

DMONO

Principal Investigator Dr. R. Bairagi Trainee Investigator (if any) \_\_\_\_\_

Application No. 97-015 Supporting Agency (if Non-ICDDR,B) \_\_\_\_\_

Title of Study Abortion dynamics... Project status:  
 Bring about any change? \_\_\_\_\_  
 New Study  
 Continuation with change  
 No change (do not fill out rest of form)

Circle the appropriate answer to each of the following (If Not Applicable write NA).

- Source of Population:
  - (a) Ill subjects Yes  No
  - (b) Non-ill subjects Yes  No
  - (c) Minors or persons under guardianship Yes  No
- Does the study involve:
  - (a) Physical risks to the subjects Yes  No
  - (b) Social Risks Yes  No
  - (c) Psychological risks to subjects Yes  No
  - (d) Discomfort to subjects Yes  No
  - (e) Invasion of privacy Yes  No
  - (f) Disclosure of information damaging to subject or others Yes  No
- Does the study involve:
  - (a) Use of records, (hospital, medical, death, birth or other) Yes  No
  - (b) Use of fetal tissue or abortus Yes  No
  - (c) Use of organs or body fluids Yes  No
- Are subjects clearly informed about:
  - (a) Nature and purposes of study Yes  No
  - (b) Procedures to be followed including alternatives used Yes  No
  - (c) Physical risks Yes  No
  - (d) Sensitive questions Yes  No
  - (e) Benefits to be derived Yes  No
  - (f) Right to refuse to participate or to withdraw from study Yes  No
  - (g) Confidential handling of data Yes  No
  - (h) Compensation &/or treatment where there are risks or privacy is involved in any particular procedure Yes  No

- Will signed consent form be required:
    - (a) From subjects Yes  No
    - (b) From parent or guardian (if subjects are minors) Yes  No
  - Will precautions be taken to protect anonymity of subjects Yes  No
  - Check documents being submitted herewith to Committee:
    - Umbrella proposal - Initially submit an overview (all other requirements will be submitted with individual studies). Protocol (Required)
    - Abstract Summary (Required)
    - Statement given or read to subjects on nature of study, risks, types of questions to be asked, and right to refuse to participate or withdraw (Required)
    - Informed consent form for subjects
    - Informed consent form for parent or guardian
    - Procedure for maintaining confidentiality
    - Questionnaire or interview schedule \*
- \* If the final instrument is not completed prior to review, the following information should be included in the abstract summary:
- A description of the areas to be covered in the questionnaire or interview which could be considered either sensitive or which would constitute an invasion of privacy.
  - Examples of the type of specific questions to be asked in the sensitive areas.
  - An indication as to when the questionnaire will be presented to the Cttee. for review.

We agree to obtain approval of the Ethical Review Committee for any changes involving the rights and welfare of subjects before making such change.

R. Bairagi  
Principal Investigator

\_\_\_\_\_  
Trainee

Principal Investigator: Last, first, middle Bairagi, R.

International Centre for Diarrhoeal Disease Research, Bangladesh

**FOR OFFICE USE ONLY**

Protocol No: \_\_\_\_\_ Date: \_\_\_\_\_

RRC Approval: Yes/ No Date: \_\_\_\_\_

ERC Approval: Yes/No Date: \_\_\_\_\_

# RESEARCH PROTOCOL

1. Title of Project (Do not exceed 60 characters including spaces and punctuations)

Abortion Dynamics in Rural Bangladesh: Does An MCH-FP Program Bring About Any Change?

2a. Name of the Principal Investigator(s) (Last, Middle, First)

Bairagi, Radheshyam

2b. Position / Title

Senior Scientist

2c. Qualifications

D.Sc.

3. Name of the Division/ Branch / Programme of ICDDR,B under which the study will be carried out.

Health & Demographic Surveillance Programme

Public Health Sciences Division

4. Contact Address of the Principal Investigator

4a. Office Location:

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ICDDR,B

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4d. Phone / Ext: 870024

5. Use of Human Subjects 5a. Use of Live Animal

Yes

Yes

No

No

5b. If Yes, Specify Animal Species

6. Dates of Proposed Period of Support

(Day, Month, Year - DD/MM/YY)

01-11-97 - 30-04-99

7. Cost Required for the Budget Period

7a. 1<sup>st</sup> Year (\$) 66,770 2<sup>nd</sup> Year (\$) 32,118 3<sup>rd</sup> Year:

7b. Direct Cost (\$) 98,888 Total Cost (\$) 118,666

8. Approval of the Project by the Division Director of the Applicant

The above-mentioned project has been discussed and reviewed at the Division level as well by the external reviewers.

The protocol has been revised according to the reviewer's comments and is approved.

Radheshyam Bairagi  
Name of the Division Director

Radheshyam Bairagi  
Signature FHSD

4-7-97  
Date of Approval

9. Certification by the Principal Investigator

I certify that the statements herein are true, complete and accurate to the best of my knowledge. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. I agree to accept responsibility for the scientific conduct of the project and to provide the required progress reports if a grant is awarded as a result of this application.

10. Signature of PI

R. Bairagi

Date: 3 August 1997

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Principal Investigator: Bairagi, Radheshyam

PROJECT SUMMARY

Project Name: **Abortion Dynamics in Rural Bangladesh: Does An MCH-FP Program Bring About Any Change?**

Total Budget: US\$ 118,666

Beginning Date: 1 November 1997; Ending Date: 18 months from the date of starting

The objectives of this project are to examine the impact of a family planning program on quantity, quality and health consequences of abortions and to find the reasons for abortion in rural Bangladesh. Existing data for the 1974-96 period from the Demographic Surveillance System (DSS), the Record Keeping System (RKS), and Socioeconomic and KAP Surveys of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) in Matlab during 1974-96 will be used. Some additional data on reasons for and health consequences of abortion will also be collected from Matlab for the study. Abortion (yes or no), method used for abortion, gestational age at abortion, morbidity, mortality related to abortion, etc. will be the dependent variables and MCH-FP program (presence or absence), contraceptive use, contraceptive failure, socioeconomic and demographic variables etc. will be the independent variables. While the bivariate analysis of the data will be done mainly by comparing the mean and proportion, logistic regression, multinomial logit, multiple regression, life table and hazard model techniques will be used for multivariate analysis. The study is expected to have important policy lessons about how (mechanism) a well-run MCH-FP program can both reduce the incidence of abortion and enhance its safety.

KEY PERSONNEL

Name	Professional Discipline/Specialty	Role in the Project
Radheshyam Bairagi	Demographer-Statistician and Public Health Specialist	Principal Investigator
Kapil Ahmed	Demographer	Co-investigator
M. Mazharul Islam	Demographer-Statistician	Co-investigator

Principal Investigator: Bairagi, Radheshyam

## DESCRIPTION OF THE RESEARCH PROJECT

Hypothesis to be tested

A well-designed MCH-FP program can bring about a change in the quantity, quality and health consequences of abortions in a population.

### Specific Aims

The specific aims of this project are to:

- i. investigate levels, trends and differentials of abortion in Matlab;
- ii. examine whether the MCH-FP program has brought about any changes in the quantity and or improvements in the quality (reduction in unsafe indigenous method, lower gestational age at abortions, etc.) of abortion over time and whether the quantity and quality of induced abortions differ between the MCH-FP area and the comparison area in Matlab;
- iii. investigate the health and other consequences of abortion;
- iv. study the relationship between levels of contraceptive use and level of abortion and also to study post-abortion contraceptive use behavior;
- v. identify the reasons for abortion and to study the interrelationship between contraceptive failure and abortion.

