4	22.0
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**253**	**398**	**185**	**836**

Women who accepted MRM services from MSB clinics are likely to have a secondary education (86%), and one third were employed. In addition, they were more likely to have a higher income than MCWC and UHFWC clients. Both MSB clinics are in Dhaka.

REPRODUCTIVE HEALTH CHARACTERISTICS

Table 8 presents MRM acceptors' RH characteristics including previous pregnancies, childbirth history, and previous MR. Most MRM acceptors were multigravidas (two thirds reported 3 or more pregnancies) and multiparous (83% had 2 or more children). One fourth of MRM acceptors (22%) had at least one prior MR procedure. When asked about future pregnancy intentions, 58 percent had no interest in more children, and among the one third who wanted more children, nearly half wanted at least one more child.

Table 8. Percent distribution of MRM acceptors, by RH characteristics and by facility type

RH characteristics	MCWC	UHFWC	Marie Stopes	Total
Number of pregnancies				
1	8.7	7.8	29.2	12.8
2	22.1	19.8	22.7	21.2
3	33.6	25.4	23.2	27.4
4+	35.6	47.0	24.9	38.6
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**253**	**398**	**185**	**836**
Number of children				
1	10.9	10.3	48.6	17.4
2	27.7	26.2	24.3	26.3
3	37.6	29.8	22.5	31.1
4+	23.8	33.7	4.6	25.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**202**	**302**	**111**	**615**
Ever accepted MR				
Yes	16.6	18.8	37.3	22.2
No	83.4	81.2	62.7	77.8
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**253**	**398**	**185**	**836**
Number of MR				
1	69.0	74.7	73.9	73.1
2	21.5	16.0	17.4	17.7
3+	9.5	9.3	8.7	9.2

RH characteristics	MCWC	UHFWC	Marie Stopes	Total
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**42**	**75**	**69**	**186**
Interest in having a child in the future				
Yes	27.7	31.7	53.5	35.4
No	68.3	62.7	36.2	58.5
Not sure	4.0	5.6	10.3	6.1
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**253**	**398**	**185**	**836**
Expected number of future children				
1	68.6	60.3	20.2	48.8
2	24.3	15.9	14.1	17.3
Not sure	7.1	23.8	65.7	33.9
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**70**	**126**	**99**	**295**

Table 9 provides MRM acceptors' FP method use and causes of method failure. When asked about their contraceptive practices before their last pregnancy, over one half (54%) used a contraceptive method, with approximately half of those (56%) using contraceptive pills and one third (35%) using condoms. When asked for possible reasons for method failure, 62 percent revealed forgetting to take their chosen method, and 20 percent attributed failure to a leaking condom.

Table 9. Percent distribution of MRM acceptors, by contraceptive use and causes of failure and by facility type

Issues	MCWC	UHFWC	Marie Stopes	Total
Contraceptive use before last pregnancy				
Yes	53.4	62.1	37.3	53.8
No	46.6	37.9	62.7	46.2
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**253**	**396**	**185**	**834**
Methods used				
Pill	60.7	63.8	15.9	55.6
Condom	31.9	23.6	84.1	35.3
Injectable	3.7	7.7	-	5.3
Other*	3.7	4.9	-	3.8
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**135**	**246**	**69**	**450**
Reason for FP method failure				
Forgot to use method	61.5	61.1	65.2	61.9
Leaking of condom	21.5	15.0	33.3	19.8
Date expired on injectable	3.7	7.3	-	5.1
No contraceptive used during postpartum Amenorrhea	5.9	1.6	-	2.7
Other	7.4	15.0	1.5	10.5
Total	**100.0**	**100.0**	**100.0**	**100.0**
N	**135**	**246**	**69**	**450**

*Other methods include IUD, Norplant, safe period, and withdrawal

MRM KNOWLEDGE

An important facet of the intervention was to inform women about their MR options and assist their decision process with MRM educational materials provided by field workers. Clients were interviewed by RAs to determine whether they received information from field workers on MRM. During orientation sessions, field workers were requested to provide information on MRM during routine household visits and were paid BD Taka 1,000 monthly for transport costs. The results of this knowledge assessment are presented in Table 10.

Over half of respondents correctly defined LMP as last menstrual period. MRM clients were asked about the procedures that can be used for menstrual regulation. Two thirds of clients identified MVA as a type of MR procedure, 26 percent identified MRM, and seven percent identified herbal medicine or *kabiraji*.

