FINAL REPORT OF
THE MIDLINE SURVEY

EVALUATION OF COMMUNITY-BASED HEALTH SYSTEM STRENGTHENING (CHSS) PROGRAM IN UNICEF SUPPORTED AREAS

Institute of Health Economics,
University of Dhaka

and

The United Nations Children's Fund (UNICEF)

UNICEF Bangladesh
January 2021

Midline Evaluation of Community-Based Health System Strengthening (CHSS) Program in UNICEF Supported Areas

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This evaluation report was prepared by a team of independent consultants from the Institute of Health Economics, University of Dhaka. Minjoon Kim of Health Section, UNICEF Bangladesh, managed and led the overall evaluation process in close collaboration with Andrea Parks of SPEAR Section, UNICEF Bangladesh and Tom Pellens of UNICEF Regional Office for South Asia.

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unicef
for every child

Evaluation of Community-based Health System Strengthening (CHSS) Program in UNICEF Supported Areas

Timeframe of evaluation: Oct 2018 – early/mid 2020
CHSS Program locations: Moulvibazar, Patuakhali, Sirajganj and Jamalpur districts

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CONTENTS

EXECUTIVE SUMMARY 13

1. BACKGROUND 18

2. PURPOSE, OBJECTIVES AND SCOPE 25

2.1 Evaluation objectives 27

2.2 Scope of evaluation 28

2.3 Evaluation criteria 29

3. METHODOLOGY 31

3.1 Study area 31

3.2 Respondents in the midline evaluation 31

3.3 Evaluation tools 32

3.4 Evaluation design 32

3.5 Implementation of the midline evaluation 36

3.5.1 Development of study instruments and training 36

3.5.2 Quantitative data collection and quality assurance 38

3.5.2.1 Data collection at household level 38

3.5.2.2 Data collection at facility level 38

3.5.2.3 Implementation of FGDs and KIIs 40

3.6 Data processing and data analysis 40

3.7 Limitations of the evaluation 43

3.8 Ethical considerations 44

3.9 Preparation of the report 45

4. FINDINGS: EFFECTIVENESS – KNOWLEDGE, AWARENESS, HEALTH CARE-SEEKING BEHAVIOR AND PRACTICES OF MOTHERS 46

4.1 Knowledge of maternal danger signs 46

4.1.1 Knowledge of maternal danger signs during pregnancy 46

4.1.2 Knowledge of maternal danger signs during delivery 47

4.1.3 Knowledge of maternal danger signs during postnatal period 47

4.2 Awareness and Preferences for ANC, Delivery Care and PNC 48

4.3 Mothers' knowledge of newborn and under-five children danger signs 50

4.3.1 Mothers' knowledge of newborn danger signs 50

4.3.2 Mothers' knowledge of danger signs for under-five children 50

4.4 Breastfeeding and complementary feeding to infants and young children 51
4.4.1 Exclusive breastfeeding 51
4.4.2 Complementary feeding 51
4.4.3 Continued breastfeeding 52
4.4.4 Minimum Acceptable Diet (MAD) among infants and young children aged 6-23 months 52
4.5 Counselling on nutrition and lactation management 53
4.6 Family planning: knowledge and practices 53
4.6.1 Knowledge of family planning methods 53
4.6.2 Prevalence of family planning methods 54
4.6.3 Sources (persons) of family planning methods 55
4.7 Receiving gender-based services by women 55
4.7.1 Gender-focused advice, counseling and services 55
4.7.2 Knowledge of adolescents about nearest center for ASRHR services 56
4.7.3 Receiving ASRHR services by adolescents 56

5. FINDINGS: EFFECTIVENESS – UTILIZATION OF MATERNAL HEALTH CARE DURING PREGNANCY PERIOD 58

5.1 Effect on utilization of ANC 58
5.1.1 Seeking ANC 59
5.1.2 Place of ANC 60
5.1.3 Number of ANC visits 61
5.1.4 Consumption of Iron-Folate Acid (IFA) 61
5.1.5 Tetanus Toxoid (TT) injection 63
5.1.6 Birth preparedness 63
5.1.7 Care-seeking behavior for complications during antenatal period 63

6. FINDINGS: EFFECTIVENESS – UTILIZATION OF MATERNAL HEALTH CARE DURING DELIVERY 65

6.1 Place and type of delivery 65
6.2 Assistance during delivery 68
6.3 Complications during delivery and care 70

7. FINDINGS: EFFECTIVENESS – UTILIZATION OF HEALTH CARE BY MOTHERS AND CHILDREN AFTER BIRTH DELIVERY 72

7.1 Utilization of postnatal care 72
7.2 Umbilical cord care 74
7.3 Complications immediately after delivery and care-seeking behavior 74

8. FINDINGS: EFFECTIVENESS – UTILIZATION OF NEWBORN AND CHILD HEALTH CARE 76
8.1 Utilization of Essential Newborn Care (ENC) 76
8.2 Newborn illness and complications and care-seeking behavior 78
8.3 Effect on utilization of health care of under-five children 79
8.3.1 Effect on utilization of IMCI 79
8.3.2 Vitamin A supplementation 82
9. FINDINGS: EFFECTIVENESS – MATERNAL DEATHS, STILL BIRTHS, NEONATAL AND CHILDHOOD DEATHS 83
9.1 Maternal deaths 83
9.2 Neonatal and childhood mortality 84
9.3 Still births 86
10. FINDINGS: EFFECTIVENESS – PERFORMANCES OF SERVICE PROVIDERS, UTILIZATION OF AVAILABLE RESOURCES, AND PATIENTS' FLOW IN HEALTH FACILITIES 87
10.1 Human resources 87
10.2 Training of HR 97
10.3 Laboratory-based diagnostic capacity 98
10.4 Availability and stockout status of essential medicines and vaccines 100
10.5 Availability of essential medicines and vaccines on the day of visit 100
10.6 Stockout status of essential medicines and vaccines in the past three months 102
10.7 Bed occupancy 104
10.8 Challenges in implementation of the CHSS program 105
11. FINDINGS: RELEVANCE, EFFICIENCY, IMPACT AND SUSTAINABILITY OF THE CHSS PROGRAM 107
11.1 Relevance of the CHSS Program 107
11.2 Efficiency of the CHSS Program 108
11.2.1 Cost of the CHSS Program 109
11.2.2 Average MNCH output of the health facilities 109
11.2.3 Average cost of MNCH patients 110
11.3 Impact, sustainability, coherence and coordination 112
11.3.1 Progress towards impact 112
11.3.2 Sustainability 114
11.3.3 Coherence and coordination 115
11.3.3.1 Advice and referral for care-seeking behavior for complications in ANC period 115

11.3.3.2 Advice and referral for care-seeking behavior for complications during delivery 116
11.3.3.3 Advice and referral for care-seeking behavior for complications after delivery 117
11.3.3.4 Advice and referral for care-seeking for newborn complications 117
12. CONCLUSIONS AND LESSONS LEARNED 118
12.1 Conclusions 118
12.2 Lessons Learned 121
13. RECOMMENDATIONS 122
REFERENCES 124
ANNEX-I, ANNEX-II & ANNEX-III are attached as separate files.

LIST OF TABLES

Table-1.1:	Evidences from Zambia, Ethiopia and Pakistan	20
Table-2.1:	Study districts from the Intervention and the Comparison areas	25
Table-2.2:	Timeframe of the project and evaluations	29
Table-3.1:	Determination of sample sizes based on different indicators	33
Table-3.2:	Sample sizes achieved in the household survey	34
Table-3.3:	Sample facilities covered in the health facility survey	35
Table-3.4:	Number of KIIs and FGDs by districts in the midline survey	41
Table-8.3.1:	Suspected pneumonia among children (0-59 months) in two weeks prior to survey in the midline survey	80
Table-8.3.2:	Suspected pneumonia among children (0-59 months) in two weeks prior to survey in the baseline survey	81
Table-9.1:	Maternal deaths among women aged 15-49 years with pregnancies of 7+ month gestation in the Project and the Comparison areas	84
Table-9.2:	Neonatal and childhood mortality rates in the Project an the Comparison areas	85
Table-9.3:	Stillbirths among pregnancies of 7+ months of gestation in the Project and the Comparison areas	86
Table-10.3.1:	Laboratory diagnostic capacities during the midline survey	99
Table-10.3.2:	Laboratory diagnostic capacities during the baseline survey	99
Table-10.4.1:	Availability of essential medicines and vaccines on the day of interview in the midline survey	101
Table-10.4.2:	Availability of essential medicines and vaccines on the day of interview in the baseline survey	101

Table-10.6.1: Stockout status of essential medicines and vaccines in three months preceding the midline survey 103
Table-10.6.2: Stockout status of essential medicines and vaccines in three months preceding the baseline survey 103
Table-11.2.1: Budget of the CHSS program (Oct-Dec 2018 to Oct-Dec 2019) 109
Table-11.2.2: Yearly average output of different health facilities 110
Table-11.2.3: Average per MNCH patient costs in UHC, UHFWC and CC (in BDT) 111
Table-11.2.4: Incremental cost-effectiveness ratio of the CHSS program (in BDT) 112
Table-11.3.1.1: Community groups and community support groups in the midline survey 113
Table-11.3.1.2: Community groups and community support groups in the baseline survey 114
Table-11.3.3.1: Advice and referral for care-seeking for complications during ANC period in the midline and the baseline surveys 139
Table-11.3.3.2: Advice and referral for complications during delivery in the midline and the baseline surveys 116
Table-11.3.3.3: Advice and referral for complications after delivery during the midline and the baseline surveys 116

LIST OF FIGURES

Figure-5.1.4.1: Consumption of Iron-Folate Acid (IFA) supplements by area (the midline survey) 62
Figure-5.1.4.2: Consumption of Iron-Folate Acid (IFA) supplements by area (the baseline survey) 62
Figure-6.1.1: Place of delivery (the midline survey) 67
Figure-6.1.2: Place of delivery (the baseline survey) 67
Figure-6.2.1: Assistance during delivery by medically trained provider or qualified doctor by area (the midline survey) 69
Figure-6.2.2: Assistance during delivery by medically trained provider or qualified doctor by area (the baseline survey) 69
Figure-6.3.1: Complications during delivery and care-seeking behavior by area (the midline survey) 70
Figure-6.3.2: Complications during delivery and care-seeking behavior by area (the baseline survey) 71
Figure-7.3.1: Complications within 42 days of delivery and care-seeking behavior by area (the midline survey) 75
Figure-7.3.2: Complications within 42 days of delivery and care-seeking behavior by area (the baseline survey) 75
Figure-8.1.1: Overall essential newborn care by area (the midline survey) 77
Figure-8.1.2: Overall essential newborn care by area (the baseline survey) 77
Figure-8.2.1: Newborn complications in one month after birth and care-seeking behavior by area (the midline survey) 78

Figure-8.2.2: Newborn complications in one month after birth and care-seeking behavior by area (the baseline survey) 78
Figure-10.1.1: Percentage of vacant posts of doctors against sanctioned posts in DHs 88
Figure-10.1.2: Percentage of doctors against employed posts present at survey time in DHs 89
Figure-10.1.3: Percentage of vacant posts of doctors against sanctioned posts in MCWCs 89
Figure-10.1.4: Percentage of doctors against employed posts present at survey time in MCWCs 90
Figure-10.1.5: Percentage of vacant posts of doctors against sanctioned posts in UHCs 90
Figure-10.1.6: Percentage of doctors against employed posts present at survey time in UHCs 91
Figure-10.1.7: Percentage of vacant posts of doctors against sanctioned posts in UHFWCs 91
Figure-10.1.8: Percentage of doctors against employed posts present at survey time in UHFWCs 92
Figure-10.1.9: Percentage of vacant posts of other health service providers against sanctioned posts in DHs 92
Figure-10.1.10: Percentage of other health service providers against employed posts present at survey time in DHs 93
Figure-10.1.11: Percentage of vacant posts of other health service providers against sanctioned posts in MCWCs 93
Figure-10.1.12: Percentage of other health service providers against employed posts present at survey time in MCWCs 94
Figure-10.1.13: Percentage of vacant posts of other health service providers against sanctioned posts in UHCs 94
Figure-10.1.14: Percentage of other health service providers against employed posts present at survey time in UHCs 95
Figure-10.1.15: Percentage of vacant posts of other health service providers against sanctioned posts in UHFWCs 95
Figure-10.1.16: Percentage of other health service providers against employed posts present at survey time in UHFWCs 96
Figure-10.1.17: Percentage of vacant posts of other health service providers against sanctioned posts in CCs 96
Figure-10.1.18: Percentage of other health service providers against employed posts present at survey time in CCs 97

LIST OF SCHEMA

Schema-1: The Project and the Comparison districts 26
Schema-2: The Theory of Change 27
Schema-3: Steps in Data Triangulation 43

ACRONYMS

5S	Sort, Set-in-Order, Shine, Standardize, Sustain
ANC	Antenatal Care
ARI	Acute Respiratory Tract Infection
ASRHR	Adolescent Sexual and Reproductive Health and Right
BCC	Behavior Change Communication
BDHS	Bangladesh Demographic and Health Survey
BEmOC	Basic Emergency Obstetric Care
BHFS	Bangladesh Health Facility Survey
BMMS	Bangladesh Maternal Mortality and Health Care Survey
BPCR	Birth Preparedness and Complication Readiness
CC	Community Clinic
CEmOC	Comprehensive Emergency Obstetric Care
CG	Community Group
CSG	Community Support Group
CHCP	Community Health Care Promoter
CHV	Community Health Volunteer
CHW	Community Health Worker
CHSS	Community Health System Strengthening
CNP	Community Nutrition Promoter
CPD	Cephalopelvic Disproportion
CQI	Continuous Quality Improvement
CS	Civil Surgeon
CSBA	Community Skilled Birth Attendant
CSG	Community Support Group
DALY	Disability Adjusted Life Years
DEPB	District Evidence-based Planning and Budgeting
DDFP	Deputy Director of Family Planning
DGH	District General Hospital
DGHS	Directorate General of Health Services
DH	District Hospital

EOC	Essential Obstetric Care
EmOC	Emergency Obstetric Care
EmONC	Emergency Obstetric and Newborn Care
EMEN	Every Mother Every Newborn
ENC	Essential Newborn Care
EPI	Expanded Program on Immunization
ETAT	Emergency Triage Assessment and Training
FGD	Focus Group Discussion
FP	Family Planning
FPA	Family Planning Assistant
FWC	Family Welfare Centre
FWV	Family Welfare Visitor
GIS	Geographical Information System
GoB	Government of Bangladesh
GPS	Global Positioning System
HA	Health Assistant
HF	Health Facility
HI	Health Inspector
HMIS	Health Management Information System
HR	Human Resources
HSS	Health System
IFA	Iron-Folate Acid
IMCI	Integrated Management of Childhood Illness
ImSRHR&MNH	Improving sexual and reproductive health and rights including maternal and neonatal health
IPD	Inpatient Department
IUD	Intra Uterine Device
IYCF	Infant and Young Child Feeding
KII	Key Informant Interview
KPI	Key Performance Indicators
LAM	Lactation Amenorrhea Method
MA	Medical Assistant
MCH	Medical College Hospital
MCWC	Maternal and Children Welfare Center