## Background of the Project including Preliminary Observations

Abortion is defined as a chemical or mechanical intervention to avert a live birth. Legal or illegal, it exists to some degree in all societies in the world. Because of legal constraints as well as social sensitivity and ethical unacceptability, collection of accurate data on abortions through surveys in many developing countries is very difficult. Even those women in the hospital receiving treatment for problems resulting from an abortion are often unwilling to reveal the cause (Barreto et al., 1992).

Abortion is one of the 4 principal proximate determinants of fertility (Bongaarts, 1982). In some countries it became the principal method of fertility control at times (Georges 1996; Johnson, Horga, and Andronache, 1996). However, perceptions about abortion and stigmas attached to it differ widely between cultures. In China, for example, abortion is accepted by the population very easily and is rarely an issue of discussion. On the other hand, in the USA, the controversy surrounding abortion is well known (Rigdon 1996). The perception about abortion and the law of the land can make a significant impact, not necessarily on the number of abortions, but on the problems related to it. The best example in this respect, perhaps, is Rumania (Johnson, Horga, and Andronache 1996). There, in the absence of modern contraceptives, abortion was the primary form of fertility control following the liberalization of the abortion law in 1959. During the first 6 months of 1962 there were 14 abortions for every live birth at Filantropia Hospital in Bukharest. The legalization of abortion resulted in a sharp decline in the number of illegal abortions and thus in mortality due to them.

In Bangladesh, abortion is still illegal except in a few special circumstances such as to save the life of a pregnant woman. Nonetheless, evidence from hospitals, clinic records and other sources suggests that abortion is not rare in Bangladesh. Many unqualified persons and institutions are involved with abortion (Khan et al., 1986). The government of Bangladesh, however, declared in 1979 that menstrual regulation (MR) is an "interim method of establishing nonpregnancy" for a woman at risk of being pregnant, whether or not she is pregnant (Ruth 1988). In recent years several government and non-government clinics and hospitals are providing MR services. Records of these clinics suggest a rising trend in MR in Bangladesh. Many abortion cases are performed under the name of MR to avoid legal controversy. Thus, it can be argued that the prevalence of induced abortion in Bangladesh may not be negligible, and increased medical facilities and modernization may increase it.

Although menstrual regulation (MR) is allowed in the early stages before a pregnancy is clinically confirmed, the services for it are not widely available in rural Bangladesh. Studies on abortion in Bangladesh are extremely limited in number and scope, and the results of the available studies are not consistent. The most well-cited study on the number of abortions and related deaths was conducted by Measham et al. (1981). In this study, the number of induced abortions per year was estimated to be almost 800,000 in 1978, while abortion-related deaths numbered almost 8,000. In a study on a rural

population of 267,000, Khan et al. (1986) estimated an abortion ratio of 44.2 per 1,000 live births and abortion-related deaths totalling 2.4 percent. In their estimates, the number of abortions and abortion-related deaths in that year totalled 204,000 and 5,078 respectively. These estimates are much smaller than those of Measham et al. Alauddin's (1986) estimates on a population of 340,876 in a different area during 1982-83 were very close to the results of Khan et al. In short, all of these studies reveal that the accurate measurement of induced abortion is very difficult to calculate in this country. Abortion is considered to be a leading cause of maternal morbidity and mortality (Alauddin 1986; Khan et al. 1984). In rural Bangladesh, due to insufficient modern clinical facilities, among other reasons, abortions are performed by indigenous practitioners who (due to legal and social constraints) refuse to identify themselves to investigators, thus making the data gathering process even more difficult. In a preliminary analysis of Matlab data, Ahmed et al. (1996) observed that during the period 1982-1991, the abortion ratio was 20 in the MCH-FP area and 33 in the comparison area per 1,000 live births in Matlab. However, they did not cover the entire period from 1966 to 1996, for which data on abortion is available in Matlab. They also did not try to investigate any difference or change in abortion procedures or differences in the quality of abortions between areas and over time, including those resulting from MR as opposed to other indigenous methods. Finally, they did not address any of the specific objectives as stated in (ii) through (v).

Abortion appears as a serious health problem in many developing countries including Bangladesh (Khan et al. 1984). Induced abortion is likely to create social problems in China and Korea as a result of sex-selective abortions of the fetus, resulting in an imbalanced sex ratio at birth (Gu and Roy 1995; Cho and Hong 1996). Although abortion does not seem to be sex-selective in Bangladesh yet, it is found to be related to son preference here (Bairagi 1996). If son preference continues, it is not unlikely that the situation here will become as it is now in Korea and China, specially when the technology to identify the sex of the fetus becomes available. With the promotion of menstruation regulation (MR) services as a method of birth control in Bangladesh, late pregnancies are frequently aborted under the name of MR to avoid legal controversy. Available records from hospitals and clinics suggest a rising level of MR in Bangladesh.

If this study can show that a well-run MCH-FP program can both reduce the incidence of abortion and enhance its safety (at earlier gestation, use of relatively safe procedure, reduction in post-abortion complications, etc.), it will have important lessons for policy in Bangladesh and other developing countries.

### **Research Design and Methods**

Data for this study will come from the well-known Matlab Demographic Surveillance System (DSS). Matlab is a field research station of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B). In the Matlab DSS, data on births, deaths, marriages (since 1974) and migration data have been collected since 1966 from

a population of about 200,000 living in 149 villages. An MCH-FP project was initiated in 1977 (phase by phase, see Appendix A) in half of the DSS area, known as the MCH-FP program area, to test the hypothesis that demographic change can be induced through an intensive MCH-FP project without any intervention or change in socioeconomic status within a poor society. The remaining half of the area, known as the Comparison area, remained under the usual program of the Government. Demographic data are collected bi-weekly through home visits by the Community Health Workers (CHWs) in both the areas. Their work is supervised and checked at several levels. Thus a well-defined system of management and supervision exists in Matlab to produce quality data. Matlab demographic data is thought to be the largest, longest and most accurate longitudinal demographic data in the developing world. Furthermore, the Matlab MCH-FP project is perhaps the most well-known and involves an important study design to investigate the effects of different components of an MCH-FP program on population growth and health in the developing world.