One quarter of clients had heard of MRM before coming to the facility. Their primary source of information was field workers (56%), FWVs/MA/SACMO (28%), MRM acceptors, relatives, friends, neighbors (21%), or qualified doctors (10%). Many FWAs provided MRM information, which is reflected in higher MRM knowledge among UHFWC clients, of whom a large majority (86%) mentioned a health facility as the place for the first MRM dose, and that the drugs should be taken orally (94%). Two thirds of these clients acknowledged that the second dose could be taken at either the health facility (67%) or at home (67%), and almost all of these clients knew the second dose should be taken buccally. It is clear that FWAs who provided information about MRM and did it correctly.

Table 10. Percent distribution of MRM acceptors, by MRM knowledge and by facility type

Knowledge indicator	MCWC	UHFWC	Marie Stopes	Total
Correct knowledge on LMP	80.6	29.9	68.1	53.7
N	253	398	185	836
*Types of MR**				
MR by syringe (MVA)	56.1	58.3	95.1	65.8
MR by medicine (MRM)	6.3	44.7	13.5	26.2
MR by Kabiraji medicine	15.0	4.3	2.2	7.1
MR by herbal medicine	19.8	2.0	0.5	7.1
N	253	398	185	836
Ever heard of MRM before coming to the facility	7.1	42.7	11.9	25.1
N	253	398	185	836
*Persons provided MRM information**				
Qualified doctor	22.2	-	77.3	10.0
FWV/ MA/SACMO	16.7	32.5	-	27.8
HA/FWA	5.6	68.6	-	56.0
MRM acceptors/relatives/friends/neighbors	55.6	17.2	18.2	20.6
N	18	169	22	209
Place for receiving 1st dose of MRM				
Health facility	88.9	87.6	81.8	86.2
Don't know	11.1	12.4	18.2	13.8
N	18	169	22	209
How to administer 1st dose of MRM drugs				
Oral	88.9	94.7	90.9	93.8
Don't know	11.2	5.3	9.1	6..2
N	18	169	22	209
*Place for administer 2nd dose of MRM**				
Health facility	83.3	74.0	-	67.3
Home	83.3	60.9	100.0	66.8
Don't know	5.6	10.7	-	9.1
N	18	169	22	209

How to administer 2nd dose of MRM drugs				
Buccally	88.9	91.8	100.0	92.3
Other	11.1	8.2	-	7.7
N	18	169	22	209

* Multiple responses

In Table 11, knowledge of usual MRM effects, side effects, and complications is described by women who heard about MRM before coming to a health facility. When asked about possible effects, side effects, and signs of complications after MRM, clients mentioned a bleeding period after taking the second dose (57%), blood clots (47%), and cramping (43%) were usual effects of MRM. Fever or chills (58%), nausea (55%), vomiting (54%), diarrhea (36%), dizziness (24%), and headaches (19%) were listed as possible side effects.

Table 11. Percent distribution of women who knew of MRM before coming to health facility, by knowledge of MRM procedure and by facility type

Knowledge indicator	MCWC	UHFWC	Marie Stopes	Total
*Usual effects**				
Bleeding-like period after taking the 2nd dose	66.7	50.3	100.0	56.7
Release of blood clot	33.3	43.8	81.0	46.6
Lower abdominal pain and cramping	16.7	42.0	76.2	43.3
Don't know	-	23.1	-	18.8
N	18	169	21	208
*Side effects**				
Nausea	5.6	54.4	100.0	54.8
Vomiting	72.2	50.9	66.7	54.3
Fever/chills	88.9	54.4	57.1	57.7
Diarrhea	16.7	32.5	76.2	35.6
Dizziness	11.1	21.3	52.4	23.6
Headaches	11.1	16.6	47.6	19.2
Don't know	5.6	24.9	-	20.7
N	18	169	21	208
*Complications**				
Heavy vaginal bleeding	77.8	38.2	66.7	44.5
Prolonged and heavy vaginal bleeding	44.4	30.0	61.9	34.4
Severe cramping	27.8	21.8	57.1	25.8
Fever/chills lasting 6 or more hours	16.7	24.7	33.3	24.9
Any abnormal vaginal discharge	-	11.8	12.9	13.9
Severe abdominal pain	-	8.2	12.9	11.0
Don't know	11.1	44.7	8.6	40.2
N	18	170	21	208

* Multiple responses

Similarly, heavy vaginal bleeding (45%), severe cramping (26%), fever or chills lasting six hours or more (25%), abnormal vaginal discharge (14%), and severe abdominal pain (11%) were stated as signs of MRM complications. One fifth of clients who had heard of MRM did not know its usual effects or side effects, and 41 percent did not know the signs and symptoms of MRM complications, which stresses the importance of client education.