MDGs	Millennium Development Goals
MHV	Multipurpose Health Volunteer
MICS	Multiple Indicator Cluster Survey
MIS	Management Information System
MMR	Maternal Mortality Rate
MNCH	Maternal Newborn and Child Health
MNCAH	Maternal, Newborn, Children and Adolescent Health
MoHFW	Ministry of Health and Family Welfare
MPDSR	Maternal and Perinatal Death Surveillance and Response
MTP	Medically Trained Provider
NGO	Non-Governmental Organization
NID	National Immunization Day
NMR	Neonatal Mortality Rate
NSU	Newborn Stabilization Unit
OPD	Outpatient Department
PAHO	Pan American Health organization
PHC	Primary Health Care
PHD	Partners in Health and Development
PNC	Postnatal Care
PPP	Postpartum Period
PPFP	Postpartum Family Planning
PPS	Probability Proportional to Size
PSM	Propensity Score Matching
PSU	Primary Sampling Unit
QI	Quality Improvement
QIT	Quality Improvement Team
RD	Rural Dispensary
RMO	Residential Medical Officer
SACMO	Sub Assistant Community Medical Officer
SC	Satellite Clinic
SCC	Sylhet City Corporation
SCANU	Special Care Newborn Unit
SDGs	Sustainable Development Goals
SOP	Standard Operating Procedure

SRHR	Sexual Reproductive Health and Right
TBA	Traditional Birth Attendant
TFR	Total Fertility Rate
TQM	Total Quality Management
ToC	Theory of Change
ToT	Training of the Trainers
TT	Tetanus Toxoid
TTBA	Trained Traditional Birth Attendant
U5MR	Under-five Mortality Rate
UFPO	Upazila Family Planning Officer
UHC	Upazila Health Complex
UHFPO	Upazila Health and Family Planning Officer
UHFWC	Upazila Health and Family Welfare Center
UNICEF	United Nations Children's Fund
USC	Union Sub Centre
WASH	Water, Sanitation and Hygiene
WHO	World Health Organization
WIT	Work Improvement Team
YLD	Years Lived with Disability
YLL	Years of Life Lost

EXECUTIVE SUMMARY

Background

Bangladesh has progressed well in achieving some targets of the Health, Nutrition and Population (HNP) sector. However, the country is lagging behind in achieving some targets related to maternal and newborn health, and immediate attention is needed to formulate effective policies for mothers, newborns and children. Only 50 per cent of the birth deliveries were conducted in health facilities in the country, according to the BDHS 2017-2018. Therefore, an idea emerged among stakeholders to mobilize intervention at community level to play a key role in achieving the targets of the sector and reach out to the mothers, newborns and children who are still left behind. These interventions focus on reducing the existing inequity in utilization of maternal, newborn and child health care among different geographical areas and socio-economic groups. So, the Government of Bangladesh (GoB) and UNICEF, with support from Civil Society Organizations (CSOs), have been implementing the USD $4.2-million Community-based Health System Strengthening (CHSS) program at community level in selected areas in the country.

Purpose, Objectives and Scope

The CHSS program started in five intervention districts: Moulvibazar, Patuakhali, Sirajganj, Jamalpur and Rangamati, in October 2018. The baseline survey was conducted during May-August 2018. The midline survey was conducted during February-March 2020, and then postponed due to outbreak of the COVID-19 pandemic. Again, the survey was resumed and completed during July-October 2020. The endline survey is expected to be held from April-June 2022.

The midline evaluation assessed effect of the program on knowledge and awareness of MNCH service users, utilization of MNCAH services, and efficiency and capacity of frontline health workers. The specific objectives of the evaluation were assessing utilization of MNCAH services and cost-effectiveness of the CHSS program; estimating Disability-Adjusted Life Years (DALYs) related to MNCH; evaluating the relevance, effectiveness, efficiency, sustainability, and impact of the program; identifying the enabling factors, key barriers and bottlenecks to achieving program results; assessing achievement of the project over the given environments, challenges and lessons learnt; assessing scalability and sustainability of the program at national level; and determining concrete recommendations and planning for MNCH service improvements.

However, the midline evaluation mainly focused on effectiveness, with less emphasis on relevance and efficiency, and limited assessment of impact, sustainability, and coordination and coherence. The reasons for the change from the original objectives were - a very short gestation gap between the initiation of the program and the midline survey, due to delay in implementation of the program, and outbreak of the COVID-19 in March 2020. The intended use of the results was to provide UNICEF and GoB practical recommendations for improving community health programs in the country. While UNICEF, managers of health facilities at local levels, DGHS, and high-level policymakers of MoHFW were the primary intended users, national stakeholders, including other UN agencies and non-governmental organizations (NGOs), were the secondary intended users.

Methodology

To evaluate the effectiveness of this intervention, the baseline evaluation was conducted by SURCH and UNICEF in the five intervention districts (Patuakhali, Sirajganj Jamalpur, Moulvibazar and Rangamati) and four control districts (Lalmonirhat, Sylhet, Barguna and Khagrachhari). Out of these nine original districts mentioned above, three Project districts, namely Patuakhali, Moulvibazar and Jamalpur, and three Comparison districts, namely Barguna, Sylhet and Lalmonirhat, were covered in the midline evaluation. The evaluation

used pre-post quasi-experimental design and a mixed method approach.

The respondents, who participated in quantitative and qualitative components of the midline evaluation, included mothers or caregivers or household heads within the targeted households, ever-married women aged 15-49 years, mothers with live birth in two years preceding the survey (within the targeted households), mothers or caregivers of children aged 0-59 months (within the targeted households), adolescents (aged 15-19 years), managers/service providers of the health facilities, Civil Surgeons (CSs), Deputy Directors of Family Planning (DDFPs), Residential Medical Officers (RMOs), Upazila Health and Family Planning Officers (UHFPOs), Upazila Family Planning Officers (UFPOs), Sub Assistant Community Medical Officers (SACMOs), Family Welfare Visitors (FWVs), Community Healthcare Promoters (CHCPs), Community Health Volunteers (CHVs), key persons of implementing NGOs and local government, and pregnant women and mothers of children aged 0-59 months within the targeted communities.

The data collection tools used in the midline evaluation were a comprehensive household survey questionnaire, a comprehensive questionnaire for facilities, eleven comprehensive semi-structured interview guides for Key Informant Interviews (KIIs), a structured questionnaire to collect data on MNCH-related mortality from CS office, and a FGD checklist for group discussions.

A two-stage cluster sampling procedure with clusters of 100 households on an average was employed in the baseline survey. In the first stage, 78 villages or mauzas/mahallah were selected from the list of all villages/mauzas/mahallah in each of the project districts following Probability Proportional to Size (PPS) sampling method. Then each village/mauza/mahallah was divided into some segments of around 100 households by preparing a sketch map. Such segments were considered as the Primary Sampling Units (PSUs) in the sampling process. This was treated as a cluster. Then one of the segments was selected randomly, and a set of 25 households was selected by using systematic random sampling from each of the PSUs. Household listing operation was conducted before the household survey in the baseline to get an up-to-date frame (list of households) for the second stage sampling in the sampling process. In the baseline, the required sample size was 1,950 households per district. In the midline, the required sample size was 1,950 households per area. As there were three districts each in the Project area and in the Comparison area, the survey needed to cover 650 households in each district to complete 1,950 households in both the Project area and 1,950 households in the Comparison area. To cover 650 households in each district, the survey needed to cover 26 clusters in each district. Hence, a total of 26 PSUs or clusters were selected from among 78 PSUs or clusters in each district, selected during the baseline survey, following the standard systematic PPS sampling method. However, to account for the possibility of missing some households in each cluster, an additional cluster (27th) in each district was covered in the midline survey from the list of clusters, which were covered in the baseline survey.

To provide representative estimates for different health facilities in each area, the midline facility survey was planned to cover one Union Health and Family Welfare Centre (UHFWC) and two Community Clinics (CCs) in each selected upazila, and 50 per cent of Upazila Health Complexes (UHCs) in each district.

Due to the COVID-19 pandemic, data collection activities were hampered, and it took place in two phases. In the first phase, data collection from households in three out of six districts took place between 20 February 2020 and 15 March 2020. In the second phase, data collection in the remaining three districts took place between 7 July 2020 and 3 October 2020. To collect data, the study team made door-to-door visits of the sampled households during the first phase, and communicated with the sampled households over phones during the second phase. The household survey covered 3,862 households out of 3,900 households intended for the survey.

Similar to the household survey, the data collection activities in health facilities were hampered due to the COVID-19 outbreak, and it took place in two phases. In the first phase, 25 per cent of data collection took place between 9 March 2020 and 15 March 2020. In the second phase, 75 per cent of data collection took place between 7 July 2020 and 1 October 2020. To collect data, the study team made physical visits to the sampled facilities, collected data, interviewed relevant personnel, and made on-the-spot observation. A total of 93 health facilities were covered through techniques of observation and recording information as well as interviewing different individuals. A total of 40 FGDs and 155 KIIs were conducted in the Project and the Comparison areas.

Findings

The findings of the midline evaluation are summarized below, organized by the main evaluation criteria, focusing mostly on effectiveness.

Effectiveness

The CHSS program made notable improvement in providing knowledge and increasing access to basic MNCH services, which are demonstrated through different indicators. The major improvements were: increased use of ANC1 and ANC4+, increased consumption of Iron-Folate Acid (IFA), increased institutional deliveries, and increased use of PNC. The magnitude of changes in indicators is shown below.

Knowledge and practices of mothers and family members

- In the Project area, the proportion of women, aware of three or more danger signs during pregnancy period, increased by 50.5 per cent from the baseline to the midline (30.5 per cent in the Comparison area). Almost similar findings were observed for awareness of mothers regarding the danger signs of delivery and postnatal periods.
- In the Project area, percentage of children of under-6 months of age (exclusively breastfed) increased by 11.8 per cent from the baseline to the midline (4.9 per cent in the Comparison area).
- In the Project area, percentage of the adolescents, who reportedly knew about such organizations or centers providing gender services or providing counseling concerning ASRHR located in their area, increased by 12.9 per cent from the baseline to the midline (reduction by 1.2 per cent in the Comparison area).
- Higher level of knowledge of modern family planning methods was evident among women, as proportion of women with such knowledge increased from 91.7 per cent in the baseline to 92.7 per cent in the midline in the Project area, and from 89.8 per cent in the baseline to 89.9 per cent in the midline in the Comparison area.

Utilization of ANC

- In the Project area, percentage of pregnant women receiving ANC from a qualified doctor increased by 21.9 per cent from the baseline to the midline (11.7 per cent in the Comparison area). The coverage of 4+ ANC increased from 34.3 per cent in the baseline to 45.2 per cent in the midline in the Project area, from 35.9 per cent in the baseline to 52.1 per cent in the midline in the Comparison area.
- In the Project area, the coverage of consumption of iron-folate supplements (100+ tablets) increased by 9 per cent from the baseline to the midline (7 per cent in the Comparison area).

Utilization of delivery care and PNC

- In the Project area, the proportion of facility deliveries increased by 10.4 per cent from the baseline to the midline (1.9 per cent in the Comparison area). Similar findings with proportion of deliveries assisted by qualified doctors in the Project and the Comparison areas.

- The facility survey data show that utilization of MNCH services increased in CCs.

Total MNCH output in health facilities

- As the main activities of the CHSS program were concentrated around CCs, notable changes in utilization of MNCH services and per MNCH patient cost were observed in CCs. The yearly average MNCH output of CC was 742.1 in the midline and 453.8 in the baseline in the Project area (583.8 and 413.5 respectively in the Comparison area). On an average, 288.4 output increased (63.6 per cent) from the baseline to the midline in the CCs in the Project area and 170.3 (41.2 per cent) in the Comparison area.

Relevance, Efficiency, Impact and Sustainability

The evaluation has clearly shown that the program is greatly relevant to the areas where it is being implemented. The CHSS program was implemented in 2018 in districts that were lagging behind the national situation in respect of the major maternal, neonatal and child health indicators. The implementation of the program is rapidly improving the situation, as was expected by the policymakers. However, performances of the general health program were not sufficient to raise the use of services to national level.

The findings of this evaluation have shown the relevance of the program in another way as well. It has shown that the intervention has considerably improved a number of indicators, indicating that the areas had unmet need for health services. Mothers' knowledge on the danger signs during pregnancy, delivery and after delivery, preferences for service providers, utilization of ANC and modern family planning methods increased considerably, and services of CHVs played a key role in this regard. Moreover, relevance of the intervention is also demonstrated by some other effects of the program. The providers' capacity has considerably increased, and clients' awareness has appreciably risen as the result of the intervention.

In regard to efficiency, the results show that per patient cost reduced from BDT 602.6 in the baseline to BDT 554.9 in the midline in UHCs in the Project area. Per MNCH patient cost in the UHCs was higher in the Comparison area compared to that in the Project area in both the midline and the baseline. Per MNCH patient cost reduced from BDT 1,050.4 in the baseline to BDT 966.0 in the midline in UHCs in the Comparison area. In both the areas, per patient cost reduced by about 8.0 per cent from the baseline to the midline. Per MNCH patient cost was BDT 214.3 in the baseline and BDT 281.6 in the midline in UHFWCs in the Project area. Per MNCH patient cost was BDT 210 in the baseline and BDT 146 in the midline in UHFWCs in the Comparison area.

The midline evaluation could estimate the MNCH-related YLL, using HMIS data and some assumptions on life years lost due to premature mortality. YLL averted in Patuakhali, Moulvibazar and Jamalpur districts were 4,234.2, 2,752.6 and 8,309.5 DALYs respectively. The cost of the CHSS program was BDT 30,509,346 in Patuakhali district, BDT 28,333,819 in Moulvibazar and BDT 24,553,024 in Jamalpur. The estimated incremental cost effectiveness ratio, i.e., cost per MNCH-related YLL averted, was lowest in Jamalpur (BDT 2,954.8), followed by Patuakhali (BDT 7,205.4) and Moulvibazar (BDT 10,293.2).

Community participation increased in the midline in two project districts, but reduced in one district. The findings also indicate that the CHSS program increased capacity of service providers, including notable skill development (among both doctors and other service providers). However, the managers and service providers opined that more trainings and refreshers' trainings were required to improve MNCAH service delivery and health status of the population. Moreover, the proportion of vacant posts and absenteeism reduced in UHCs and CCs in the Project area. However, the proportion of vacant posts was very high, and the presence of service providers was low in UHFWCs in the Project area. These hampered utilization of MNCH services in UHFWCs in

the Project area, and was also reflected in the estimated average MNCH output of UHFWCs.