There are more than 2,500 births annually in each area. In the MCH-FP area, MCH-FP services are provided and related data including contraceptive use, breast feeding, and reproductive status such as menstruation, amenorrhoea, pregnancy and pregnancy outcome is also collected fortnightly by the CHWs. If the pregnancy of a woman is observed or reported during the fortnightly visit of a CHW to either area, it is recorded. From 1966 to 1976, the outcome of a pregnancy was registered as one of three events: live birth, still birth, or fetal wastage. From 1977 to 1986, however, fetal wastage was classified as a spontaneous abortion or an induced abortion; and since 1987, an induced abortion has been recorded as: (i) MR, (ii) D&C, (iii) Drug applied, (iv) Injection used, (v) Drug ingested, (vi) Internal manipulation via vagina (non D&C), (vii) Manipulation on abdomen, (viii) Other means, or (ix) Unknown. **This abortion data from the Matlab DSS will be the basis of this study.** Levels, trends, interrelationships between subsequent abortions, and the difference in the quantity and quality of abortions between areas will be investigated using this data. Since the data collected on reproductive status is prospective in nature, it is largely free from the recall errors and biases that characterize most retrospectively collected data. Each of the Matlab CHWs is from the locality and has been known to the Matlab community very intimately. As a result, unlike other areas or other populations, a woman in Matlab usually does not suppress reproductive health events including abortion. One is unlikely to find more accurate data on abortion on a community level than the abortion data found in Matlab. Data from Matlab thus provides a unique opportunity to examine the levels and trends in abortion during 1977-96 in rural Bangladesh. By comparing the abortion rates, ratios (abortions per 1,000 live births), method of abortion, gestational age at abortion, and repeated abortion between the Comparison and the MCH-FP area from this data for different time periods, the study will be able to examine whether a well run MCH-FP program helps to reduce incidence of abortion, enhance its safety and helps to reduce subsequent abortions. In addition, the data from the following surveys in the Matlab DSS area will be used to investigate the effects of socioeconomic and demographic variables on abortion and to examine the demographic impact of abortion, to study the reasons and health and other



consequences, and to investigate the effect of contraceptive failure on abortion and subsequent use of contraceptives. It may be noted that longitudinal data on contraceptive use and reproductive status of women are available for the women of the MCH-FP area only.

#### **a. Socioeconomic surveys in 1974, 1982 and 1996**

In each of the surveys, socioeconomic and demographic data for each individual and household was collected. This data will be used to examine the socioeconomic and demographic determinants of abortion. Since socioeconomic status (SES) has changed over time, SES data from different surveys will be used for different periods of abortion.

#### **b. Record keeping system (RKS)**

In this system, information on contraceptive use and reproductive status (menstruation, pregnancy, amenorrhoea, etc.) has been recorded for each married woman under 50 years of age in the MCH-FP area since 1978. This data will be used to investigate pre- and post- contraceptive use behavior of the aborting women and to examine the effect of contraceptive failure on abortion and subsequent use of contraceptives after an abortion. A list of aborting women and contraceptive use for each of the years since 1977/78 will be prepared so that the relationship between the abortion and contraceptive use pattern can be examined from the RKS record. This kind of study is, perhaps, only possible from the Matlab RKS data.

#### **c. Quality of worker survey 1987**

In this survey, information on each of the eight components of quality of the services performed by the CHWs in the MCH-FP area was collected. These are: (i) regularity of work, (ii) innovative techniques in communication, (iii) attitude/behavior toward clients, (iv) technical competence, (v) enthusiasm for work, (vi) accuracy of record keeping, (vii) politeness and outspokenness and (viii) conformity to social norms. There are 56 CHWs who provide health and family planning services through door-to-door visits once every two weeks. The performance of each of the CHWs was evaluated by their supervisors and project managers. The workers' performances were scored on a scale of 1, 2 and 3 on each of the eight components. Each worker has a defined area in the Matlab MCH-FP area for her work and there is no transfer of workers from one area to another. The quality of a worker was found to be significantly related to contraceptive use, adoption, continuation and failure. It will be important to determine whether worker quality is related to abortion in the area.

#### **d. Surveys on unmet need**

Surveys on unmet need for each of the married women less than 50 years of age have been conducted at 18-month intervals in the MCH-FP area since 1990. Data from this

survey will be used to examine the relationship between desire for children and contraceptive use and abortion.

#### **e. Survey design for additional data on reasons and consequences of abortion**

Some additional data on the reasons for abortion and health consequences of abortion will be collected through a field survey using a case-control study design. Each year ICDDR,B records about 150 induced abortions including MR. In the survey, data on reasons for and health consequences of an abortion from these 150 women who have had an abortion in the last 3 to 15 months (easy to identify from the computer) will be collected by a team of well-trained community health workers (CHWs). Since the purpose is to know the health impact for at least three months after an abortion, any abortion performed within three months before the survey will not be included. Two women who gave live births in the same month will be taken as a control on the basis of area, parity, age and education. Simple questionnaires will be used for data collection. Draft questionnaires for this survey including a consent form are attached. However, these questionnaires will be modified further in consultation with social scientists, family planning specialists and anthropologists. The questionnaire will be finalized after a pilot test in the field. For pilot testing, data will be collected from 15 women who had abortions and another 15 women who gave live births at least 15 months before the survey, so that these women do not become a part of the ultimate sample. The pilot test will be done mainly to modify the questionnaire so that the questionnaire is adequate to know about the decision making, motivation and health consequences of an abortion.

In the Matlab DSS area, each individual has a unique identification number (ID). With this ID, the linkage of information regarding any specific individual from different surveys will be possible. Of course, the preparation of a single working file from all files involves a considerable amount of work. It should be mentioned here that although the Matlab DSS has been the basis for a wealth of population and health research, a large proportion of data still remains unanalyzed. In light of this, the proposed project will provide an opportunity to analyze a part of this accumulated data, particularly on abortion.

#### **Strength and Weakness of the Study Design**

The main strength of the proposed study lies with its large sample size, unique design and the rapport of the Matlab CHWs for collecting data on abortion, which is a sensitive issue in rural Bangladesh. The MCH-FP and the Comparison area each have about 20,000 married women of childbearing age. They will be followed for abortion and subsequent maternal mortality, fertility and repeated abortion for 20 years from 1977 to 1996. The women from the MCH-FP area will be followed to study the subsequent contraceptive use pattern and the relationship between contraceptive failure and abortion. Abortion per 1,000 live birth for the period 1982-91 was estimated to be 20 in the MCH-

FP area and 33 in the Comparison area (Ahmed, Sarkar and Rahman 1996). These lead to an estimate of abortion of 3 in the MCH-FP area and 5 in the Comparison area per year per 1,000 women. The sample size will be sufficient to show the trend of the rates and ratios of abortion in each area and will allow to identify a relative risk of 1.25 or more of the rates, ratios and quality of abortion of an observation period of five years in two areas with a 5% level of significance and 80% power (Snedicor and Cochran 1967, pp. 111-115). The sample size of the proposed case-control study is adequate to have an estimate of a morbidity due to abortion within  $\pm 10\%$  of the true value with 95% confidence and to identify a relative risk of 2 or more of any health consequences due to an abortion (vs live birth) with 5% level of significance and 80% power (Kahn 1983, pp.53-55).

A few limitations of this study may be underscored. First, the impact, if any, of an MCH-FP program on abortion, the main objective of the study, is like to be underestimated, because the Comparison area has the government MCH-FP services and it is not a control area. So the comparison will be made between a well-run MCH-FP program and a less intensive usual government MCH-FP program. However, a comparison within each area over time (with increasing contraceptive use) will reveal the relationship between abortion and contraceptive prevalence rate (CPR). This point will be clarified further by examining the relationship of abortion with density of workers, visitation by the CHWs, and the quality of worker. Second, in spite of a very high rapport of the Matlab CHWs with the community, the abortion is likely to be underreported. The CHW may not have record of an abortion done before the detection of a pregnancy during her fortnightly visit to a woman, and of an illegal abortion (to unmarried women, widows, etc.). Some induced abortions might have been reported to the CHWs as spontaneous abortions and thus may be omitted from this study. Of course, this underestimate will not affect the main objective of this study, which is to investigate the impact of an MCH-FP program on the quantity and quality of abortions, because the DSS data in both the areas, MCH-FP and the Comparison, are recorded and collected exactly in the same way. Nevertheless, an estimate of the underreporting of abortion and misclassification of induced abortion as spontaneous abortion will be available from an ongoing methodological study entitled "Quantifying Induced Abortion in the Developing World: Testing an Indirect Technique" in Matlab. The proposed study will utilize the results of this study as required. Finally, some recall errors in the retrospective data to be collected in the survey may be present, and a one-shot survey for investigating the motivation, decision making process and health consequences of abortion may not be adequate. These two points will be taken into consideration carefully at the pilot test, and the questionnaire and instructions for the interviewer will be modified accordingly.