REASONS FOR SEEKING MRM

Table 12 details the reasons clients sought either MR or MRM. Fifty eight percent of clients did not have a particular procedure in mind before coming to a health facility; however, facility specific data reveal about one third of MCWC clients were explicitly seeking MR, while 41 percent of UHFWC clients intended to receive MRM. Of the 158 clients who wanted MR, 58 percent chose it because they felt it was a safe method,

quicker (64%), and more confidential (28%). Comparatively, the 190 clients who preferred MRM selected the method because it was less invasive (54%), less expensive (52%), did not require surgery (34%), and was perceived as less risky (28%) than MR with MVA.

Table 12. Percent distribution of MRM acceptors, by reasons for seeking MR and MRM and by facility type

Reasons	MCWC	UHFWC	Marie Stopes	Total
Any particular method in mind for regulating menstruation				
Yes, MR	38.7	14.1	2.2	18.9
Yes, MRM	6.3	41.0	5.9	22.8
No	54.9	45.0	91.9	58.3
N	**253**	**398**	**185**	**836**
*Reason for seeking MR**				
MR method is safe	80.2	17.9	100.0	58.3
Takes less time	64.6	67.9	-	64.1
More confidential	21.9	39.3	-	27.6
N	**98**	**56**	**4**	**158**
*Reason for seeking MRM**				
No surgery is required	12.5	32.1	90.9	33.9
Avoids anesthesia	-	3.7	45.5	5.8
Less invasive	56.3	54.3	45.5	54.0
Less expensive	68.8	52.5	9.1	51.9
Less risky	18.8	30.9	-	28.0
Less risk of infection than MVA	6.3	8.0	-	7.4
N	**16**	**163**	**11**	**190**

* Multiple responses

FOLLOW UP

During the follow up interview, MRM acceptors were asked about the MRM second dose, side effects, follow up treatment, and satisfaction. Table 13 shows that most clients (87%) self-administered the second dose at home, and 95 percent of those clients reported doing so successfully. Only five percent of MRM acceptors experienced incomplete MRM and either received MVA (71.4%) or were referred to another facility for D&C (28.6%).

Table 13. Percent distribution of MRM acceptors, by administration of drug, completion and management, and by facility type

Issues	MCWC	UHFWC	Marie Stopes	Total
2nd dose administration				
Self-administered	**99.2**	**73.3**	**100.0**	**87.0**
Administered by provider	**0.8**	**26.7**	**-**	**13.0**
N	**253**	**398**	**185**	**836**
Completeness of the procedure				
Completed	**98.4**	**92.5**	**95.7**	**95.0**
Incomplete	**1.6**	**7.5**	**4.3**	**5.0**
N	**253**	**398**	**185**	**836**
Completeness managed by				
MVA	**75.0**	**63.3**	**100.0**	**71.4**
D&C	**25.0**	**36.3**		**28.6**
N	**4**	**30**	**8**	**42**

MRM SIDE EFFECTS

Clinical side effects for the first and second MRM doses are presented in Table 14, by type of health facility. Nineteen percent of clients experienced side effects after taking Mifepristone (first dose), and most were UHFWC clients. The most commonly reported side effects experienced by MRM acceptors are nausea (58.5%), fever or chills (36%), flushes or sweats (28%), headaches (11%), and vomiting (16%). Approximately 40 percent of women experiencing side effects needed medication or further treatment.

Table 14. Percent distribution of MRM acceptors, by reported side effects of first and second dose and by facility type

Side effects	MCWC	UHFWC	Marie Stopes	Total
A. Side effect experienced after taking 1st dose	8.3	31.9	6.5	19.1
N	**253**	**398**	**185**	**836**
Reported side effects after 1st dose*				
Nausea	28.6	62.2	58.3	57.5
Fever/chills	23.8	39.4	25.0	36.3
Vomiting	28.6	15.0	8.3	16.3
Diarrhea	-	7.9	8.3	6.9
Flushes/sweats	19.0	39.9	25.0	28.1
Dizziness	4.8	0.8	8.3	1.9
Headaches	14.3	11.8	-	11.3
N	**21**	**127**	**12**	**160**
Medication or treatment was required for side effect of 1st dose	28.6	42.5	33.3	40.0
N	**21**	**127**	**12**	**160**
B. Side effect experienced after taking 2nd dose	72.3	61.8	69.7	66.7
N	**253**	**398**	**185**	**836**
Reported side effects after 2nd dose*				
Fever/chills	69.4	51.6	34.9	53.6
Nausea	29.5	50.0	36.4	40.1
Vomiting	35.0	26.8	18.6	27.6
Diarrhea	14.2	14.6	17.1	15.1
Dizziness	10.4	13.4	20.2	14.0
Headaches	28.4	21.5	16.3	22.6
N	**183**	**246**	**129**	**558**
Medication or treatment was required for side effect of 2nd dose	23.0	47.6	30.2	35.6
N	**183**	**246**	**129**	**558**

* Multiple responses

Approximately two thirds of acceptors experienced side effects after the second dose, and 36 percent needed medication to manage side effects. Frequently cited side effects after taking Misoprostol (second dose) were fever or chills (54%), nausea (40%), vomiting (28%), headaches (23%), diarrhea (15%), and dizziness (14%).

