

# **Operations Research on ESP Delivery and Community Clinics in Bangladesh**

---

## **Baseline Assessment of Indicators for Monitoring ESP Delivery in Rural Areas of Bangladesh: Findings from a Cross-sectional Study**

**Sukumar Sarker  
Ziaul Islam  
S.A. Shahed Hossain  
Nirod Chandra Saha  
Subrata Routh**



**ICDDR,B: Centre for Health and Population Research  
Mohakhali, Dhaka 1212, Bangladesh**

**ICDDR,B Special Publication No. 112**

**Edited by:** M. Shamsul Islam Khan

**Design and Desktop Publishing:** Jatindra Nath Sarker  
Manash Kumar Barua

**ISBN: 984-551-233-X**

**ICDDR,B Special Publication No. 112**

©2001. ICDDR,B: Centre for Health and Population Research

***Published by:***

**ICDDR,B: Centre for Health and Population Research**

GPO Box 128, Dhaka 1000, Bangladesh

Telephone: (880-2) 8811751-60 (10 lines); Fax: 880-2-8811568

E-mail: [msik@icddr.org](mailto:msik@icddr.org); URL: <http://www.icddr.org>

---

***Printed by: Parallel Printers, Dhaka***

## Acknowledgements

The Operations Research Project (recently renamed as Family Health Research Project), a project of the ICDDR,B: Centre for Health and Population Research, works in collaboration with the Ministry of Health and Family Welfare, Government of the People's Republic of Bangladesh, supported by the United States Agency for International Development (USAID).

This publication was funded by the USAID under Co-operative Agreement No. 388-A-00-97-00032-00 with the ICDDR,B. The Centre is supported by the following countries, donor agencies, and others which share its concern for the health and population problems of developing countries:

- Aid agencies of the government of: Australia, Bangladesh, Belgium, Canada, European Union, Japan, Norway, Saudi Arabia, Sri Lanka, Sweden, Switzerland, the United Kingdom, and the United States of America;
- UN agencies: International Atomic Energy Agency, UNAIDS, UNICEF, World Bank, and WHO;
- International organizations: CARE Bangladesh, International Center for Research on Women, International Development Research Centre, Population Council, and Swiss Red Cross;
- Foundations: Aga Khan Foundation, Ford Foundation, George Mason Foundation, Novartis Foundation, Rockefeller Foundation, and Thrasher Research Foundation;
- Medical research organizations: International Life Sciences Institute, National Institutes of Health, New England Medical Center, Northfield Laboratories, and Walter Reed Army Institute for Research-USA;
- Universities: Johns Hopkins University, Karolinska Institute, Loughborough University, London School of Hygiene & Tropical Medicine, University of Alabama at Birmingham, University of Goteborg, University of Maryland, University of Newcastle, University of Pennsylvania, and University of Virginia;
- Others: Abt. Associates Inc., ALICO Bangladesh, Arab Gulf Fund, American Express Bank, ANZ Grindlays Bank, British Geological Survey, Cairns Energy PLC, Cytos Pharmaceuticals LLC, Department of Defence-USA, Family Health International, Helen Keller International, Macro International Inc., National Vaccine Program-USA, Occidental Bangladesh Ltd., Procter and Gamble, The Rand Corporation, Rhone-Poulenc Rorer, Save the Children Fund-USA, Shell Bangladesh, UCB Osmotics Ltd., Urban Family Health Partnership, UNOCAL Bangladesh, and Wander A.G.

The authors with deep gratitude acknowledge the contributions of Dr. Md. Abdul Quaiyum, Team Leader (A), Integrated Family Health Services, and Mr. Ali Ashraf, Team Leader (A), Management Support System and Innovative Programmes, ORP, ICDDR,B, for providing valuable suggestions to improve the report. The authors also place deep gratitude and acknowledge the contributions of the interviewers and field supervisors for their effort in collecting information through household visits in the rural areas of the study sites. Finally, the authors also acknowledge the rural women and families who extended cooperation to the study team by allowing their time for interview and providing their family health information.

## Glossary

AIDS	Acquired Immunodeficiency Syndrome
ALRI	Acute Lower Respiratory Infection
ARI	Acute Respiratory Infection
BCC	Behaviour Change Communication
BDHS	Bangladesh Demographic and Health Survey
CC	Community Clinic
CDD	Control of Diarrhoeal Diseases
CMWRA	Currently-married Women of Reproductive Age
CPR	Contraceptive Prevalence Rate
DHS	Demographic and Health Survey
DOTS	Directly Observed Treatment System
EOC	Emergency Obstetric Care
EPI	Expanded Programme for Immunization
ESP	Essential Services Package
FWA	Family Welfare Assistant
FWV	Family Welfare Visitor
GoB	Government of Bangladesh
HA	Health Assistant
HIU	Health Information Unit
HIV	Human Immunodeficiency Virus
HKI	Helen Keller International
HPSP	Health and Population Sector Programme
IEC	Information, Education and Communication
IEDCR	Institute of Epidemiology, Disease Control and Research
IMCI	Integrated Management of Childhood Illness
MA	Medical Assistant
MCWC	Maternal and Child Welfare Centre
MIS	Management Information System
MOHFW	Ministry of Health and Family Welfare
MWRA	Married Women of Reproductive Age
RD	Rural Dispensary
RTI	Reproductive Tract Infection
SACMO	Sub-Assistant Community Medical Officer
SC	Satellite Clinic
STD	Sexually Transmitted Diseases
TB	Tuberculosis
TFR	Total Fertility Rate
TT	Tetanus Toxoid
TTBA	Trained Traditional Birth Attendant
UHC	Upazila Health Complex
UHFWC	Union Health and Family Welfare Centre
UP	Union Parishad

## Table of Contents

	Page
<b>Executive Summary</b> .....	viii
<b>Introduction</b> .....	1
<b>Materials and Methods</b> .....	6
<b>Results and Discussion</b> .....	8
<b>Conclusions</b> .....	52
<b>References</b> .....	53
 <b>Tables</b>	
1. Distribution of sample by area/residence .....	5
2. Background characteristics of CMWRA .....	9
3. Percent of CMWRA with mean age at first marriage.....	18
4. Mean age at first marriage by women’s education .....	18
5. Percent of CMWRA with current pregnancy by age of women .....	19
6. Percent of CMWRA with outcome of last pregnancy in last one year .....	19
7. Age-specific and total marital fertility rate of CMWRA in last one year .....	21
8. Percent of CMWRA with knowledge on contraceptives/family planning methods .....	23
9. Percent of CMWRA with source of knowledge on contraceptives/ family planning methods .....	25
10. Mean desire for children and perceived family size by women’s education, husband’s education and number of living children.....	26
11. Percent of CMWRA with current use of contraceptives by methods .....	27
12. Percent of CMWRA with current contraceptive use (any method) by age of women .....	30
1. Percent of CMWRA with current use of contraceptives (any method) by source of supply .....	30
14. Unmet need for family planning among MWRA by area .....	33
15. Percent of CMWRA obtained ANC in last pregnancy by number of visits .....	33
16. Percent of MWRA obtained ANC in last pregnancy by type of service .....	35
17. CMWRA obtained ANC in last pregnancy by source of care .....	36
18. CMWRA obtained PNC in last pregnancy (within 42 days after delivery) by source of care .....	37
19. Percent of CMWRA obtained PNC in last pregnancy by type of service .....	38
20. Percent of CMWRA who received TT immunization in last pregnancy by number of doses .....	41

21.	Percent of CMWRA with child under 1-year who received TT by number of doses (TT coverage among women with child under 1- year) .....	41
22.	Percent of CMWRA with any reported complications during last pregnancy who visited health facilities for management complications by stages of maternal care .....	42
23.	Percent of children (12-23 months) immunized by types of vaccine .....	42
24.	Percent of children (12-23 months) who completed EPI schedule by source of immunization services .....	43
25.	Percent of children (12-23 months) dropped out of the EPI schedule by type of immunization .....	43
26.	Percent of children (6-59 months) received vitamin A supplementation in last 6 months by age and gender .....	46
27.	Percent of children <5 years with reported diarrhoea and use of ORT and reported cough and cough with fast-breathing in last 2 weeks by area .....	46
28.	Percent of CMWRA seeking care for treatment of diarrhoea in children <5 years by source of care .....	47
29.	Percent of CMWRA seeking care for treatment of cough and cold with fast-breathing in children <5 years by source of care .....	48
30.	Percent of CMWRA (15-49) visited the health/family planning facilities in last 3 months by type of facility .....	49
31.	Percent of CMWRA (15-49) visited the health/family planning facilities in last 3 months by reasons of visit .....	50
32.	Percent of CMWRA aged 15-49 years with knowledge on service delivery sites and who received the services from those sites in last 3 months .....	51

## Figures

1.	Percentage of occupation of wives .....	14
2.	Percentage of occupation of husbands.....	14
3.	MWRA with mean age-at-first marriage.....	16
4.	Prevalence of pregnancy .....	17
5.	Current pregnancy by age of women.....	17
6.	Total marital fertility rate.....	20
7.	Age-specific marital fertility rate .....	20
8.	Knowledge and current use of contraceptives (any method) by MWRA .....	22
9.	Age-specific contraceptive use rate (any method).....	28
10.	Unmet need for family planning .....	29
11.	Visits for antenatal care in last pregnancy .....	32
12.	Children received immunization by types of vaccine .....	40
13.	Complete immunization coverage of children.....	40

## Annexures

1.	Components of ESP.....	55
2.	Baseline Indicators for the HPSP .....	57
3.	Indicators for HPSP evaluation and collection of information in the baseline survey .....	59

## Executive Summary

**Background:** The sociodemographic situation in Bangladesh is changing rapidly, suggesting changes in health needs and preferences at the grassroots level. This realization also coincides with a recent significant conceptual shift, made in the 1994 International Conference on Population and Development (ICPD) in Cairo, of moving away from achieving demographic targets toward meeting the needs of individuals by providing a range of client-centred quality health services. In this regard, there is a widespread agreement among policy-makers, programme managers, service providers, and donors on the need to focus efforts on moving the health and family-planning system toward delivering a package of essential services, which is oriented to meeting the clients' need. The Government of Bangladesh, under the Health and Population Sector Programme (HPSP) 1998-2003, envisioned a client-centred and financially sustainable system to deliver high-quality essential services to the population, especially to the vulnerable group, i.e. women, children, and the poor. The package is designed to improve the health status of families through comprehensive measures, meeting required standards of quality, and to be available at one single service-delivery site, ensuring reduced production costs and the optimal use of resources.

Under the HPSP, the ESP will be delivered in a three-tiered service-delivery model with the Upazila Health Complex (UHC) at the upazila level, the Union Health and Family Welfare Centre (UFHWC) at the union level, and the Community Clinic (CC) at the ward/village level. At the grassroots and community level, the new service-delivery model warrants a shift in approach from the current home-visitation and makeshift centres (satellite clinics/EPI outreach sites) to the Community Clinic (CC)-based service-delivery plus limited home visits. This indicates that the existing makeshift outreach/satellite clinics and the domiciliary services need to be phased out gradually.

With such major changes to be implemented, it is extremely critical to monitor the effects of the change and evaluate the impacts of the programme. One aim of such monitoring is to get reliable estimates of selected key indicators, which may be followed up to assess the future progress. The present report depicts the status of the indicators in the field sites of the Operations Research Project (ORP) of ICDDR,B, where operations research on ESP delivery and CCs is being conducted.

**Study area and population:** The intervention, Operationalization of ESP Delivery in Rural Areas, was conducted in three upazilas, namely Abhoynagar of Jessore district, and Mirsarai and Patiya of Chittagong district. In total, the survey covered 50,519 persons and 9,298 households. About 11.3% of the population were children aged less than 5 years, and the average family size in the study population was 5.4.

**Objectives:** The study aims to: (i) provide reliable estimates of ESP parameters (e.g. fertility, safe motherhood and child immunization coverage, contraceptive prevalence rate, etc.) of a probability sample of the project area for implementing intervention activities; and (ii) provide a baseline estimate of health and family-planning indicators to monitor and evaluate the effectiveness of the ESP operationalization in the project area.

**Methodology:** The baseline household survey was conducted during October 1998-March 1999 and included 9,298 households (2,950 in Abhoynagar, 3,883 in Mirsarai, and 2,465 in Patiya) with 50,519 population in all the unions under survey. Data were collected



from currently-married women of reproductive age (MWRA) of 15-49 years who were included as respondents in the survey and who responded on behalf of the household. The survey was conducted within the panel sampling frame and design, adopted by the Project for a longitudinal surveillance in the project area. The minimum sample size for each union was determined to be 812 households, and the sample size was calculated as 860 households to adjust dropouts and design effects. The survey was conducted in four unions in each upazila. The survey covered 9,042 married women aged 15-49 years (2,921 in Abhoynagar, 3,517 in Mirsarai and 2,604 in Patiya). Information obtained from 96% of the respondents was finally analyzed in the study.

**Results:** The age structure of the study population showed that only 5-11% of the currently MWRA were aged less than 20 years. The proportion of women per stratum gradually declined with age, beginning with the 25-29 years cohort, and this trend was commonly observed in all the areas. Over half (53%) of the respondent families had 1-2 child(ren) in Abhoynagar compared to about 37% in Chittagong area (Mirsarai and Patiya). The mean number of living children per family ranged 2-3 across the 12 unions of the three upazilas (2 in Abhoynagar and 3 in Mirsarai and Patiya). The mean duration of marriage ranged 15-17 years across the different study unions. A small percent of the respondents had been in the married status for less than 5 years and fewer for less than 2 years were regarded as newly-weds.

Most women (89% in Abhoynagar, 72% in Mirsarai, and 69% in Patiya) were married before they reached 18 years of age. The proportion of getting married after 18 years was relatively more in Chittagong area (23%) than in Jessore area (9%). The mean age-at-first marriage turned out as 15.6 years in Abhoynagar and 16.7 years in Mirsarai and Patiya. About 7% of the women were pregnant at the time of survey.

The total marital fertility rate of the population in Abhoynagar was 2.6, and in Mirsarai and Patiya it was 3.5 and 3.4 respectively. As expected, the fertility was high among aged 20-29 years and declined with increase in age. The early child-bearing pattern of Bangladeshi women was noted in the three study areas.

Knowledge of at least one contraceptive method was universal among the women of the study area. Overall, 64%, 44%, and 51% of the currently-married women in Abhoynagar, Mirsarai, and Patiya respectively were using a contraceptive method during the survey. Modern method was much preferred by the women, and the use rates were 58%, 40% and 48% in Abhoynagar, Mirsarai and Patiya respectively. By far, the most widely-used method was the oral pill (17-34%). Injectables was the next popular method (23% in Abhoynagar, 11% in Mirsarai, and 5% in Patiya), followed by sterilization-tubectomy (ranging 5.6-7.6% across the study unions). Contraceptive use was highest among the married women aged 25-39 years, which constituted more than half to about two-thirds of the users.

Household visits by the government health workers were the most frequent source of supply of contraceptives, except in one union of Abhoynagar. Pharmacy was cited as the second single source at Abhoynagar and so were Family Welfare Centre (FWC)/Rural Dispensary (RD) in Mirsarai and Patiya. NGOs distributed the family-planning methods among less than 1% of the married women.

The proportion of unmet need was 15% in Abhoynagar in both who wanted child after two years and who did not want any more child. However, the proportion of women who wanted child after two years was 20% in Mirsarai and 17% in Patiya, and the proportions of those who did not want any more child were 27% and 20% in Mirsarai and Patiya respectively. These numbers bear important programmatic concern and warrant urgent attention for focussed family-planning activities in the study area.

Of those who received antenatal care in last year, 10%-16% paid five or more visits for antenatal care (ANC) (12% in Abhoynagar, 10% in Mirsarai, and 17% in Patiya). However, about one-third paid two visits for ANC services.

Twenty-seven percent to 47% of the pregnant mothers used some sort of postnatal care (PNC) services. Data indicated that 39%, 60%, and 56% of those who obtained PNC in Abhoynagar, Mirsarai, and Patiya respectively received the services at home. The village practitioners were consulted in 17% cases in Abhoynagar and 12-13% cases in Chittagong region. About 10% of the cases sought the PNC services from the Upazila Health Complexes (UHCs) and Union Health and Family Welfare Centres (UHFWCs).

Results of analysis of the coverage data showed that child immunization by 24 months attained a universal level (87% in Patiya, 88% in Mirsarai, and 96% in Abhoynagar). Ninety-seven percent of the children in Abhoynagar, 93% in Mirsarai and 91% in Patiya completed all the targeted doses by first 12 months of age. The vaccination service was obtained mostly from the government facilities.

The current survey revealed the status of the government efforts to reach and supplement all children aged 6-59 months with vitamin A capsules in the study population. The results showed a universal coverage independent of gender preference among all the boys and girls in different unions of the study area.

The two-week prevalence of diarrhoea was reported as 27% in Abhoynagar of Jessore and Patiya of Chittagong districts, while it was reported as high as 42% in Mirsarai of Chittagong district. Such a high prevalence of diarrhoea in the study population is not clearly understandable, except the fact that the survey was conducted after the devastating countrywide flood during July-September 1998 when a higher number of cases were likely. Fifty-one percent of the diarrhoea cases in Abhoynagar of Jessore district and 70% in Mirsarai and Patiya of Chittagong district were treated with oral rehydration solutions.

The two-week prevalence of acute respiratory infection (ARI) was noted as 43% in Abhoynagar and Patiya and 58% in Mirsarai. A similar finding from the study area was also reported in another working paper published by ICDDR,B. Again, this prevalence was higher than what had been reported (one in three in children aged less than five years) by the Bangladesh Demographic Health Survey (BDHS) 1999-2000.

Those who visited the health facilities in recent time cited the UHC as the most frequent place for visit, followed by combined SC+EPI/sites and H&FWC, except in Patiya where H&FWCs were visited much more frequently (71%) than the combined SC+EPI spots. A fair amount of the respondents also visited district hospital during the last three months. Private clinics in Abhoynagar appeared as a significantly preferred sites for healthcare visits by women compared to the other two upazilas of Chittagong district. A very small proportion preferred NGO clinics/hospital for seeking care for their health problems.

**Conclusion:** The findings from the baseline survey conducted during October 1998-March 1999 in the Operations Research Project sites reveal certain inter-region and intra-region differentials in fertility, contraceptive use, unmet need for family planning, childhood immunization, etc. However, this report provides a benchmark for the ESP indicators to monitor the progress of ESP delivery system in the project area over time.

## **Introduction**

Bangladesh has made remarkable strides toward improving the health and well-being of its people. The sociodemographic situation in Bangladesh is changing rapidly. Fertility has declined by half in less than a generation; child survival has improved, causing significant increases in life expectancy; and contraceptive prevalence has increased from about 7% in 1975 to 54% (Rural - 52.3%) in 2000-2001 [1]. With these changes, there have also been changes in both health needs and preferences at the grassroots level. At the same time, greater social mobility of women through improvements in education and employment opportunities outside the home has raised the prospect of improving the health of the whole family.