The CHSS program helped to improve the activities of Community Groups (CGs) and Community Support Groups (CSGs), and consequently, the local government was more active in the midline compared to that in the baseline. However, one of the limitations of the evaluation was that the Comparison districts were performing well in community-level activities even in the baseline and continued to do so. It was difficult to choose control districts for the intervention, as many other programs were implemented in parallel in the control districts.

Conclusions

Overall, the project has started creating positive effects in the areas, although the depth of effects is still less than expected, and further, has been unable to produce any effect in the higher-level primary facilities. Normal gestation gap between implementation of the project and production of outcomes is applicable in this challenging program context area. The gradual upward trend in the crucial indicators provides ample indication that the program would achieve the expected outcomes, after the end of gestation period.

Lessons Learned

The key **lessons learned** are presented below:

- The demand creation activities are helping to overcome bottlenecks in use of many MNCAH services. However, community participation should be increased, and the activities should be better coordinated with the regular government program. Supply-side barriers should also be removed to ensure facility readiness and effective referral system.
- The institutional delivery in the Project area was lower than the national estimates. This might be one of the causes of low progress in ENC in the Project area.
- Inequity exists in knowledge, awareness and utilization of MNACH services among different socio-economic groups and districts. The inequity decreased for many MNACH-related indicators from the baseline to the midline; but still there are scopes for improvement.
- Proportion of women (aged 15-49 years), receiving gender-focused advices, counseling and services, increased in the midline compared to that of the baseline in both the areas.
- Continuation of the program and further interventions are needed, so that MNCAH indicators in the Project area, which are still behind the national estimates, could reach these targets.

Recommendations

The following measures should be adopted without delay in order to gear up the performance of the project. The recommendations are presented below in order of priority:

1. More Multipurpose Health Volunteers (MHVs) should be recruited under the government Community-based Health Care Program.
2. Efforts should continue to strengthen the capacity of MHVs and other frontline health workers.
3. Measures should be taken to revitalize CGs and CSGs.
4. The roles and responsibilities of community health volunteers and frontline health workers should be clearly defined to improve coordination under the CHSS program.
5. UNICEF should provide support to GoB for women-friendly health services at communities.
6. Measures should be taken to ensure safe deliveries at communities against COVID-19.
7. UNICEF and local government should support GoB to develop an innovative referral model for hard-to-reach areas.

1.
BACKGROUND

Primary Health Care (PHC) is an integral part of a country's health system, and ideally, its main focus. It is the first level of contact for individuals, families and communities, which enables health care to be delivered as close as possible to where people live and work. PHC is therefore the first layer of the health service delivery. The PHC approach is foundational to achieving the shared global goals in Universal Health Coverage (UHC) and the health-related Sustainable Development Goals (SDGs). In 1978, a pivotal conference was held in Almaty, Kazakhstan, bringing together health experts and world leaders to commit to health for all. Endorsed in that conference, the declaration formed the foundation for the last 40 years of global primary health care efforts. The Global Conference on Primary Health Care in Astana, Kazakhstan in October 2018 endorsed a new declaration, emphasizing the critical role of primary health care around the world. The declaration aims at refocusing efforts on primary health care to ensure that everyone everywhere is able to enjoy the highest possible attainable standard of health (DGHS 2018, WHO 2019). It would contribute to the attainment of other goals beyond the health goal (SDG3), including those on poverty, hunger, education, gender equality, clean water and sanitation, work and economic growth, reducing inequality and climate action (DGHS 2018).

According to the SDG 3.1, the countries should reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030. The SDG 3.2 aims to end preventable deaths of newborns and children under five years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-five mortality to at least as low as 25 per 1,000 live births by 2030 (WHO 2019). Bangladesh has progressed well in achieving some targets of the HNP sector. However, the country is lagging behind for some targets related to maternal and newborn health. The overall MMR is 196 per 100,000 live births (95 per cent, CI: 159-234) in the BMMS 2016. This is similar to the BMMS 2010 estimate of 194 per 100,000 live births (95 per cent, CI: 153-236). According to the BDHS 2017-2018, neonatal mortality rate was 30 per 1,000 live births, infant mortality rate was 38 per 1,000 live births, and under-five mortality was 45 per 1,000 live births. Therefore, immediate attention is needed to formulate effective policies for mothers, newborns and children, who are still not seeking care from health facilities. Only 53 per cent of the deliveries were assisted by qualified providers in the country, according to the BDHS 2017-2018, and 47 per cent of the deliveries were assisted by unqualified providers and others, which include trained traditional birth attendants, untrained traditional birth attendants, unqualified doctors, and relatives/friends/others. Only 50 per cent of the birth deliveries are conducted in the health facilities in the country, according to the BDHS 2017-2018. Hence, the community-based health system strengthening could play a key role in achieving the targets of the HNP sector, and reach out to the mothers, newborn and children, who are still left behind. It would help to reduce the existing geographical and socio-economical inequity in utilization of maternal, newborn and child health care. The Government of Bangladesh (GoB) and UNICEF with support from Civil Society Organizations (CSOs) have been implementing the Community-based Health System Strengthening (CHSS) program in selected areas in the country. UNICEF and UNFPA have partnered with the government, and have jointly launched the project "Improving sexual and reproductive health and rights

including maternal and neonatal health (ImSRHR&MNH) in five low-performing districts in Bangladesh with financial support from Global Affairs Canada (GAC). The districts are Patuakhali, Sirajganj, Jamalpur, Moulvibazar and Rangamati. The program aims to reduce maternal, neonatal and under-five child mortality and morbidity, and improve young child growth and development from 2017 to 2022 in these districts.

Under this initiative, PHD, CARE Bangladesh, and Unnayan Sangha (US) developed joint program documents to implement Maternal, Neonatal, Child and Adolescent Health (MNCAH) interventions in Moulvibazar, Patuakhali, Sirajganj and Jamalpur districts following the approach to increase demand for MNCAH services among service recipients through raising awareness of community people as well as rights holders. The joint programs also target education and advocacy through SRHR educational programs for adolescents and their communities. They aim to ultimately improve the availability, accessibility and quality of integrated SRHR, including MNCAH services, with the intention of empowering women and girls. It was decided that some of the key community-level interventions of these joint programs would be evaluated, and it was referred to as the Community Health System Strengthening (CHSS) program[1]. The total budget for the life of the program was US$ 4,198,180.35 (BDT 358,354,156) split between PHD, CARE and US. By June 2020, the midpoint of the program, approximately US$ 2,197,487.86 (BDT 187,576,245) was planned to have been spent, and the actual expenditure had minimal disparities from this.

The main interventions of the CHSS program are effective social mobilization, review of progress, developing revised action plan, and monitoring system through regular meetings, involving the local government, Community Groups (CGs), and Community Support Groups (CSGs). The community awareness activities include ANC/PNC/ENC campaigns, advocacy meetings, courtyard meetings, mothers' group meetings, and regular household visits by CHVs and other government frontline workers. Other important activities of the program are community case management and reporting of sick children at household level, defaulter tracking, and MPDSR. The expected outputs of the project are: improvement of local governance, improvement of capacity of health providers, increased demand of MNCAH services, and strengthened community health system. Through the partnership with CSOs, various demand creation activities have been undertaken to increase awareness of service users and use of MNCH services, especially in hard-to-reach areas. The interventions are implemented at household, community and community health systems by engaging the local government bodies, CGs, CSGs, GoB and NGO frontline health workers, and community leaders.

Quayyum, et al. (2013) conducted a quasi-experimental study in rural areas of five districts of Bangladesh to find out the impact of the IMNCS (Intervention on Improving Maternal, Neonatal and Child Survival) program on use and also on equity of access to maternal health care services. Two cross-sectional household surveys were conducted in 2008 (the baseline) and 2010 (the midterm) on maternal health behavior in three IMNCS intervention districts and two control districts. Gaibandha, Rangpur and Mymensingh were the intervention districts, and Netrokona and Naogaon were the comparison districts. Bangladesh Rural Advancement Committee (BRAC) introduced an intervention on the IMNCS in the severely poverty-stricken northern part of the country. The program was piloted in Nilphamari district in 2006, and scaled up in three other districts in 2008. The intervention used BRAC Community Health

1 The interventions, like - District Evidence-based Planning and Budgeting (DEPB), training and monitoring on quality improvement, training of skilled birth attendants and midwives, monitoring gender-responsive SRHR, preparing project reports and gender-responsive policy and legal framework, midwifery-led gender-responsive service and ToT, and capacity building of managers and officials at the upazila and district level, were included in the Improving Sexual Reproductive Health and Rights including Maternal and Neonatal Health (ImSRHR&MNH) program. However, these interventions were excluded in this evaluation, and the CHSS program included only the community-level interventions of ImSRHR&MNH program.

Workers (CHWs) to generate demand and provide services at community level. The CHWs from BRAC, including Shasthya Kormi (SK), Shasthaya Shebika (SS), and Newborn Health workers (NHW), offered a wide range of domiciliary services for free to pregnant and breastfeeding mothers, newborn babies and under-five children, and made reference to public facilities for any complicated cases. Considering their economic status, the referred women got full or partial reimbursement of treatment cost for maternal care. Survey participants were selected randomly from all eligible mothers (mothers who were pregnant in the previous year of the survey, and who had a child less than one year of age). In the baseline survey, the sample size was 3,000 (600 from each district). In 2010, the midterm survey was carried out, resulting a sample size of 2,100 respondents (420 per district). The survey collected information on all maternal care, socio-demographic and household assets. The use of ANC was higher in the intervention areas compared to the control areas. The study also found a significant increase in use of trained birth attendants in the intervention areas compared to the comparison group. There was no significant increase in the use of public hospitals for normal delivery, which can be credited to the intervention. Nevertheless, there was a significant change in utilization of public hospitals for delivery care among the poor households. In the intervention areas, the rich-poor ratio for use of maternal health care services decreased in all maternal indicators (home delivery assisted by trained providers, utilization of normal delivery in public facilities, utilization of ANC and PNC). This study found higher utilization of maternal health care, which was pro-poor in the intervention areas. For further scaling up of the program, proper monitoring of the intensive intervention activities was required.

Similar studies in Zambia, Ethiopia and Pakistan showed that a few components of the CHSS were successful in increasing the utilization of MNCAH in those countries. The interventions and the results of the studies are presented in the following table.

Table-1.1: Evidences from Zambia, Ethiopia and Pakistan

Country and the study	Title of the intervention	Coverage	Description of the intervention	Impacts/effectiveness
Zambia, and Ensor, et al. (2014)	National safe motherhood program	Six districts received the intervention, because they were not receiving substantive assistance from donors to improve maternal health. Three districts – Serenje, Mongu and Choma – took part in phase-one, which started in July 2011, and three others – Chama, Kaoma and Mkushi – took part in phase-two, which started in January 2012. The intervention covered about 25% of the population of each district and included a total of 250,000 inhabitants.	The intervention involved community discussions on safe pregnancy and delivery by trained volunteers and establishment of emergency transport. Trained volunteers worked with existing establishment of Safe Motherhood Action Groups. It engaged the whole community and emphasized social approval and its ability to bring about changes in behavior. In this intervention, community leaders were asked to be trained as community volunteers, men were encouraged to be emergency transport drivers, and older women - who were often traditional birth attendants - were trained to recognize obstetric danger signs.	The intervention's effect on maternal health indicators was assessed by using a quasi-experimental difference-in-difference approach, which involved propensity score matching and adjustment for confounders, such as - education, wealth, parity, age and distance to a healthcare facility. The result showed that the intervention caused significant increase in maternal health indicators: the number of women who knew when to seek ANC, the number of women who recognized three obstetric danger signs, use of emergency transport, skilled birth attendants at birth, and deliveries in a healthcare facility in all six intervention districts. The community intervention was significantly associated with improvements in women's knowledge of antenatal care and obstetric danger signs, use of emergency transport and deliveries involving skilled birth attendants.

Country and the study	Title of the intervention	Coverage	Description of the intervention	Impacts/effectiveness
Ethiopia, and Karim, et al. (2018)	Community-Based Data for Decision-Making (CBDDM) strategy	In October 2010, the Women's Development Army (WDA) was added to improve Ethiopia's Health Extension Program services for each household in the community. A health management information system (MIS) for WDA's CBDDM strategy was developed and implemented in 115 rural districts of Ethiopia between July 2013 and January 2015.	With the CBDDM strategy, Health Extension Workers (HEWs) fostered community leaders and WDA to inform, own, plan, lead and monitor the maternal and newborn health care interventions in their communities. HEWs received training to support WDA team leaders, so that they could map 30 households in their catchment areas, to have each under surveillance, and to safeguard maternal and newborn health care services. It was the duty of HEWs to visit households routinely for updating information in the family folders. The strategy identified households, which were underserved, and linked those with HEWs and community administrators to remove the barriers in access to maternal and newborn health care services.	Communities with relatively high CBDDM implementation strength score had greater success in the use of maternal (ANC and institutional delivery) and newborn care. However, there was no significant evidence of any impact of the intervention on use of postnatal care (within two days of childbirth). The study indicated the importance of a local information system to involve communities successfully to increase the performance of health systems. Possibly, the strategy could be used in community-based newborn and maternal health care systems elsewhere, having alike settings.
Pakistan, and Midhet and Becker, 2010	Community-based interventions on maternal and neonatal health indicators	Thirty-two village clusters in a rural district of Balochistan. Village clusters were randomly assigned to intervention and control arms (16 clusters each). Baseline and follow up household surveys on some selected maternal and neonatal health indicators were carried out in all 32 clusters.	The interventions under the project were Information and Education for Empowerment and Change (IEEC) for both women and their husbands, training of traditional birth attendants in recognition of obstetric danger signs and supporting with telecommunication and transportation services for women in need of emergency obstetric and neonatal care (EmONC). IEEC served as a strategy for providing information about safe motherhood to women and their husbands.	Pregnant women in intervention clusters received prenatal care and prophylactic iron therapy more frequently than pregnant women in control clusters. Compared to women from the control arm, pregnant women from the intervention arm had higher odds of receiving perinatal care and tetanus immunization, and lower odds of having a perinatal death ($P< 0.05$). The study found a significant increase in institutional delivery in intervention areas. The community-based interventions package was found to have a significant impact on utilization of maternal health care services. Therefore, it was deemed necessary to include an IEEC strategy in all safe motherhood programs. Training of traditional birth attendants was also recommended for clean and safe home delivery.