POST-MRM FAMILY PLANNING

After the MRM procedure, providers were expected to inform their clients about FP methods. Table 15 shows that the most frequently discussed contraceptive methods were contraceptive pills (77%), IUDs (29%), condoms (24%), injections (16%), and implants (14%). Only one percent of service providers did not discuss contraceptive options with MRM acceptors. Findings suggest that 69 percent of MRM users decdied on contraceptive pills, and eight percent opted for condoms. Only 12 percent did not accept any form of contraception, while the remaining 11 percent chose IUDs, injectables, or implants. UHFWC clients were

more likely to begin contraceptive pills. Approximately one fifth of MSB and MCWC clients did not receive any contraceptive method, versus only three percent at UHFWC.

Table 15. Percent distribution of MRM acceptors, by accepting FP methods at follow up visit and by facility type

Issues	MCWC	UHFWC	Marie Stopes	Total
Contraceptive methods discussed *				
Oral contraceptive pill	73.9	71.5	93.5	77.1
Condom	25.3	15.9	40.0	24.1
IUD	28.9	32.0	23.8	29.2
Injection	14.6	20.4	11.9	16.8
Implant	16.6	13.6	9.2	13.5
Sterilization	3.6	6.3	1.1	4.3
Not discussed	0.8	2.0	0.0	1.2
N	**253**	**398**	**185**	**836**
Chose Contraceptive methods				
Oral contraceptive pill	60.4	76.0	65.2	68.9
Condom	8.4	5.7	13.6	8.3
IUD	2.0	8.0	-	4.4
Injection	6.8	5.7	0.5	4.9
Implant	2.0	1.0	0.5	1.2
Sterilization	-	0.5	-	0.2
Didn't accept any method	20.4	3.1	20.1	12.2
Total	**100**	**100**	**100**	**100**
N	**250**	**388**	**184**	**822**

* Multiple responses

QUALITY OF CARE

RAs used a standardized checklist to record their observations of MRM service quality. Findings from these observations are provided in Table 16. Nearly all observed providers determined LMP, and 70 percent took a menstrual history. Service providers screened for history of ectopic pregnancy (47%), hemorrhagic disorder (60%), severe anemia (57%), drug allergies (77%), and hypertension (65%).

Table 16: Percent distribution of client-provider interactions, by indicators and by facility type

Indicators	MCWC	UHFWC	Marie Stopes	Total
Collected background information for screening				
Date of last menstrual period (LMP)	99.2	100.0	99.0	99.5
Menstrual history	60.6	67.3	89.6	70.4
Any current medication	87.4	73.9	97.9	83.4
History of ectopic pregnancy, self and family member	46.5	32.2	79.2	47.2
History of long term steroid intake	56.7	43.2	92.7	58.5
History of asthma	92.9	51.8	83.3	71.3
History of hemorrhagic disorder	76.4	53.8	52.1	60.2
History of severe anemia	69.3	50.3	55.2	57.1
History of adrenal failure	16.5	24.1	43.8	26.3
History of hypertension	89.0	55.8	52.1	64.9
Inquire about chest pain or breathlessness	82.7	55.3	88.5	71.1
History of convulsion/fainting attack	44.9	42.7	32.3	41.0