The health and family-planning programme of Bangladesh has not only been able to sustain its achievements, but also has been able to improve and strengthen these advances, and to meet the new demands in the changed scenario. As the health and family-planning programme matures and grows in size, ensuring both quality and cost-effectiveness becomes the priority issue. This is due to the fact that the growing and changed demand for family planning and other health services opt for a more cost-effective and sustainable service-delivery system. This realization also coincides with a recent significant conceptual shift, largely influenced by the 1994 International Conference on Population and Development (ICPD) in Cairo, from achieving the demographic targets toward meeting the needs of individuals by providing a range of client-centred quality health services.

The policy-makers, programme managers, service providers, and donors widely agree that there is a need to focus efforts on moving the health and family-planning system toward delivering a package of essential services, which is oriented to meeting the clients' need. The Government of Bangladesh, under the Health and Population Sector Programme (HPSP) 1998-2003, envisioned a client-centred and financially-sustainable system to deliver high-quality essential services to the population, especially to the vulnerable group, i.e. the women, children, and the poor. The longer-term vision of providing a package of essential services is to respond to clients' needs, to provide better quality services, to become financially sustainable, and to develop adequate service-delivery capacity. Hence, the changing health needs and priorities of the people, and moreover, the desire to ensure better health for all have prompted the policy-makers to design the Essential Services Package (ESP) as the major focus of the HPSP.

### **Problems of the rural health and family-planning service-delivery system**

Despite significant advances in lowering fertility and child mortality, Bangladesh still faces major challenges in its health and demographic profile. With an estimated population of 129 million at the end of 2000, it is the most densely-

populated country on earth [2]. The current population, projected to grow to 250 million, will stabilize only in 30-40 years. The GNP per capita of \$360 (1997) is among the lowest in the world [2]. Most health problems are interlinked with severe poverty. Nine of 10 children and seven of 10 mothers suffer from some form of nutritional deficiency. Poverty-related infectious diseases, such as acute respiratory infections and diarrhoea, exacerbated by the effects of malnutrition, are the main causes of mortality among children [3]. Only less than 40% of the population have access to basic healthcare [3]. About half of the children are not fully immunized. Much of the success of the family-planning programme is compromised by a high discontinuation rate, as 47% of contraceptive users dropout in 12 months. Three quarters of pregnant women do not use antenatal care, and over 90% do not receive assistance from a trained person during childbirth and delivery [1]. Even with highly chronicled success in family-planning programme and expanded programme for immunization (EPI), the evidence of poor access to healthcare remains prominent. The present system also does not enable customers to obtain services from any single service-delivery point, especially at the community level.

Weak referral and linkages, both vertically and horizontally, are major concerns, since poor inter-provider relationships exist at all levels, particularly between health and family-planning service-delivery systems. The inability to provide essential services from a single site limited the opportunities for shared costs and resources, resulting in high levels of inefficiency. Population growth and the increase in proportion of households in need of healthcare herald rising costs of service-delivery, especially if doorstep supply of services and commodities is continued, ultimately compromising quality, coverage, and effectiveness.

The HPSP, the reformative initiative adopted by the Ministry of Health and Family Welfare (MOHFW) of Government of Bangladesh (GoB), aims to address these issues through restructuring and reorganization of various systems to provide a package of essential health services. The package is designed to improve the health status of families through comprehensive measures, meeting required standards of quality, and to be available at one single service-delivery site, ensuring reduced production costs and the optimal use of resources.

### **The ESP and its delivery within the HPSP**

In the wake of the International Conference on Population and Development (ICPD), held in 1994 in Cairo, health and population policies and priorities have undergone major changes. Population and family planning must and will remain at the top of the country's agenda for many years to come. The elements of ESP echo the priorities of the Programme of Action of the ICPD regarding reproductive health of women, safe motherhood, child survival, and prevention of sexually transmitted diseases (STDs). Based on the interventions identified by the 1993 World Development Report, the elements of ESP are grouped into the following five areas: (i) reproductive healthcare, (ii) child health care, (iii) communicable disease control, (iv) limited curative care, and (v) behaviour change communication. The detailed components of the ESP are presented in Annexure 1.

Under the HPSP, the ESP will be delivered in a three-tiered service-delivery model with the Upazila Health Complex (UHC) at the upazila level, the Union Health and Family Welfare Centre (UHFWC) at the union level, and the Community Clinic (CC) at the ward/village level. At the grassroots and community level, the new service-delivery model warrants a shift in approach from the current home-visitation and makeshift centres (satellite clinics/EPI outreach sites) to the CC-based service-delivery plus limited home visits. This indicates that the existing makeshift outreach/satellite clinics and the domiciliary services need to be phased out gradually. In the reorganized service-delivery plan, the CCs will be the only major service-delivery outlet at the grassroots level to provide basic health and family-planning services. Nevertheless, limited home visits by the CC providers will still be continued as a back up to prevent dropout of critical services and to provide services for population with limited access.

To implement such major changes, it is critical to monitor the effects of the changes and to evaluate the impacts of the programme. One aim of such monitoring is to get reliable estimates of selected key indicators, which may be followed up to assess the future progress. The present report depicts the status of the indicators in the ORP field sites, where operations research on ESP delivery and CCs is being conducted. The study was undertaken in a period (October 1998-March 1999) when establishment of CCs was in a planning phase---orientation of providers, supervisors, managers, and the community leaders were being conducted, and the sites for CCs were being selected following the guidelines suggested by the MOHFW for establishment of CCs. None of the CCs was in operation in the project area when this survey was conducted. In the context of HPSP, the information obtained from this study may, thus, be considered the baseline for monitoring the effects and impacts of delivery of ESP in the rural field sites of the Project.

## **Setting**

The intervention, Operationalization of ESP Delivery in Rural Areas, was conducted in three upazilas<sup>1</sup>, namely Abhoynagar of Jessore district, and Mirsarai and Patiya of Chittagong district. Abhoynagar, one of the eight upazilas of Jessore district located in the southwest part of the country, is known as a high-performing area because of the higher level of health and demographic indicators found in different evaluations. This upazila is an intervention area of the ORP where other operations-research interventions are also being conducted. The upazila consists of eight unions, and the intervention on ESP delivery was conducted in all the unions of the upazila. However, four unions (Rajghat, Paira, Baghutia, and Sreedharpur) of the upazila, selected purposively for monitoring and evaluation, were covered in the baseline household survey.

Mirsarai and Patiya, the two of the 14 upazilas in Chittagong district located in the southeast part of the country, are known as the low-performing areas because of a lower level demonstration of different demographic and health indicators. These two upazilas are also the ORP intervention areas and are hosting varied range of OR activities. Four (Dhum, Hinguli, Durgapur and Mirsarai) of 16 unions in Mirsarai were covered in the baseline household survey, and similarly, four (Kharana, Dhalghat, Haidgaon and Baralia) of 22 unions in Patiya upazila were covered in the study, although

---

<sup>1</sup> In Bangladesh, there are 465 upazilas (subdistricts) in 64 districts. Each upazila comprises, on an average, 10 unions (similar to a county) and a population of 270,000.

the ESP intervention has been implemented in all the unions of the two upazilas. The reasons for selection of unions for survey are the same as in Abhoynagar<sup>2</sup>.

### ***Study area and study population***

The study was confined to 12 unions of the 3 upazilas where operations research activities have been conducted within the government health systems. Table 1 shows the distribution of sample population by their area of residence (unions of upazila). A total of 50,519 population and 9,298 households were covered in the survey. About 11.3% of the population were children aged less than 5 years, and the average family size in the study population was 5.4. Area-to-area variation in population and family size was also distinct in the survey (Table 1).

### ***Objectives of the study***

The overall objective of the study was:

To collect programme-specific data relevant to the project area for assessment of baseline information required for implementing the intervention and for subsequent monitoring and evaluation of operations research.

The specific objectives of the study were:

- 1) To provide reliable estimates of ESP parameters (e.g. fertility, safe motherhood and child immunization coverage, contraceptive prevalence rate, etc.) of a probability sample of the project area for implementing intervention activities.
- 2) To provide a baseline estimate of health and family-planning indicators for monitoring and evaluating the effectiveness of the ESP operationalization intervention in the project area.

---

<sup>2</sup> The unions under the survey are the rural unions covered by a longitudinal surveillance of ORP. The survey households were the households included in the sampling framework of the surveillance system.

**Table 1.** Distribution of sample by area/residence

Area/Residence		No. of Households	Population			CMWRA	No. of children <5 years	Average family size
Upazila	Union		Male	Female	Total			
Abhoynagar	Rajghat	967	2316	2177	4493	940	482	4.6
	Paira	565	1322	1258	2580	536	259	4.5
	Baghutia	583	1470	1410	2880	591	279	4.9
	Sreedharpur	835	2097	2045	4142	854	430	4.9
	Sub-Total	2950	7205	6890	14095	2921	1450	5.8
Mirsarai	Dhum	654	1651	1944	3595	577	384	5.4
	Durgapur	865	2179	2324	4503	766	496	5.2
	Hinguli	1289	3565	3629	7194	1181	919	5.5
	Mirsarai	1075	2891	3042	5933	993	676	5.5
	Sub-Total	3883	10286	10939	21225	3517	2475	5.5
Patiya	Kharana	467	1572	1480	3052	516	402	6.5
	Baralia	600	1830	1789	3619	560	391	6.0
	Dhalghat	666	2096	2038	4134	759	454	6.2
	Haidgaon	732	2313	2081	4394	769	545	6.0
	Sub-Total	2465	7811	7388	15119	2604	1792	6.1
<b>Total</b>		<b>9298</b>	<b>25302</b>	<b>25217</b>	<b>50519</b>	<b>9042</b>	<b>5717</b>	<b>5.4</b>



## **Materials and Methods**

### **Data-collection procedure**

Data were collected from currently-married women of reproductive age (MWRA) of 15-49 years who were included as respondents in the survey and who responded on behalf of the households. The interview questionnaire--a household questionnaire--structured in Bangla, was finalized after careful pretests. While designing the questionnaire, attention was paid to the need to collect data on indicators that could be followed up to track the progress of ESP. The survey was conducted mainly to collect information on the use of services rather than on the health status (outcome) indicators, although some of these were included. The Field Research Officers of the Operations Research Project supervised the interview schedule and the data-collection procedure. All the researchers involved in preparation of the study trained the interviewers (mostly females) for 5 days on the theoretical and practical aspects of the survey and about the interview schedule, instructions for the interviewers, and potential problems of the interview and its solutions. The supervisors accompanied the interviewers in the survey area and helped them resolve problems during the survey. Besides, the supervisors edited each of the interviewer's filled-up questionnaires and checked the completeness of data recording. Ten percent of the sample households were revisited, and the quality-control staff interviewed the revisited household respondents to ensure the reliability and validity of the information collected.

### **Sampling procedure**

The survey was conducted within the panel sampling frame and design, adopted by the Project for a longitudinal surveillance in the project area. In the rural study areas, the design was stratified two-stage sampling. Unions were the first stage units and were randomly selected. Households served as the second stage sample units and were enumerated earlier according to the sampling frame. The sampling fraction was designed in such a way that each household had an equal probability of selection. A systematic random-sampling technique (every 4th or every 6th) was applied to select the sample households. Each union of the project upazila was considered an independent intervention unit, since the project unions have separate programmes initiated on different dates. The minimum sample size for each union was determined to be 812 households, and the sample size was calculated as 860 households to adjust dropouts and design effects [4].

The baseline household survey was conducted during October 1998-March 1999 and included 9,298 households (2,950 in Abhoynagar, 3,883 in Mirsarai and 2,465 in Patiya) with 50,519 population in all the unions under survey. The survey covered four unions in each upazila, as shown in Table 1. The survey included 9,042 married women aged 15-49 years of age (2,921 in Abhoynagar, 3,517 in Mirsarai, and 2,604 in Patiya). Complete information obtained from 96% of the respondents was finally analyzed.

## **Analysis plan**

To allow the comparison of findings among the unions within an upazila and across the unions between the upazilas, data from the survey were analyzed by unions of the three upazilas. The sample design allows each union of the project area to be considered an independent intervention unit, and a comparison between them may be considered valid too. Analysis of variables encompassed the knowledge and use aspects of the ESP delivery system.

The variables analyzed were as follows:

- i. Household sociodemographic and economic characteristics
- ii. Reproductive health status and use of service
- iii. Child health status and use of service
- iv. Knowledge about and visit to health facilities

### ***i. The household sociodemographic and economic characteristics included***

Age of women and age of husbands  
Number of living children in households  
Parity of women and duration of marriage  
Education of women and husbands  
Occupation of women and husbands  
Monthly expenditure  
Source of water  
Hand-washing practices and sanitation facility

### ***ii. Reproductive health***

Age-at-first marriage  
Fertility desire and attitudes toward family-planning  
Contraceptive methods  
Prevalence of pregnancy  
Antenatal care  
Postnatal care  
Maternal immunization

### **iii. Child health**

- Immunization status
- Vitamin A supplementation
- Prevalence of diarrhoea
- Use of Oral Rehydration Therapy (ORT)
- Prevalence of cough and cough with fast breathing
- Health-seeking behaviour for diarrhoea and Acute Respiratory Infection (ARI)

### **iv. Behaviour Change Communication**

- Visit to health facilities
- Knowledge about health facilities

## **Results and Discussion**

### **Background characteristics**

Distribution of currently-married women, aged 15-49 years interviewed in the survey, by selected background characteristics, is presented in Table 2. The selected characteristics included: age of couples, family size, parity, duration of marriage, level of education, religion, occupation, income and expenditure, source of water, and sanitation facility of the respondents' families. Only 5-11% of the currently-MWRA in the survey unions was aged less than 20 years. This relatively low proportion was due to the fact that only women who were married at the time of survey were interviewed, and probably many women aged less than 20 were not married.<sup>3</sup> The proportion was 11% in Abhoynagar compared to 6% in Mirsarai and 5% in Patiya. The mean age of the women in the sample was about 31 years across the different study unions (30 in Jessore and 31 in Chittagong area) and the modal age ranged from 24 to 33 years. The proportion of women per stratum gradually declined with age, beginning with the 25-29 years cohort, and it was a common trend observed in all the areas.

Similarly, as wives reported, relatively low proportion of husbands of the respondents was aged less than age 24 years, and the proportion varied 1% to 6% across the different unions surveyed. The regional difference was also observed between the Chittagong (1.6-2.6%) and Jessore (5.7%) areas. Twenty-eight to 39% of the husbands were aged 45-49 years with the mean age ranging from 39 to 41 years (39 years in Abhoynagar, 42 years in Mirsarai, and 41 years in Patiya). The modal age was 35-40 years (35 years in Abhoynagar, 40 years in Mirsarai, and 36 years in Patiya).

---

<sup>3</sup> This pattern is close to the findings (16%) of BDHS 1999-2000 in which the ever-married women were interviewed.

**Table 2.** Background characteristics of CMWRA

Variables	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga- pur n=725	Mirsarai n=954	Total n=3372	Kharana n=513	Dhalghat n=744	Haid- gaon n=756	Baralia n=549	Total n=2562
<b>Women's age</b>															
<20	10.2	12.0	10.4	10.7	10.7	5.2	7.9	7.2	5.8	6.2	5.3	5.0	7.1	3.6	5.4
20-24	20.7	20.0	24.3	19.9	21.5	15.9	18.9	17.2	16.6	16.9	18.9	18.4	20.2	17.3	18.8
25-29	17.4	17.5	17.6	20.4	18.1	25.5	19.6	21.7	22.1	22.7	24.0	21.0	21.4	22.2	22.0
30-34	15.1	13.8	17.2	14.7	15.4	17.6	17.5	19.0	18.2	18.1	16.6	20.7	19.6	18.6	19.1
35-39	16.5	15.0	13.4	16.7	15.3	16.4	14.9	17.8	16.7	16.6	16.6	19.3	16.3	17.7	17.5
40-44	11.3	13.2	9.1	10.7	10.9	11.9	11.5	10.8	11.3	11.4	12.5	10.7	10.4	9.8	10.8
45-49	8.8	8.5	8.0	7.0	8.1	7.5	9.7	6.3	9.3	8.1	6.2	4.8	4.9	10.7	6.4
Mean	30.8	30.7	29.9	30.4	30.4	31.2	31.3	31.1	31.4	31.2	31.2	31.1	30.4	31.7	31.1
Mode	22.0	24.0	20.0	24.0	24.0	25.0	28.0	28.0	30.0	30.0	26.0	33.0	26.0	30.0	30.0
<b>Husband's age</b>															
<20	0.6	0.2	0.2	0.6	0.4	0.1	-	0.5	0.1	0.2	0.2	0.1	0.1	-	0.1
20-24	6.2	5.5	5.3	3.9	5.3	1.0	3.9	3.4	2.4	2.4	0.9	1.9	2.0	0.8	1.5
25-29	12.7	17.8	16.5	13.9	15.1	8.7	8.1	6.8	8.7	8.2	11.1	9.3	11.1	8.6	10.0
30-34	18.4	16.4	20.8	17.4	18.6	14.5	14.5	12.4	13.3	13.7	16.7	15.2	16.9	15.1	16.0
35-39	15.5	15.6	17.4	20.3	17.0	19.1	19.2	21.4	19.8	19.8	22.1	20.6	21.0	21.4	21.2
40-44	16.2	18.4	14.1	15.0	15.8	18.0	12.8	18.8	15.5	16.6	17.1	18.3	16.3	17.6	17.3
45-49	30.4	26.1	25.7	28.9	27.8	38.6	41.5	36.7	40.2	39.0	31.9	34.6	32.6	36.5	33.8
Mean	39.2	38.4	38.1	39.2	38.7	41.6	42.5	41.7	41.8	41.8	40.3	40.6	40.2	41.2	40.6
Mode	51.0	28.0	29.0	35.0	35.0	40.0	39.0	36.0	45.0	40.0	36.0	41.0	38.0	40.0	36.0
<b>No. of living children</b>															
No child	8.0	9.5	8.8	11.2	9.2	7.6	8.8	8.3	7.5	7.9	5.8	6.8	7.1	6.9	6.8
1-2	53.2	56.7	52.6	49.6	52.9	36.3	35.4	41.9	36.8	37.5	33.9	44.2	37.4	33.5	37.9
3-4	28.4	26.6	26.8	27.7	27.4	33.2	31.5	32.4	34.3	33.0	37.2	34.3	37.3	35.9	36.1
5-6	8.2	6.0	9.5	9.2	8.4	17.8	18.5	14.6	16.3	16.8	18.1	12.5	14.7	18.6	15.6
7+	2.2	1.2	2.3	2.3	2.1	5.2	5.8	2.8	5.0	4.7	4.9	2.1	3.4	5.1	3.7
Mean	2.4	2.2	2.4	2.4	2.3	3.0	3.0	2.7	3.0	2.9	3.1	2.6	2.9	3.1	2.9
Mode	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0	2.0	2.0	2.0	2.0	3.0	2.0