Haider, et al. (2017) carried out a study to identify the impact of maternal and neonatal health initiatives on inequity in maternal health care utilization in Bangladesh. Two surveys were conducted in four districts (Moulvibazar, Jamalpur, Narail and Thakurgaon) in Bangladesh, the baseline in 2008 and

the endline in 2013. Maternal and Neonatal Health Initiatives in Bangladesh (MNHI) was launched in some selected districts in 2007 by the Government of Bangladesh and three UN agencies (UNICEF, UNFPA and WHO). The program was designed and implemented to reduce maternal and neonatal mortality and morbidity. Two types of intervention were implemented in the first phase of the program, e.g., community support system to create demand for maternal care services. The program intended to make women conscious of their right of safe motherhood and make communities aware of how mothers can be helped in achieving the right. The community support system intervention, provided by partner Non-Governmental Organizations (NGOs), was adopted in the four program districts (Moulvibazar, Jamalpur, Narail and Thakurgaon). The program also adopted some supply-side interventions. The public sector health facilities were strengthened and equipped with required level of human resources, physical capacity, and service level-specific procurement of necessary drugs and equipment. A baseline survey in 2008 and an endline survey in 2013 were carried out in the four districts. Data were collected from 13,206 women giving birth in the preceding year in the baseline, and a total of 7,177 women were interviewed in the endline. Inequity in maternal health care use was calculated (pre- and post-MNHI), using rich-to-poor ratio and concentration index. The hypothesis was that planning of birth as well as mobilization of health system should help pregnant mothers to receive a minimum of four ANC visits, safe delivery, PNC and care for obstetric complications from both public and private facilities. Use of maternal care increased across all socio-economic strata between these two survey periods. The Concentration Indices (CI) for different maternal health service uses in 2013 were found lower than the indices in 2008. Overall utilization of maternal health care services improved in the post-MNHI year in comparison to the pre-MNHI year and inequity in maternal service utilization declined for three indicators out of six, considered in the study. The study found the program successful in improving utilization of maternal health services, and lowering inequality in utilization of service across socio-economic groups. Properly designed maternal health care programs could improve access, if implemented properly.

The study titled ‘Voice and Accountability: The Role of Maternal, Neonatal and Child Health Committee’ by Leppard, et al. (2011) aimed to explore how the maternal, neonatal and child health (MNCH) committee encouraged community participation, and how its communication activities empowered the community people to ensure the health care needs of poor and disadvantaged people. A range of qualitative methods were used in the study. In-depth interview, focus-group discussion, informal discussion, observation and document review were used as data collection method. The study was conducted in two sub-districts of Nilphamari and Mymensingh districts of Bangladesh during February-April 2010. Thematic content analysis technique was followed. Findings revealed that the committee members concerned took necessary steps to solve maternal complication by referral and follow up referred cases, providing financial support to extreme poor, if needed. The committee also helped increase the availability of health care service providers, and improve the nature of services accessible to the community people. However, the capacity of the committees to raise the voice of poor people was fairly limited due to lack of adequate orientation of the committee members as well as lack of publicity about their roles. Besides, despite having potentials, the committee could not run properly due to disagreement among the committee members. Community Clinic (CC) is the lowest tier of one-stop public health facilities, each covering around 7,000-10,000 rural population in Bangladesh. The services provided in CCs cover health, family planning and nutrition. Currently 13,779 CCs are operational. From July 2015, all the activities of CCs were being carried out under an Operational Plan of DGHS, namely Community-based Healthcare (CBHC) under the Health, Population and Nutrition Sector Development Program (HPNSDP) 2011-2016 (DGHS 2018). Community Group (CG) is a community-level organization to look after CC services. Each CG holds a monthly meeting to discuss health issues in the community, and manages community fund that is saved by local people. Its president is an elected Union Parishad (UP) member, and other members are from different sectors, i.e., social

workers, religious leaders, adolescents, retired government officials and others. CHCP is the member secretary without voting right. Community Support Group (CSG) is a community-based organization to facilitate utilization of CCs by mobilizing the community, contributing local resource mobilization for CCs, and strengthening referral linkage. Every CC has three CSGs. CSG members make a social map to identify pregnant women's houses, and visit their houses regularly to follow up the course of their pregnancy in time. Together Community Group (CG), Community Support Group (CSG) members and Community Health Volunteers (CHVs) are working to improve MNCH service delivery among marginalized population (DGHS 2018). However, knowledge gaps exist with regards to the impact of an integrated and comprehensive CHSS program, since the impact evaluation, program evaluation and economic evaluation of such intervention have not been conducted. No study so far has assessed the effect of such program on maternal, newborn and child health status, i.e., the final outcome. Therefore, impact, program and economic evaluations are imperative to have a more informed policymaking. An understanding of the effects of CHSS on both maternal and child mortality and morbidity, that is the total burden of disease, would help to design the effective strategies and plans in the HNP sector and identify cost-effective interventions for improvement of MNCH.

There are mainly four types of interventions under the CHSS: trainings, meetings and workshops, inputs (HR, logistics and supplies), demand creation events, and monitoring, supervision and evaluation.

Trainings, Meetings and Workshops

One of the key activities, carried out by UNICEF for implementing the CHSS, was organizing trainings for local-level managers, supervisors and community health workers through CS offices, UH&FPOs/ UFPOs, and NGOs. The objective of the trainings was to enhance the knowledge and capacity of service providers, frontline health workers, CGs and CSGs to improve provision of MNCH services. The different trainings, organized under the program, were training on gender responsive respective care for service providers (FWVs, SACMOs and CHCPs), training for core team members (SRH committee) at district level on their roles and responsibilities for project implementation, refreshers' trainings for selected CG members, and orientation and bi-annual refreshers' training for CHVs at upazila level, district-level sensitization workshop on community-based intervention for improving sexual reproductive health and rights including maternal, newborn and child health care, upazila-level sensitization workshop with upazila chairman, UNO, all UPs, UHFPO and local stakeholders etc. CHVs reported that they received training on household census and registration of pregnant mothers. They also attended refreshers' training. On an average, they received 4/5 trainings within one year of recruitment. The trainings were very useful, and they requested for more similar learning opportunities. An information board was prepared in CCs, and an UP action plan was developed in Jamalpur. Under the CHSS, rapid formative assessments were conducted in all unions through engaging the government first-line supervisors and project staffs, and advocacy and sharing meetings were held at district and upazila levels. Other activities included union-level sharing and planning meetings to develop union-wise action plans, and semi-annual program and performance review meetings at district level for all project staff.

Supply of Inputs (HR, Logistics and Supplies)

Community Health Volunteers (CHVs) were recruited under the CHSS in the intervention districts. It was the key activity of the program, as CHVs were expected to play a crucial role in increasing awareness about the need for MNCH services, coordinate with the government health workers, be present in the CG/CSG meetings, conduct registration of pregnant mothers and default tracking, and bring the pregnant mothers and children to CCs in time of their need. The related activities under CHSS were organizing orientation meetings on MNCAH and initial registration and mapping for CHVs at upazila

level, selection of CHVs, providing required logistics and support to CHVs for conducting household registration and mapping, including promotion of birth registration, and providing performance-based incentives for CHVs. Usually, on an average, one CHV covered 400 to 500 households in an area, and one CHV was recruited in one ward. For example, in Bauphal upazila, there were nine CHVs recruited in each of its nine wards. CHVs received a monthly honorarium of BDT 500 each. Office space, equipment, office supplies, and maintenance of the project office were also funded by the program.

Under the CHSS program, several demand-side interventions were implemented in the intervention districts:

- To provide counseling services to pregnant women, family members and community leaders on benefit of institutional delivery by existing fieldworkers of health and family planning department.
- To provide education, counseling and support to households for improved home-based MNCAH practices, care-seeking behaviors, nutrition care practices, and early childhood development through CHVs.
- To organize mothers' assembly under the leadership of local health system by engaging local government and community leaders.
- To strengthen motivational activities through Behavior Change Communication (BCC) and counseling at household level.
- To increase awareness at community through Interactive Popular Theatre (IPT) shows on MNCAH issues.
- To organize observation of various international and national days (like - Safe Motherhood Day, Premature Day, Breast Feeding Day, Global Handwashing Day etc.).
- To provide referral support to pregnant women, infant and adolescent from hard-to-reach areas as well as from poor families (transportation and treatment cost).
- To organize school debates on health/nutrition/WASH topics in secondary schools in collaboration with local government and local health system to improve MNCAH service provision.

Monitoring, Supervision and Evaluation

Another important activity of the CHSS program was to facilitate joint supervision and monitoring visit at field level at national, district and upazila levels. Regular field monitoring was conducted by district coordinator, field coordinators and union facilitators, and reporting was also done. Under the program, rapid formative assessments were done in all unions through engaging the government first-line supervisor and project staff. District managers were engaged in planning, supervising, monitoring and facilitating, and linkages are developed at different level to establish community health system. The managers received an amount for monitoring and supervision for each quarter. In addition, some fund was allocated for facilitation and community mobilization in hard-to-reach areas through regular field visits and on-the-job support in the intervention districts. Yearly meeting was organized in union parishads to facilitate learning, reflection and progress review of the program.

2.

PURPOSE, OBJECTIVES AND SCOPE

As mentioned earlier, UNICEF and UNFPA partnered with the Government of Bangladesh (GoB), and jointly launched the project 'Improving sexual reproductive health and rights including maternal and neonatal health' (ImSRHR&MNH) in five low-performing districts (Patuakhali, Sirajganj Jamalpur, Moulvibazar and Rangamati) in Bangladesh with financial support from Global Affairs Canada (GAC)[2]. UNICEF was providing fund and technical assistance, and the assigned NGOs were implementing the interventions with close coordination with GoB. Successful implementation of the demand creation interventions at community level could increase MNCH service utilization (Jahan, et al. 2017a, Jahan, et al. 2017b). Both national and international studies on effect of some components of CHSS also showed that home visits by health workers and health education had been successful in increasing utilization of maternal, newborn and child health care.

To evaluate the effect of this intervention, the baseline survey was conducted by SURCH and UNICEF during May-August 2018 in the five intervention districts (Patuakhali, Sirajganj Jamalpur, Moulvibazar and Rangamati) and four control districts (Lalmonirhat, Sylhet, Barguna and Khagrachhari). It was decided by UNICEF that the midline survey would be conducted in three intervention districts (yellow) and three comparison districts (green) - out of the five intervention and four control districts - to assess the changes in some key MNCAH indicators, to evaluate the process and level of implementation of the program as well as conduct a cost-effectiveness analysis of the program. The selected intervention districts are presented in Table-2.1 and Schema-1.

Table-2.1: Study districts from intervention and comparison areas Intervention districts[3]

(Project area)	Matching control districts (Comparison area)
Jamalpur	Lalmonirhat
Moulvibazar	Sylhet
Patuakhali	Barguna

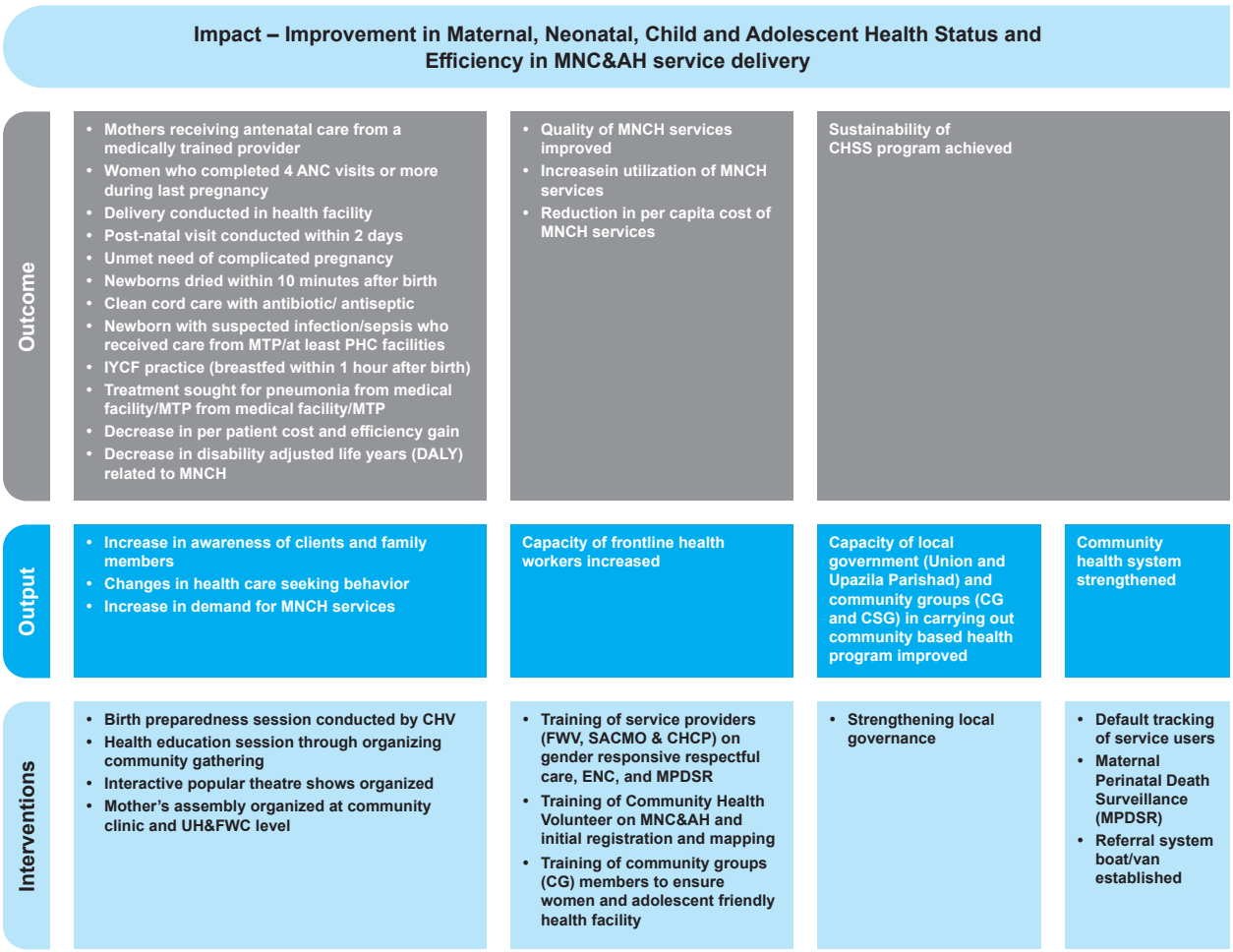
2 A similar intervention was initiated by UNICEF in Tangail and Khulna with the financial support from Korea International Cooperation Agency (KOICA).

3 The total population of Jamalpur district is 2.04 million, Moulovibazar district is 1.91 million, and Patuakhali district is 1.53 million (BBS website).

Schema-1: The Project and the Comparison districts

The interventions at the household, community, and community health system were expected to increase awareness of pregnant mothers and their family members about the need for modern health care, which in turn would change the maternal and child health care-seeking behavior of the household. It would remove some of the demand-side barriers in MNCH service delivery and increase demand for modern MNCH services. This would lead to an increase in utilization of MNCH services at CC, UHFWC and UHC level. Ultimately the interventions would reduce MMR, NMR and U5MR, and improve the maternal and child status in the intervention area (Schema-1). The detailed Theory of Change is presented in Schema-2.