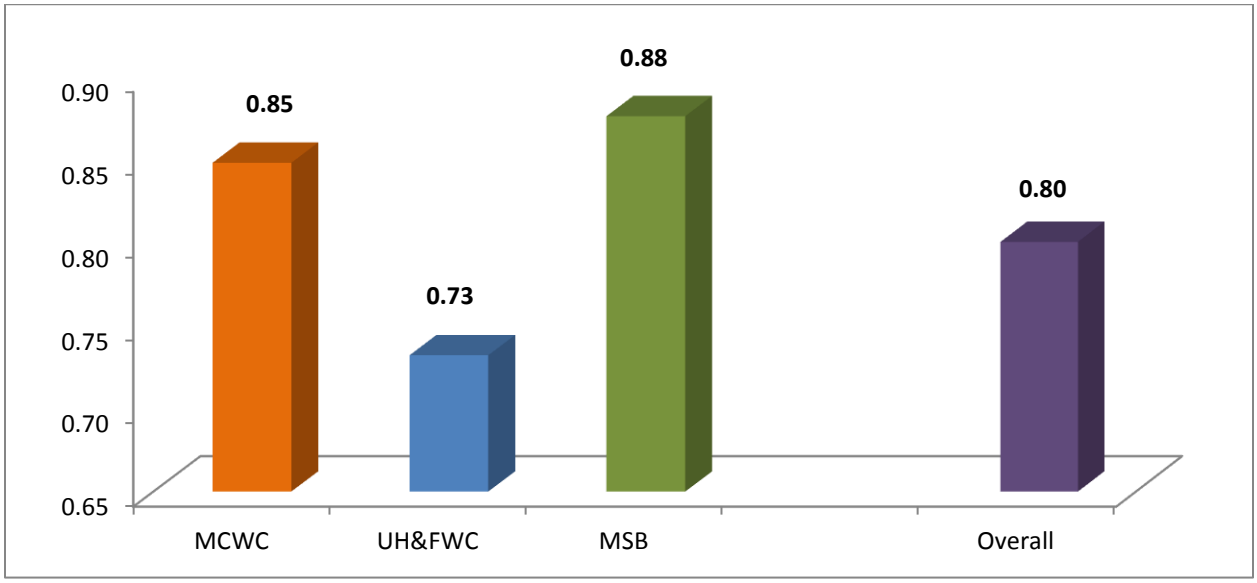
Indicators	MCWC	UHFWC	Marie Stopes	Total
Diabetes mellitus	96.1	52.8	43.8	63.7
Any drug allergies	95.3	56.3	96.9	77.3
Number of pregnancies	96.1	84.9	87.5	88.9
Age of younger child	96.9	85.4	88.5	89.6
Any previous miscarriage/abortion	89.0	65.8	83.3	76.8
Any previous still birth(s)	85.0	57.3	49.0	63.7
Any history of surgery	78.7	57.8	51.0	62.6
Any caesarean sections	81.1	62.3	41.7	63.3
Current use of contraceptive method	86.6	78.4	83.3	82.0
Any current symptoms of STIs or PID	16.5	28.1	67.7	33.6
N	**127**	**199**	**96**	**422**
Performed physical examination				
Took height	28.3	35.2	100.0	47.9
Took weight	20.5	13.6	16.7	16.4
Measured blood pressure	83.5	72.9	67.7	74.9
Measured pulse	46.5	67.3	65.6	60.7
Checked conjunctiva for anemia	49.6	62.3	87.5	64.2
Checked abdomen for any mark of operation	37.8	45.7	21.9	37.9
Performed bimanual examination abdomen	48.0	81.9	17.7	57.1
Performed internal examination for vaginal discharge	19.7	52.8	15.6	34.4
Recorded all info on the client's card	74.0	62.3	68.8	67.3
N	**127**	**199**	**96**	**422**
Provided services at follow up visit				
Listen and keep record of experiences after receiving 2nd drug	81.1	66.8	84.4	75.1
Perform physical examination to check completeness of MRM	74.0	89.9	80.2	82.9
Perform vaginal examination to check completeness of MRM	51.2	78.4	47.9	63.3
Perform vaginal examination to check pelvic infection	16.5	34.7	49.0	32.5
Consult about importance and adoption of post MRM contraceptive	92.9	89.9	51.0	82.0
Inform that the MRM is successfully done	97.6	89.9	92.7	92.9
Ask about any complications experienced by the client after MRM services	95.3	72.9	88.5	83.2
N	**127**	**199**	**96**	**422**

Most providers took a detailed pregnancy history: 89 percent asked about the number of previous pregnancies, miscarriage or abortion (77%), and still births (64%); 82 percent asked about current contraceptive methods; and one third inquired about symptoms of Sexually Transmitted Infections (STIs) and Pelvic Inflammatory Disease (PID). During the initial physical examination, only 57 percent of providers performed a bimanual pelvic examination, and 34 percent internally examined vaginal discharge. At the follow up visit, 83 percent of providers performed a physical examination to confirm MRM completion.

A Composite Quality Score (CQS) was calculated by measuring the performance of a health facility according to quality indicators (Annex 1) that were classified into seven broad categories, with several indicators for each category. Overall facility scores were computed to assess quality of MRM services provided to MRM acceptors. The CQS is based on 422 observations by RAs using a standard checklist of indicators for items providers should have covered during clinical visits. Indicators were grouped by different aspects of care: medical history or background check, physical examination, counseling, follow up services, contraceptives, and distribution of BCC materials for second doses, and assigned a score. These scores were equally weighted

based on the number of indicators within the group and totaled for an overall quality score. On the CQS scale, a score of 1.00 represents the highest quality service possible. Figure 2 indicates that the overall CQS for all health facilities was 0.80, signifying that good quality MRM services were provided. MSB clinics were the highest performing health facilities, with a CQS of 0.88, and UHFWCs were the lowest, with an overall score of 0.73.