*Contd.....*

**Table 2. (contd.)**

Variables	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga- pur n=725	Mirsarai n=954	Total n=3372	Kharana n=513	Dhalghat n=744	Haid- gaon n=756	Baralia n=549	Total n=2562
<b>Parity</b>															
0	4.9	5.0	5.5	6.2	5.4	3.8	5.2	4.0	4.1	4.1	3.1	3.9	3.3	4.2	3.6
1-2	41.8	46.4	43.2	44.9	43.7	27.5	31.6	35.2	29.6	30.4	30.8	39.1	32.5	27.9	33.1
3-4	31.7	29.1	29.7	28.4	30.0	30.9	24.5	30.0	30.5	29.5	32.4	30.8	32.9	33.3	32.3
5-6	15.8	13.6	13.6	13.1	14.2	21.6	23.9	18.9	21.1	21.3	20.3	18.0	20.2	21.5	19.9
7+	5.8	5.8	7.9	7.3	6.7	16.2	14.7	12.0	14.8	14.6	13.4	8.2	11.0	13.1	11.1
Mean	3.1	2.9	3.0	2.9	3.0	3.9	3.8	3.6	3.8	3.8	3.8	3.3	3.6	3.8	3.6
<b>Duration of marriage</b>															
<3	0.1	-	-	-	0.1	-	-	-	-	-	-	-	-	-	-
3-5	0.1	-	0.1	-	0.1	-	0.2	-	-	0.1	-	-	-	-	-
6-10	3.1	2.1	3.8	4.3	3.3	0.9	0.5	0.4	1.0	0.7	0.8		0.4	0.2	0.3
11-15	63.8	62.7	65.6	62.0	63.8	40.7	41.7	33.7	39.7	39.1	33.5	25.4	39.4	33.3	32.9
16-20	31.6	33.4	28.9	31.6	31.1	53.1	55.2	60.4	52.5	54.9	57.7	63.8	56.1	60.7	59.6
21+	1.3	1.7	1.6	2.1	1.6	5.3	2.3	5.5	6.7	5.2	8.0	10.8	3.8	5.8	7.1
Mean	14.9	15.1	14.6	14.9	14.8	16.2	16.0	16.6	16.2	16.2	16.6	17.2	16.1	16.6	16.7
<b>Women's education</b>															
No education	41.5	42.3	46.8	46.5	44.2	54.5	45.7	42.9	56.1	51.0	44.4	28.0	47.0	38.2	39.1
1-4	21.5	20.8	22.5	17.8	20.9	11.5	14.6	15.6	9.6	12.4	15.6	13.4	17.5	14.6	15.6
5-9	3.7	33.0	28.0	30.0	31.0	28.0	32.9	31.9	27.2	29.4	31.6	35.2	27.2	35.3	31.6
10+	41.5	3.9	2.7	5.7	3.8	6.0	6.8	9.7	7.0	7.2	13.7	23.4	8.3	11.8	13.7
Median	3.0	3.1	2.0	2.0	3.0	-	3.3	3.0	-	-	3.0	5.0	2.0	4.0	4.0
<b>Husband's education</b>															
No	34.4	33.8	45.7	39.6	38.7	38.8	31.1	32.7	39.8	36.5	39.2	17.1	41.8	24.9	30.5
1-4	19.1	17.7	17.1	16.2	17.6	11.7	13.8	12.3	11.5	12.1	13.6	11.7	13.2	12.6	12.7
5-9	33.3	37.3	27.4	29.1	31.4	34.6	34.5	32.7	31.9	33.4	28.3	33.7	25.9	36.1	30.8
10+	13.2	11.2	9.8	15.1	12.2	14.9	20.5	22.3	16.7	18.0	18.9	37.5	19.1	26.4	26.0
Median	4.0	4.5	2.0	4.0	4.0	4.0	5.0	5.0	4.0	5.0	7.0	8.0	3.5	6.0	5.0

*Contd.....*

**Table 2. (contd.)**

Variables	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga- pur n=725	Mirsarai n=954	Total n=3372	Kharana n=513	Dhalghat n=744	Haid- gaon n=756	Baralia n=549	Total n=2562
<b>Women's occupation</b>															
House wife	79.4	74.7	83.4	83.7	80.6	67.9	79.1	71.2	68.7	70.7	91.2	91.4	91.5	88.2	90.7
Service	1.7	0.8	1.0	1.9	1.4	0.4	0.7	1.4	1.0	0.9	1.7	1.5	0.7	0.2	1.0
Business	14.1	18.6	10.7	10.1	13.1	30.2	18.5	25.2	29.7	27.0	5.6	5.1	5.4	10.2	6.4
Skill labour	1.6	2.1	1.1	0.7	1.4	0.3	0.7	0.4		0.3	-	0.3	0.1	0.7	0.3
Day labour	2.4	2.3	2.8	2.7	2.6	0.9	0.9	1.2	0.4	0.8	0.8	1.2	1.3	0.4	1.0
Others	0.8	1.4	1.0	0.9	0.9	0.3	0.6	0.2	0.2	0.3	0.6	0.5	1.0	0.4	0.6
<b>Husband's occupation</b>															
Unemployed	2.0	0.8	0.7	1.2	1.2	4.8	6.5	2.9	3.7	4.4	3.3	2.7	2.4	2.6	2.7
Service	8.7	9.5	6.6	8.7	8.2	31.7	40.8	36.0	30.7	33.9	27.9	39.8	22.6	30.1	30.2
Business	19.8	14.6	19.2	19.7	18.6	22.4	16.7	18.1	18.5	19.4	26.7	22.2	23.0	22.6	23.4
Skill labour	26.7	12.8	11.6	13.7	17.0	3.9	4.9	1.9	4.8	3.9	1.7	6.5	5.7	4.7	4.9
Day labour	25.4	30.1	24.8	22.6	25.5	17.5	11.7	10.1	19.4	15.5	13.8	14.6	27.8	21.1	19.7
Drivers	1.0	0.2	0.1	0.4	0.5	4.5	2.5	2.3	2.5	3.1	1.6	1.0	1.5	1.3	1.3
Others	16.5	32.0	37.0	33.7	30.0	15.1	16.9	28.7	20.4	19.8	25.0	13.3	17.1	17.7	17.7
<b>Women's income</b>															
Yes	20.6	25.2	16.6	16.3	19.4	32.1	20.9	28.8	31.3	29.3	8.8	8.6	8.5	11.8	9.3
No	79.4	74.8	83.4	83.7	80.6	67.9	79.1	72.2	68.7	70.7	91.2	91.4	91.5	88.2	90.7
<b>Monthly expenditure (Taka)</b>															
<2000	18.8	22.0	18.7	15.8	18.7	4.3	5.9	6.8	4.6	5.2	3.5	5.5	4.2	6.4	4.9
2000-3000	32.0	40.8	36.4	31.8	34.9	14.9	18.9	19.6	17.3	17.3	17.7	13.2	18.4	11.1	15.2
3000-4000	23.5	16.7	16.1	19.4	19.2	28.0	23.7	30.5	28.0	27.8	29.6	22.3	28.4	27.0	26.6
4000-5000	11.1	7.6	10.2	14.7	10.9	19.4	16.2	22.8	17.6	19.1	16.2	16.0	18.7	19.1	17.5
5000+	14.6	13.0	18.7	18.3	16.3	33.2	35.3	20.4	32.5	30.6	33.0	43.0	30.3	36.4	35.8
Median	2500	2500	2500	3500	2500	4500	4500	3500	4500	3500	35.0	5500	3500	5500	4500
<b>Religion</b>															
Islam	83.0	66.2	83.9	77.4	79.0	87.1	89.2	72.8	81.0	82.7	68.8	36.0	72.2	76.3	61.9
Others	17.0	33.8	16.1	22.6	21.0	12.9	10.8	27.2	19.0	17.3	31.2	64.0	27.8	23.7	38.1

*Contd.....*

**Table 2. (contd.)**

Variables	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga- pur n=725	Mirsarai n=954	Total n=3372	Kharana n=513	Dhalghat n=744	Haid- gaon n=756	Baralia n=549	Total n=2562
<b>Source of water</b>															
Drinking(Tube well/pump)	100	100	100	100	100	100	100	100	100	100	98.6	100	100	100	99.0
<b>Dish washing</b>															
Tube well/pump	57.4	36.3	67.4	57.0	56.4	36.4	6.3	18.3	34.7	27.1	9.0	25.5	15.2	17.3	17.4
Pond/canal	42.6	63.7	32.6	43.0	43.6	63.6	93.7	81.7	65.3	72.9	91.0	74.5	84.5	82.7	82.6
<b>Hand washing</b>															
Tube well/pump	49.7	45.1	68.0	61.8	56.7	37.6	10.4	20.1	30.7	27.4	13.1	63.2	42.5	37.7	41.6
Pond/canal	50.3	54.9	32.0	38.2	43.3	62.4	89.6	79.9	69.3	72.6	86.9	36.8	57.5	62.3	58.4
<b>Sanitation facility</b>															
Sanitary	38.6	18.5	26.5	33.7	30.3	58.2	43.9	63.7	56.8	56.6	13.3	17.2	21.2	15.9	17.3
Pit latrine	46.5	56.9	42.3	46.7	47.2	35.6	51.4	26.8	34.9	36.1	49.9	29.0	32.1	26.2	33.5
No latrine	14.9	24.6	31.2	19.6	22.5	6.2	4.7	9.5	8.3	7.3	36.8	53.8	52.3	57.9	50.8

Distribution of the living children showed that 53% of the respondent families had 1-2 child(ren) in each family in Abhoynagar, whereas it was 37% in Chittagong area (Mirsarai and Patiya). Less than a third and about one-third of the families in Abhoynagar and Mirsarai-Patiya area respectively had a family size of 3-4 children. Seventeen to 20% of the households in Mirsarai and Patiya area had 5 or more children, which may be considered high compared to that of Abhoynagar area where only 11% of the families had 5 or more children. The mean number of living children per family ranged from 2 to 3 across the 12 unions of the three upazilas (2 in Abhoynagar and 3 in Mirsarai and Patiya). The modal number was cited as 2 in all the areas, except Dhum of Mirsarai and Baralia of Patiya, where it was noted as 1 and 3 respectively.

The respondents in Mirsarai and Patiya had a higher parity than those of Abhoynagar. More than one-third (34-35%) of the mothers of Mirsarai and Patiya had 5 or more live-births compared to about one-fifth of the respondents in Abhoynagar. The mean parity was also observed slightly higher in Chittagong (3.8 in Mirsarai and 3.6 in Patiya) than that of Jessore (3 in Abhoynagar).

The mean duration of marriage ranged from 15 to 17 years across the different study unions. A small percentage of the respondents had been in the married status for less than 5 years and fewer for less than 2 years, regarded as newly-weds. The majority (64%) of the respondents in unions of Abhoynagar had been in the status of 11-15 years marriage, while 55% in Mirsarai and 60% in Patiya were in the status of 16-20 years of marriage.

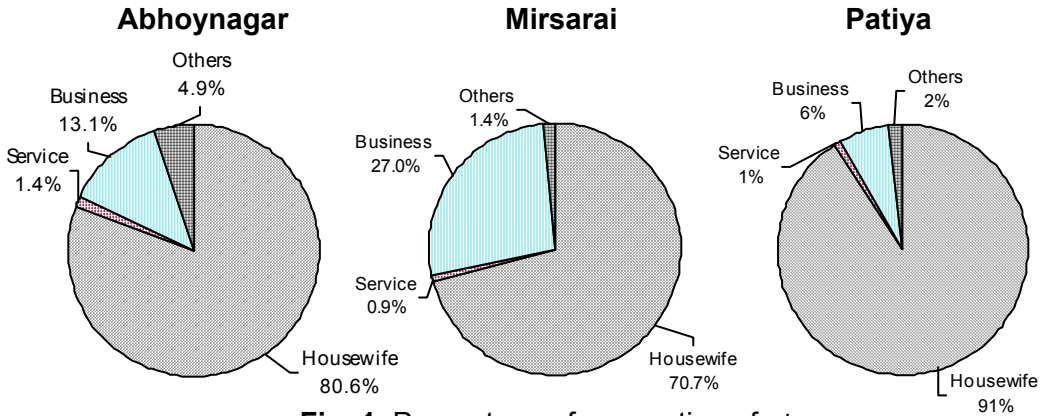
Although 39% of the women in Patiya, 44% in Abhoynagar and 51% in Mirsarai had no education, a little less than a third of them had 5-9 years of schooling. The pattern of educational status was almost same in all the unions. The husbands have had marginally higher education than their wives in the study sites. The median education of the female respondents ranged from 2 to 4 years of schooling across the unions, while the median education of husbands ranged from 2 to 8 grades of schooling. More than half of the respondents and their spouses had received some formal education.

As far religious affiliation was concerned, 21% and 17% of the respondents in Abhoynagar and Mirsarai respectively were non-muslims. The non-muslim respondents were higher (38%) in Patiya and was as high as 64% in Dhalghat union of Patiya.

Although the husbands are universally accepted as bread-earners, the women in Bangladesh are gradually taking more part in income-generating activities. In this survey, the involvement of rural women in generating family income was examined. Table 2 shows that only a small percentage of the women was occupied with income-generating activities, while most of them were housewives. Of those who were involved in family income, a significant proportion

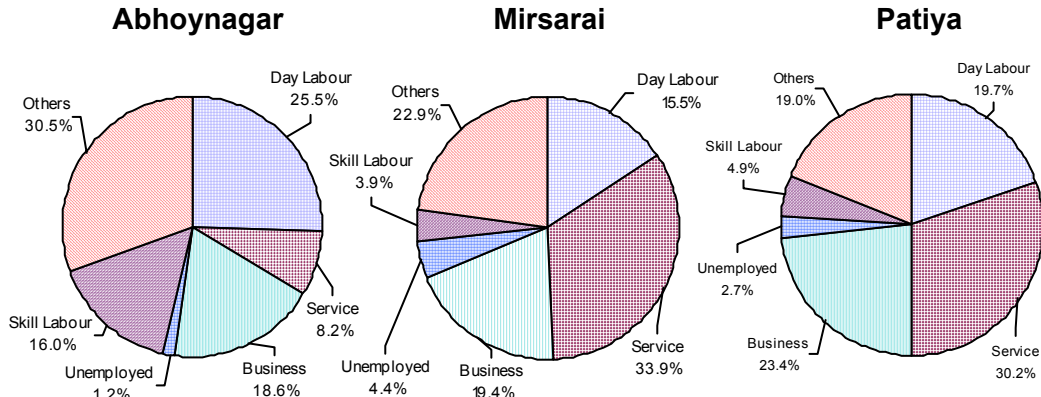


(13% in Abhoynagar, 27% in Mirsarai and 6% in Patiya) was engaged in some sort of business (Fig. 1).



**Fig. 1.** Percentage of occupation of wives

The major occupations of husbands varied across the regions. In Abhoynagar, the husbands were mostly engaged in selling skilled labour and day-labour whereas in Mirsarai and Patiya, most of the husbands were employed in the service sector or owned a business. However, a small percentage was unemployed in both the areas. Fig. 2 shows the various categories of occupation of husbands in their study areas.



**Fig. 2.** Percentage of occupation of husbands

As an indirect assessment of family income, the respondents were asked to provide a gross monthly expenditure of the family, regardless of the source of earning or occupation. The data on monthly expenditure (Table 2) showed that about 19% of the families in Abhoynagar spent less than Tk. 2,000 per month, contrary to only about 5% of the families in Mirsarai-Patiya region. At the same time, the proportion of families having a higher expenditure level, i.e. more than Tk. 5,000 per month, was much higher (30-36%) in Chittagong area than those (16%) in Abhoynagar. The median expenditure of families in unions of Abhoynagar ranged from Tk. 2,500 to 3,500, which was also lower than that (Tk. 3,500-5,500) of families of Mirsarai and Patiya. This confirms the economic affluence of the families in Chittagong region than Jessore region.

Information was also taken on the sources of water for the families and the sanitation facilities available in the families of the study population. Tube-wells were the universal source for drinking water in all the unions, but regional variations were observed in the use of water for dish-washing and hand-washing. The families of Mirsarai and Patiya areas predominantly used pond/canal water for dish-washing and hand-washing. The predominance of use of pond/canal water over tubewell water for dish-washing practices was significantly higher in both Mirsarai and Patiya, and for hand-washing it was significantly higher in Mirsarai. A significant portion of the households had sanitary and/or pit latrines in Abhoynagar (78%) and Mirsarai (93%), respectively. About half of the households in Patiya still did not have any latrine facilities for sanitation purposes.

### **Fertility**

The currently-married women were asked to give a retrospective history of all their births. To encourage complete reporting, each woman was first asked about the number of sons and daughters living with her at the time of survey, the number living elsewhere, and the number who had died. She was then asked for a history of all her pregnancy outcome, including the month and year in which the child was borne, the child's name, sex and, if dead, the age at death and, if alive, the current age of the child, and the gap between two pregnancies, as applicable for the mother. This procedure allowed to taking accounts of all the birth events that had occurred in the women's reproductive life before the survey. Essentially, the fertility data described marital fertility of the study population.

The mean number of living children per family ranged from 2 to 3 across the 12 unions of the three upazilas. The modal number was cited as 2 in all the areas, except Dhum of Mirsarai and Baralia of Patiya where it was noted as 1 and 3 respectively.

### Marriage and pregnancy

Table 3 and Fig. 3 reveal that most women (89% in Abhoynagar, 72% in Mirsarai, and 69% in Patiya) were married before they reached 18 years of age. The proportion of women getting married after 18 years was relatively more in Chittagong (23%) than in Jessore (9%). The mean age-at-first marriage was 15.6 years in Abhoynagar and 16.7 years in Mirsarai and Patiya. Education of women had marginal influence on their age-at-first marriage (Table 4). An average of 6% of the women was pregnant at the time of survey in the surveyed area of Abhoynagar (Table 5). This proportion was higher in Mirsarai (8%) and in Patiya (7%) (Fig. 4). Table 5 further shows that a relatively higher proportion (22%) of women was pregnant at a lower age (<18 years) in Abhoynagar than that in Mirsarai (12%) and Patiya (11%). Thirty to 33% of the pregnant women, however, were in the 21-24-year age group in all the areas (Fig. 5).