Schema-2: The Theory of Change



2.1 Evaluation objectives

The midline evaluation assessed the effect of the program on utilization of MNCAH services and level of implementation of the CHSS program, the challenges faced by managers and CSOs in implementation of the program, and long-run sustainability of the program. Economic evaluation of such program was also important for measuring efficiency gain in health service delivery. Therefore, the cost-effectiveness of the CHSS program was analyzed, and the changes in the level of quality of services in intervention and control areas were studied.

The specific objectives of the study were:

- To assess the impact of the program on utilization of MNCH services, and examine the cost-effectiveness of the program in intervention and control areas by using both quantitative and qualitative surveys
- To evaluate the relevance, effectiveness, efficiency, sustainability, and impact of the project
- To identify the enabling factors, key barriers and bottlenecks to achieving program results
- To assess the achievement of the project over the given environments, challenges and lessons learned
- To provide information as a basis for making concrete recommendations and planning for improving MNCH activities
- To assess the scalability and sustainability of the program at national level
- To assess the cost-effectiveness of the program, and estimate the disability-adjusted life years (DALYs) related to MNCH - averted by the intervention.

Of these objectives, the midline evaluation primarily assessed the effectiveness of the CHSS program on the healthcare-seeking behavior, knowledge of the household population, and utilization of MNCAH services, including some discussion on gender equality in the results achieved. The impact on MNCAH status, i.e., the effect of the CHSS program on the final outcome, was not possible to fully determine in the midline assessment, and thus was only discussed briefly in terms of 'indications' of longer-term effects. This evaluation also helped document the process and current level of implementation of the CHSS program, and the challenges in its implementation. The intended use of the results was to provide UNICEF and GoB practical recommendations for improving community health programs in the country, specifically in overcoming barriers to implementation. While UNICEF, local health facility managers, DGHS, and high-level policymakers of MoHFW were the primary intended users, national stakeholders, including other UN agencies, non-governmental organizations, and academicians were secondary intended users. These primary users were expected to use the information and findings - generated through the evaluation - to better monitor and supervise the interventions, understand the program's strengths and potentials for more efficient scale-up and sustainability. Secondary users would utilize the findings in advocacy with GoB, and further refine models for economic evaluation of healthcare in the country.

2.2 Scope of evaluation

The timeframe of the project, the duration of the program in the intervention districts, the time of the baseline, midline and expected endline evaluations are presented in Table-2.2. The CHSS program in the five interventions districts started in October 2018. However, the baseline survey was conducted before that, during May-August 2018. The midline survey was done in the first, third and fourth quarter of 2020, and the endline survey is expected to be held during April-June 2022. Total implementation of the CHSS program is needed to achieve the final impact/results of the program along with a sufficient time gap between the initiation of the program and the evaluation. The scope of the evaluation only covers the CHSS program, not the larger ImSRHR&MNH, and the timeframe of the evaluation was extended from 1 October 2018 to the time of the midline data collection in early/mid-2020. The midline was conducted only just after more than a year of starting of the program. Therefore, the focus of this midline would hone in more on the effectiveness of the CHSS program, with some assessment of relevance

and efficiency, and limited evaluation of the impact, sustainability and coherence and coordination of the program. Within effectiveness, key short- and medium-term outcomes, such as - health-seeking behaviors and practices of mothers, utilization of maternal health care during different points in time, utilization of newborn and child health care, maternal, neonatal and child deaths, and performance of the health system, would be the primary focus of the evaluation.

Table-2.2: Timeframe of the project and evaluations

Sl	Activities	Timeframe	Gantt Chart																			
			2018 (Quarters)				2019 (Quarters)				2020 (Quarters)				2021 (Quarters)				2022 (Quarters)			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	ImSRHR&MNH	30 Mar 2017 – 30 Jun 2022																				
2	The CHSS program by PHD, CARE and Unnayan Sangha in intervention districts	1 Oct 2018 – 31 Dec 2021																				
3	The baseline survey, conducted by SURCH	9 May 2018 – 18 Aug 2018																				
4	The midline survey (IHE)	Feb-Mar 2020, Jul-Oct 2020																				
5	Projection for the endline survey	Estimated Apr-Jun 2022																				

2.3 Evaluation criteria

In the evaluation the following standard thematic areas and core dimensions were planned to be addressed. The evaluation questions are presented under each thematic area.

- Relevance: Whether the objectives of the CHSS program match needs of the target groups and basic development policy orientation of the government, UNICEF and other stakeholders. (Do the targets of the CHSS program match the targets of the HNP sector of Bangladesh?)
- Effectiveness: Demand creation and increase in utilization as a result of the CHSS initiation, the quality of MNCH services that the public facilities are delivering, performances against target, and reviewing the barriers. (Did the CHSS program change the health care-seeking behavior and improve knowledge on MNCAH? Did the CHSS increased utilization of MNC&AH services? Did it help to increase the maternal, neonatal and child health status?)
- Efficiency/cost effectiveness: Whether the CHSS can achieve targets at an affordable cost. (Did the CHSS program increase utilization of available resources and improved efficiency in the facilities?)
- Impact/results: Identify the impact of the project on child and maternal survival and burden of diseases (DALY). Identify the effects that the CHSS may have had on MNCH services and the

health system, and the strengths and weaknesses of the community-level activities. (Did the CHSS program increase community participation and capacity of the frontline activities?)

- Sustainability: To analyze the sustainability of the CHSS, capacity of the partners in maintaining the CHSS to provide high quality MNCH services and level of ownership for continued implementation of the program for improved MNCH services and beyond the lifespan of the development partners' support. (Did the CHSS program increase the capacity of the local government in carrying the activities of the CHSS?)
- Coherence and coordination: To analyze the extent to which the CHSS has systemically created synergies between the different health facilities (UHCs, UHFWCs and CCs), towards achieving the defined objectives and goals over time and effective referral mechanism. (Did the CHSS program improve the referral system at upazila level and below?)

However, the midline evaluation mainly focused on effectiveness, with less emphasis on relevance and efficiency, and limited assessment of impact, sustainability, and coordination and coherence. The reasons behind it were very short gestation gap between the initiation of the program and the midline survey, delay in implementation of the program, and outbreak of the COVID-19 pandemic in March 2020.

Additionally, while there was no specific gender criteria/questions formulated, gender and equity were integrated transversally across the data presented in the findings.

3.

METHODOLOGY

3.1 Study area

The CHSS program in the five Project (intervention) districts started in October 2018. However, the baseline survey was conducted before that, during May-August 2018. The midline survey was conducted during February-March 2020, and then postponed due to the COVID-19 pandemic outbreak. Again, the survey resumed and completed during July-October 2020. The endline survey is expected to be held during April-June 2022.

As mentioned earlier that the baseline study covered five Project (intervention) districts, namely Patuakhali, Moulvibazar, Rangamati, Jamalpur and Sirajganj. The baseline study also covered four Comparison districts, namely Barguna against Patuakhali, Sylhet against Moulvibazar, Khagrachhari against Rangamati, and Lalmonirhat against Jamalpur and Sirajganj. They were chosen because of their similarity with the neighboring Project (intervention) districts in terms of their geographical location, characteristics and various vital indicators, e.g., average household size, population density, sex ratio, literacy rate, access to mass media, total fertility rate (TFR), contraceptive prevalence rate, ANC, PNC, unmet need of pregnancy-related complications and breastfeeding. Out of the nine districts (five Project districts and four Comparison districts) mentioned above, three Project districts, namely Patuakhali, Moulvibazar and Jamalpur, and three Comparison districts, namely Barguna, Sylhet and Lalmonirhat, were covered in the midline evaluation.

3.2 Respondents in the midline evaluation

The respondents covered in quantitative and qualitative components of the midline evaluation were:

Household Survey

- Household mothers or caregivers or household heads
- Ever-married women aged 15-49 years
- Household mothers with live birth in previous two years
- Household mothers or caregivers of children aged 0-59 months
- Adolescents (aged 15–19 years)

Facility Survey

- Managers/service providers of health facilities

Key Informant Interviews (KIIs)

- Civil Surgeons (CSs), Deputy Directors of Family Planning (DDFPs), Residential Medical Officers (RMOs), Upazila Health and Family Planning Officers (UHFPOs), Upazila Family Planning Officers (UFPOs)

- Sub Assistant Community Medical Officers (SACMOs), Family Welfare Visitors (FWVs), Community Healthcare Promoters (CHCPs)
- Community Health Volunteers (CHVs)
- Key persons of implementing NGOs
- Representatives of local government

Focus Group Discussion (FGD)

- Community pregnant women and community mothers of children aged 0-59 months

3.3 Evaluation tools

The midline evaluation was conducted by using different types of study tools and instruments as it was done in the baseline evaluation. The data collection tools used in the midline evaluation were:

- A comprehensive household survey questionnaire
- A comprehensive questionnaire for facility survey
- Eleven comprehensive semi-structured interview guide for key informant interviews (KIIs)
- A structured questionnaire to collect data on MNCH-related mortality from CS office
- A FGD checklist for group discussions

The midline evaluation used the same household survey questionnaire and facility survey questionnaire that were used in the baseline evaluation. But the guidelines and FGD checklist were edited, and new guidelines were added in the midline evaluation. All the data collection instruments are attached in Annex-II.

3.4 Evaluation design

The evaluation used the pre-post quasi-experimental design and the mixed methods approach. This approach helped to conduct the Difference in Difference (DID) analysis[4]. There are comparisons of the key indicators before and after the implementation of the intervention as well as between the intervention and control districts. Both qualitative and quantitative data were used. The analysis was guided by the Theory of Change (ToC), specifically the effectiveness in achieving some of the short- and medium-term outcomes. The indicators were also assessed by different socio-economic groups and areas. Gender and human rights dimensions were brought in through the design, implementation and analysis, utilizing the lens of the Convention on the Rights of the Child (CRC). The government stakeholders were consulted during the design and implementation of the evaluation, specifically during the data collection.

4 The Difference in Difference (DID) design is a quasi-experimental research design that researchers often use to study causal relationships in health interventions and indicators, where Randomized Controlled Trials (RCTs) are infeasible. However, causal inference poses many challenges in DID designs. The DID method compares the changes in outcomes over time between a population enrolled in a program (the treatment group) and a population not enrolled (the comparison group). This allows for correction for any differences between the treatment and the comparison groups that remain constant over time. Instead of comparing outcomes between the treatment and the comparison groups after the intervention, the DID method compares trends between the treatment and the comparison groups. (Gertler, et al., 2016).

Household Survey

Sample design

A two-stage cluster sampling procedure with clusters of 100 households on an average was employed in the baseline survey. In the first stage, 78 villages or mauzas/mahallah were selected from the list of all villages/mauzas/mahallah in each of the project districts following Probability Proportional to Size (PPS) sampling method. Then each village/mauza/mahallah was divided into some segments of around 100 households by preparing a sketch map. Such segments were considered as the Primary Sampling Units (PSUs) in the sampling process. This was treated as a cluster. Then one of the segments was selected randomly, and a set of 25 households was selected by using systematic random sampling from each of the PSUs. Household listing operation was conducted before the household survey to get an up-to-date frame (list of households) for the second stage sampling in the sampling process. In the baseline, the required sample size was 1,950 households per district. In the midline, the required sample size was 1,950 households per area. As there were three districts each in the Project area and in the Comparison area, the survey needed to cover 650 households in each district to complete 1,950

households in each of the Project and the Comparison areas. To cover 650 households in each district, the survey needed to cover 26 clusters in each district. Hence, a total of 26 PSUs or clusters were selected from among 78 PSUs or clusters in each district, selected during the baseline survey, following the standard systematic PPS sampling method. Thus, the required sample size of 650 households (25 households/cluster × 26 clusters/district = 650 households) for each district was planned to cover. However, for possibilities of missing of some households in each cluster during the midline survey, which were covered during the baseline survey, the midline survey covered an additional cluster (27th) in each district.

The power calculation is presented in Table-3.1.

Table-3.1: Determination of sample sizes based on different indicators

Indicators	Current findings*	Precision (expected change) (%)	(z_{1-a}, z_{1-b}) with 95% CI and 80% power	Design effect	Sample size in target group	Households required
Under-five Mortality Rate (U5MR)	45 per 1000 live birth#	9/1000	1.96, 1.28	1.15	11581	11581
Neonatal Mortality Rate (NMR)	28 per 1000 live birth#	7.5/1000	1.96, 1.28	1.15	10154	10154
Still birth rate	32 per 1000 pregnancies	8/1000	1.96, 1.28	1.2	10265	10265
Treatment sought for pneumonia from medical facility/MTP	42.6	18	1.96, 1.28	1.2	192	7600
Mothers receiving antenatal care from a medically-trained provider	72.2	15	1.96, 1.28	1.2	170	1134
Women who completed 4 or more ANC visits during last pregnancy	30.2	15	1.96, 1.28	1.2	248	1876
Delivery conducted in health facility	38.3	15	1.96, 1.28	1.2	230	1748

Indicators	Current findings*	Precision (expected change) (%)	(z_{1-a}, z_{1-b}) with 95% CI and 80% power	Design effect	Sample size in target group	Households required
Post-natal visit conducted within 2 days	38.6	15	1.96, 1.28	1.2	259	1966
Unmet need of complicated pregnancy	16.5	14	1.96, 1.28	1.2	220	1470
Newborns dried within 10 minutes after birth	84	7	1.96, 1.28	1.2	467	3113
Clean cord care with antibiotic/ antiseptic	33.6	15	1.96, 1.28	1.2	256	1931
Newborn with suspected infection/sepsis, who received care from MTP/at least PHC facilities	53.2	20	1.96, 1.28	1.2	137	2055
IYCF practice (breastfed within 1 hour after birth)	57.2	15	1.96, 1.28	1.2	254	1941

Note: * Bangladesh Demographic Health Survey: 2014. #Baseline MNCH Survey in Tangail and Khulna: 2016. Source of sample size estimation: Baseline study conducted by SURCH.

However, the midline household survey covered 3,862 households out of 3,900 households, intended for the survey. Remaining 38 households could not be covered due to unavailability of responsible persons or absence of household members at their place of residence on the days of interview.

Table-3.2: Sample sizes achieved in the household survey

Districts	Number of sampled households	Number of achieved households
Project area		
Patuakhali	650	626
Moulvibazar	650	639
Jamalpur	650	643
Total	**1,950**	**1,908**
Comparison area		
Barguna	650	651
Sylhet	650	647
Lalmonirhat	650	656
Total	**1,950**	**1,954**

Facility Survey, KIIs, and FGDs

Sample design

To provide representative estimates for different health facilities in each area, the midline facility survey was planned to cover one Union Health and Family Welfare Centre (UHFWC) and two Community Clinics (CCs) in each selected upazila, and 50 per cent of the Upazila Health Complexes (UHCs) in each district. Every other upazila was selected as a sample from the upazilas listed in alphabetical order. One UHFWC and two CCs were to select randomly from each upazila. The number of selected sample UHCs, UHFWCs and CCs are presented in Table-3.5.2, and the list of the selected upazilas are presented in Annex-I.