### **Facilities Available**

The work will be done at ICDDR,B, which is internationally renowned for its health and population work. It has perhaps the best study design and most accurate data in the developing world to study the impact of an MCH-FP project on contraceptive use, fertility,

mortality and abortions. ICDDR,B is equipped with an extensive library, computer facilities (including mainframe), data analysts, and excellent research environment. A large number of professionals from Bangladesh and abroad with multidisciplinary backgrounds are working here in various capacities, which make ICDDR,B a very valuable research institution.

### Data Analysis

Data will be analyzed by the investigators themselves with the help of the existing facilities including personnel, computer and library of the ICDDR,B. SPSS and SAS packages will be mainly used for data analysis. Frequency distribution, cross tabulation, multivariate technique and relevant statistical tests will be utilized as analytic techniques. The bivariate analysis will compare different proportions, life table probabilities, and hazard rates. The ultimate aim is to analyze these outcome variables in a multivariate perspective where all the independent variables under consideration and only one dependent variable will be in an equation. For different dependent variables, different equations will be used. The use of statistical technique will depend on the type of the dependent variable as shown in Table 1. In the case of time dependent variable, the analysis will be done with the help of Life table and Hazard Model to meet the censoring issues.

**Table 1: Type of Dependent Variable and Proposed Analysis Technique**

Type of dependent variable	Analysis	
	Bivariate	Multivariate
Continuous	Mean	Multiple Regression
Dichotomous	Proportion	Logistic Regression
Categorical	Proportion	Multinomial Logit
Failure time	Life Table probability/ survial rate	Hazard Model Technique

The investigators are using these methodologies extensively to understand the complex processes of contraceptive and fertility behavior in Matlab (Bairagi 1996; Bairagi and Rahman 1996; Bairagi, Islam and Barua 1997).

A provisional list of dependent and independent variables is given in Table 2 and 3, respectively. This delineation is not, however, necessarily exhaustive; other relevant variables, if any, will be considered after the finalization of the questionnaires for the additional data collection mentioned in the method section.

**Table 2: A Provisional List of Dependent Variables**

Dependent variables	Type
1. Abortion	Dichotomous
2. Procedure used for abortion	Nominal
3. Gestational age	Continuous/Categorical
4. Method failure	Time-dependent categorical
5. Reasons for abortion	Categorical
6. Cost of abortion	Continuous/categorical
7. Morbidity/complication before abortion/live birth	Categorical
8. Morbidity/complication after abortion/live birth	Categorical
9. Maternal mortality related to abortion	Dichotomous
10. Discussion before abortion	Categorical
11. Counselling before abortion	Categorical
12. Counselling after abortion	Categorical

A comparison of the above listed variables between two areas (MCH-FP and Comparison) will reveal the effect of MCH-FP program on abortion dynamics.

**Table 3: A Provisional List of Independent Variables**

#### Socio-demographic and family planning

Age

Total Pregnancy

Living Children by sex

Reproductive status

Lactation

Dwelling space (an economic indicator in Mallab area) and income

Education of woman

Education of husband

Religion

#### Motivational

Desire for additional children

Feelings about having another son/daughter

Desired length of spacing next birth

Familial

Husband's desire for additional children  
 Mother-in-law's desire for additional children  
 Husband's/mother-in-law's attitude towards FP

Program characteristics

Program (MCH-FP and Comparison)  
 Quality of worker  
 Use prior to abortion  
 Type of method use  
 Density of worker

While the independent variables will be used to identify the determinants of abortions, these variables will also help to understand the mechanism as how an MCH-FP program can affect the quantity and quality of abortions.

It may be noted that a dependent variable in one model may be an independent variable in another model. For example, the gestational age is an independent variable to investigate its effects on subsequent complications of an abortion, while it is a dependent variable as a measure of quality of abortion (short gestational age is safer than longer one). The type of a variable may need to be changed to another type for some analyses. For example, gestational age is a continuous variable. But we may need to categorize it as safe (less than 8 weeks), risky (8 to 16 weeks) and very risky (more than 16 weeks). While the multivariate analysis will be done for examining the effect of a variable and its interaction with another variable on a dependent variable, most of the important points about effect of MCH-FP program on quantity and quality of abortion will come from simple two-way or three-way table as follows (Table 4):

**Table 4: Distribution of abortion during the period 1990-95 (for example) according to type of abortion and gestational age by area**

Gestational age (month)	Type of abortions			
	MCH-FP area		Comparison area	
	MR	D&C.....Internal manipulation	MR	D&C.....Internal manipulation
1				
2				
7				

While the impact of the MCH-FP program on the quantity of abortion will be measured by comparing abortion ratio (abortion per 1,000 live births, etc.) and rate (abortion per year per 1,000 women etc) , the impact on quality of abortion may be examined by comparing safe and unsafe abortions according to gestational age and proportion of unsafe abortion according to type of abortion (internal manipulation via vagina) from the above table.

### **Ethical Assurance for Protection of Human Rights**

The study will be based mainly on secondary data of ICDDR,B. However, some data on the reasons for and health consequences of abortion will be collected from Matlab by the female community health workers (CHWs). The information to be collected will be kept confidential and will be used only for research purposes. The study will not create any health risk for the respondents. However, the consent of the respondent will be obtained before the interview as per the attached "Voluntary Consent Form".

Principal Investigator: Bairagi, Radheshyam

### Literature Cited

Ahmed Kapil, Afzal H. Sarkar, Mizanur Rahman (1996): "Determinants of induced abortion in rural Bangladesh." Presented at the IUSSP Seminar on Socio-cultural and Political Aspects of Abortion from An Anthropological Perspective. Trivandrum, India, -25-28 March 1996.

Alauddin Mohammad (1986): "Maternal mortality in rural Bangladesh: The Tangail District." *Studies in family Planning* 17(1):13-21.

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Bairagi R, M M Islam, and M Barua (1997). "Contraceptive failure: levels, trends and determinants in Matlab, Bangladesh," ICDDR,B, GPO Box 128, Dhaka 1000, Bangladesh. Presented at the 1997 PAA, Washington, D.C., March 27-29.

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Principal Investigator: Bairagi Radheshyam

### **Dissemination and Use of Findings**

The findings will be disseminated thorough at least one national seminar where the researchers, program managers and policy makers from government, non-government and international agencies will be invited. We also hope to present the results in at least one international conference/meeting such as Population Association of America. However, the main vehicle for dissemination will be publication of the results in peer review journals.

Estimates of the levels of abortion would help policy makers realize the magnitude of the problem; its determinants would also help to identify target groups for action, such as counseling at the time of pregnancy. Moreover, any relationship with contraceptive use level and failure would serve to develop appropriate strategies, including changes in method mix in a program or improvements in FP counselling. Finally, knowledge of the primary reasons for abortion will help policy makers take steps to reduce unsafe abortions and thus decrease maternal morbidity and mortality.