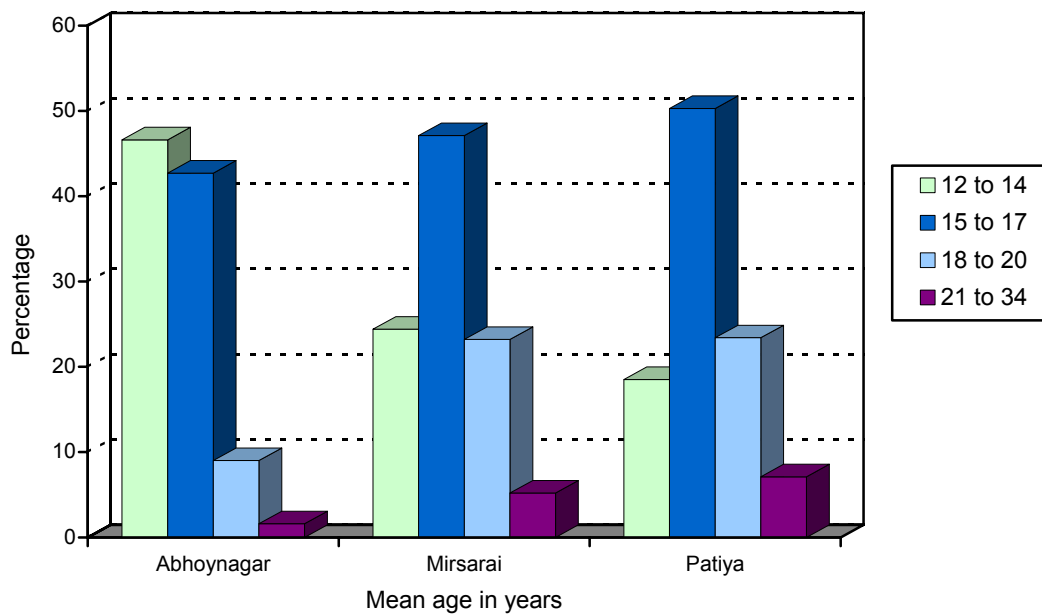
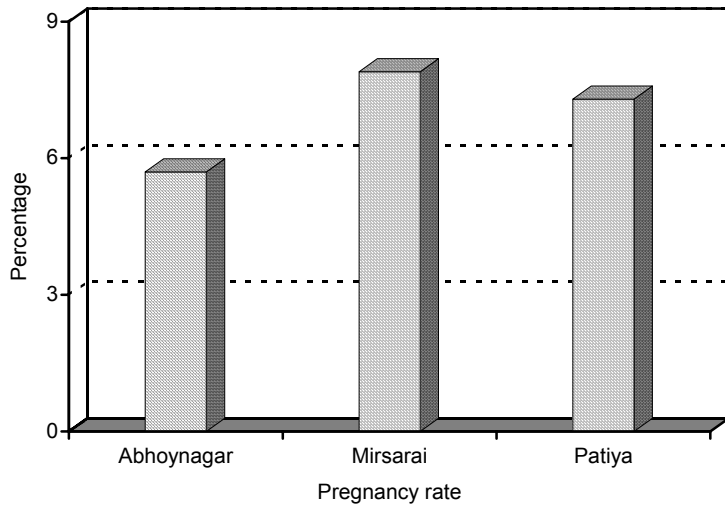
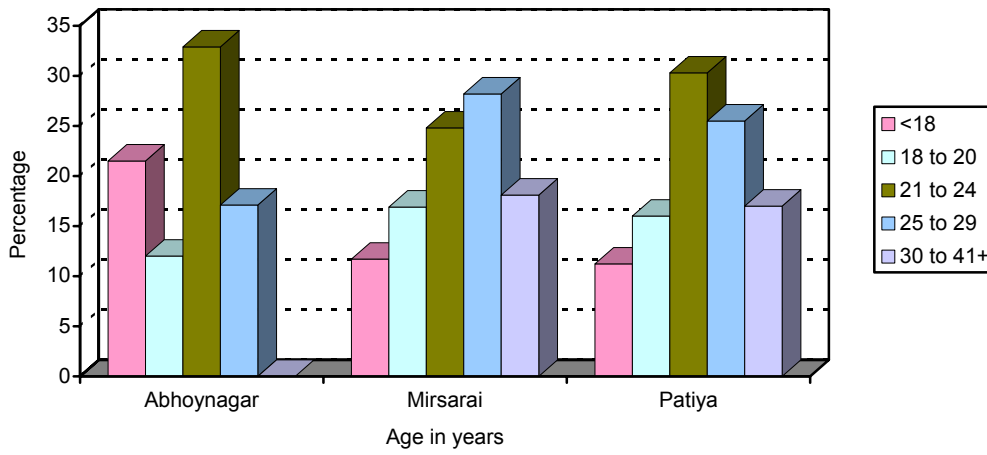


Fig. 3. MWRA with mean age-at-first marriage

Table 6 demonstrates that about 5% of the last pregnancies in Abhoynagar and Patiya were terminated as induced miscarriage compared to 2% in Mirsarai. Spontaneous miscarriage, however, terminated another 6% of pregnancies in all the study areas, and stillbirths accounted 2-4% of the pregnancy outcome.



**Fig. 4.** Prevalence of pregnancies



**Fig. 5.** Current pregnancy by age of women

**Table 3.** Percent of CMWRA with mean age at first marriage

Age in years	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga-pur n=725	Mirsarai n=954	Total n=3372	Kharana n=514	Dhal- ghat n=741	Haid- gaon n=737	Baralia n=539	Total n=2562
12-14	46.3	42.3	51.2	44.6	46.6	26.2	21.4	20.3	27.2	24.4	20.7	12.9	23.2	17.5	18.5
15-17	43.7	45.6	39.3	43.5	42.7	47.0	55.7	45.4	43.6	47.1	47.9	46.5	53.9	52.5	50.3
18-20	8.7	10.3	7.9	9.8	9.0	21.6	20.5	28.8	22.5	23.2	24.2	29.8	19.1	24.2	23.4
21-24	0.9	1.6	1.2	1.9	1.3	4.8	2.16	5.0	6.0	4.7	7.2	9.3	3.3	5.1	6.2
25-29	0.3	0.2	0.4	0.2	0.3	0.4	0.18	0.5	0.7	0.5	0.8	1.3	0.4	0.7	0.8
30-34	-	-	-	-	-	-	-	-	-	-	-	0.1	0.1	-	0.1
Overall Mean Age	15.4	15.8	15.3	15.6	15.6	16.7	16.5	17.0	16.7	16.7	16.6	17.2	16.6	16.9	16.7

**Table 4.** Mean age at first marriage by women's education

Level of education	Rajghat	Paira	Sreedh- arpur	Baghu- tia	Total	Hinguli	Dhum	Durga- pur	Mirsarai	Total	Kharana	Dhal- ghat	Haid-gaon	Baralia	Total
No education	14.3	14.6	14.2	14.2	14.3	15.7	15.6	16.2	15.7	15.8	15.8	16.3	15.7	15.8	15.3
1-4 grade	14.6	14.5	14.4	14.8	14.6	16.4	15.8	16.3	16.0	16.1	17.0	16.8	15.9	16.3	15.6
5-9 grade	15.5	15.6	15.1	15.3	15.4	16.7	16.1	16.8	16.8	16.6	16.6	17.1	16.3	17.0	16.3
10+ grade	17.4	18.4	18.4	18.2	18.1	18.1	18.5	18.7	18.5	18.4	19.0	18.8	18.3	18.6	18.5

**Table 5.** Percent of CMWRA with current pregnancy by age of women

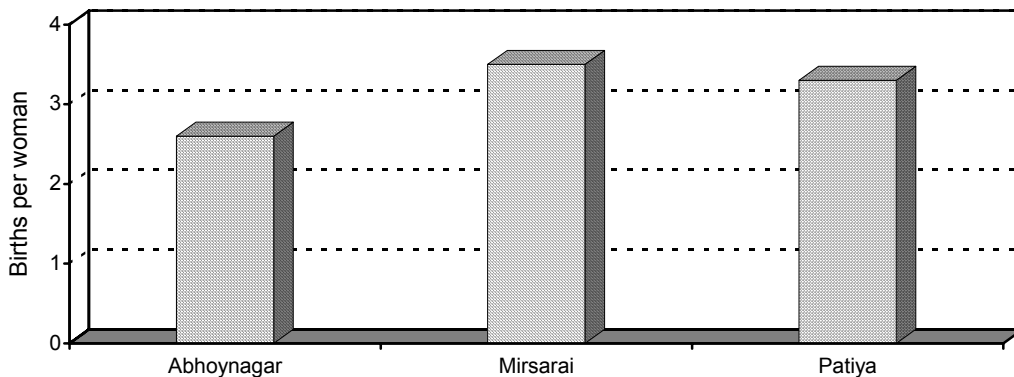
Age in years	Rajghat n=44	Paira n=34	Sreedh- arpur n=45	Baghu-tia n=35	Total n=158	Hinguli n=94	Dhum n=41	Durga- pur n=56	Mirsarai n=75	Total n=266	Kharana n=41	Dhal- ghat n=52	Haid- gaon n=56	Baralia n=39	Total n=188
<18	20.5	23.5	15.6	28.6	21.5	9.6	12.2	17.9	9.3	11.7	7.3	9.6	19.6	5.1	11.22
18-20	9.1	14.7	13.3	11.4	12.0	18.1	4.9	16.1	22.7	16.9	17.1	17.3	12.5	18.0	16.0
21-24	31.8	32.3	35.6	31.4	32.9	23.4	26.8	25.0	25.3	24.8	34.1	36.5	21.4	30.8	30.3
25-29	27.3	11.7	13.3	14.3	17.1	28.7	34.2	28.6	24.0	28.2	26.8	21.1	28.6	25.6	25.5
30-34	9.1	17.6	17.8	8.6	13.3	12.8	17.1	7.1	16.0	13.2	14.6	9.6	12.5	10.3	11.7
35-40	2.3	-	-	5.7	1.9	6.4	4.9	5.4	2.7	4.9	-	5.8	5.4	2.6	3.7
>41	-	-	4.4	-	1.3	1.1	-	-	-	-	-	-	-	7.7	1.6
All ages	5.0	6.6	5.5	6.2	5.7	8.3	7.4	7.7	7.9	7.9	6.0	7.0	7.4	7.1	7.3

**Table 6.** Percent of CMWRA with outcome of last pregnancy in last one year

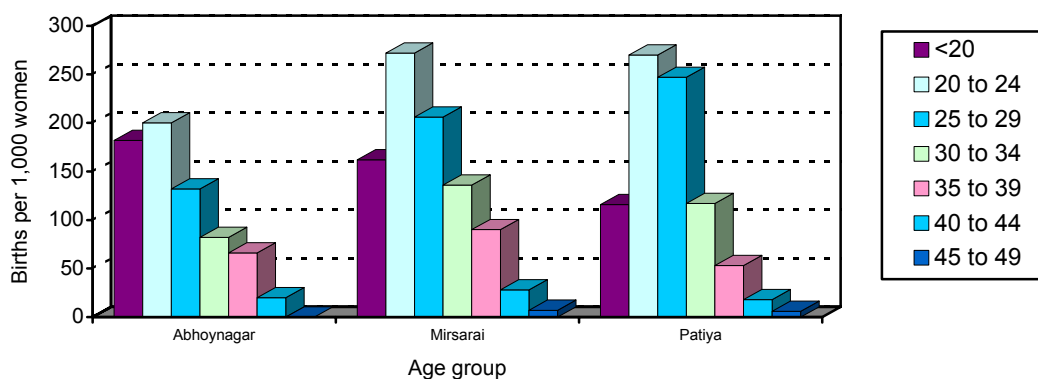
Outcome	Rajghat n=105	Paira n=64	Sreedh- arpur n=112	Baghu- tia n=62	Total n=343	Hinguli n=217	Dhum n=79	Durga- pur n=98	Mirsarai n=111	Total n=505	Kharana n=87	Dhal- ghat n=105	Haid- gaon n=92	Baralia n=73	Total n=357
Induced miscarriage	3.8	1.6	4.5	9.7	4.7	0.5	3.8	4.1	1.0	1.8	4.1	6.9	5.7	4.3	5.3
Spontaneous miscarriage	5.7	6.2	4.5	8.1	5.8	6.4	5.1	9.2	3.6	6.1	2.7	5.7	7.6	5.4	5.6
Still birth	1.0	7.8	1.8	3.2	2.9	1.8	3.8	7.1	3.6	3.6	-	3.4	4.7	0	2.2
Live birth	89.5	84.4	89.3	79.0	86.6	91.2	87.3	79.6	91.9	88.5	78.2	79.0	93.5	100	86.8
	n=94	n=54	n=100	n=49	n=297	n=198	n=69	n=78	n=102	n=447	n=68	n=83	n=86	n=73	n=310
Male	53.2	61.1	55.0	46.9	54.2	53.0	50.7	43.6	51.0	50.6	51.5	42.5	51.2	57.8	51.0
Female	46.8	38.9	45.0	53.1	45.8	47.0	49.3	56.4	49.0	49.4	48.5	52.5	48.8	42.2	49.0

**Total and age-specific fertility**

The age-specific and total marital fertility rates for the study population were calculated directly from the birth history data and are shown in Table 7. The total marital fertility rates (TFR) were 2.6 in Abhoynagar, 3.5 in Mirsarai, and 3.4 in Patiya (Fig. 6). The total marital fertility is the sum of age-specific fertility that gives a useful measure of recent level of fertility. Compared to the TFR (3.3) reported by the BDHS 1999-2000, the total fertility has declined in Abhoynagar than the other two areas, which are close to the national figure. Analyzing the births of the respondent women in the last year preceding the survey, a period covering mainly the calendar year 1998, a classic decline of fertility rate with increasing age of women was observed (Table 7, Fig. 7). As expected, the fertility was high among 20-29-year age group and declined with the increase of age. The early child-bearing pattern of Bangladeshi women was noted in the three study areas.



**Fig. 6.** Total marital fertility rate



**Fig. 7.** Age-specific marital fertility rate

**Table 7.** Age-specific and total marital fertility rate of CMWRA in last one year

Women's age	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga- pur n=725	Mirsarai n=954	Total n=3372	Kharana n=513	Dhal-ghat n=744	Haid- gaon n=756	Baralia n=549	Total n=2562
<20	213	145	176	183	182	152	182	154	164	162	37	162	148	50	116
20-24	199	233	192	187	200	260	219	312	291	272	258	285	281	242	270
25-29	125	89	112	200	132	227	174	191	204	206	228	243	253	262	247
30-34	98	56	78	84	82	175	124	109	121	136	94	84	128	167	117
35-39	49	91	82	53	66	123	84	93	50	90	94	35	32	72	53
40-44	20	15	40	-	20	30	31	26	28	28	16	-	-	74	18
45-49	-	-	-	-	-	23	-	-	-	7	-	28	-	-	6
TMFR	2.7	2.5	2.7	2.6	2.6	3.6	3.5	3.2	3.5	3.5	3.2	3.0	3.3	3.5	3.3

TMFR: Total Marital Fertility Rate

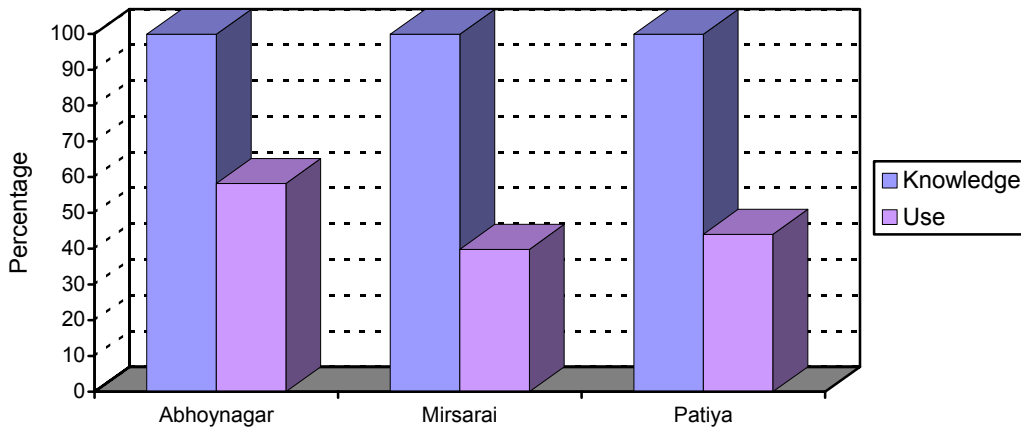


## Family planning

The survey included a series of questions about family-planning knowledge and current use. The respondents were first asked to name all the contraceptive methods that they had heard of. For methods not mentioned spontaneously, the interviewer read out a description of the method and asked if the respondent had heard of it. For each method, the respondents were asked about the source of knowledge about it and if they had ever used it.

### **Knowledge of methods and sources**

Knowledge of at least one contraceptive method was universal among the women of the study area, and the knowledge of any modern method was also universal (Table 8, Fig. 8). With regard to knowledge of specific methods, Table 8 shows that most currently-married women had heard of pill, intrauterine device (IUD), injectables, and female sterilization (tubectomy). Condom was the next well-heard method; 77% and above recognized it across the study unions. Male sterilization was recognized by 54% of the respondents in Mirsarai and 93% in Abhoynagar. More than half of the respondents--51% in Mirsarai and 57% in Abhoynagar--were aware of periodic abstinence (rhythms) as a method of family-planning. Thirty-eight percent of the respondents of Patiya were aware of both periodic abstinence and vasectomy. Contraceptive methods were much widely known in Abhoynagar than in other two areas. An average of 65% of the women in Abhoynagar had heard about Norplant, which is more than double of the other two upazilas. Of the three upazilas, Patiya seems to have shown a lower rate in regard to contraceptive knowledge, except on methods, such as oral pill, tubectomy, injectables, and IUD.



**Fig. 8.** Knowledge and current use of contraceptives (any method) by MWRA

**Table 8.** Percent of CMWRA with knowledge on contraceptives/family-planning methods

Contraceptive methods	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga- pur n=725	Mirsarai n=954	Total n=3372	Kharana n=513	Dhal- ghat n=744	Haid- gaon n=756	Baralia n=549	Total n=2562
Any method	100	100	100	100	100	100	100	100	100	100	100	100	100	99.0	99.9
Any modern method	100	100	100	99.8	99.9	100	99.8	100	100	99.9	100	100	100	99.8	99.9
<b>Temporary</b>															
<b>Non-clinical</b>															
Condom	97.9	97.7	97.7	96.3	97.5	88.1	95.3	95.3	92.5	92.1	81.1	79.7	69.0	80.1	76.9
Pill	100	100	100	99.8	99.9	99.9	99.8	100	100	99.9	100	100	99.6	99.3	99.7
Rhythm/Azal	65.3	58.1	44.7	61.3	57.1	41.9	51.6	60.4	52.6	50.5	48.1	48.9	26.5	29.0	37.9
Withdrawal	44.7	35.7	35.3	44.9	40.3	26.3	34.5	57.8	35.8	37.1	31.2	39.8	23.2	22.9	29.6
<b>Clinical</b>															
IUD	97.1	96.5	94.8	95.7	95.7	95.6	96.9	97.2	97.0	96.6	95.1	96.4	93.9	93.9	95.1
Norplant	66.5	67.6	52.1	77.6	64.7	38.1	25.5	12.7	25.3	26.9	18.7	20.0	22.5	22.9	21.1
Injectables	99.3	99.8	99.6	99.3	99.5	99.6	98.9	99.2	99.5	99.4	98.8	96.0	94.4	94.5	95.8
<b>Permanent</b>															
Tubectomy	90.0	98.4	98.4	97.3	98.4	98.3	98.7	99.0	98.2	98.5	98.8	99.6	98.9	98.9	99.1
Vasectomy	92.8	92.4	94.1	89.9	92.5	50.1	44.6	61.4	56.9	53.6	40.6	40.6	33.9	36.8	37.8

Information on contraceptive method seemed to be a well-discussed matter within the family and among the families, friends/neighbours and relatives (Table 9). Over 70% of the respondents cited friends and neighbours as the most common source of knowledge on family-planning methods followed by husbands and relatives. About 9-12% reported to have the knowledge from radio, and about 11% in Patiya upazila mentioned the Family Welfare Assistants as the source of knowledge on family-planning methods, which was 3% in Abhoynagar and 5.5% in Mirsarai.