Figure 2. Composite Quality Score, by facility type



CLIENT SATISFACTION

Client interview findings show that clients were pleased with their MRM services (Table 17). Nearly two thirds of clients found the service satisfactory, and one third stated they were very satisfied with their MRM service. In fact, 97 percent of MRM acceptors reported that they would suggest MRM to others, and 95 percent would refer a friend to the same health facility.

Table 17. Percent distribution of MRM acceptors, by satisfaction and by facility type

Issues	MCWC	UHFWC	Marie Stopes	Total
Satisfaction				
Very satisfied	19.0	38.5	45.7	34.2
Satisfied	79.8	54.7	50.5	61.4
Unsatisfied	-	6.6	3.8	3.9
Did not respond	1.2	0.3	-	0.5
Suggest MRM to others				
Yes	100.0	95.6	96.2	97.1
No	-	4.4	3.8	2.9
Recommend the same facility				
Yes	100.0	91.4	96.7	95.2
No	-	3.6	2.2	2.2
Not sure	-	4.9	1.1	2.6
N	**253**	**398**	**185**	**836**

MRM SERVICE COST

One objective of this OR study was a cost analysis to assess funding needed for national MRM services. The cost analysis includes computation of intervention costs, cost categorization, and analysis of the behavior of different types of cost. Strictly speaking, cost refers to the value of the inputs used for producing an output at the highest level of economic efficiency, and any and every expenditure is not cost. For operational purposes, an expenditure can be considered a cost if the expenditure estimates are obtained after a proper cost minimization analysis. Total cost can be divided into two components: fixed and variable. Fixed cost is defined as that part of cost that remains constant at any level of output (including zero) and variable cost changes as the number of outputs change (and is zero when no output is produced). The total cost can also be divided into two categories: recurrent and capital.

In this analysis fixed cost comprises monthly field worker allowances, training costs, and BCC material costs. Variable costs include service provider incentives (per case) and complications management costs. Recurring cost comprises service provider and field worker payments as incentives as well as the costs of complication management. Capital costs include training and BCC material costs. For each category, the total cost, cost per facility, and cost per client are computed. The different cost categories are presented in Table 18.

Fixed costs constitute 59 percent and variable costs 41 percent of the intervention's total cost. The proportion of recurring cost is approximately 66 percent and capital cost is 34 percent. The total cost per facility was BD Taka 95,573, and the average total cost (cost per client) was BD Taka 660.

Table 18. Different categories of cost of MRM intervention, in BD Taka

Cost type	Amount (BDT)
Total fixed cost	729,942
Fixed cost per facility	56,149
Fixed cost per client (average fixed cost)	388
Total variable cost	512,502
Variable cost per facility	39,423
Variable cost per client (average variable cost)	272
Total recurrent cost	817,402
Recurrent cost per facility	62,877
Recurrent cost per client	434
Total capital cost	425,042
Capital cost per facility	32,696
Capital cost per client	226
Total cost	1,242,444
Total cost per facility	95,573
Total cost per client	660

In the absence of separate cost data for each facility, it was assumed that each facility's overall average cost (i.e. total cost divided by 13) was the same, with the amount per facility at BD Taka 95,573. Costs include expenses related to training and BCC activities. The drug cost is not included in the calculation.

Bangladesh has 3,800 UHFWCs and 97 MCWCs, with a total cost of implementing the intervention nationally of BD Taka 373 million (US $4.66 million). Of this total amount, BD Taka 246 million (US$ 3.07 million) will be a recurring cost—incurred every year for BCC activities—and BD Taka 127 million (US $1.59) will be spent only in the initial year.

DISCUSSION

The objective of this operations research study was to assess the feasibility and accessibility of introducing menstrual regulation with medication through the combination of Mifepristone and Misoprostol. The study was implemented in health facilities, with different types of service providers from both urban and rural districts throughout Dhaka Division, to better understand the challenges and potential barriers to implementing menstrual regulation with medication as part of the national family planning strategy.

Given the option between standard menstrual regulation (MR) and menstrual regulation with medication (MRM), 63 percent of women selected MRM, and most MRM acceptors were satisfied with the drug regimen. Drug administration alone should not be considered when evaluating the study, however. Quality of MRM care must be a major consideration as well. The health facilities participating in this study received an overall good quality of care score based on CQS. MSB health facilities received a higher composite quality score compared to government health facilities (i.e. MCWC and UHFWC). Government health facilities generally serve more clients than MSB, and these clients are more likely from lower socio-economic backgrounds. Differences in quality of care could be attributed to differences in types of service providers performing MRM servicess in the two types of facilities. Government facility clients are more likely to be treated by a paramedic compared to MSB clients, who are more likely to be seen by a medical doctor. It is of concern, however, that UHFWC health facilities provided lower quality care than MCWC health facilities, because FWVs provided MRM services at both facilities and so quality of care should be about the same.