### **Collaborative Arrangements**

This will be a collaborative study of ICDDR,B and the University of Dhaka, Bangladesh under the guidance and supervision of Dr. R. Bairagi. ICDDR,B is collaborating with many national and international organization and institutions for different research activities. The University of Dhaka is the most prestigious academic institution in Bangladesh. Dr. Mazharul Islam, a co-investigator of this project, is a faculty member of this university. He will utilize the data and results of this project in his research work and teaching at the graduate level at the university. Mr. Kapil Ahmed, another co-investigator, will develop his Ph. D. thesis using the data from this project. The proposed research project will benefit from the thesis work of Heidi Johnston from the Johns Hopkins University. Her thesis is entitled "Quantifying Induced Abortion in the Developing World: Testing an Indirect Technique". She is collecting qualitative and quantitative data on abortion in the Matlab area. She began her work at the ICDDR,B under the supervision of Dr. Bairagi in the last week of November 1996 and will continue for a year and a half.

Principal Investigator: Bairagi, Radheshyam

### BIOGRAPHY OF THE INVESTIGATOR

Name	Position	Date of Birth
Radheshyam Bairagi	Senior Scientist, ICDDR,B	April 20, 1940

#### Academic Qualification

Institution and Location	Degree	Year	Field of Study
Univerisity of Dhaka	Master of Science	1962	Statistics
Johns Hopkins University, USA	Master of Science	1978	Demography
Johns Hopkins University, USA	Doctor of Science	1981	Demography

#### Research and Professional Experience

1970-1982 Assistant Professor/Associate Professor, Institute of Statistical Research and Training (ISRT), University of Dhaka, Bangladesh.

Responsibilities: (i) Offered courses in demography and statistics to under graduate and graduate students; (ii) supervised theses of students; and (iii) conducted projects in population and family planning on funding from national and international agencies and foundations.

1983-1983 Research Associate, Department of Population Dynamics, The Johns Hopkins University, USA.

Responsibilities: Obtained funds from the USAID for doing a nutrition project.

1982-1983 Visiting Fellow, International Population Program, Cornell University, USA.

Responsibilities: Conducted research in nutrition and population.

1983-1986 Visiting Scholar and Population Council Fellow, Carolina Population Center, University of North Carolina at Chapel Hill, USA.

1986-1989 Visiting Scientist, Population Studies Unit, Indian Statistical Institute, Calcutta, India.

Responsibilities: Offered demographic courses to international and national fellows and analyzed the data of Calcutta Fertility Survey.

1989- to date: Senior Scientist (since January 1989), and Studies Director, Population Studies Centre (since July 1992), ICDDR,B

Responsibilities:

i. Developing work plan for the Population Studies Centre (PSC), managing projects, and conducting and directing demographic and MCH-FP research.

ii. Writing research proposal for population and MCH-FP work and raising funds for these projects from different international organizations and foundations.

iii. Fostering and maintaining linkage with different academic and government institutions and local offices of different international organizations engaged in population and family planning work. Working closely with Bangladesh Bureau of Statistics for Population Census and Vital Registration System and Child Nutrition Survey Unit and for Health and Demographic Survey Project and with Bangladesh Planning Commission for the preparation of the Population Data Sheet and Population Projection.

#### Members of the Professional Societies:

- (i) Member of the International Union for the Scientific Study of Population (IUSSP): Participated in all the general conferences (held at four yearly interval) since 1981 and will organize a formal session on "Gender Preference for Children and Its Consequences" at the XXIIIrd General Conference, October 1997, Beijing.
- (ii) Member of the Population Association of America (PAA): Participated in most of the annual meeting of the PAA for the last 12 years and all the annual meeting since 1991. Presented two papers in its 1997 annual meeting, Washington, D.C., March 27-29, 1997.
- (iii) Member of the Executive Committee of the Bangladesh Statistical Association and Convener of the Qazi Matalaher Husain Gold Medal Nomination Committee.
- (iv) Member of the Bangladesh Population Association

#### Publications:

Bairagi, R., M. Shuaib, and A. Hill: Estimating childhood mortality trends from routine data: a simulation using the preceding birth technique in Bangladesh. Demography, August 1997 (in press).

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Bairagi, R., and M. Rahman: Contraceptive failure in Matlab, Bangladesh. International Family Planning Perspectives Vol 22(1):21-25, 1996.

Chowdhury, M.K., R. Bairagi, and C.M. Suchindran: Effects of age at marriage on fertility and mortality in rural Bangladesh. Paper no. 96-01. Carolina Population Center, The University of North Carolina at Chapel Hill, 143 Franklin Street, Chapel Hill, NC 27516-3997, USA, 1996.

Bairagi, R., and S. Salway: Effects of diarrhoea on growth: Facts or fallacies? Proceedings of the 7th Asian Conference on Diarrhoeal Diseases, 1994. BMA Bhaban, 15/2 Topkhana Road, Dhaka 1000, Bangladesh.

Bairagi, R. and M.K. Chowdhury: Socioeconomic and anthropometric status, and mortality of young children in rural Bangladesh. International Journal of Epidemiology Vol. 23(6):1179-84, 1994.

Bairagi, R. and M.K. Chowdhury: Effects of parental gender preference on fertility and mortality in Matlab. In Matlab: Women, Children and Health Edited by Vincent Fauveau: 309-322, 1994.

#### **Presentation at International Conference:**

Bairagi, R., M.M. Islam and M. Barua: Contraceptive failure: levels, trends and determinants in Matlab, Bangladesh. ICDDR,B, GPO Box 128, Dhaka 1000, Bangladesh (Presented at the 1997 PAA, Washington, D.C., March 27-29).

Bairagi, R.: Some issues on estimation and demographic impact of contraceptive failure in Bangladesh. ICDDR,B GPO Box 128, Dhaka 1000, Bangladesh. (Presented at the 1997 PAA, Washington, D.C., March 27-29).

Bairagi, R., S.R. Sutradhar and A. Alam: Levels, trends and determinants of child mortality in Matlab, Bangladesh, 1966-94. Presented at the 1996 Annual Meeting of the Population Association of America, New Orleans, May 9-11, 1996.

Bairagi, R.: Is gender preference an obstacle to fertility transition in Bangladesh? Presented at the IUSSP seminar entitled "Comparative Perspectives on the Fertility Transition in South Asia," Islamabad, Pakistan, 17-20 December 1996.

Alam, N. and R. Bairagi: Excess female child mortality: Its levels, trends and differentials in rural Bangladesh. (Presented at the Symposium on Issues Related to Sex Preference for Children in the Rapidly Changing Demographic Dynamics in Asia organized by UNFPA and KIHASA, Seoul, South Korea, 21-25 November 1994).

Bairagi, R. and M. Barua: Contraceptive use dynamics in Matlab, Bangladesh: Does the quality of workers make any difference? Presented at the 1995 Annual Meeting of the Population Association of America.

Bairagi, R., and M. Rahman: Levels, patterns, and determinants of contraceptive failure in rural Bangladesh. (Presented at the 1994 PAA Annual Meeting in Miami, May 5-7, 1994).

Bairagi, R., and M. Shuaib: On some properties of the preceding birth technique. (Presented at the 1994 PAA Annual Meeting in Miami, May 5-7, 1994).

Principal Investigator: Last, first, middle Bairagi, Radheshyam**Detailed Budget for New Proposal**

Project Title: Contraceptive Use Dynamics in Rural Bangladesh: Does a MCH-FP Program Bring Any Change?