### ***Attitudes toward family-planning***

Attitudes toward family-planning were reflected in the expression regarding the desired number of children and the number of children perceived as ideal for a family (Table 10). Regarding the number of children wanted, the mean desire was 2.4 calculated for the overall study population. The desired number was neither influenced by women's education nor by their spouse's education. Similar pattern was observed regarding expression on the number of children perceived as ideal for a family, where the mean was calculated as 2.6 for the whole study population. In both the cases, the mean of total number of children desired or perceived as ideal was close to 2, which gives a notion that popularizing the idea of a two-child family may not be far away.

### ***Current contraceptive use***

Overall, 64%, 44%, and 51% of the currently-married women in Abhoynagar, Mirsarai, and Patiya respectively were using a contraceptive method during the survey (Table 11).

The women preferred the modern method, and its use rates were 58%, 40% and 48% in Abhoynagar, Mirsarai, and Patiya respectively. The most widely-used method was the oral pill (17-34%). Injectables were the next popular method (23% in Abhoynagar, 11% in Mirsarai and 5% in Patiya), followed by sterilization-tubectomy (ranging from 5.6 to 7.6%), across the study unions. In Bagutia union of Abhoynagar, injectables were the most popular method (30%). The Family Welfare Assistants (FWA) were trained to push injectable contraceptive in the study area and were officially instructed to provide the subsequent doses of injectables to the clients, which probably explains the high use of injectables. In the method-mix, IUD use (2.6-4%), condom (2-3%), periodic abstinence (2-3.5%), and withdrawal (1.5-2%) followed other methods throughout the study area.

**Table 9.** Percent of CMWRA with source of knowledge on contraceptives/family-planning methods

Contraceptive methods	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga- pur n=725	Mirsarai n=954	Total n=3372	Kharana n=513	Dhal- ghat n=744	Haid- gaon n=756	Baralia n=549	Total n=2562
Radio	7.4	7.8	13.0	23.8	12.5	15.0	9.2	11.5	15.3	13.4	5.8	11.1	6.6	8.2	8.1
TV	2.9	1.4	2.3	1.4	2.1	2.1	1.4	1.8	2.0	1.9	1.6	9.8	3.6	6.6	5.6
Poster/Bill board	-	0.4	0.1	0.2	0.1	0.6	0.2	-	0.1	0.3	0.6	0.3	0.3	0.4	0.3
Husband	23.7	18.5	20.2	20.1	21.0	21.9	25.2	41.2	26.6	27.9	14.0	13.6	10.1	9.1	11.7
Friends/ Neighbour	44.4	47.8	37.4	38.6	41.8	36.1	28.8	24.9	33.5	31.7	21.8	31.9	43.6	39.5	34.9
Relative	18.6	19.8	24.3	14.8	19.7	19.6	26.7	14.6	17.3	19.1	29.2	26.3	28.1	24.5	27.0
FWA	3.0	4.3	2.7	1.1	2.8	4.5	8.3	5.9	4.8	5.5	26.5	5.7	6.7	10.2	11.1
Others	-	-	-	-	-	0.2	0.2	0.1	0.4	0.2	0.5	1.3	1.0	1.5	1.3

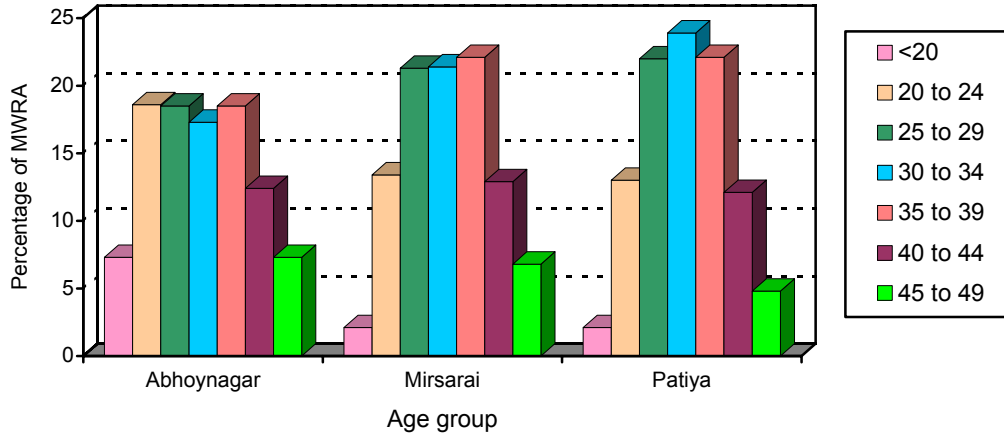
**Table 10.** Mean desire for children and perceived family size by women's education, husband's education and number of living children

Variables	No. of children wanted			Perceived ideal family size		
	Son	Daughter	Total	Son	Daughter	Either
<b>Women's age</b>						
<20	1.2	1.1	2.6	1.1	1.1	2.4
20-24	1.2	1.1	2.6	1.2	1.1	2.5
25-29	1.1	1.0	2.3	1.3	1.1	2.6
30-34	1.0	1.0	2.0	1.3	1.1	2.6
35-39	1.1	1.0	2.3	1.3	1.1	2.7
40-44	1.1	1.1	2.4	1.3	1.1	2.7
45+	1.0	1.0	3.0	1.4	1.2	2.8
<b>Women's education</b>						
No education	1.1	1.0	2.4	1.4	1.2	2.7
1-4	1.1	1.0	2.2	1.3	1.1	2.6
5-9	1.1	1.0	2.2	1.2	1.0	2.6
10+	1.1	1.0	2.6	1.1	1.0	2.8
<b>Spouses education</b>						
<b>No education</b>	1.1	1.1	2.4	1.3	1.1	2.6
1-4	1.1	1.0	2.5	1.3	1.1	2.6
5-9	1.2	1.0	2.5	1.3	1.1	2.6
10+	1.1	1.0	2.5	1.2	1.1	2.7
<b># of living children</b>						
No child	1.2	1.1	2.9	1.1	1.0	2.5
1-2	1.1	1.0	2.4	1.1	1.0	2.5
3-4	1.1	1.0	1.7	1.3	1.1	2.7
5-6	1.0	1.0	1.3	1.4	1.2	2.8
7+	1.0	1.0	1.0	1.5	1.3	2.8
<b>Overall Mean</b>	1.1	1.0	2.4	1.3	1.1	2.6
<b>Mode</b>	1.0	1.0	1.0	1.0	1.0	2.0

**Table 11.** Percent of CMWRA with current use of contraceptives by methods

Contraceptive methods	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga- pur n=725	Mirsarai n=954	Total n=3372	Kharana n=513	Dhal- ghat n=744	Haid- gaon n=756	Baralia n=549	Total n=2562
Any method	65.9	61.0	60.6	68.9	64.0	39.6	41.5	47.9	48.4	44.2	52.4	59.8	50.8	42.8	51.3
Any modern method	59.8	55.9	55.1	62.3	58.2	36.7	38.5	42.5	41.9	39.8	49.4	53.9	48.9	39.8	48.0
<b>Temporary</b>															
<b>Non-clinical</b>															
Condom	5.6	2.1	2.8	2.1	3.4	2.0	2.5	2.6	2.7	2.4	2.7	3.2	2.1	2.7	2.7
Pill	18.0	16.9	22.8	21.7	20.0	17.8	12.8	19.6	17.5	17.3	20.1	34.5	29.9	20.6	27.3
Rhythm/Azal	3.7	3.5	3.3	3.4	3.5	1.9	1.6	3.9	4.6	3.0	1.6	3.2	0.7	1.1	1.6
Withdrawal	2.4	1.6	2.2	3.2	2.3	1.0	1.4	1.5	1.9	1.4	1.4	2.7	1.2	1.6	1.7
<b>Clinical</b>															
IUD	4.1	4.1	1.1	2.7	2.9	2.1	2.5	2.1	3.8	2.6	5.6	3.5	3.8	3.5	4.0
Norplant	0.5	0.6	0.2	-	0.3	0.7	0.7	-	0.4	0.5	-	-	-	0.4	0.2
Injectables	19.7	22.5	22.0	29.8	23.0	10.0	13.5	10.2	10.9	10.9	10.7	5.1	4.0	6.2	6.1
<b>Permanent</b>															
Tubectomy	8.1	7.8	3.8	4.8	6.1	3.2	5.9	7.7	6.2	5.5	10.1	6.5	8.1	6.2	7.6
Vasectomy	2.9	0.8	1.2	0.5	1.5	0.1	-	0.1	-	0.1	0.2	0.1	0.1	0.5	0.3

Use of contraceptives varied according to women's characteristics, such as age, education, and number of living children they have. Contraceptive use was highest among the married women aged 25-39 years, which constituted more than half to about two-third of the users (Table 12, Fig. 9). The pattern was almost uniform in different strata of this age group. This pattern (18%) was also the same among women of Abhoynagar aged 20-24-years, but was low in Mirsarai and Patiya (13% and 14% respectively). The drop in contraceptive use among the older age group may reflect declining fecundity, and the lower levels of contraceptive use in younger



**Fig. 9.** Age-specific contraceptive use rate (any method)

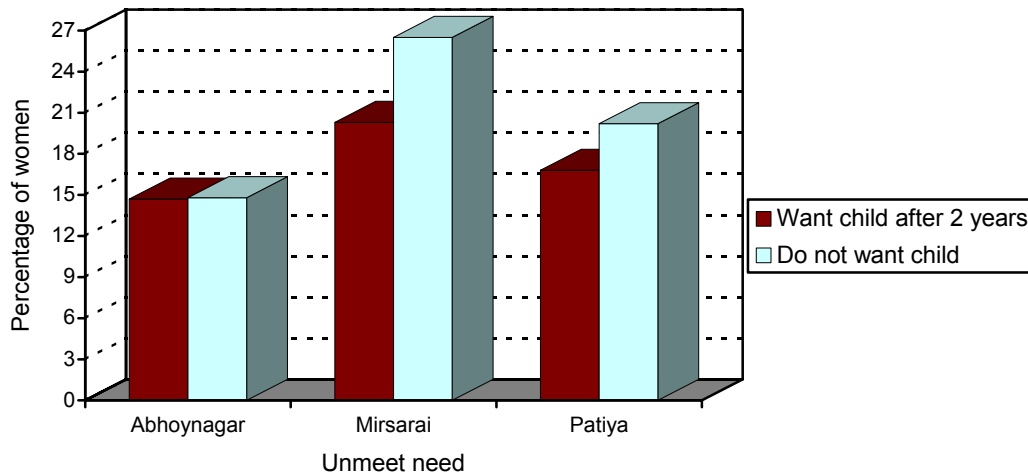
women may be explained as desire to have more children (Table 8). The use of contraceptive was higher in Abhoynagar than Mirsarai and Patiya. Injectables were the most popular method in Abhoynagar, followed by pills, whereas the picture was reverse in Mirsarai and Patiya (Table 11).

**Sources of family-planning methods**

The women who reported using a modern contraceptive method at the time of survey were asked from where did they obtain the method last time. Household visits by the government health workers were the most frequent source of supply, except in one union of Abhoynagar (Table 13). Pharmacy was cited as the second single source in Abhoynagar and so were Family Welfare Centre (FWC)/Rural Dispensary (RD) in Mirsarai and Patiya. The NGO system was found to distribute the family-planning methods to less than 1% of the married women. In Baghutia and Paira unions of Abhoynagar and in Durgapur union of Mirsarai, the combination of limited service centres (LSC) and the extended service centres (ESC) serving a cluster of 50-60 households and 350-400 population respectively, was the most commonly-used source of supply for the family-planning commodities. These centres were established to support intervention on alternative service delivery strategy, the services of EPI and SC were merged together in ESC. The details of this intervention on alternative service-delivery strategy were reported earlier in ICDDR,B working paper no. 140 [5]. The government static centres, including the district hospitals and UHCs, were the major sources of family-planning commodities.

### **Unmet need for family-planning**

The fecund women who were currently married and who requested that they either did not want any more children or they wanted to wait for two or more years before having another child, but were not using any contraception, were considered to have an unmet need for family planning. Table 14 and Fig. 10 show the relative magnitude of the unmet need in the study population. While 15% of the currently-married women had an unmet need in the BDHS 1999-2000, the proportion was 15% in Abhoynagar in both the cases. However, the proportions of women who wanted children after two years were 20% in Mirsarai and 17% in Patiya, and the proportions of those who said that they did not want any more child were 27% and 20% in Mirsarai and Patiya respectively. These numbers are important programmatic concerns and warrant urgent attention for focussed family-planning activities in the study area.



**Fig. 10.** Unmet need for family planning



**Table 12.** Percent of CMWRA with current contraceptive use (any method) by age of women

Women's age	Rajghat n=576	Paira n=314	Sreedh- arpur n=493	Baghu- tia n=388	Total n=2766	Hinguli n=450	Dhum n=231	Durga- pur n=347	Mirsarai n=462	Total n=1490	Kharana n=269	Dhal-ghat n=445	Haid- gaon n=384	Baralia n=235	Total n=1333
<20	8.5	6.4	6.9	6.7	7.3	2.4	3.5	2.0	1.1	2.1	1.1	2.5	2.9	1.3	2.1
20-24	17.5	15.3	22.5	18.0	18.6	12.4	17.3	12.7	12.8	13.4	11.9	12.6	13.8	14.0	13.0
25-29	16.0	19.1	17.6	22.7	18.5	25.1	14.3	20.2	22.1	21.3	24.5	20.5	21.1	23.4	22.0
30-34	16.7	14.7	20.1	16.7	17.3	20.2	21.7	24.2	20.4	21.4	21.2	24.3	25.8	23.0	23.9
35-39	19.1	19.4	16.6	19.6	18.5	20.2	23.4	22.5	23.2	22.1	22.0	24.0	19.0	23.4	22.1
40-44	13.5	15.3	9.9	11.6	12.4	13.1	10.4	13.5	13.4	12.9	15.6	11.7	12.0	9.4	12.1
45-49	8.7	9.9	6.3	4.6	7.3	6.4	9.5	4.9	7.1	6.8	3.2	4.5	5.5	5.5	4.8

**Table 13.** Percent of CMWRA with current use of contraceptives (any method) by source of supply

Source of method	Rajghat n=576	Paira n=314	Sreedh- arpur n=493	Baghu- tia n=388	Total n=1771	Hinguli n=450	Dhum n=231	Durga- pur n=347	Mirsarai n=462	Total n=1490	Kharana n=269	Dhal- ghat n=445	Haid- gaon n=384	Baralia n=235	Total n=1333
NGO clinic/ hospital	2.6	3.5	-	0.3	1.5	1.6	2.2	0.9	0.9	1.3	0.4	0.2	-	-	0.1
NGO sterilization camps	0.2	1.3	-	-	0.3	-	-	-	-	-	-	-	-	-	-
GOB sterilization camps	0.4	-	0.2	0.8	0.3	0.9	0.9	2.6	7.8	3.4	-	1.1	8.3	4.3	3.5
Unknown sterilization camps	-	-	-	-	-	-	-	-	-	-	0.7	-	0.5	-	0.3
Private clinic/ hospital	0.5	-	0.2	0.3	0.3	0.2	0.4	-	-	0.1	0.4	0.2	0.3	-	0.2
Govt. worker at household	29.9	20.4	53.6	5.9	29.5	24.2	32.0	15.3	35.5	29.9	9.3	28.8	27.1	18.3	22.5

Contd....

**Table 13. (contd.)**

Source of method	Rajghat n=576	Paira n=314	Sreedh- arpur n=493	Baghu- tia n=388	Total n=1771	Hinguli n=450	Dhum n=231	Durga- pur n=347	Mirsarai n=462	Total n=1490	Kharana n=269	Dhal- ghat n=445	Haid- gaon n=384	Baralia n=235	Total n=1333
NGO worker at household	0.9	0.3	1.2	-	0.7	-	0.4	-	0.2	0.1	-	0.4	0.3	-	0.2
Cluster (LSC)	-	15.3	-	16.0	6.2	-	-	18.7	-	4.4	4.1	-	-	-	0.8
EPI+SC (ESC)	11.8	14.6	4.9	37.9	16.1	10.0	3.5	12.1	3.0	7.3	28.2	2.0	1.3	2.1	7.1
FWC/RD	6.9	12.4	3.2	7.7	7.1	28.2	19.5	6.1	18.2	18.6	16.4	16.8	29.7	26.8	22.2
District hospital	4.5	3.5	1.2	0.3	2.5	2.7	3.9	4.0	2.2	3.0	8.9	4.5	3.9	6.4	5.5
THC/MCWC	9.9	6.7	7.1	6.4	7.8	6.2	11.7	13.3	3.0	7.7	10.0	5.8	3.4	10.6	6.8
Pharmacy/shop	15.1	6.1	10.3	12.1	11.5	14.7	14.3	9.8	12.6	12.8	15.2	25.4	19.0	23.8	21.2
Allopath quack	-	-	-	-	-	-	-	0.6	-	0.1	-	-	-	-	-
Satellite clinic (SC)	-	-	-	-	-	-	0.4	1.0	-	0.3	-	1.6	0.3	0.4	0.6
EPI spot	-	-	0.6	-	0.2	-	-	-	-	-	-	-	-	-	-
Dispensary at mill/industry	-	-	-	-	-	-	-	0.3	-	0.1	-	-	0.2	-	-
Govt. worker residence	6.1	5.7	6.5	1.8	5.2	1.6	2.2	2.9	1.3	1.9	-	-	0.5	-	-
Not applicable	10.9	10.2	10.8	10.6	10.6	9.7	8.7	11.5	14.3	9.0	5.6	12.7	4.7	6.8	7.5

**Table 14. Unmet need for family planning among the MWRA by area**

Unmet need	Rajghat n=874	Paira n=515	Sreedh- arpur n=814	Baghu- tia n=563	Total n=2766	Hinguli n=1137	Dhum n=556	Durga- pur n=725	Mirsarai n=954	Total n=3372	Kharana n=513	Dhal- ghat n=744	Haid- gaon n=756	Baralia n=549	Total
Want child after 2 yrs	12.8	17.9	16.0	13.0	14.7	20.7	22.0	21.0	18.4	20.3	19.1	14.0	17.9	17.1	16.8
Do not want child	15.6	13.4	17.1	11.4	14.8	30.2	28.6	22.5	23.9	26.5	18.1	16.3	20.0	27.9	20.2

## Maternal care

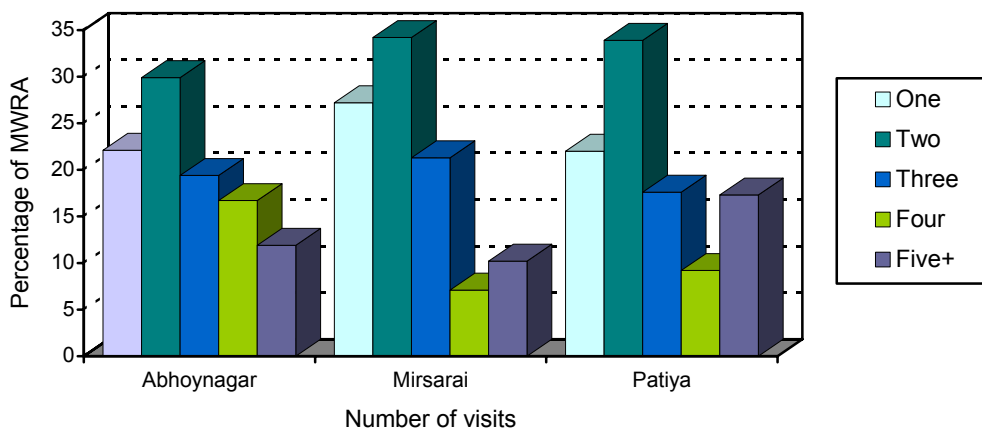
### Prevalence of pregnancy

All the respondents were asked if they were pregnant at the time of survey. Data suggest that the point prevalence of pregnancy ranged from 6 to 8% at the time of survey in the three areas of survey (Table 5). A higher prevalence was observed in the early child-bearing ages. Table 5 represents the classical pattern of age distribution of the currently-pregnant women and shows a decreasing pattern with increase in age. There is a regional difference in this pattern too. About one-fifth of the pregnancies in Abhoynagar occurred in the adolescent mothers, (aged less than 18 years), which was about twice as much as in Mirsarai and Patiya. However, the proportions of currently-pregnant women in the older age group (30+ years) were about 17% and 19% in Mirsarai and Patiya, which was rare in Abhoynagar.