The facility survey fulfilled its target of covering 92 facilities with an additional facility (one UHFWC). Thus, a total of 93 health facilities were covered through the techniques of observations as well as recording information and interviewing different individuals. The number of the sample facilities covered by area is presented in Table-3.3 below.

For KIIs at district and upazila levels, the respondents were employed personnel in those positions. At union and below, the service providers were chosen purposively. A total of 155 KIIs were conducted in the Project and the Comparison areas. For FGDs, pregnant women and mothers with children under two years of age were purposively selected by the research team (those who agreed to participate). A total of 40 FGDs were conducted at the community level.

Table-3.3: Sample facilities covered in the health facility survey

Districts	Number of DGHs	Number of MCWCs	Number of UHCs	Number of UHFWCs	Number of CCs
Project area					
Jamalpur	1	1	4	5	8
Moulvibazar	1	1	3	3	6
Patuakhali	1	1	3	3	6
Total	3	3	10	11	20
Comparison area					
Lalmonirhat	1	1	3	3	6
Sylhet	1	1	5	5	10
Barguna	1	1	2	2	4
Total	3	3	10	10	20
Grand total	**6**	**6**	**20**	**21**	**40**

3.5 Implementation of the midline evaluation

3.5.1 Development of study instruments and training

In the midline, the research team reviewed relevant documents that included the baseline report, project plans, monitoring matrix, and accompanying study reports. They also reviewed secondary information and study findings, done by the government, national and international organizations and research institutes as well as different individuals. The reviews focused the areas, which the research team needed for development of the study instruments. As per the objectives of the evaluation, the research team prepared a list of broad and specific indicators and the questionnaire, guidelines and checklists for KII and FGDs. The identification of the indicators considered both objectives and potential indicators of the midline evaluation as well as the indicators used in the baseline evaluation. Investigators, supervisors, moderators and facilitators for field operations were recruited following a standard recruitment procedure. After recruitment, the selected persons were invited to attend training programs. Three training programs were organized: training on household survey, training on health facility survey, and training on qualitative data collection techniques.

Training on household survey and household questionnaire

As per the methodology and to meet the objectives of the study, the midline evaluation used a questionnaire for collecting data from the sample households, which was prepared and used in the baseline evaluation. The research team recruited primarily 18 persons and arranged a training to orient them elaborately with survey objectives, techniques and questionnaire. The training was arranged in two phases - one on paper questionnaire and another on Computer Assisted Personal Interviewing (CAPI) exercise of the questionnaire by using cell-phones or tablets.

The training program on paper questionnaire took place at the Institute of Health Economics (IHE) of Dhaka University and SURCH to impart training to 18 participants on the household survey purpose, survey techniques and survey questionnaire. It continued for eight working days on 5-12 February 2020. The training consisted of classroom lectures, group discussions, mock interviews, role play and a field practice for applying interviewing techniques in a real situation and follow-up discussions on the experience of field practice. In addition, the participants were trained as to how they should introduce themselves to respondents, conduct an interview, throw a question, probe age of a household member and so on. After the classroom training, a total of three teams were formed with the participants of the training for field practices. The teams went to three adjoining areas of Singair upazila in Manikganj district on 11 February 2020 to exercise field practices under the supervision of a quality control officer of research team, assigned for each area. On the following day, the quality control officers discussed experience of the field practices with the team members of their respective areas. They discussed mistakes and weaknesses of the teams in the field practices, and instructed them as to how they could improve their capacity.

There was a separate training event to inform the participants as to how they would conduct interview of a respondent by using tablets or cell-phones through a softcopy of the questionnaire. The training was held on 11-17 February 2020 with 18 participants, who had participated in the training on paper questionnaire.

The participants in the training on tablets or cell-phones were imparted training with a comprehensive practical exercise on how to operate a tablet, how to open a softcopy of the questionnaire in the tablet or cell-phone, how to administer full interview along with simultaneous data entry, and how to send the

entered data to drop-box. The participants were oriented to troubleshooting also. Field practices were arranged with three groups, formed by the training participants, on 16 February 2020 at a village of Singair in Manikganj. A follow-up discussion session for all three groups was held at the IHE office on 17 February 2020 to share mistakes or weaknesses of the participants along with possible remedies.

Finally, a written test followed the training events to assess the participants' level of understanding of the survey purpose, survey techniques and survey questionnaire. All participants took part in the test. Based on their test performance, both field team supervisors and interviewers were selected. Then the required number of teams was formed with a supervisor for each. The teams went to the field on 19 February 2020, and started data collection activities on the following day (20 February 2020).

Training on health facility survey and questionnaire

Besides the training on household survey questionnaire, there was a need for arranging a separate comprehensive training and orientation on the purpose of health facility survey and survey tools. Accordingly, a separate training event took place in the IHE to impart training to nine participants on the health facility survey purpose, survey techniques and survey questionnaire. The 12-day training continued from 24 February 2020 to 7 March 2020. The training consisted of classroom lecture, group discussions and mock interviews. During the training, a full-fledged piloting, starting from 2 March 2020 and ending on 5 March 2020, was organized with the participation of all trainees in Sirajganj district. Prof. Nahid Akhter Jahan, Nafiz Iftekhar Tulon and other participants in the piloting visited the Civil Surgeon (CS) office of the district. They collected data on child mortality and project-related information from the CS Office. Then the team visited the Deputy Director of Family Planning (DDFP) office of the district. They conducted a Key Informant Interview (KII) with the DDFP in the Office. Further, the team visited Kamarkhand Upazila Health Complex (UHC), met the UHFPO and the UFPO, and conducted KIIs with them. Besides, the team collected all input and output information of the UHC and filled in a facility survey questionnaire in the UHC. The team visited Rai Daulatpur UHFWC in Kamarkhand upazila, where they arranged a KII with the FWV, and filled in a facility survey questionnaire there. Then, the team visited Rasulpur Community Clinic (CC) at Rai Daulatpur Union in Kamarkhand upazila, where they conducted a KII - each with the CHCP and the CHV of the CC - and filled in a facility survey questionnaire there. The whole event was supervised by the core research team members.

After the piloting, a follow-up session with all the participants in the piloting was held at Dr. Shushil Ranjan Hawladar Conference Room of the IHE on 7 March 2020. In the follow-up session, core research team members discussed the experience of the field piloting with the team members. They discussed mistakes and weaknesses of the team in the field piloting and the areas, where they could improve their capacity with possible techniques of improvement. Then they started their main field activities on the following day (8 March 2020) onward.

Training on qualitative data collection techniques and tools

The research team developed draft checklists for FGDs and KIIs, and then they arranged training on the instruments. For this, the research team selected all the participants of the facility survey training. A separate training was held for them from 28 February 2020 to 1 March 2020 simultaneously with the training on facility survey questionnaire. Through the training the participants were oriented to the details of qualitative methods of data collection along with the checklists. The training included classroom lecture on the techniques as to how the participants would arrange sessions with community people, and how to play the role of a moderator and a facilitator in a group discussion. The training also included some sessions on how to administer an interview of a key informant of the health sector.

After completion of the classroom training, they were divided into three facility survey teams with additional assignment of conducting FGDs and KIIs. The team supervisors as well as the team members, who showed better performance in the training sessions through their active participation as well as sharing their views and conception about different issues of the facility survey, were assigned to conduct KIIs. On the other hand, other members of the teams were assigned to arrange FGDs. Then, they started their main field activities on the following day (8 March 2020).

Application of household listing operation for the household survey

In the baseline survey, a complete listing of households with proper identification (ID), showing name of household heads and address or location, was conducted in each selected segment after selection of the segments with approximately 100 households in each. The lists provided an up-to-date frame (list of households) for the second stage sampling. However, no fresh listing operation took place in the midline survey. Instead, the lists of households, prepared in the baseline survey, were used in the midline survey.

3.5.2 Quantitative data collection and quality assurance

The data collection and quality control procedures, used in the evaluation, are presented in this section.

3.5.2.1 Data collection at household level

A total of three interviewing teams collected survey data from the sampled households, starting from 20 February 2020 to 15 March 2020 and again from 9 July 2020 to 3 October 2020. They performed data collection by using tablet PCs. It is to be noted that due to the COVID-19 pandemic, data collection activities were hampered, and it took place in two phases. In the first phase, data collection in three out of six districts took place between 20 February 2020 and 15 March 2020. In the second phase, data collection in the remaining three districts took place between 7 July 2020 and 3 October 2020. To collect data, the study team made door to door visits of the sampled households during the first phase, and communicated with the sampled households over phones during the second phase. One cluster in very hard-to-reach area, which could not be reached through phone, was visited by the team, and face-to-face interview was conducted.

Quality control checking

The quality control team, consisting of senior research team members, performed quality control checks to ensure quality and reliability of collected data. They performed physical verifications to see whether or not the investigators completed questionnaires by interviewing the intended respondents in the selected households by asking rightful questions and filling up the questionnaires rightfully on the spot. Physical verification was done both in presence and absence of the interviewing team members. Some 10 per cent to 15 per cent respondents were revisited and interviewed by the supervisors or quality control officers or research officers to monitor the validity of information.

3.5.2.2 Data collection at facility level

Three survey teams, under overall supervision of the survey manager, conducted the health facility survey, including quality measurement of maternal and newborn services, information collection on major input and output facilities, and service providers' interviews in the selected health facilities.

Observation, reviewing records and interviewing at facilities

In order to gather reliable data and information to assess the availability and measure the quality of key MNCH and SRHR including FP services as well as capacity of facilities and service providers at community and facility levels, following three techniques were followed to get real pictures in this regard:

a. Observation of health facilities

b. Collection of and recording information on all major input and output facilities

c. Interview of health service providers

Following activities were performed to collect information regarding the availability and quality of resources and services along with observations of overall environment of selected health facilities mentioned above:

- As part of the survey, the survey teams visited listed health facilities and collected information on the availability and quality of input facilities in terms of human resources, presence of service providers on a working day, coverage of treatment/services, availability, functionality, quality of equipment and other logistics and overall environment etcetera, and output facilities by review of records, observation and interview, and discussion with some service providers and key officials through a structured questionnaire (Facility Survey Questionnaire).
- Input facilities were surveyed regarding availability of resources in the facilities in terms of human resources, absenteeism, duration of service on a working day, treatment resources, availability, and quality of equipment etcetera.
- Status of output facilities was assessed with the help of service statistics and discussions with the providers of selected facilities. Information regarding number of clients using MNCAH services along with trend and reasons for receiving such services were considered for estimating the cost of delivered services.

Timeline of the data collection activities for the health facility survey

Similar to the household survey data collection, the data collection activities in health facilities were hampered due to the COVID-19 outbreak, and it took place in two phases. In the first phase, 25 per cent of data collection took place between 9 March 2020 and 15 March 2020. In the second phase, 75 per cent of data collection took place between 7 July 2020 and 1 October 2020. To collect data, the study team made physical visits to the sampled facilities, collected data, interviewed relevant personnel, and made on-the-spot observations. Thus, the facility survey took place between 9 March 2020 and 15 March 2020, and then again between 7 July 2020 and 1 October 2020.

Data on the number of patients in the facility for MNCH by disease (OPD/IPD) from July 2019 to December 2019 were collected in the midline. In the baseline, data were collected on the number of MNCH patients in the health facility (OPD/IPD) from November 2017 to April 2018. Therefore, there was no effect on the data on the patient flow, collected by the facility survey, due to the COVID-19 pandemic. However, it might have a downward bias on the presence of HR, stock of medicines, and views of managers, service providers, community health workers and mothers.

There were some differences in success rates in data collection by face-to-face interviews (Pre-COVID) and remote data collection (Post-COVID) in the midline evaluation[5].

3.5.2.3 Implementation of FGDs and KIIs

A total of two teams performed the qualitative data collection. Each team, consisting of one facilitator and one moderator, under the supervision of a research officer, conducted 40 FGDs and 155 KIIs, and they gathered and compiled qualitative data. FGDs were conducted with pregnant women and mothers with under-two children. KIIs were conducted with Civil Surgeons (CSs), Deputy Directors of Family Planning (DDFPs), Upazila Health and Family Planning Officers (UHFPOs), Upazila Family Planning Officers (UFPOs), Sub Assistant Community Medical Officers (SACMOs)/Family Welfare Visitors (FWVs), Community Healthcare Promoters (CHCPs), Union Parishad chairmen, and representatives of implementing NGOs in the Project districts. The total number of KIIs and FGDs covered by area are presented in Table-3.3.

3.6 Data processing and data analysis

Data processing and data analysis techniques of the midline evaluation are presented in this section.

Editing and coding of quantitative data

Data editing and coding of the filled-in questionnaires were done with the help of experienced data processing personnel. They checked gaps, inconsistencies, miscoding and blank areas, found in the filled-in questionnaires. Coding of open-ended questions was performed by preparing appropriate lists of codes. The survey manager and research officers supervised the editing and coding works to ensure quality.

5 Pre-COVID and Post-COVID Restrictions

Indicators	Pre-COVID Restrictions (face-to-face collection)	Post-COVID Restrictions (remote data collection)
% of selected survey participants who declined participation	0 (0.0%)	21 (1.08%)
Average # of phone calls made before completion of survey/interview (*including any other numbers used to locate the selected person*)	0	7
#/% of all selected participants replaced for any reason (*household surveys*)*	21 (1.08%)	18 (0.92%)
% of surveys with all key questions answered (*'no response' doesn't count*)	1920 (98.5%)	1942 (99.6%)
% of surveys completed from first to last question	1852 (95.0%)	1906 (97.7%)
#/% of all selected participants replaced for any reason (*IDIs/KIIs*)*	*1 (2.5%)	**6 (6.9%)

* Out of 40 KIIs, one UFPO was replaced by one MO-MCH-FP. UFPO interview was replaced due to vacancies.
** Out of 115 KIIs, five UFPOs were replaced by MO-MCH-FPs, and one UH&FPO was replaced by one RMO. UH&FPO and UFPO interviews were replaced due to vacancies.

Table-3.4 Number of KIIs and FGDs by districts in the midline

Districts	Number of KII at district level			Number of KII at upazila level			Number of KII at union level				Number of FGDs at CC level
	CS	DDFP	NGO personnel	UHFPO	UFPO/MO-MCH-FP	NGO personnel	SACMO/ FWV	CHCP	NGO personnel	UP Chairman /Member	
Project area											
Jamalpur	1	1	1	4	4	4	4	8	8	4	8
Moulvibazar	1	1	1	3	3	3	3	6	6	3	6
Patuakhali	1	1	1	3	3	3	3	6	6	3	6
Total	3	3	3	10	10	10	10	20	20	10	20
Comparison area											
Lalmonirhat	1	1		3	3		3	6			6
Sylhet	1	1		5	5		5	10			10
Barguna	1	1		2	2		2	4			4
Total	3	3		10	10		10	20			20
Grand total	**6**	**6**	**3**	**20**	**20**	**10**	**20**	**40**	**20**	**10**	**40**

Computerization and entry of quantitative data

After coding, all data from paper questionnaires were entered into computers. Expert study team members developed the database software on CSPro package. The data entry software had some built-in editing facilities that permit range checking and logical checking.