Name of PI: Radheshyam Bairagi

Protocol Number:

Name of Division: Public Health Sciences Division

Funding Source: WHO/EWC/ICDDR,B  
Overhead (20%) US\$19,778

Amount Funded (direct): US\$98,888

Total: US \$118,666

Starting Date: 1 November 1997

Closing Date: 18 months from the date of starting

Strategic Plan Priority Code(s) : Research Issues: 21 &amp; 24; Discipline: 95, 96 &amp; 97

	Account Description		Salary Support			1st Yr	2 <sup>nd</sup> Yr	3 <sup>rd</sup> Yr
	Personnel	Position	Effort%	Salary				
1.	Radheshyam Bairagi (PI)	Sr. Scientist	33	10,250	40,590	21,308		
2.	Mazharul Islam	Co-investigator	33	1,400	5,544	2,911		
3.	Kapil Ahmed	Co-investigator	33	555	2,198	1,154		
4.	Manoj K. Barua	Programmer	33	525	2,080	1,091		
5.	To be named	Matlab Manager	11	1,455	2,910	0		
6.	To be selected	Research Officer	75	392	3,528	1,854		
7.	To be named	Data Entry/Coding Ast	20	325	780	0		
8.	To be selected	Office Attendant	50	190	1,140	600		
9.	To be named	CHWs (5)	25	130	1,950	0		
10.	To be named	Health Asst (2)	25	325	1,950	0		
<b>Sub Total</b>					<b>62,670</b>	<b>28,918</b>		
<b>Consultants</b>								
	<b>Local Travel</b>	Dhaka -Matlab-Dhaka & within Matlab			1,200	300		
	<b>International Travel</b>	Regional conference				1,000		
<b>Sub Total</b>					<b>1,200</b>	<b>1,300</b>		

MSJ  
3/8795

Principal Investigator: Last, first, middle \_\_\_\_\_

**Supplies and Materials (Description of Items)**

1.	Office supplies	700	300	
	<b>Sub Totals</b>	700	300	

**Other Contractual Services**

	Repair and Maintenance			
	Rent, Communications, Utilities			
	Training Workshop, Seminars	300	500	
	Printing and Publication		500	
	Staff Development			
	<b>Sub Total</b>	300	1,000	

**Interdepartmental Services**

	Computer Charges	1,500	500	
	Pathological Tests			
	Microbiological tests			
	Biochemistry Tests			
	X-Rays			
	Patients Study			
	Research Animals			
	Biochemistry and Nutrition			
	Transport			
	Xerox, Mimeographs etc.	400	100	

Principal Investigator: Last, first, middle \_\_\_\_\_

	<b>Sub Totals</b>	1,900	600	
	<b>Other Operating Costs</b>			
	<b>Capital Expenditure</b>			

**TOTAL DIRECT COST****66,770****32,118**

## **Budget Justifications**

Please provide one page statement justifying the budgeted amount for each major item. Justify use of man power, major equipment, and laboratory services.



## Appendix A: Interventions in MCH-FP, Matlab, Bangladesh 1978-1990

ICDDR,B Intervention	Date	MCH-FP BLOCKS				Comparison area
		A	B	C	D	
Family Planning	October 1977	X	X	X	X	
Tetanus toxoid to pregnant women	March 1978	X	X	X	X	
ORT	January 1979	X	X	X	X	
Tetanus toxoid to all women	December 1981 December 1985	X X	X	X X	X	
Measles vaccine	March 1982 December 1985	X X	X	X X	X	
Antenatal care	September 1982 January 1986	X X	X	X X	X	
Iron/folic acid to pregnant women	January 1985 January 1986	X X	X	X X	X	
Oral cholera vaccine trial	May 1985	X	X	X	X	X
EPI immunizations (BCG, DPT, polio)	March 1986	X	X	X	X	
Nutritional rehabilitation	September 1988	X	X	X	X	
Vitamin A distribution	January 1986	X	X	X	X	X (ended June 1990)
Maternity care	March 1987			X	X	
ARI	April 1988 July 1991	X	X X	X	X X	
Dysentery	April-December 1989		X		X	

## Appendix B.

**ABORTION DYNAMICS IN MATLAB, BANGLADESH**  
**Questionnaire for Women who had an Abortion**

1. Name of Respondent: \_\_\_\_\_
2. Name of Village: \_\_\_\_\_; Village Code: \_\_\_\_\_
3. Name of Bari: \_\_\_\_\_; Bari Code: \_\_\_\_\_
4. Area of Resident:
 

MCH-FP	1
Comparison	2
5. CID of Respondent: \_\_\_\_\_ (available in DSS report)
6. RID of Respondent: \_\_\_\_\_ (available in DSS report)
7. Gestational Age: \_\_\_\_\_ months (available in DSS report)
8. In your last pregnancy (abortion), how long was the pregnancy when you realize it ?
 

_____	Weeks
-------	-------
9. What is the safe timing (gestation of pregnancy) for an abortion ?
 

_____	Weeks
-------	-------
10. Did you use any contraceptive during the last conception (specify) ?
 

Yes	1
No	2

If yes, method used

Pill	1
Injection	2
IUD	3
Condom	4
Other, specify _____	

11. Do you think that this conception was due to contraceptive failure ?
- |     |   |
|-----|---|
| Yes | 1 |
| No  | 2 |
12. Why did you decide to abort this pregnancy (multiple reasons possible) ?
- |                               |   |
|-------------------------------|---|
| Previous child was very young | 1 |
| Desire no more children       | 2 |
| Sickness                      | 3 |
| Studying                      | 4 |
| Husband unemployed            | 5 |
| Age is too young              | 6 |
| Other reason, specify _____   |   |
13. Do you discuss with anyone before your decision of this abortion ?
- |     |   |
|-----|---|
| Yes | 1 |
| No  | 2 |
- If yes, with whom (multiple answers possible) ?
- |                              |   |
|------------------------------|---|
| Husband                      | 1 |
| Relatives                    | 2 |
| Neighbour                    | 3 |
| Doctor                       | 4 |
| Family Planning Worker (FPW) | 5 |
| Other, specify _____         |   |
14. Did you have any hesitation for this abortion ?
- |     |   |
|-----|---|
| Yes | 1 |
| No  | 2 |
15. If yes, who motivated you for this abortion (multiple answers possible) ?
- |                                     |   |
|-------------------------------------|---|
| Self                                | 1 |
| Husband                             | 2 |
| Relatives                           | 3 |
| In-law's                            | 4 |
| Health/Family Planning Worker (FPW) | 5 |
| Other, specify _____                |   |
16. Did any FPW's visited you before this conception (specify) ?

Yes 1

No 2

If yes, how long before this conception ?

\_\_\_\_\_ Weeks

17. What kind of advice given by FWV (multiple answers possible) ?

Advantage of abortion	1
Disadvantage of abortion	2
Advantage of proper timing	3
Information about family planning	4
Procedures of abortion	5
How abortion are done	6
Other, specify _____	

18. Who are the abortion provider in your area ?

Hospital/clinic/Health center	1
Family Welfare Center (FWC)	2
Private doctor's clinic	3
Village doctor's house	4
Trained Birth Attendant's house	5
FPW's house	6
Other, specify _____	

19. By whom did you abort your pregnancy ?

Doctor's	1
FPW	2
Nurse	3
Trained TBAs	4
Untrained TBAs	5
Village Doctor's	6
Other, specify _____	

20. Did you get any suggestion from provider after abortion ?

Yes 1

No 2

If yes, what kind of suggestion given (multiple answer possible) ?