### Use of antenatal care in last pregnancy

Proper care during pregnancy and childbirth is critical to the health of both mother and her baby. The respondents who were pregnant in the year preceding the survey were asked about any visit to any person or place for antenatal and postnatal care. They were also asked whether they had received tetanus toxoid vaccination while pregnant, and whether they received any assistance at delivery.

To be most effective, the antenatal care of a pregnant mother should be carried out regularly throughout the pregnancy. Of those who received antenatal care in last year, only about 10%-16% paid 5 or more visits for antenatal care (12% in Abhoynagar, 10% in Mirsarai, and 17% in Patiya) (Table 15 and Fig. 11). This proportion is very low. However, it may be seen from the table that about one-third paid two visits for antenatal care services.



**Fig. 11.** Visits for antenatal care in last pregnancy

**Table15.** Percent of CMWRA obtained ANC in last pregnancy by number of visits

No. of visits	Rajghat n=92	Paira n=60	Sreedh- arpur n=96	Baghu- tia n=46	Total n=294	Hinguli n=112	Dhum n=29	Durga- pur n=54	Mirsarai n=59	Total n=254	Kharana n=66	Dhal- ghat n=76	Haid- gaon n=81	Baralia n=72	Total n=295
One	22.8	31.7	21.9	8.7	22.1	30.4	24.1	22.2	27.1	27.2	39.4	17.1	14.8	19.4	22.0
Two	29.4	33.3	28.1	30.4	29.9	35.7	38.0	25.9	37.3	34.2	42.4	34.2	33.3	26.4	33.9
Three	18.5	11.7	24.0	21.7	19.4	17.0	13.8	33.3	22.0	21.3	7.6	17.1	23.5	20.8	17.6
Four	19.6	13.3	13.5	21.7	16.7	6.3	17.2	5.6	5.1	7.1	3.6	11.8	8.6	12.5	9.2
Five above	9.8	10.0	12.5	17.4	11.9	10.7	6.9	13.0	8.5	10.2	7.6	19.7	19.8	20.8	17.3

Antenatal care by a trained provider is important to monitor pregnancy and reduce the risks of the mother and child during pregnancy and at delivery. The respondents who received antenatal care were asked about the type of service provider and the type of services they received. Almost the whole range of services was mentioned by the majority of the respondents (Table 16). There were some regional differences noted in the reported type of care received during last pregnancy. However, in all the study areas, blood test for anaemia and urine test for albumin and sugar were the least dispensed services.

The UHCs were the major source (41%) of antenatal care in Mirsarai, which was not the same in other areas (Table 17). The UHFWCs were also the source of antenatal care for about 14% and 26% of the pregnancies in Abhoynagar and Patiya respectively. The health workers were the main source for the care in Abhoynagar (39%) and Patiya (47%). In Mirsarai and Patiya, the private qualified doctors were a significant source for delivering antenatal care services. The government health facilities and the health workers were, in general, consulted more often for antenatal care services.

FWV/MA/SACMO were the most frequent care givers in Abhoynagar (71%), whereas in Mirsarai and Patiya they provided antenatal care services to about 30% of the pregnant mothers who sought it (Table 17). The government health workers were the next commonly-cited source of services followed by the private medical doctors. The role of private medical doctors was more prominent in Patiya than in other two areas. About 32% of the pregnancies were cared by the male health workers in Patiya, which was a contrast to other areas.

### ***Use of postnatal care in last pregnancy***

Differences in use patterns of postnatal care were also reported across the different survey unions. The overall use rate revealed that about 27-47% of the pregnant mothers used some sort of postnatal care services (Table 18). Data indicate that 39%, 60%, and 56% of those who obtained postnatal care in Abhoynagar, Mirsarai, and Patiya respectively received the services at home. The village practitioners were consulted in 17% of the cases in Abhoynagar and 12-13% of the cases in Chittagong. In about 10% of cases or less, the postnatal care services were sought from the UHCs and UHFWCs.

Advice on extra food for mothers, breast-feeding practices, and dispensing of iron tablets was cited commonly as the postnatal care by the mothers who received postnatal care during their last pregnancy (Table 19). Advice on immunization and family planning follows the other services. Nevertheless, having advices on other medicines was mentioned as the postnatal care service by more than two-thirds of the respondents who got some postnatal care in the study area.

**Table 16.** Percent of MWRA obtained ANC in last pregnancy by type of service

Type of service *	Rajghat n=92	Paira n=60	Sreedh- arpur n=96	Baghu- tia n=46	Total n=294	Hinguli n=112	Dhum N=29	Durga- pur n=54	Mirsarai n=59	Total n=254	Kharana n=66	Dhal- ghat n=76	Haid- gaon n=81	Baralia n=72	Total n=295
Check for anaemia	64.1	56.7	65.6	65.2	63.3	42.0	41.4	38.9	32.2	39.0	34.8	48.7	50.6	43.1	44.7
Check for oedema	54.3	38.3	57.3	54.3	52.0	36.6	37.9	46.3	28.8	37.0	27.3	35.5	39.5	40.3	34.0
<i>Taking weight</i>	78.3	70.0	84.4	89.1	80.3	75.9	51.7	48.1	52.5	61.8	39.4	29.0	34.6	26.4	32.2
Measuring BP	77.2	70.0	79.2	76.1	76.2	84.8	55.2	90.7	79.7	81.5	45.4	56.6	59.3	65.3	56.9
Abdominal examination	83.7	75.0	80.2	84.8	81.0	90.2	89.7	98.1	94.9	92.9	48.5	60.5	72.8	66.7	62.7
Advice regarding food	82.6	78.3	82.3	84.8	82.0	77.7	65.5	75.9	66.1	73.2	78.8	61.8	65.4	56.9	65.4
<i>Advice regarding breast care</i>	67.4	50.0	56.2	73.9	61.2	52.7	48.3	44.4	42.4	48.0	30.3	38.2	46.9	30.6	37.0
Safe delivery	62.0	51.7	58.3	63.0	58.8	67.0	55.2	53.7	47.5	58.3	33.3	43.3	35.8	38.9	38.0
Care seeking in case of complications	73.9	73.3	70.8	76.1	73.1	68.7	65.5	55.6	52.5	61.8	53.0	52.6	30.9	40.3	43.7
Urine test (albumin, sugar)	57.6	25.0	53.1	26.1	44.6	17.9	34.5	29.6	11.9	20.9	12.1	27.6	16.0	23.6	20.0
Blood test (for anaemia	16.3	11.7	28.1	8.7	18.0	12.5	24.1	20.4	11.9	39.3	10.6	23.7	16.0	19.4	17.6
Can't remember	1.1	21.7	19.8	-	11.2	42.0	13.8	5.6	3.4	22.0	7.6	13.2	1.2	29.2	12.5

\* Multiple responses were accepted

**Table 17.** CMWRA obtained ANC in last pregnancy by source of care

Source of Service Centre *	Rajghat n=92	Paira n=60	Sreedh- arapur n=96	Baghu- tia n=46	Total n=294	Hinguli n=112	Dhum n=29	Durga- pur n=54	Mirsarai n=59	Total n=254	Kharana n=66	Dhal- ghat n=76	Haid- gaon n=81	Baralia n=72	Total n=295
Female health worker	21.7	40.0	35.4	26.1	30.6	8.0	-	-	3.4	4.3	19.7	9.2	17.3	19.4	16.3
Male health worker	8.7	11.7	6.2	8.7	8.5	1.0	-	-	-	0.4	7.6	52.6	27.2	37.5	31.9
TTBA	1.1	-	1.0	-	0.7	1.8	3.4	3.7	-	2.0	-	1.3	2.5	2.8	1.7
Dai	-	1.7	-	-	0.3	-	-	-	-	-	1.5	-	-	-	0.3
Thana health complex	5.4	3.3	6.2	-	4.4	26.8	37.9	64.8	45.8	40.6	31.8	15.8	22.2	19.4	22.0
NGO clinic/ satellite clinics	3.3	1.7	1.0	4.3	2.3	1.8	6.9	11.1	5.1	5.1	3.0	7.9	-	5.6	4.1
H&FWC	9.8	21.7	18.8	2.2	14.0	24.1	44.8	7.4	39.0	26.4	3.0	2.6	13.6	5.6	6.4
FWV/MA/SACMO	71.7	68.3	71.9	73.9	71.4	33.9	10.3	18.5	40.7	29.5	39.4	27.6	38.3	22.2	31.9
Nurse	-	3.3	-	-	0.7	-	3.4	5.6	-	1.6	-	1.3	1.2	2.8	1.4
Private MBBS doctor	5.4	3.3	11.5	4.3	6.8	16.1	6.9	13.0	11.9	13.4	7.6	21.0	24.7	19.4	18.6
Village practitioner	1.1	-	1.0	-	0.7	1.8	6.9	1.8	1.7	2.4	1.5	-	1.2	1.4	1.0
Private clinic/ hospital	2.2	1.7	4.2	2.2	2.7	3.6	6.9	3.7	1.7	3.5	3.0	3.9	3.7	1.4	3.1
Homeopath	-	1.7	1.0	-	0.7	-	-	-	1.7	0.4	-	-	3.7	1.4	1.4

\* Multiple responses were accepted

**Table 18.** CMWRA obtained PNC in last pregnancy (within 42 days after delivery) by source of care

Source of service centre *	Rajghat n=32	Paira n=21	Sreedh- arpur n=29	Baghu-tia n=11	Total n=93	Hinguli n=66	Dhum n=26	Durga- pur n=22	Mirsarai n=35	Total n=149	Kharana n=23	Dhal- ghat n=39	Haid- gaon n=50	Baralia n=54	Total n=166
At home	28.1	33.3	44.8	63.6	38.7	63.6	61.5	50.0	57.1	59.7	73.9	56.4	46.0	57.4	56.0
Satellite clinic	6.2		6.9	9.1	5.3	-	-	-	-	-	-	-	-	1.8	0.6
H&FWC	3.1	9.5	3.4	-	4.3	-	-	4.6	2.9	1.3	-	-	8.0	7.4	4.8
THC	18.7	-	13.8	-	10.7	7.6	7.7	22.7	11.4	10.7	-	7.7	8.0	11.0	7.8
NGO clinic/ hospital	6.2	4.8	-	-	3.2	-	-	-	2.9	0.7	-	5.1	-	1.8	1.8
District hospital	-	-	-	-	-	3.0	-	-	-	1.3	4.3	7.7	6.0	9.3	7.2
Private clinic/ hospital	3.1	9.5	17.2	-	8.6	7.6	7.7	4.6	5.7	6.7	4.3	5.1	2.0	11.1	6.0
Village practitioner	12.5	23.8	13.8	27.3	17.2	13.6	11.5	4.6	14.3	12.1	13.0	12.8	18.0	9.3	13.2
Kobiraj	3.1	-	-	-	1.1	-	-	4.6	2.9	1.3	-	-	2.0	1.8	1.2
Homeopath	9.4	14.3	-	-	6.4	1.5	3.8	-	2.9	2.0	4.3	-	4.0	7.4	4.2
Moulana/Fakir	-	-	-	-	-	-	-	-	-	-	-	-	-	1.8	0.6
Overall PNC coverage of pregnant mother	30.5	32.8	25.9	17.7	27.1	30.4	33.0	22.4	31.5	29.5	26.4	37.1	54.3	74.0	46.5

\* Multiple responses were accepted



**Table 19.** Percent of CMWRA obtained PNC in last pregnancy by type of service

Source of PNC services*	Rajghat n=32	Paira n=21	Sreedh- arpur n=29	Baghu- tia n=11	Total n=93	Hinguli n=66	Dhum n=26	Durga- pur n=22	Mirsarai n=35	Total n=149	Kharana n=23	Dhal- ghat n=39	Haid- gaon n=50	Baralia n=54	Total n=166
Extra food	43.7	38.1	31.0	27.3	36.6	28.8	38.5	36.4	37.1	33.6	60.9	35.9	20.0	31.5	33.1
Breast feeding	40.6	19.0	24.1	9.1	26.9	12.1	30.8	22.7	17.1	18.1	39.1	20.5	12.0	18.5	19.9
<i>Family planning</i>	12.5	9.5	3.4	-	7.5	6.1	7.7	13.6	5.7	7.4	4.3	2.6	4.0	5.6	4.2
Immunization	34.5	14.3	13.8	18.2	21.5	9.1	19.2	13.6	20.0	14.1	-	7.7	6.0	9.3	6.6
Refer	3.1	-	6.9	-	3.2	3.0	7.7	4.5	-	3.4	-	2.6	-	-	0.6
Physical examination	15.6	28.6	20.7	18.2	20.4	15.1	23.1	13.6	14.3	16.1	13.0	5.1	2.0	11.1	7.2
Iron tablet	53.1	28.6	24.1	27.3	35.5	28.8	15.4	4.5	25.7	22.1	21.7	23.1	20.0	11.1	18.1
Other medicine	65.6	76.2	51.7	72.7	64.5	77.3	69.2	63.6	82.9	75.2	52.0	92.3	92.0	90.7	86.1

\* Multiple responses were accepted

### ***Maternal immunization***

Tetanus toxoid injections were given to women during pregnancy to prevent neonatal tetanus, a significant cause of infant death when sterile procedures are not followed at the time of delivery. The married women of the study area were asked about obtaining tetanus toxoid immunization from any sources during their last pregnancy. About 50% of them reported that they had received at least two doses of tetanus toxoid (TT2) during the last pregnancy (Table 20). The coverage was reported little less (46-50%) among those with child aged less than one year (Table 21).

### ***Management of complications***

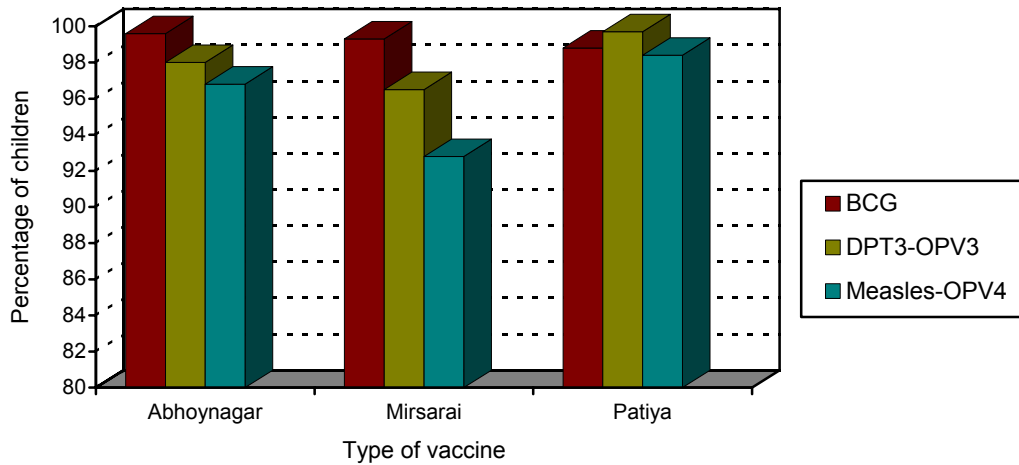
Appropriate management of complications in pregnancy is recognized as the most effective intervention to prevent maternal mortality. Table 22 demonstrates that the majority (58% in Abhoynagar and Mirsarai and 61% in Patiya) of those with reported pregnancy-related complications visited the health facilities during delivery for the management of their complications.

## **Child health**

### ***Childhood immunization***

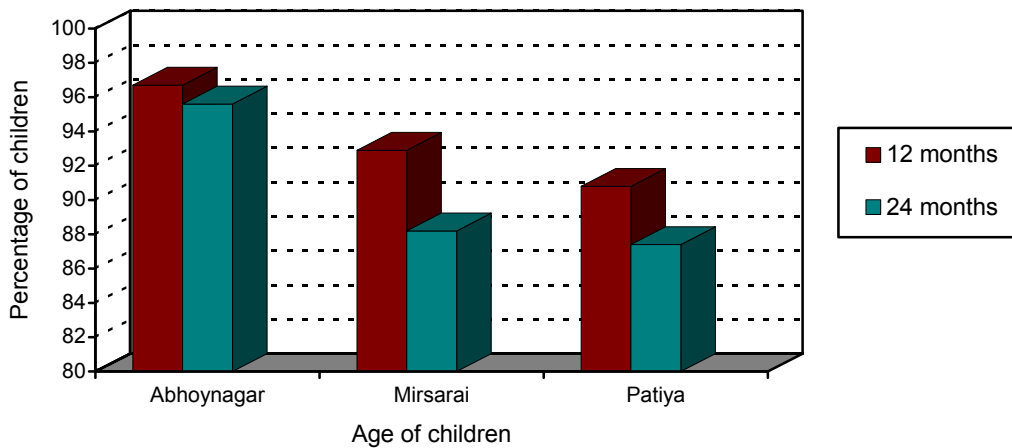
Data on childhood immunization were collected for all surviving children, aged 12-23 months, of the study population. The estimates of the immunization coverage among children aged 12-23 months in Table 23 were based on the information taken from the EPI card, and from the history provided by the mothers who were unable to present a card (or a vaccination record). Antigen-specific analysis suggests that most children (87%) in the study area had received all types of vaccines provided in the EPI (Fig. 12). Results of analysis of the coverage data showed that child immunization by 24 months attained a universal level (87% in Patiya, 88% in Mirsarai, and 96% in Abhoynagar). The analysis further revealed that 97% of the children in Abhoynagar, 93% in Mirsarai, and 91% in Patiya completed all the targeted doses by first 12 months of age (Fig. 13).