Although there was substantial effort to include key stakeholders and service providers from the beginning of the OR study, it was difficult to garner commitments from FWVs because charging fees for MRM services was not permitted. Financial incentives for MRM provision are much less than for MVA because providers can charge for MVA because it is an invasive procedure. There is convincing evidence that MRM services would be in women's best interests, from both health and financial perspectives. If service providers are unwilling to provide MRM because they will not make as much profit from doing so, some sort of additional compensation should ensure they provide the best care for women, especially for MR and FP services.

This study shows there is a demand from clients for MRM services; with additional financial incentives for providers, MRM services can easily be introduced in both rural and urban facilities. Currently, a large number of providers do not offer MR services for personal reasons, which means women are forced to seek MR from unscrupulous providers.

Menstrual regulation by medication is a feasible alternative that can be easily incorporated into normal MR care with political will and backing from Ministry of Health and Family Welfare officials. National introduction of MRM will provide more than one million annual MR in Bangladesh with another option for care.

RECOMMENDATIONS

It is clear that menstrual regulation by medication is feasible in Bangladesh, and given the option between MRM and MVA, a large majority of women choose MRM services. In addition, women who chose MRM were satisfied with their quality of care. MRM is non-invasive and can be performed safely and confidentially at a health facility or at home. It is imperative this service be incorporated in the national FP program for an alternative for the more than one million annual MR seekers in Bangladesh.

To introduce MRM services at government health facilities, a commitment to providing additional MRM training to service providers, particularly FWVs and SACMOs, is necessary so it is not a service provided by only a few private sector providers. Trained providers must be adequately supervised to ensure quality services for clients. Private sector facilities (i.e. MSB) should be used as a model for quality and demand generation, based on their higher performance in this study. MRM service provision should be incorporated into service providers' training curricula.

Before introducing MRM nationally, a scale up strategy should be developed for phased MRM services, starting with urban health facilities such as MCWCs and gradually moving to rural areas. In addition, a comprehensive training program will be needed to train more than 6,000 public sector providers. The MIS also needs to be revised and updated to include MRM information.

This project's next step should be to assist policymakers and program managers for developing strategies for introducing MRM in MCWCs and developing plans for capacity building, monitoring, and dissemination.

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ANNEX 1

Indicators of quality Care observed during client-provider interaction (CPI)

1. Medical history/ background check (23)

Did the provider ask about date of last menstrual period (LMP)?

Did the provider ask about menstrual history?

Did the provider ask about any current medication?

Did the provider ask about history of ectopic pregnancy, self and family member?

Did the provider ask about history of Porphyria?

Did the provider ask about history of long term steroid intake?

Did the provider ask about history of Asthma?

Did the provider ask about history of hemorrhagic disorder?

Did the provider ask about history of severe anemia?

Did the provider ask about history of adrenal failure?

Did the provider ask about history of hypertension?

Did the provider inquire about chest pain or breathlessness (cardiac disease)?

Did the provider ask about H/O convulsion/ fainting attack?

Did the provider ask about diabetes mellitus?

Did the provider ask about any drug allergies?

Did the provider ask about number of pregnancies?

Did the provider ask about age of younger children?

Did the provider ask about any previous miscarriage/ abortion?

Did the provider ask about any previous still birth(s)?

Did the provider ask about any history of surgery?

Did the provider ask about any caesarean sections?

Did the provider ask about current use of contraceptive method?

Did the provider ask about any current symptoms of STIs or PID?

2. Physical examination (10)

Did the service provider take, ask or perform height of the client?

Did the service provider take, ask or perform weight of the client?

Did the service provider measure blood pressure of the client?

Did the service provider count pulse of the client?

Did the service provider check the client's conjunctiva for anemia?

Did the service provider check the client's abdomen for any mark of operation?

Did the service provider perform bi-manual examination abdomen for size, shape, height and position of uterus?

Did the service provider perform internal examination for vaginal discharge?

Did the service provider record all relevant information on the client's record?

Did the service provider record all relevant information in registers?

3. Counseling (25)

The provider explained Medical MR to the client

Did the service provider explain the advantages of MR?

Did the service provider explain the disadvantages of MR?

Did the service provider explain the advantages of Medical MR?

Did the service provider explain the disadvantages of Medical MR?

Did the provider allow the client to choose the MR method?

Did the service provider inform the client about her eligibility for receiving Medical MR service?