Follow up after two weeks		1
Use of contraceptive method following abortion	2	
contraceptives given	3	
Contact with them if any problem arises		4
Call them for any help	5	
Prescription of medicine	6	

21. Was there any complication at the time of abortion ?

Yes 1

No 2

If yes, what was the complication (multiple answer possible) ?

Excessive bleeding	1
Lower abdominal pain	2
Faint	3
Convulsion	4
Other, specify _____	

22. Did you spend any money for this abortion ?

Yes 1

No 2

If yes, for what and how much ?

Abortion provider	1	Tk. _____
Medicine	2	Tk. _____
Travel	3	Tk. _____
Other, specify _____		Tk. _____

23. Was there any post abortion complication ?

Yes 1.

No 2

If yes, what are the complications and for how long?

Problem		Duration (days)
Excessive bleeding	1	_____
Sever pain in lower abdominal	2	_____
Long time irregular bleeding	3	_____
Fever	4	_____
Urinary problem	5	_____
Convulsion	6	_____
Foul discharge	7	_____
Anemia	8	_____
Septic	9	_____
Other, specify _____		_____

24. Did you get any treatment for complication ?

- Yes 1
- No 2

If yes, what type of treatment was taken and what was the cost ?

Medical treatment	1	Taka _____
Medicine taken	2	Taka _____
Hospital treatment	3	Taka _____
Discuss with FPW	4	Taka _____
Went to family welfare center	5	Taka _____
Admitted into the hospital	6	Taka _____
Other, specify _____		Taka _____

25. Do you use any contraceptive now ?

- Yes 1
- No 2

26. Do you desire to use any contraception in the-future ?

- Yes 1
- No 2

27. If you conceive again, do you plan to have an abortion again ?

- Yes 1
- No 2

28. Did anybody has any negative attitude for this abortion ?

- Yes 1

No 2

If yes, who were they ?

Husband	1
In-law's	2
Relatives	3
Neighbour	4
Other specify	5

29. What is your feeling about this abortion ?

Feel good	1
Feel bad	2
No specific feeling	3
Other, specify _____	

\_\_\_\_\_  
Signature of the interviewer

Code \_\_\_\_\_

Date \_\_\_\_\_

\_\_\_\_\_  
Signature of data entry person

Code \_\_\_\_\_

Date \_\_\_\_\_

## Appendix C.

**ABORTION DYNAMICS IN MATLAB, BANGLADESH**  
**Questionnaire for Women who had a Live birth**

1. Name of Respondent: \_\_\_\_\_
2. Name of Village: \_\_\_\_\_ Village code: \_\_\_\_\_
3. Name of Bari: \_\_\_\_\_ Bari code: \_\_\_\_\_
4. Area of Residence:
 

MCH-FP	1
Comparison	2
5. CID of Respondent: \_\_\_\_\_ (available in DSS report)
6. RID of Respondent: \_\_\_\_\_ (available in DSS report)
7. Did you use any contraceptive before the conception of this (specify) birth ?
 

Yes	1
No	2
8. Did you want this (specify) birth before your conception ?
 

Yes	1
No	2

If no, did any one influence you for this conception ?

Husband's wish	1
In-laws pressure	2
Contraceptive failure	3
Other, specify _____	
9. Did you spend any money for prenatal care for this birth ?
 

Yes	1
No	2

if yes, for what and how much ?

Doctors	1	Taka _____
---------	---	------------



Medicine	2	Taka _____
Travel	3	Taka _____
Other, specify _____		Taka _____

10. Did you spend any money for the treatment of complication during pregnancy?

Yes 1  
No 2

If yes, what and how much ?

Doctor's fees	1	Taka _____
Hospital/Clinic charge	2	Taka _____
Medicine	3	Taka _____
Travel	4	Taka _____
Other, specify _____		Taka _____

11. Did you spend any money for delivery purpose to this birth ?

Yes 1  
No 2

if yes, what and how much ?

Govt. Dais	1	Taka _____
Traditional Birth Attendant	2	Taka _____
Trained Nurse	3	Taka _____
ICDDR,B Midwife	4	Taka _____
Hospital/Clinic	5	Taka _____
Other, specify _____		Taka _____

12. Was there any complication after this birth ?

Yes 1  
No 2

If yes, what are the problems and for how long ?

Problem		Duration (months)
Convulsions and eclampsia	1	_____
Dropsy	2	_____
Severe headache	3	_____
Excessive vaginal bleeding	4	_____
High fever	5	_____
Sever abdominal & Pelvic pain	6	_____
Vomiting	7	_____
Urinary tract infection	8	_____
Other, specify _____		_____

13. Did you get any treatment for complication after this birth ?

Yes 1  
No 2

If yes, what type of treatment was taken ?

Medical treatment 1  
Medicine 2  
Hospital treatment 3  
Other, specify \_\_\_\_\_

14. Did you spend any money for this treatment ?

Yes 1  
No 2

If yes, for what and how much ?

Doctors 1 Taka \_\_\_\_\_  
Medicine 2 Taka \_\_\_\_\_  
Travel 3 Taka \_\_\_\_\_  
Other specify \_\_\_\_\_ Taka \_\_\_\_\_

15. Are you using any contraceptive now ?

Yes 1  
No 2

If no, did you desire any more children in future ?

Yes 1  
No 2

16. Do you want to use contraceptive in the future ?

Yes 1  
No 2

\_\_\_\_\_  
Signature of the interviewer Code \_\_\_\_\_

Date \_\_\_\_\_

\_\_\_\_\_  
Signature of data entry person Code \_\_\_\_\_

Date \_\_\_\_\_

Principal Investigator: Bairagi, Radheshyam

## International Centre for Diarrhoeal Disease Research, Bangladesh

### Abortion Dynamics in Rural Bangladesh: Does An MCH-FP Program Bring About any Change?

#### Consent Form

As you know, ICDDR,B has been involved in population and health research in Matlab for about three decades. Recently, it has undertaken a research project on "Abortion Dynamics in Rural Bangladesh: Does An MCH-FP Project Bring About Any Change?" The findings of this project are expected to be useful for the improvement of the reproductive health of women of Bangladesh and other developing countries. If you have no objection, we would like to ask you some questions about it.

Your participation in this research is entirely voluntary and will not in any way affect your relationship with ICDDR,B. You may refuse to respond to any part of the question and may discontinue your participation at any time during the session. All information will be kept confidential and the information that you will give will be used only for this research.

-----  
Signature of the Interviewer

-----  
Signature/LTI of the Respondent

Date: \_\_\_\_\_

Date: \_\_\_\_\_

EXTRACT FROM THE NOTES OF THE FEDERAL GOVERNMENT OF BANGLADESH  
COMMITTEE MEETING OF THE COMPONENT OF CONTEXT, NEEDS AND  
PERSPECTIVES IN REPRODUCTIVE HEALTH,

97109 BSDA Bangladesh "Abortion dynamics in rural Bangladesh: does MCH/FP Programme  
bring any change?"  
PI Radheshyam Bairagi  
Institution ICDDR,B

**Summary:** This study of abortion primarily uses existing data sources, which are linked via unique identifiers. The specific objective are:

1. To investigate levels and patterns of abortion in Matlab.
2. To examine whether the presence of a strong MCH/FP programme has affected the number of abortions, the timing of abortion, or the type of provider.
3. To examine the health consequences of abortion.
4. To investigate the relationship between contraception and abortion, and post abortion contraceptive use.
5. Identify the reasons for abortion, and study the relationship between contraceptive failure and abortion.