The sources of immunization services for the study population were also examined by residence. The immunization services were obtained mostly from the government facilities (Table 24). Regional differentials were observed regarding preference for obtaining the services from different types of service outlets. The combined EPI and SC sites provided 62% of the immunization services in Abhoynagar, followed by EPI outreach sites (32%). Although the proportions were different, the pattern (LSC-44%, EPI site-27%) was similar in Mirsarai. Twenty-two percent of the mothers in Mirsarai also optioned the UHC as their choice. The scenario, however, was different in Patiya, where the UHC played a greater role (30%) than the combined SC+EPI sites (27%), while the individual EPI spots remained as a significant source (22%) for vaccination services.



**Fig. 12.** Children received immunization by types of vaccine

Immunization data further revealed dropout of children from the programme in completing the doses of immunization. The dropout rates were calculated between two doses with varied interval in the routine immunization schedule. The rates of dropout were minimum in Abhoynagar, while the rates were gradually higher in Mirsarai and Patiya for all the intervals between the different antigen schedule (Table 25). The overall dropout from BCG to measles was the highest in all the study areas, followed by DPT1-DPT3 in Abhoynagar and Patiya and DPT3-measles in Mirsarai. The dropouts were more pronounced among the children of Patiya than those of Abhoynagar and Mirsarai.



**Fig. 13.** Complete immunization coverage of children

**Table 20.** Percent of CMWRA who received TT immunization in last pregnancy by number of doses

No of doses	Rajghat n=573	Paira n=341	Sreedh- arpur n=550	Baghu- tia n=357	Total n=1821	Hinguli n=736	Dhum n=384	Durga- pur n=505	Mirsarai n=621	Total n=2246	Kharana n=408	Dhal- ghat n=532	Haid- gaon n=560	Baralia n=396	Total n=1896
One	39.1	34.9	32.7	37.8	36.1	26.0	27.1	24.2	28.5	26.4	38.2	27.8	36.6	32.3	33.6
Two	52.9	58.4	59.1	52.7	55.7	55.0	49.0	55.5	45.1	51.3	45.1	49.4	46.8	44.9	46.8
<i>Three above</i>	8.0	6.7	8.2	9.5	8.2	19.0	23.9	20.3	26.4	22.3	16.7	22.8	16.6	22.8	19.6

**Table 21.** Percent of CMWRA with child under 1-year who received TT by number of doses (TT coverage among women with child under 1-year)

No of doses	Rajghat n=83	Paira n=55	Sreedh- arpur n=92	Baghu- tia n=44	Total n=274	Hinguli n=131	Dhum n=61	Durga- pur n=76	Mirsarai n=85	Total n=353	Kharana n=408	Dhal- ghat n=71	Haid- gaon n=76	Baralia n=69	Total n=289
One	56.6	36.4	52.2	50.0	50.0	38.2	37.7	39.5	43.5	39.7	38.2	29.6	51.3	50.7	45.4
Two	43.4	60.0	42.4	47.7	47.1	51.9	47.5	52.6	44.7	49.6	45.1	60.6	36.8	39.1	45.4
<i>Three above</i>		3.6	5.4	2.3	2.9	9.9	14.7	7.9	11.8	10.7	16.7	9.8	11.9	10.2	9.2

Table 22. Percent of CMWRA with any reported complications during last pregnancy who visited health facilities for management complications by stages of maternal care

Complications*	Rajghat n=36	Paira n=29	Sreedh- arpur n=38	Baghu- tia n=20	Total n=123	Hinguli n=75	Dhum n=19	Durga- pur n=28	Mirsarai n=28	Total n=150	Kharana n=19	Dhal- ghat n=44	Haid- gaon n=41	Baralia n=42	Total n=146
During pregnancy	30.6	48.3	36.8	40.0	38.2	46.7	57.9	46.4	53.6	49.3	36.8	40.9	48.8	30.9	39.7
During delivery	66.7	55.2	50.0	60.0	57.7	46.7	68.4	75.0	60.7	57.3	78.9	70.4	56.1	47.6	61.0
After delivery	16.7	13.8	13.2	5.0	13.0	33.3	36.8	35.7	28.6	33.3	31.6	27.3	41.5	35.7	34.2

\* Multiple responses were accepted

Table 23. Percent of children (12-23 months) immunized by types of vaccine

Vaccine	Rajghat n=78	Paira n=43	Sreedh- arpur n=73	Baghu- tia n=60	Total n=254	Hinguli n=155	Dhum n=62	Durga- pur n=100	Mirsarai n=114	Total n=431	Kharana n=65	Dhal- ghat n=92	Haid- gaon n=101	Baralia n=78	Total n=336
BCG	98.7	100	100	100	99.6	99.3	100	100	98.2	99.3	100	98.9	98.0	98.7	98.8
DPT1 – OPV1	98.7	100	100	100	99.6	100	100	100	98.2	99.5	99.8	100	98.0	98.7	98.8
DPT2 – OPV2	98.7	100	100	100	99.6	97.4	98.3	99.0	96.4	97.6	99.8	96.7	95.1	98.7	96.0
DPT3 – OPV3	94.8	97.6	100	100	98.0	95.4	96.7	97.0	97.3	96.5	99.8	95.7	86.4	94.9	99.7
Measles – OPV4	94.8	97.6	97.2	98.3	96.8	92.9	91.9	90.0	95.6	92.8	99.8	91.4	80.5	83.5	98.4
<b>Fully immunized:</b>															
- by 12 months	95.8	95.2	97.1	98.3	96.7	95.5	90.6	89.8	93.3	92.9	93.3	91.4	80.5	83.5	90.8
- by 24 months	92.3	97.6	95.8	98.3	95.6	86.4	85.4	88.0	92.1	88.2	80.0	90.5	92.7	86.3	87.4

**Table 24.** Percent of children (12-23 months) who completed EPI schedule by source of immunization services

Source of vaccine	Rajghat n=78	Paira n=43	Sreedh- arpur n=73	Baghu- tia n=60	Total n=254	Hinguli n=155	Dhum n=62	Durga- pur n=100	Mirsarai n=114	Total n=431	Kharana n=65	Dhal- ghat n=92	Haid- gaon n=101	Baralia n=78	Total n=334
UHC	2.8	-	2.9	-	1.7	11.6	19.3	39.0	21.0	21.6	16.9	37.6	37.9	45.6	35.6
EPI spot	1.4	50.0	70.0	10.2	31.7	26.4	43.6	19.0	23.7	26.4	-	18.2	38.8	22.8	22.1
NGO clinic/hospital	-	-	-	-	-	-	-	-	-	-	-	-	-	1.3	0.3
Private clinic/hospital	-	-	-	-	-	-	-	-	-	-	-	-	1.0	-	0.2
HA (at home)	1.4	2.4	-	-	0.8	3.9	1.6	2.0	4.4	3.2	7.7	17.2	3.9	13.9	9.1
Cluster (LSC)	1.4	-	-	-	0.4	-	-	-	-	-	-	-	-	1.3	1.8
SC+EPI (ESC)	88.9	42.9	25.7	86.4	62.1	51.0	30.7	35.0	43.9	42.5	75.4	22.6	16.5	6.3	27.1
FWC/MCWC	2.8	2.4	-	1.8	1.6	5.2	4.8	5.0	6.1	5.3	-	2.1	-	5.1	1.8
District hospital	-	-	-	-	-	0.6	-	-	0.9	0.5	-	-	-	1.3	0.3
Missing information	1.3	2.3	1.4	1.6	1.7	1.3	-	-	-	0.5	-	2.3	1.9	2.4	1.7

**Table 25.** Percent of children (12-23 months) dropped out of the EPI schedule by type of immunization

Measures of drop-out	Rajghat n=78	Paira n=43	Sreedh- arpur n=73	Baghu-tia n=60	Total n=254	Hinguli n=155	Dhum n=62	Durga- pur n=100	Mirsarai n=114	Total n=431	Kharana n=65	Dhal- ghat n=92	Haid- gaon n=101	Baralia n=78	Total n=336
BCG	3.9	2.3	4.1	1.7	2.8	6.5	8.1	10.0	2.7	6.5	1.5	7.6	17.8	14.3	1.5
DPT1-DPT3	3.9	2.3	-	-	1.6	3.8	3.2	3.0	0.9	3.0	3.1	8.7	17.2	14.3	6.2
DPT3-Mesasles	-	-	2.7	2.1	1.2	2.7	5.0	7.2	1.8	3.8	3.1	1.1	6.8	12.0	11.6

### **Vitamin A deficiency**

Vitamin A deficiency is one of the major nutritional deficiencies in Bangladeshi children. It is a leading cause of preventable childhood blindness and a major contributing factor for the severity of several other childhood morbidity and mortality. Enough evidence is available to suggest that the children with vitamin A deficiency, including those with suited deficiency, are at an increased risk of death from infectious diseases and that the supplementation with a high dose of vitamin A capsules to deficient children, can reduce mortality by 33% or more [6]. To avoid the deficiency of this crucial micro-nutrient, children (age 6-59 months) of Bangladesh are given high potency vitamin A, usually every six months. This supplementation programme has been instituted throughout the country. The current survey revealed the status of the government efforts to reach and supplement all children aged 6-59 months with vitamin A capsules in the study population. The result showed a universal coverage independent of gender preference among all the boys and girls in different unions of the study area (Table 26).

### **Diarrhoea**

In this survey, the mothers were asked if their children aged less than 5 years had experienced any episode of diarrhoea in the two weeks before the survey. If the child had had diarrhoea, the mother was asked whether the child was given *khobar saline*-ORS (packet or home made solution of salt, sugar, and water). Table 27 presents information on answers to the above questions. The two-week prevalence of diarrhoea was reported as 27% in Abhoynagar and Patiya, while it was reported as high as 42% in Mirsarai. Such a high prevalence of diarrhoea in the study population was not clearly understandable, except the fact that the survey was conducted after the devastating countrywide flood during July-September 1998 when a higher number of cases were likely. A similar finding from the study area has also been reported in another study [7]. The BDHS 1999-2000 that was conducted nationwide during September-December 1999 reported 6% prevalence of diarrhoea in the last two weeks before the survey. The Baseline Service Delivery Survey, conducted by the Ministry of Health and Family Welfare in February-March 1999, had, however, reported a 9% prevalence of diarrhoea in a nationwide sample.

Treatment by ORS was reported for 51% of the episodes in Abhoynagar and for 70% in Mirsarai and Patiya of Chittagong. Such an encouraging finding on ORT use has also been reported similarly in the BDHS 1999-2000. In more than half of the cases (53% in Abhoynagar, 61% in Mirsarai, and 60% in Patiya), the mothers sought advice or treatment for diarrhoea from outside the home (Table 28). In Abhoynagar and Patiya, allopathic quacks and/or *palli chikithsaks* were the most commonly-consulted source of care followed by the homeopaths. Pharmacy was the most popular source of consultation in Mirsarai followed by the quacks and homeopaths. In Patiya, 11% of the cases consulted the MBBS doctors, which was very low in other two areas.

### **Respiratory illness**

The mothers of children aged less than 5 years were asked if their children had had a respiratory illness during the two weeks prior to the survey. Those who answered 'yes' were asked whether any advice or treatment was sought from outside and if so from where. ARI, in this survey, was defined as an episode of cough with fast breathing. The two-week prevalence was noted as 43% in Abhoynagar and Patiya and 58% in Mirsarai (Table 27). A similar finding from the study area was earlier reported in another working paper [7]. Again, this prevalence was higher than what had been reported (one in three

in children aged less than 5 years) by the BDHS 1999-2000. The Baseline Service Delivery Survey of MOHFW used a definition of acute lower respiratory infection (ALRI) as an episode of coughing, rapid breathing, and chest in-drawing and found the prevalence as 9% in the national sample. An advice or treatment for ARI was sought from outside for one-third episodes in Abhoynagar (34%) and about half of the episodes in Mirsarai (47%) and Patiya (54%). The pattern for care-seeking for ARI from different sources was almost the same as was for diarrhoea (Table 29).

### **Care-seeking behaviour**

Care-seeking behaviour of the study population is presented in Table 30-32. The respondents were asked to provide information regarding their visits to any health facilities, including reasons of visit. Most respondents reported at least one visit to the public and private healthcare facilities in last year of the survey. Those who visited the health facilities in recent time cited the UHC as the most frequent place for visits, followed by combined SC+EPI/sites and H&FWC, except in Patiya where the H&FWCs were visited much more frequently (71%) than the combined SC+EPI spots. A fair amount of the respondents also visited district hospitals during the last 3 months.

The private clinics in Abhoynagar appeared as significantly preferred sites for healthcare visits by the women compared to the other two upazilas of Chittagong district. A very small proportion preferred NGO clinics/hospitals for seeking care for their health problems.

The purposes of visit to the healthcare facilities were mostly reported as childcare and general healthcare, followed by family-planning services. Antenatal care was the next cited reason for seeking healthcare from the healthcare facilities.



**Table 26.** Percent of children (6-59 months) received vitamin-A supplementation in last 6 months by age and gender

Age and gender	Rajghat n=305	Paira n=162	Sreedh- arpur n=288	Baghu- tia N=184	Total n=939	Hinguli n=464	Dhum n=181	Durga- pur n=267	Mirsarai n=377	Total n=1289	Kharana n=218	Dhal- ghat n=304	Haid- gaon n=339	Baralia n=253	Total n=1114
Overall 6-59 months	91.3	94.2	92.6	92.5	92.4	86.0	72.7	78.8	88.1	82.9	88.6	96.5	93.1	93.0	93.1
Male	87.2	98.7	96.5	92.0	92.8	88.2	96.4	94.5	91.5	91.6	90.0	96.4	93.0	88.5	92.2
Female	90.2	91.0	89.1	89.0	89.5	81.5	81.5	77.8	83.5	81.3	74.8	78.3	71.0	75.7	74.8
6-11 months	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
12-23 months	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
24-59 months	84.7	86.1	86.8	84.7	85.6	72.1	60.0	60.4	76.7	67.7	77.4	93.7	85.6	86.8	86.5

**Table 27.** Percent of children <5 years with reported diarrhoea and use of ORT and reported cough and cough with fast-breathing in last 2 weeks by area

Illness	Rajghat n=305	Paira n=162	Sreedh- arpur n=288	Baghu- tia n=184	Total n=939	Hinguli n=464	Dhum n=181	Durga- pur n=267	Mirsarai n=377	Total n=1289	Kharana n=218	Dhal- ghat n=304	Haid- gaon n=339	Baralia n=253	Total n=1119
Diarrhoea	26.9	21.6	27.4	32.0	27.1	51.7	40.9	30.0	35.8	41.5	26.6	22.4	26.8	20.5	24.1
ORT use	59.7	45.7	59.5	32.2	51.3	68.3	75.7	70.9	63.0	68.4	70.7	67.6	70.3	67.3	69.1
<i>Cough</i>	58.6	45.7	36.1	89.7	63.1	82.7	93.9	85.0	72.9	79.1	56.8	63.1	49.3	46.6	53.9
Cough with fast breathing	47.5	74.3	67.3	26.0	42.7	58.3	71.2	45.8	60.0	58.1	48.2	43.4	38.9	42.0	42.6
Seek advice															
Diarrhoea	47.6	42.8	62.0	54.2	52.9	55.0	68.9	60.4	66.7	60.7	56.9	55.9	59.3	65.4	59.1
ARI	39.7	55.4	56.7	20.0	34.4	46.0	56.5	39.6	47.3	46.7	40.3	46.9	52.7	57.6	53.7

**Table 28.** Percent of CMWRA seeking care for treatment of diarrhoea in children <5 years by source of care

Source of service centre	Rajghat n=40	Paira n=16	Sreedh- arpur n=51	Baghu-tia n=34	Total n=141	Hinguli n=144	Dhum n=55	Durga-pur n=54	Mirsarai n=100	Total n=353	Kharana n=40	Dhal- ghat n=42	Haid- gaon n=60	Baralia n=35	Total n=177
NGO clinic/ hospital	-	-	-	-	-	-	-	1.9	-	0.3	-	-	1.7	-	0.6
District hospital	-	-	-	-	-	-	-	1.9	1.0	0.6	2.5	-	-	-	0.6
Pharmacy/shop	5.0	6.2	5.9	5.9	5.7	45.8	25.4	22.2	40.0	37.4	17.5	16.7	10.0	11.4	13.6
THC	5.0		2.0		2.1	2.1	5.4	11.1	6.0	5.1	10.0	4.8	8.3	8.6	7.9
Govt. WHA/FWA	-	-	-	-	-	-	-	-	-	-	2.5	2.4	-	2.9	1.7
Cluster (LSC)	-	-	-	-	-	-	-	-	-	-	2.5	9.5	15.0	2.9	8.5
SC+EPI (ESC)	7.5	-	2.0	8.8	5.0	1.4	1.8	1.9	1.0	1.4	2.5	-	1.7		1.1
FWC/MCWC/RD	10.0	18.7	3.9	5.9	7.8	0.7	10.9	-	4.0	3.1	-	-	-	-	-
Private clinic/ hospital	2.5	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-
MBBS Doctor at home	-	-	2.0	-	0.7	0.7	1.8	1.8	-	0.9	-	2.4	-	-	0.6
Fakir/moulana	-	6.2	5.9	11.8	5.7	1.4	-	-	2.0	1.1	-	-	1.7	-	0.5
Allopath quack /palli chikitchsak	47.5	37.5	51.0	26.5	42.6	26.4	36.4	50.0	21.0	30.0	15.0	31.0	30.0	31.4	27.1
MBSS Doctor consulted	7.5	-	3.9	-	3.6	3.5	1.8	-	3.0	2.6	12.5	14.3	4.9	14.3	10.7
Homeopath	12.5	25.0	15.7	35.3	20.6	9.7	9.1	3.7	12.0	9.4	12.5	9.5	16.7	22.8	15.2
Other	2.5	6.4	7.7	5.8	5.5	8.3	7.4	5.5	10.0	8.1	22.5	9.4	10.0	5.7	11.9

**Table 29.** Percent of CMWRA seeking care for treatment of cough and cold with fast-breathing in children <5 years by source of care