One research officer supervised the data entry work. Range checks and validation checks of data were done with the help of a research officer and data-processing supervisors. Data that were collected through tablets were directly entered into computer at field level, and sent to Dhaka for further checking.

Analysis of data, generation of survey results and incorporation of quantitative information

A tabulation plan containing dummy tables as per the study objectives was prepared based on the baseline report. Then tables containing quantitative data were constructed in accordance with dummy tables with modifications as and where necessary.

Data were analyzed using SPSS software. Summary statistics were presented for MNCAH and CHSS indicators as well as key health, nutrition and hygiene indicators. Bivariate analysis was performed to present association of some indicators on some background characteristics. Summarized qualitative information was incorporated into the report as and where appropriate.

Economic evaluation

Attempts were made to conduct the cost-effectiveness analysis using the data on patient flow collected in the facility survey, cost of the CHSS program collected from the NGOs, HMIS data on mortality and cost of health facilities estimated in another recent evaluation of DEPB of UNICEF. Cost per patients was calculated using the yearly average MNCH patients of each type of facility and total cost of the facility. The facility survey collected information on the MNCH patients, receiving services from the facilities in both OPD and IPD. Total output of the facility was estimated using weights for maternal care and child health care. The weight was calculated based on the average cost of maternal care and child care, taken from recent studies. The estimated weight for one client seeking maternal health care was 2.65 compared to one client seeking child health care (Khan, et al., 2012). Weights were also used for inpatients and outpatients to calculate the total patient flow in health facilities. The assumption used was that one inpatient is equivalent to 2.27 outpatients. It was also taken from a recent study on costing of inpatients and outpatients (Howlader, et al., 2012). The evaluation used the data on costs of health service delivery, estimated in similar health facilities in 2017 in the evaluation of DEPB. The cost in 2018 and 2019 was estimated using 3 per cent interest rate, and cost during six months was estimated as the output was for six months.

The DALY has two parts: Years of Life Lost (YLL) and Years Lived with Disability (YLD). The study estimated the MNCH-related YLL in 2018 and 2019 using the HMIS data collected from the CS offices. The MNCH-related YLD could not be estimated using the data of the baseline and the midline household surveys. It was suggested that the same questionnaire that was used in the baseline should be used in the midline survey. The duration of illness or complaints were not collected in the baseline and in the midline. Therefore, the evaluation could estimate the MNCH-related YLL using some assumptions on life years lost due to premature mortality, and then using cost of the CHSS program it estimated incremental cost-effectiveness ratio of the CHSS program in each project district.

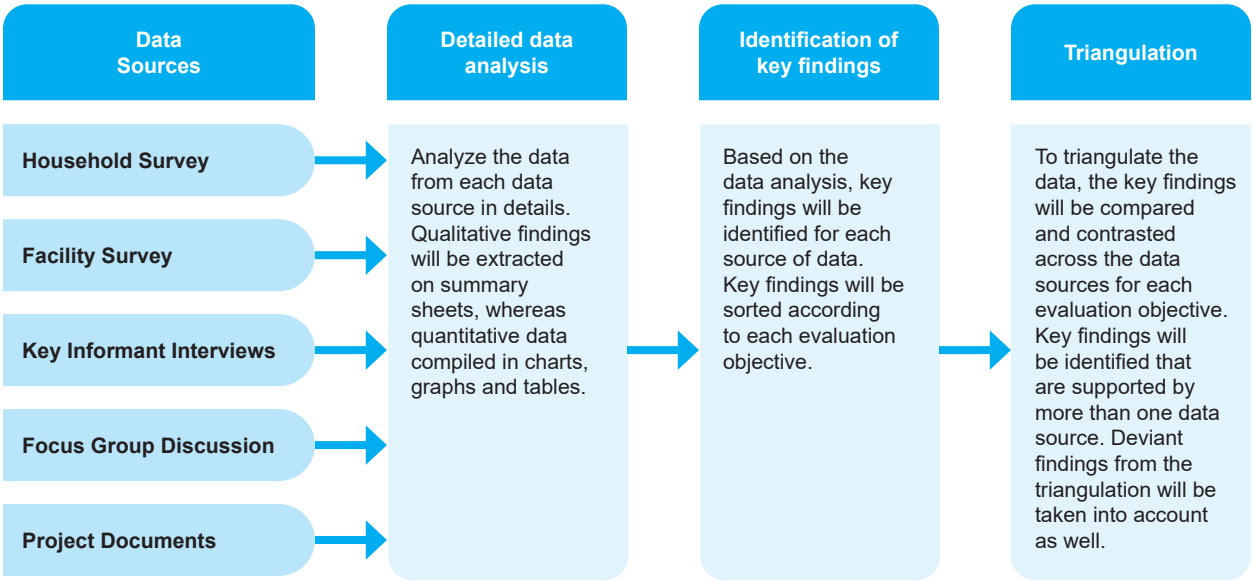
Analysis of data, generation of survey results and incorporation of qualitative information

Qualitative methods of investigation, adopted for the study, included FGD, KII and review of documents along with on-the-spot observations. Qualitative data were processed following qualitative data processing guidelines. Qualitative data (KII and FGD) was recorded/written, documented and stored in MS Excel. Data were analyzed according to themes and subthemes, and summarized in narratives for each theme and subtheme in summary sheets. The narrative provided answers to subsequent questions and associations between the themes to obtain insights into the original objectives of the evaluation. All field observation data and other qualitative findings from FGDs and KIIs were compiled and analyzed according to the standard guideline, and a compiled report was prepared.

Data triangulation

The qualitative and quantitative data analysis was made separately, and their findings were triangulated. The steps of data triangulation are presented in following Schema-3.

Schema-3: Steps in Data Triangulation



3.7 Limitations of the evaluation

The main limitations of the evaluation are:

- The focus of the evaluation was on progress made against short- and medium-term outcomes. However, the scope did not include an assessment of the Theory of Change (ToC), meaning there is no analysis on whether or not there are any lagging results due to missed assumptions or inaccurate identification of causal linkages between activities-outputs-outcomes.
- There may be many confounding factors, such as, other NGOs working in the areas and operating in both the areas. So, the total effect may not be solely due to the intervention (the CHSS program). It is always difficult to find a perfect control, as there are overlaps in the programs.

- Sample size of the midline survey (both the household survey and the facility survey) is smaller than that of the baseline survey, and therefore, assessments between the baseline and the midline will not be completely comparable.
- The matching between control and intervention is not exactly justified. This limits the ability to strongly conclude that the two groups are appropriately comparable, and therefore, the changes observed in outcomes (i.e., potential treatment effects) should be interpreted with caution.
- The evaluation attempted to estimate per MNCH patient cost in the health facilities. Total outputs of the health facilities were estimated using weights for maternal and child health care, and also for outpatients and inpatients. However, the total cost of the facilities could not be calculated, as the midline evaluation used the same facility survey questionnaire that was used in the baseline. Therefore, the total costs of the facilities were taken and adjusted using discount rate from another recent evaluation of the District Evidence-based Planning and Budgeting (DEPB) of UNICEF.
- The evaluation attempted to estimate Disability Adjusted Life Years (DALY). The evaluation used the HMIS data, collected from the CS office on mortality. The household survey included the information of MNCH-related illnesses and symptoms. But duration of illness was not included in the survey in the baseline, and consequently, not in the midline. Therefore, the evaluation calculated Years of Life Lost (YLL) using the HMIS data, and could not estimate Years Lived with Disability (YLD)[6].
- There might be a downward bias among the views of managers, service providers and frontline health workers on implementation and progress of the CHSS program due to the COVID-19 pandemic.
- The research team also faced challenges in collecting data from the households remotely due the COVID-19 outbreak. In most cases, they had to make two to three phone calls to complete the interview. They also could not observe the households and the members due to telephonic interview.
- In some of these areas, implementation of the intervention may have been disrupted due to flooding, at least for a short period. This may lead to an underestimation of the intervention's effect, as the control group did not experience the flooding or to the same degree.
- In line with the scope of work for this evaluation, the government stakeholders (duty bearers) and the CHSS program beneficiaries (rights holders) were not involved in the formulation of recommendations. UNICEF plans to work alongside GoB to utilize the relevant recommendations, but lack of involvement of these groups may impede understanding, ownership or buy-in of the recommendations, and could delay results usage.

3.8 Ethical considerations

Strict ethical guidelines, related to the research involving human subjects, were followed. Protection of the respondents from any personal harm was ensured. The questionnaire was developed in a way that it avoided searching for any information unrelated to the study. Confidentiality and anonymity of the participants were maintained. Informed consent was obtained from the respondents before collection of necessary data. The copy of the IHE's approval letter from the Institutional Review Board (IRB) is attached in Annex-I. Additionally, the evaluation team complied with the UNEG Code of Conduct for Evaluation and the UNICEF's Procedure for Ethical Standards in Research, Evaluation, Data Collection

6 The inability to calculate YLD is expected to have a very low effect on DALY estimate. YLL is expected to be much higher than YL, as it is due to premature mortality.

and Analysis, particularly in relation to components related to engaging with vulnerable populations, such as adolescents.

Please find below the potential ethical issues identified, and how these were addressed.

Ethical issues	How these were addressed
Respondents' privacy, and data protection	Only the trained personnel, having previous experience in conducting household-, community- and facility-level interviews, were allowed to conduct the interviews. The confidentiality and privacy of the respondents, as well as protection of data, was given the topmost priority. The information obtained for this study would be used only for the purpose of evaluation, and identity of the respondents would not be revealed. The evaluators complied with the codes for vulnerable groups, confidentiality, and avoidance of harm.
Ensuring informed consent	Before the respondents participated in the study, they were provided with full details of the objectives of the evaluation, so that they could give an informed consent. The evaluators ensured respect for dignity and diversity of the respondents. Their rights to self-determination and fair representation were observed.
Gathering information on MNCH	Female investigators collected the data on pregnancy, birth practices, and other reproductive health issues in order to be sensitive to the respondents' needs and comfort.
Obligations of evaluators	The evaluators ensured independence and impartiality in evaluation of the program. All potential conflicts of interest were scrutinized, and none was found among the evaluation team. The accountability for data security and credibility of the findings were solely with the evaluators.

3.9 Preparation of the report

Based on the study objectives and indicators, chapter-wise dummy tables were prepared before data analysis. The analysis of quantitative data shows rates and frequencies of respondents in terms of socio-economic and other relevant short- and medium-term output and outcome indicators, while qualitative data/information provide background and underlying factors that influence respondents' preferences or aversions to the planned program services, particularly MNACH-related service delivery at community, sub-district and district levels. It provides in-depth information on individual's knowledge, attitude and practices on specific MNACH health, nutrition and other matters. It also provides opinions and insights of community leaders and service recipients about MNACH services, delivered through the project. Therefore, to enrich the quantitative findings obtained through the household survey, appropriate triangulation of the qualitative findings with the quantitative findings was also made. Experienced study team members, through in-depth analysis, interpretation and comments on quantitative and qualitative findings, produced a detailed description of evaluation findings and prepared the report. The findings were focused primarily on the evaluation criteria of effectiveness, and these were spread across seven findings chapters, specifically 4-10. Chapter 11 provides a lighter assessment on relevance, efficiency, impact, sustainability, and coordination/coherence. The recommendations thus focus on practical actions to improve remainder of the program in order to provide the best chance for success by the end of its implementation. Each recommendation is rooted in the findings that are impacting current and future effectiveness. Given the required depth of analysis on a large range of specific process and outcome indicators to examine effectiveness, UNICEF and the evaluation team agreed on a longer report length than the standard one for UNICEF evaluations.

4.

FINDINGS: EFFECTIVENESS – KNOWLEDGE, AWARENESS, HEALTH CARE-SEEKING BEHAVIOR AND PRACTICES OF THE MOTHERS

One of the key outputs of the CHSS program is to increase knowledge and awareness about the need for MNCAH services at the household level through community interventions as a pathway towards community health system strengthening. This is also presented in the Theory of Change (ToC), and shown as one of the inputs in evaluating the effectiveness of the program. The midline and the baseline surveys collected information on knowledge, awareness and health care-seeking behavior of pregnant women and mothers by interviewing the households. Besides, the women's experience of complications in pregnancy, delivery and postnatal periods along with care-seeking behavior for such complications as well as their knowledge of danger signs in pregnancy, delivery and post-delivery periods are also discussed in this chapter. Finally, this chapter sheds light on the women's knowledge level and practices about Family Planning (FP) methods. These are some of the outputs of the interventions of the CHSS program as presented in ToC.

The household survey also collected detailed information on the socio-economic and demographic characteristics of the households. The findings are presented in Annex-III.

4.1 Knowledge of maternal danger signs

This section presents the findings of the midline and the baseline household surveys on knowledge regarding maternal danger signs during pregnancy, birth delivery and immediately after delivery.

4.1.1 Knowledge of maternal danger signs during pregnancy

The more commonly known danger signs during pregnancy include convulsion, severe headache and/or blurred vision, excessive vaginal bleeding, severe abdominal pain and high fever. Findings show that, 72.1 per cent and 44.7 per cent of women in the Project and the Comparison areas respectively cited 'convulsion' as a danger sign in the midline. The corresponding figures were 47.1 per cent in the Project area, and 40.3 per cent in the Comparison area in the baseline survey. Further, in the midline survey, 52.2 per cent and 46.7 per cent of women in the two areas, respectively, mentioned 'severe headache and/or blurred vision' as a danger sign. The corresponding figures in the baseline were 48.6 per cent in the Project area, and 52.1 per cent in the Comparison area. Also, 47.8 per cent and 34.2 per cent of women in the Project and Comparison areas, respectively, identified 'excessive vaginal bleeding' as a danger sign in the midline survey. The corresponding figures were 29.9 per cent and 27.8 per cent

respectively in the baseline survey. Apart from these, 27 per cent and 20 per cent of women in the two areas, respectively, cited 'severe abdominal pain' in the midline survey. The corresponding figures were 31 per cent in the Project area, and 30 per cent in the Comparison area in the baseline survey (Table-A.4.1.1.1, Table-A.4.1.1.2, Table-A.4.1.1.3, and Table-A.4.1.1.4).

Tables also show that, 73.8 per cent and 53.9 per cent of women in the Project and the Comparison areas, respectively, were aware of three or more danger signs of pregnancy period in the midline survey. These percentages in both areas in the baseline were lower (23.3 per cent and 23.4 per cent respectively) compared to those of the midline. Women's education and household wealth status show a positive relationship with their knowledge of danger signs (in citing specific signs) in most cases in both the areas during the two surveys. For example, proportions of women with knowledge of 3+ danger signs increased with increase in their education and wealth status regardless of area in the midline. However, the inequity in knowledge improved in the midline compared to that of the baseline (Table-A.4.1.1.1, Table-A.4.1.1.2, Table-A.4.1.1.3, and Table-A.4.1.1.4). It seems that the program had a treatment effect of an average 20 per cent increase in proportion of women with knowledge of three or more danger signs during pregnancy.