**Overall project design:** Data are to be drawn from the Matlab Demographic Surveillance System; data are available for the Matlab and control areas on pregnancy outcome, including induced abortion, from 1977, and since 1988 further divided into MR, D&C, and other types.

Data are to be obtained from a variety of existing sources:

- (1) the Surveillance System, which contains detailed data on abortion over at least a decade;
- (2) KAP surveys in 1984 and 1991, for information on family size preferences and subsequent abortion behaviours;
- (3) Socioeconomic Surveys in 1974, 1982, and 1996, so as to obtain information on the socioeconomic or demographic correlates of abortion in the periods closest to the date of the abortion;
- (4) Record Keeping System containing information on the contraceptive and reproductive health status of all women will enable the PI to assess such factors as contraceptive failure or post-abortion contraception;
- (5) Quality of Worker Survey 1987 to examine the relationship between quality of worker and abortion and contraceptive behaviour;
- (6) Surveys of unmet need to assess the relationship between unmet need and abortion;
- (7) a parallel study testing an indirect method of measuring abortion will be compared to reported data from the surveillance system; and
- (8) a Validation Study of the Bangladesh DHS in Matlab, in order to assess the extent of under-estimation of abortion in DHS.

The inclusion of data sources in numbers 7-8 is not justified. These two studies, although very relevant in their own right, will not yield information on the relationship between the MCH-FP programme and abortion dynamics.

Additional data will also be collected on reasons for, and health consequences of, abortion from a survey using a case-control design. The sampling will comprise 150 women who underwent an abortion in the 12 months preceding the survey, and 300 women who have had a live birth in the same period will be drawn as controls.

The intention is to link up, through the unique identification numbers, information from these diverse sets of data.

**Sampling Procedures:** Only applicable for the additional survey of health consequences of, and reasons for abortion. In a case control study design, the sample will comprise all women who have undergone an abortion in last 12 months, and a control of similar women who have given birth in the same period. The questionnaire for this study has yet to be developed and was therefore not included in the proposal.

main variables and analysis: A list of variables has been provided, but the list is relatively disappointing given the potential implied in the diverse data sets to be employed. Abortion indicators include: prevalence, procedure (MR, D&C, etc), gestational age, and contraceptive failure. Independent variables are the usual socioeconomic and demographic variables, along with some data on desire for additional children and attitudes. Programme characteristics include residence in the MCH/FP area, and worker quality. The relationship between the variables listed and the research questions is not clear.

While one of the objectives is to study health consequences and reasons for abortion, variables in these two areas have not been listed. Nor are there any draft questions. Important issues remain unaddressed: how will complications, decision making, costs, etc be assessed? Ethical issues pertaining to the follow-up of women who have had an abortion in the last 12 months are not addressed. Nor has the question of whether decision-making, motives, consequences can be drawn from a one-shot questionnaire been addressed, and no pilot work in this area is anticipated.

The questions of consequences, decision making, attitudes, quality of abortion, costs etc have not been addressed. Without the follow up, the study becomes a more simple examination of proportions of women experiencing abortion.

The proposal should contain information to show the abortion rates in the two areas and see if the data will stand up to the proposed scrutiny.

Multivariate analysis is to be used.

**Field procedures and data collection:** No information supplied.

**Data management:** No information supplied. Information from the various sources can be linked through the common identification number.

**Timetable and budget:** The project is to be completed within 18 months, which is realistic. The cost \$89413.20 is unreasonably high.

**Overall assessment and feasibility:** The topic is important, and the proposal to link up data over time from several sources is promising. However, with the diverse sets of sources of data, the main topic of how a good MCH-FP programme can affect the numbers and quality of abortions seems to have become somewhat lost. What is not clear is:

(a) whether the entire range of sources are necessary, or whether a couple of sources are sufficient to answer the major research questions posed;

(b) how such important concerns as consequences of abortion decision making and so on will be addressed;

(c) set of variables indicated are relatively unimaginative;

(d) ethical questions with regard to re-interview of 150 women who had abortions in the preceding 12 months have not been addressed.

**Policy relevance:** If this study can show that a well run MCH-FP programme can both reduce the incidence of abortion, and enhance its safety (at earlier gestation, by trained provider etc), it will have important lessons for policy.

**Ethical requirements:** No information is supplied.

**Recommendations:** The Committee recommend that the proposal be deferred. It noted that the proposal concerned itself much more on matching various data sources than addressing adequately the major research questions. More information is needed on how various sets of data will contribute to answering the main research question, i.e. whether or not an integrated MCH-FP programme helps to reduce the incidence of abortion or improve its safety and subsequent use of contraceptives. The Committee recommended that a more focused proposal is developed and resubmitted for its consideration.

## RESPONSE TO THE REVIEWERS' COMMENTS

### 1. Whether so many data sets are essential

We have mentioned the specific purpose for use of each data set (pages 6-7). However, we have given up the idea of linking the data files "Testing an Indirect Technique" and "Validation Study of the Bangladesh DHS" with the working file for the present study. Nevertheless, we will use the results of these files to assess the underestimate of abortion of DHS and Matlab DSS as well (see collaborative arrangement, page 15).

### 2. About list of variables

The list of the variables including the variables on health consequences and reasons for abortion has been expanded considerably. In the original proposal, the number of dependent variables was 4, now it is 12 (page 10-11). However, the list is not exhaustive. The existing files and the proposed survey will have much more variables, and those variables will be used for the study.

### 3. Ethical issue is not addressed

Ethical issue is addressed in page 12. Individual consent will be obtained from all respondents (see the attached consent form at page 32). The proposal will be submitted to the Ethical Review Committee for approval.

### 4. Field procedure, data collection and data management

Discussed in details in Research Design and Methods particularly in page 7-8.

### 5. Budget is too high

Our requirement with 20% overhead is \$118,666. As WHO does not pay any overhead and usually the salary of the PI, we may have to revise the budget excluding the overhead and 50% salary of the PI for resubmission to WHO.

### 6. Estimates of abortion rate and sample size

Preliminary estimates of abortion rates and ratios are given and the question of the adequacy of sample size is addressed (see Strength and Weakness of the Study Design, page 7-8).

7. About questionnaire

Two draft questionnaires are attached (Appendix B and C).

8. Without the follow-up the study becomes a more simple examination of proportion of women experiencing abortion

Certainly, we will do the follow-up of the subjects for abortion and its impact on maternal mortality, fertility, contraceptive use from the prospective data from DSS and RKS. For doing the follow-up to investigate the health consequences, we will have to depend on retrospective data. Its limitations and how to minimize the limitations has been mentioned in the Strength and Weakness of the Study Design (page 7-8).

9. Pilot study

Certainly, a pilot study has been in our mind. We do not finalize any questionnaire without a pilot test. It will also be done for this study (page 7)

We feel the proposed study will have enough materials to investigate how an integrated MCH-FP program reduces incidence of abortion, improves its safety and subsequent use of contraceptives. A simple dummy table for investigating the effect of the Matlab MCH-FP program on incidence of abortion and its safety to be measured by gestational age and type of providers is shown at page 11, as an example.