Source of service centre	Rajghat n=72	Paira n=41	Sreedh- arpur n=63	Baghu- tia n=35	Total n=211	Hinguli n=66	Dhum n=26	Durga- pur n=22	Mirsarai n=35	Total n=149	Kharana n=84	Dhal- ghat n=94	Haid- gaon n=93	Baralia n=72	Total n=343
NGO clinic/hospital	-	2.4	-	-	0.5	-	1.0	1.1	-	0.4	-	-	-	-	-
District hospital	-	-	-	-	-	0.6	-	2.2	-	0.6	1.2	-	-	-	0.3
<i>Unknown hospital/health centre</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	0.2
Pharmacy/shop	5.6	7.3	4.8	-	4.7	40.7	29.4	14.3	47.1	35.4	17.9	17.0	21.5	9.7	16.9
THC	8.3	-	1.6	-	3.3	3.4	2.9	9.9	2.2	4.2	11.9	2.1	9.7	6.9	7.6
Govt. WHA/FWA	-	-	1.6	-	0.5	-	-	-	-	-	-	-	-	-	-
NGO worker/DH/CM	-	-	-	-	-	0.6	1.0	-	-	0.4	-	-	-	-	-
Cluster (LSC)	-	-	-	-	-	-	-	-	-	-	2.4	-	1.1	-	0.9
SC+EPI (ESC)	8.3	2.4	3.2	5.7	5.2	1.1	-	-	1.5	0.8	6.0	3.2	1.1	-	2.6
FWC/MCWC/RD	4.2	4.9	8.0	14.3	7.1	1.7	9.8	1.1	1.5	3.2	-	4.3	5.4	4.2	3.5
Private clinic/hospital	-	2.4	4.8	-	1.9	-	1.0	1.1	0.7	0.6	1.2	-	1.1	-	0.6
Satellite clinic	-	2.4	-	-	0.5	-	-	-	-	-	-	-	-	-	-
<i>Community health worker</i>	-	-	-	-	-	-	-	-	-	-	1.2	1.1	-	-	0.6
MBBS Doctor at home	2.8	-	4.8	-	2.4	0.6	2.9	2.2	0.7	1.4	1.2	1.1	-	-	0.6
Fakir/moulana	1.4	-	4.8	-	1.9	1.1	-	-	-	0.4	-	-	-	-	-
Allopath quack/palli chikitchsak	38.9	43.8	36.5	37.1	38.9	24.3	36.3	50.6	20.6	30.4	11.9	20.2	26.9	34.7	23.0
MBSS Doctor consulted	5.6	-	1.6	2.9	2.8	3.9	1.0	1.1	2.2	2.4	21.4	29.8	8.6	12.5	18.4
<i>Depot holder</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	1.4	0.3
Homeopath	23.6	34.0	20.6	34.3	26.5	11.9	8.8	14.3	18.4	13.4	14.3	16.0	18.3	22.2	17.5
Other	1.3	-	7.7	5.7	3.8	10.1	5.9	2.1	4.9	6.4	9.4	5.2	6.3	7.0	7.0

**Table 30.** Percent of CMWRA (15-49) visited the health/ family-planning facilities in last 3 months by type of facility

Type of facilities*	Rajghat n=630	Paira n=386	Sreedh- arpur n=561	Baghu- tia n=479	Total n=2056	Hinguli n=835	Dhum n=333	Durga- pur n=511	Mirsarai n=663	Total n=2342	Kharana n=383	Dhal- ghat n=453	Haid- gaon n=575	Baralia n=335	Total n=1746
H&FWC	65.4	76.0	54.8	72.0	66.0	67.4	75.1	24.2	72.4	60.5	52.2	56.1	83.5	71.3	67.2
THC/RD/MCWC	88.1	73.9	84.9	73.1	81.1	81.8	69.1	94.3	86.4	84.0	81.2	80.6	85.0	77.9	81.7
<i>NGO clinic/ hospital</i>	10.1	6.5	11.0	14.8	10.8	4.4	4.2	8.4	5.6	5.6	0.8	2.4	1.9	3.0	2.0
Private clinic/ hospital	42.8	37.5	51.6	44.3	44.5	13.2	9.3	7.4	10.1	10.5	12.8	16.8	7.1	14.3	12.3
District hospital	31.7	28.7	24.9	29.8	28.9	26.3	19.8	20.7	22.2	23.0	25.6	48.6	29.9	42.4	36.2
Satellite clinic	0.8	-	1.1	0.8	0.7	0.4	4.8	2.3	0.7	1.5	2.3	10.6	5.9	3.9	6.0
Cluster (LSC)	0.3	24.8	-	28.2	11.3	-	-	18.0	0.1	4.0	20.6	-	-	-	4.5
SC+EPI (ESC)	83.2	57.9	56.0	85.2	71.5	70.8	39.9	37.1	49.6	53.0	74.1	16.1	14.6	6.6	26.5
Pharmacy/shop	27.5	20.7	21.9	28.4	24.9	74.2	61.9	54.1	71.9	67.4	35.5	55.2	55.5	51.6	50.3
EPI centre	7.3	42.1	46.8	6.3	24.4	11.4	27.0	13.9	25.0	18.0	3.4	25.2	40.2	28.7	25.0
Other	19.7	28.7	34.9	41.5	30.6	2.6	6.6	8.2	3.9	4.8	7.0	9.7	14.6	17.0	10.4

\* Multiple responses were accepted

**Table 31.** Percent of CMWRA (15-49) visited the health/family-planning facilities in last 3 months by reasons of visit

Purpose of visit	Rajghat n=630	Paira n=386	Sreedh- arpur n=561	Baghu- tia n=479	Total n=2056	Hinguli n=835	Dhum n=333	Durga- pur n=511	Mirsarai n=663	Total n=2342	Kharana n=383	Dhal- ghat n=453	Haid- gaon n=575	Baralia n=335	Total n=1746
Antenatal care	7.0	12.4	9.6	7.5	8.8	14.4	11.7	6.7	14.3	12.3	11.0	10.8	12.5	8.1	10.9
Postnatal care	0.5	1.0	0.4	0.6	0.6	0.4	0.6	-	0.7	0.4	-	0.4	-	-	0.1
<i>ODelivery care</i>	2.1	0.8	2.0	2.5	1.9	1.8	0.9	2.9	1.80	1.9	1.6	5.1	2.3	3.3	3.0
Management of obstetric complication	1.4	-	1.2	0.8	1.0	0.7	0.6	0.4	0.4	0.6	1.0	1.6	-	0.6	0.7
FP methods	12.2	12.4	5.5	10.6	10.1	21.8	19.2	11.7	19.60	18.6	24.5	18.5	17.6	21.5	20.1
Side-effect management	4.1	3.1	2.7	3.6	3.4	1.2	0.9	1.0	1.50	1.2	0.8	0.4	0.9	0.9	0.7
Child care	27.3	23.8	25.1	24.4	25.4	21.4	24.9	27.8	22.20	23.5	26.4	30.9	36.7	33.7	32.4
General health care	21.3	19.9	25.1	26.5	23.3	18.7	24.0	23.1	21.09	21.3	16.2	14.8	20.3	15.8	17.1
Health education	0.3	-	0.2	0.4	0.2	-	-	0.2	0.1	0.1	0.5	0.2	-	-	0.2
Accompanied someone	10.2	7.8	15.0	10.0	11.0	7.7	4.2	9.8	6.8	7.4	5.5	9.7	5.2	7.8	6.9
EPI	0.3	1.5	0.2	-	0.4	5.0	4.8	7.6	4.7	5.5	3.9	0.9	1.7	3.3	2.3
Husband treatment	0.2	0.5	-	-	0.1	0.1	-	1.0	0.3	0.3	-	-	0.2	-	0.1
Visit relatives/patient	7.5	5.2	8.0	4.6	6.5	0.7	0.3	20.	0.70	0.9	-	-	0.2	0.6	0.2
For TT dose/Vitamin-A	-	-	-	-	-	-	0.6	0.4	0.3	0.3	-	0.7	-	-	0.2
D&C/MR	-	-	-	0.4	0.1	0.1	0.3	0.4	0.1	0.2	-	0.2	-	-	0.1
Others	5.7	11.4	5.0	7.9	7.1	6.0	6.9	5.1	4.4	5.5	8.6	5.7	2.4	4.5	5.0

**Table 32.** Percent of CMWRA aged 15-49 years with knowledge on service delivery sites and who received the services from those sites in last 3 months

Variables	Abhoynagar					Mirsari					Patiya				
	Rajghat	Paira	Sreedh- arapur	Baghu- tia	Total	Hinguli	Dhum	Durga- pur	Mirsarai	Total	Kharana	Dhal- ghat	Haid- gaon	Baralia	Total
<b>Knowledge About:</b>															
EPI Outreach Sites	990	510	815	563	2778	1042	543	733	900	3218	215	684	684	417	2000
Satellite Clinics	890	508	811	562	2771	1003	463	522	690	2678	444	225	249	78	996
H&FWC	890	510	813	563	2776	1042	546	723	900	3211	487	691	708	422	2308
THC	890	510	814	563	2777	1045	547	735	901	3228	493	691	714	422	2320
<b>Service Received:</b>															
EPI Outreach Sites	354	232	397	242	1225	465	312	424	365	1566	51	351	389	24	813
Satellite Clinics	154	57	65	195	471	104	11	38	36	189	257	20	21	21	319
H&FWC	125	78	23	72	298	166	36	16	111	329	26	58	124	72	280
THC	105	20	30	11	166	91	21	127	121	360	30	42	76	45	193

## **Conclusions**

The findings from the baseline survey conducted during October 1998-March 1999 in the ORP sites reveal certain inter-region and intra-region differentials in fertility, contraceptive use, unmet need for family planning, childhood immunization etc. Most findings in this survey are quite consistent with the BDHS 1999 and the Baseline Service Delivery Survey 1999. In some indicators, the present study differed with the others, and the difference may be due to regional variations or the influence of different operations research interventions conducted in the study sites for a number of years. However, this report provides a benchmark for the ESP indicators to monitor the progress of its delivery system in the project area over time. For a better understanding of national indicators and comparability, the baseline indicators of HPSP reported in the Baseline Service Delivery Survey of MOHFW are attached as Annexure 2. For future evaluation, we also attach here a set of indicators designed by the MOHFW for evaluation of HPSP (Annexure 3).

## References

1. Mitra SN, Ahmed AS, Saha T, Kumar S, editors. Bangladesh demographic health survey 1999-2000, preliminary report. Dhaka: Mitra and Associates and National Institute of Population Research and Training, 2000:10.
2. ESCAP population data sheet. 2000.
3. Bangladesh. Ministry of Health and Family Welfare. Health and population sector programme (HPSP) 1998-2003: project implementation plan, part I. Dhaka: Ministry of Health and Family Welfare, Government of Bangladesh, 1998.
4. Ahmed KS, Mozumder ABMKA, Barkat-e-Khuda. Redesigning the Operations Research Project surveillance system. Dhaka: International Centre for Diarrhoeal Disease Research, Bangladesh, 1999:23-31 (ICDDR,B special publication, 107).
5. Ashraf A, Barkat-e-Khuda, Rahman M, Reza M. The delivery of maternal and child health and family planning services through cluster visitation. Dhaka: International Centre for Diarrhoeal Disease Research, Bangladesh, 1997:1-9. (ICDDR,B working paper,140).
6. Helen Keller International, Bangladesh. Vitamin A capsule distribution trends in Bangladesh. Dhaka: Helen Keller International, Bangladesh, 1996.
7. Ashraf A, Tunon C, Hasan Y, Reza M, Saha NC, Khuda B. Knowledge of men about reproductive health Services in Bangladesh. Dhaka: International Centre for Diarrhoeal Disease Research, Bangladesh, 2000:21 (ICDDR,B working paper,135).





**Components of ESP**

***i. Reproductive Healthcare***

- including safe-motherhood services, i.e. antenatal care, safe delivery and obstetric first-aid and referral services, postnatal care;
- family-planning services to increase distribution of pills and condoms, emphasize clinical contraception with particular attention to low-performing areas and under-served groups;
- prevention and control of RTIs/STDs/AIDS, especially in behaviour change communication and condom promotion;
- maternal nutrition;
- adolescent care, emphasizing behavioural change messages on proper nutrition and hygienic practices, information regarding puberty, safer sexual behaviour, and avoidance of health risks, including STDs/HIV/AIDS;
- services that address problems of infertility, particularly if caused by RTIs and STDs, such as sexually transmitted chlamydia infection.

***ii. Child Healthcare***

- including the provision of basic preventive and curative care for infants and children for ARI, CDD, vaccine-preventable diseases, and vitamin A;
- integrated management of childhood illness (IMCI) as a child-survival strategy directed at improved prevention and case management of measles, malaria, malnutrition, diarrhoea and bacterial pneumonia;
- services to address malnutrition especially chronic energy deficiency, protein-energy malnutrition, low birth-weight, and micronutrient deficiency;
- school health services, such as first-aid care, and periodic health check-ups of school children.

***iii. Communicable Disease Control***

- includes services that prevent and manage infectious diseases that have severe health impact (TB, leprosy, malaria, kala-azar, and other emerging and re-emerging diseases).

**iv. Limited Curative Care**

- refers to the care of common illnesses and injuries (basic first-aid, treatment of medical emergencies, pain relief and advice, especially for those in poverty).

**v. Behaviour Change Communication (BCC)**

- concerns the provision of information, education and communication (IEC) services to support access to, and use of the ESP, and to promote healthy behaviour change.

**Baseline Indicators for the HPSP**

**Reproductive healthcare**

- Contraceptive prevalence rate (CPR) (modern methods): 46%
- Use of antenatal care in first 6 months of pregnancy: 54%
- Reasons for non-use of antenatal care: 70% 'no need'
- Antenatal care users satisfied with service: 94%

**Child healthcare**

- Children given 2 doses of vitamin A in last year: 85%
- Children aged 12-23 months given measles vaccine: 85%
- Children aged less than 5 years with diarrhoea in last 2 weeks: 9%
- Children with diarrhoea given correct ORT: 36%
- Children aged less than 5 years with ALRI in last 2 weeks: 9%

**Limited curative care**

- Children with ALRI taken to health facility: 87%

**Behaviour change communication**

- Women aware of health services available at the local level; women aware of at least one service from
  - Outreach clinics: 86%
  - UHFWC: 71%
  - UHC: 70%

**Use and experience of health services, meeting felt needs of clients**

- Households using health services in last month
  - Government services: 13%
  - Private services: 32%
- Reasons for not using government services: too far, poor medicines/treatment, lack of medicines/staff
- Visits with all needed medicines available: 33%
- Visits with trained staff available: 87%
- Visits with extra/unofficial payments

- Extra payment to worker(s): 22%
- Unofficial registration fee: 27%
- Households willing to pay for improved government health services: 55%
- Users satisfied with last visit to service: 53%
- Households satisfied with government health services: 37%
  
- Union Parishad councils discussed health services in last year: 84%
- *Upazila* with health service improvement committee: 88%
- Perceived problems with services, lack of medicines, main concern of users and providers
- Priorities for changes in services: more medicines, more workers are priorities of users and providers

**Annexure 3**

**Indicators for HPSP evaluation and collection of information  
in the baseline survey**

<b>Indicator</b>	<b>Available from other source</b>	<b>Collect in SDS process from</b>
<b><i>Reproductive healthcare</i></b>		
Maternal mortality	No	No
Estimated proportion of pregnancies with serious complications reaching (UHC) obstetric care	Yes - Management information systems (MIS)	
Proportion of pregnancies reaching first level obstetric care (OC), referred from lower level	Yes - MIS	
Availability of emergency obstetric care (EOC) per 500,000 population	Yes - MIS	
Contraceptive prevalence rate	Yes - Demographic Health Survey (DHS)	Household (HH) questionnaire
Proportion of women using antenatal care (ANC) services during first six months in last pregnancy (for pregnancies within the last five years)	Yes - DHS	HH questionnaire
Reasons for non-use of ANC		HH questionnaire, FG
Proportion of married women aged 15-49 years satisfied with their experience of ANC services		HH questionnaire
<b><i>Child healthcare</i></b>		
Child nutritional status-anthropometry	Yes - DHS, HKI	No
Mortality rates among children aged less than 5 years	Yes - DHS, HKI	No
Proportion of children aged less than 12-60 months who have received 1 or 2 vitamin A capsule in last year	Yes	HH questionnaire
Proportion of children aged less than 12-23 months old who have received measles vaccine	Yes - DHS, EPI	HH questionnaire
Proportion of children aged less than 5 years who have had diarrhoea in last two weeks	Yes - DHS	HH questionnaire
Proportion of children with diarrhoea given correct ORT	Yes - DHS	HH questionnaire
Proportion of children aged less than 5 years with ALRI in last two months	Yes - Institute of Epidemiology, Disease Control and Research (IEDCR), DHS	HH questionnaire

<b>Indicator</b>	<b>Available from other source</b>	<b>Collect in SDS process from</b>
<b><i>Communicable disease control</i></b>		
Incidence and mortality from malaria, kala-azar, and TB	Yes - IEDCR, HIU	No
Proportion of diagnosed TB cases receiving DOTS		No
Incidence of STDs	Yes - IEDCR, HIU	No
<b><i>Limited curative care</i></b>		
Proportion of ALRI cases successfully managed by health facilities	Yes - MIS	
Proportion of ALRI cases in last two weeks taken to health facilities		HH questionnaire
Proportion of cases of 'selected' condition successfully managed at health facilities	Yes - MIS	
Proportion of cases 'selected' condition in last month (or in last 3 months) taken to health facilities		Not yet
<b><i>Behaviour change communication</i></b>		
Proportion of population, women, aware of selected ESP services at the local level, including referral system to the upazila level		HH questionnaire, Focus Group (FG)
<b><i>Use and experience of health services meeting felt needs of clients</i></b>		
Proportion of households using health services (GoB vs other providers) in last month		HH questionnaire
Reasons for choice of service (GoB or others)		HH questionnaire, FG
Reasons for non-use of GoB services		HH questionnaire, FG
Proportion of visits to GoB health services with all needed medicines available		HH questionnaire, Institutional review (IR)
Proportion of visits to GoB health services with trained staff available		HH questionnaire, IR
Payments for consultation, investigations, and treatment on last visit (official and unofficial)		HH questionnaire, IR
Proportion of households willing to pay for GoB health services		HH questionnaire
Proportion of service users satisfied with services and staff experienced on last visit		HH questionnaire
Proportion of households satisfied with the provision of health services generally		HH questionnaire
Proportion of clients needing selected ESP services who state they are satisfied with provision of services		See previous two rows, plus antenatal care indicators

<b>Indicator</b>	<b>Available from other source</b>	<b>Collect in SDS process from</b>
Proportion of Union Parishad Councils which have held discussions on health issues, especially the ESP, in the last year	Yes -- National STP Council	KI interviews
Proportion of first-level health facilities with community participation in management		IR
Perceived problems with present health services of service users and service providers		HH questionnaire, FG, IR
Priorities for change of service users and service providers		HH questionnaire, FG, IR
<b><i>Strengthening service-delivery</i></b>		
Proportion of unions where all fixed health and family-planning facilities are providing the same mix of ESP services	Yes -- MIS	IR
Number of CCs established and functional	Yes - MIS	
Proportion of Directorate General of Health Services and Directorate of Family Planning staff at the union level working under new generic job description (with gender balance of these staff)	Yes - MIS	IR
<b><i>Improving system management</i></b>		
Proportion of upazilas having established a functioning unified command (Chief/Manager)	Yes - MIS	
Proportion of unions with all health and family-planning employees working under command of Medical Officer	Yes - MIS	
Proportion of hospitals managed by local boards	Yes - MIS	
<b><i>Financing aspects</i></b>		
Total spending on ESP as proportion of total health sector spending	Yes - Management Accounts Unit (MAU) in MOHFW	
Proportion of health sector recurrent expenditure going into salary components vs important non-salary component (medicines, maintenance)	Yes - MAU in MOHFW	
Proportion of health sector expenditure to recurrent rather than capital expenditure	Yes - MAU in MOHFW	

### **Notes**

All the indicators to be collected in the baseline survey will be aggregated by relevant factors, including gender, age, and area of residence.



- HH Household; administered to all 100-150 households in the site.
- FG Focus-groups discussion with men and women.
- KI Key-informant interview.
- IR Institutional review of health facilities serving the survey sites. This includes interviews with the health workers providing the service.