Did the service provider taken written consent from the client after she chose Medical MR?

Did the service provider provide 1st dose of Medical MR drug to the client?

Did the provider inform about bleeding like period after taking 2nd dose as the normal effects of Medical MR drugs?

Did the provider inform about release of blood clot as the normal effects of Medical MR drugs?

Did the provider inform about lower abdominal pain and cramping as the normal effects of Medical MR drugs?

Did the provider inform about nausea as the possible side-effects of 1st dose Medical MR drug?

Did the provider inform about vomiting as the possible side-effects of 1st dose Medical MR drug?

Did the provider inform about chill/ fever as the possible side-effects of 1st dose Medical MR drug?

Did the provider inform about diarrhea as the possible side-effects of 1st dose Medical MR drug?

Did the provider inform about flushes/ sweats as the possible side-effects of 1st dose Medical MR drug?

Did the provider inform about dizziness as the possible side-effects of 1st dose Medical MR drug?

Did the provider inform about headaches as the possible side-effects of 1st dose Medical MR drug?

Did the provider advice the client to take pain relief medication when the pain becomes severe as the side effect management of Medical MR?

Did the provider advice the client to take anti vomiting drug as the side effect management of MRM?

Did the provider advice the client to take anti-diarrheal drugs as the side effect management of MRM?

Did the provider advice the client to have hot compress as the side effect management of MRM?

Did the provider advice the client to contact with FWA/ MSB field worker/ RA for any need as the side effect management of Medical MR?

Did the provider advice the client to call round the clock call center as the side effect management of Medical MR?

4. Services for follow up visit (9)

Did the provider listen and keep record of experiences after receiving 2nd drug?

Did the provider perform physical examination to check whether the MR with medication successfully completed?

Did the provider perform vaginal examination to check completeness of MR?

Did the provider perform vaginal examination to check pelvic infection?

Did the provider consult about importance and adoption of post MR contraceptive?

Did the service provider inform the client that the Medical MR is successfully done?

If the Medical MR is not successful, did the service provider advice the client to perform MRVA?

If the Medical MR is not successful, did the service provider refer the client for MRVA?

Did the service provider ask about any complications experienced by the client after Medical MR services?

5. Contraceptive (8)

Did the service provider counsel the client on post Medical MR contraception?

Did the service provider offer the client any post Medical MR contraceptive method?

Did the service provider supply the client oral contraceptive pill?

Did the service provider supply the client condom?

Did the service provider supply the client IUD?

Did the service provider supply the client implant?

Did the service provider supply the client injectable?

Did the service provider supply the client sterilization?

6. Distribution of materials (3)

Did the service provider provide the client pictorial pamphlet on Medical MR at the health facility?

Did the service provider provide the client wheel calendar on Medical MR at the health facility?

Did the service provider collect client's phone number (mobile) number for follow up?

7. Information on 2nd dose (19)

Did the service provider explain about home as the recommended place of administration of 2nd dose of Medical MR drug?

Did the service provider explain about health facility as the recommended place of administration of 2nd dose of Medical MR drug?

Did the service provider explain about the recommended routes of administration of 2nd dose of Medical MR drug?

Did the service provider explain the correct time of administration of 2nd dose of Medical MR drug?

Did the provider inform about nausea as the possible side-effects of 2nd dose Medical MR drug?

Did the provider inform about vomiting as the possible side-effects of 2nd dose Medical MR drug?

Did the provider inform about chill/ fever as the possible side-effects of 2nd dose Medical MR drug?

Did the provider inform about diarrhea as the possible side-effects of 2nd dose Medical MR drug?

Did the provider inform about flushes/ sweats as the possible side-effects of 2nd dose Medical MR drug?

Did the provider inform about dizziness as the possible side-effects of 2nd dose Medical MR drug?

Did the provider inform about headaches as the possible side-effects of 2nd dose Medical MR drug?

Did the service provider explain about heavy vaginal bleeding as the possible complications of 2nd dose of Medical MR drug?

Did the service provider explain about prolonged heavy bleeding or severe cramping as the possible complications of 2nd dose of Medical MR drug?

Did the service provider explain about severe cramping which is not relieved by pain relief medication as the possible complications of 2nd dose of Medical MR drug?

Did the service provider explain about a fever, chills or malaise lasting six or more hours as the possible complications of 2nd dose of Medical MR drug?

Did the service provider explain about any abdominal vaginal discharge as the possible complications of 2nd dose of Medical MR drug?

Did the service provider explain about severe abdominal pain and lower abdominal tenderness as the possible complications of 2nd dose of Medical MR drug?

Did the service provider ask the client to return to the health facility after 14 days of administering 2nd dose for a follow-up visit?