4.1.2 Knowledge of maternal danger signs during delivery

The women's knowledge of danger signs that are considered serious health issues during delivery period can be a potential risk for survival of foetus and mothers. The findings reveal that women in both the Project and the Comparison areas commonly knew about specific danger signs like babies' hands and feet coming first, prolonged labour pain, convulsion/unconsciousness and excessive vaginal bleeding during delivery, and retained placenta. Every two in five women in the Project area (39.6 per cent) and one in three in the Comparison area (35.9 per cent) identified 'severe headache and/or blurred vision' as a danger sign during delivery. The corresponding figures were 31.7 per cent and 35.6 per cent, respectively, in the baseline. In the midline, 36.4 per cent of women in the Project area and 26.6 per cent women in the Comparison area cited convulsion as a danger sign during delivery (43.7 per cent and 31.3 per cent, respectively, in the baseline survey), 36.4 per cent and 33.6 per cent of women mentioned, respectively, 'excessive vaginal bleeding' as a danger sign (28.9 per cent and 23.3 per cent, respectively, in the baseline survey), 16.9 per cent and 9.9 per cent of women, respectively, cited severe abdominal pain as a danger sign (16.4 per cent and 14.3 percent, respectively, in the baseline), 39.0 per cent and 46.1 per cent of women, respectively, cited prolonged labor pain as a danger sign (23.9 per cent and 32.7 percent, respectively, in the baseline survey), and 39.6 per cent and 35.9 per cent of women, respectively, mentioned edema/swelling as a danger sign (21.7 per cent and 21.8 per cent, respectively, in the baseline) (Table-A.4.1.2.1, Table-A.4.1.2.2, Table-A.4.1.2.3, and Table-A.4.1.2.4).

The findings show that, in the midline survey, 69.6 per cent of women in the Project area and 57.6 per cent of women in the Comparison area were aware of three or more danger signs of delivery period. However, in the baseline survey only one tenth of the women in two areas were aware of three or more such danger signs. It seems that the program had a potential treatment effect of an average 20 per cent increase in proportion of women, having knowledge of three or more danger signs during delivery.

4.1.3 Knowledge of maternal danger signs during postnatal period

The women's lack of knowledge of serious health issues (danger signs) during postnatal (PNC) period can be fatal for mothers and newborn. The midline and the baseline survey findings reveal that, 'convulsion/shivering', 'high fever', 'excessive vaginal bleeding' and 'severe lower abdominal pain' were more frequently cited as danger signs during postnatal period. Also, higher percentages of women in

the midline survey compared to the percentage of women in the baseline survey cited these danger signs. Findings show that 71.0 per cent women in the Project area and 51.1 per cent of women in the Comparison area cited 'convulsion/shivering' as a danger sign during postnatal period in the midline. The corresponding figures were 48.5 per cent and 37.9 per cent respectively in the baseline. Further, 50.4 per cent women in the Project area and 42.2 per cent of women in the Comparison area mentioned 'severe lower abdominal pain' as danger sign during postnatal period. The corresponding figures were 27.5 per cent and 25.0 per cent respectively in the baseline survey. A significant number of women also mentioned 'excessive vaginal bleeding' as a danger sign (42.3 per cent in the Project area and 41.3 per cent in the Comparison area in the midline, and 25.0 per cent and 26.4 per cent respectively in the baseline). Again, slightly over one third of the women in the Project area (36.0 per cent) and one fourth of the women in the Comparison area (24.9 per cent) in the midline survey (20.6 and 24.6 per cent respectively in the baseline survey) stated 'edema of face/leg'. 'Difficulty in breathing' was another notable danger sign, which was known to 33.8 per cent women in the Project area and 28.9 per cent of women in the Comparison area in the midline survey, and 17.0 per cent and 13.8 per cent of women in two areas respectively in the baseline survey (Table-A.4.1.3.1, Table-A.4.1.3.2, Table-A.4.1.3.3, and Table-A.4.1.3.4).

The findings show that, in the midline survey, 57.2 per cent of women in the Project area and 42.8 per cent of women in the Comparison area were aware of three or more danger signs of postnatal period. However, the proportion was lower (one-third) in both the areas in the baseline survey. It seems that the program had a potential treatment effect of an average 16 per cent increase in proportion of women with knowledge of three or more danger signs during postnatal period. In both the Project and the Comparison areas a positive relationship was found in most of the cases between women's knowledge of maternal danger signs in postnatal period and their education level. For example, in the midline survey, proportions of women having knowledge of three or more danger signs increased with an increase in their education level ('primary incomplete' and 'SSC/above' respectively: the Project area: 44.7 per cent and 59.6 per cent, and the Comparison area: 33.3 per cent and 58.4 per cent). However, the inequity in knowledge among different socio-economic groups considerably improved in the midline compared to that of the baseline (Table-A.4.1.3.1, Table-A.4.1.3.2, Table-A.4.1.3.3, and Table-A.4.1.3.4).

4.2 Awareness and preferences for ANC, delivery care and PNC

Data on women's perceived reasons for the preferences of health facilities for ANC, delivery care and PNC were collected in both the midline and the baseline surveys. Results show that in both the Project and the Comparison areas in both the surveys 'scope of getting good health care services' (96.1 per cent and 94.6 per cent respectively in the midline survey, and 85.5 per cent and 84.3 percent respectively in the baseline survey) and 'health facilities near to house' (59.1 per cent and 49.0 per cent respectively in the midline survey, and 41.5 per cent and 42.6 per cent respectively in the baseline survey) were the key reasons for pregnant women to choose facilities for ANC, delivery care and PNC. Other than these two, women across areas and surveys added another reason 'courteous behavior of service providers' in this regard (39.0 per cent and 27.3 per cent in the two areas respectively in the midline survey, and 29.4 per cent and 28.9 per cent respectively in the baseline survey). In addition, in the midline survey, 35.8 per cent of the women in the Project area, and 25.2 per cent of the women in the Comparison area mentioned that they 'can get services free of cost'. The corresponding figures were quite lower in the baseline survey (11.2 per cent and 14.3 per cent respectively). In the midline, 27.9 per cent and 16.9 per cent of the women in the two areas respectively cited 'availability of drug free of cost' as two reasons for preference. The corresponding figures were lower in the baseline survey (6.3 per cent and 11.1 per cent in the two areas respectively) compared to those in the midline. It appears that in both the areas,

women's education and household wealth level had apparently a positive relationship with citing the reason of 'scope of getting good services'. The proportions of women citing this reason for choosing the health facility increased with an increase in the levels of these two background characteristics (Table-A.4.2.1, Table-A.4.2.2, Table-A.4.2.3, and Table-A.4.2.4).

Similar to the above, the study attempted to learn women's preferences of health service providers to get delivery care. Findings revealed that MBBS doctors were most preferred in this regard. Around 60 per cent of women in the Project area and a little less than half of the women in the Comparison area preferred MBBS doctors in both the surveys (60.8 per cent and 44.8 per cent respectively in the midline survey, and 58.9 per cent and 46.3 per cent respectively in the baseline survey). Traditional Birth Attendants (TBAs) were also preferred by women. About 27.5 per cent of women in the Project area, and 31.1 per cent of women in the Comparison area in the midline survey (37.2 per cent and 40.6 per cent respectively in the baseline survey) preferred TBAs as the health service provider. Besides, in the midline survey, 51.0 per cent and 48.1 per cent of women in the two areas respectively preferred nurses as the health personnel for delivery care. The corresponding figures were quite lower in the baseline survey (24.9 per cent in the Project area and 21.8 per cent in the Comparison area) compared to those of the midline. Moreover, around one in three women in both the areas preferred Trained Traditional Birth Attendants (TTBAs) in the midline survey. The proportions were lower in the baseline survey (10.4 per cent and 18.4 per cent respectively) compared to those in the midline. Irrespective of survey area and survey time, proportions of women preferring MBBS doctors and nurses for delivery care increased almost consistently when their education or household resource levels increased. In contrast to that, proportions of women preferring TBAs decreased almost consistently with increase in education or household resource levels. The inequity in preferring qualified providers improved slightly in the midline compared to that in the baseline. In addition, preferences for female service providers increased significantly in the midline compared to the baseline (Table-A.4.2.5 and Table-A.4.2.6).

The women were further asked to describe the key reasons for their preferences of health providers mentioned above to assist during deliveries. In response, they identified reasons, some of which were related to providers and some to health facilities. The data show that, in the midline survey, in the Project and Comparison areas respectively, 'experienced doctors are safe and dependable' was the major reason why women preferred doctors (57.5 per cent in the Project area, and 51.9 per cent in the Comparison area). The corresponding percentages were 50.1 per cent and 41.2 per cent respectively in the baseline survey. Again, in the midline survey, 45.5 per cent of women in the Project area and 30.2 per cent of women in the Comparison area mentioned 'availability of quality services/arrangements of Cesarean section' as the reason for preferring the health personnel for delivery care. In the baseline survey, only 11.5 per cent of women in the Project area and 26.4 per cent of women in the Comparison area mentioned 'availability of quality services/arrangements of Cesarean section' as the reason. About 42.7 per cent and 48.6 per cent of women, respectively, mentioned 'female doctors are more convenient' as the reason in the midline. The corresponding baseline percentages were 7.3 per cent and 21.1 per cent respectively. Also, 36.0 per cent women in the Project area and 16.4 per cent in the Comparison area in the midline survey, and 9.3 per cent and 22.7 percent of women, respectively, in the baseline survey pointed out 'trustworthiness or reliability' as the reason for choosing the service provider (Table-A.4.2.7, Table-A.4.2.8, Table-A.4.2.9 and Table-A.4.2.10).

It appears that in both the areas and surveys, women's education and household wealth categories had apparently a positive relationship with citing the reason 'experienced doctor is safe and dependable', as proportions of women mentioning the reason increased with an increase in the levels of these two background characteristics. The inequity improved slightly in the midline compared to that in the baseline. Not surprisingly, proportions of women citing 'experienced traditional birth attendant is safe'

decreased with an increase in the education level or household resources in both the Project and the Comparison areas (Table-A.4.2.7, Table-A.4.2.8, Table-A.4.2.9 and Table-A.4.2.10).

4.3 Mothers' knowledge of newborn and under-five children danger signs

This section presents the findings of the midline and the baseline household surveys on mothers' knowledge on danger signs of newborn and under-five children.

4.3.1 Mothers' knowledge on newborn danger signs

The neonatal period (i.e., the first 28 days of life) is the most critical time for the survival of an infant. Neonates and young infants may often exhibit some non-specific symptoms and signs, indicating severe illness. A newborn may experience serious problems and complications within the first month of life that require immediate care to save his/her life. Hence mothers need to be aware of danger signs, so that they could be able to seek care when needed. Many newborn intervention programs are designed to educate and counsel mothers about danger signs and care-seeking for the signs. It seems that the program had a potential treatment effect of an average 15 per cent increase in proportion of mothers with knowledge of newborn danger signs.

The midline and the baseline surveys collected data regarding the perception and knowledge of the sampled mothers and caregivers (with children aged under-2) on danger signs in a newborn child. The findings reveal that, in the midline, in the Project and the Comparison areas most commonly known and perceived danger signs were 'pneumonia' (84.9 per cent and 72.4 per cent respectively), 'baby's high temperature/fever or feeling cool' (53.9 per cent and 55.3 per cent respectively) and 'difficulty in breathing or fast breathing or chest in-drawing' (41.8 per cent and 34.1 per cent respectively). The corresponding baseline percentages in the Project and the Comparison areas were 64.2 per cent and 62.2 per cent respectively for 'pneumonia', 49.0 per cent and 31.3 per cent respectively for 'baby feel fever or cool', 22.5 per cent and 34.7 per cent respectively for 'difficulty in breathing'. In addition, proportion of mothers and caregivers, having knowledge of three or more newborn danger signs, was higher in the midline survey compared to that of the baseline survey in both the Project and the Comparison areas. About 38.7 per cent mothers and caregivers in the Project area and 27.0 per cent in the Comparison area in the midline had knowledge of three or more newborn danger signs. The corresponding figures for the Project and the Comparison areas were 15.5 per cent and 18.8 per cent, respectively, in the baseline (with a statistically significant difference between two areas during the midline, $p<0.05$). A positive relationship between having such a knowledge and women's education and household wealth status was found in the Project area in the midline only (Table-A.4.3.1.1, Table-A.4.3.1.2, Table-A.4.3.1.3 and Table-A.4.3.1.4).

4.3.2 Mothers' knowledge of danger signs for under-five children

The mothers or caregivers, having under-five children, were requested to list signs that they would consider serious health issues for children. The findings show that 'to develop fever' was the most commonly cited danger sign for under-five children in the midline survey (83.1 per cent in the Project area, and 81.8 per cent in the Comparison area), and in the baseline survey (79.8 per cent in the Project area, and 72.9 per cent in the Comparison area). 'To occur diarrhea' was another commonly reported danger sign in the midline (85.3 per cent and 76.5 per cent in two areas respectively). The corresponding figures in the baseline were 73.2 per cent and 72.6 per cent respectively. Besides, 'cold/

cough' (77.7 per cent in the Project area and 74.0 per cent in the Comparison area in the midline, and 75.0 per cent and 59.4 per cent, respectively, in the baseline) and 'pneumonia (82.5 per cent in the Project area and 72.6 per cent in the Comparison area in the midline, and 54.2 per cent and 60.6 per cent, respectively, in the baseline) were two other major danger signs mentioned by women. In the midline survey, 'child becoming sicker' was mentioned by about one-third of women as a danger sign for under-five children in both the Project and the Comparison areas (11.6 per cent and 28.7 per cent in two areas respectively). Further, as the midline data suggested, nearly nine in 10 women in the Project area (94.7 per cent) and the Comparison area (87.6 per cent) were found to be aware of three or more danger signs of under-five children. It seems that the program had a treatment effect of an average 8 per cent increase in proportion of mothers having knowledge of under-five danger signs. Almost a similar pattern prevailed in the baseline survey (87.1 per cent and 88.1 per cent respectively in the two areas). Data across two areas in the two surveys suggest that no specific and uniform relations persisted between 'knowledge of danger signs of under-five children' and 'women's background dimensions' (Table-A.4.3.2.1, Table-A.4.3.2.2, Table-A.4.3.2.3 and Table-A.4.3.2.4).

4.4 Breastfeeding and complementary feeding to infants and young children

This section presents the findings of the midline and the baseline household surveys on breastfeeding practices and complementary feeding to infants and young children.

4.4.1 Exclusive breastfeeding

Exclusive breastfeeding to the children aged 0-5 months is very important for health and nutrition of infants. About 60 per cent of the children aged 0-5 months in the Project area and 59.5 per cent in the Comparison area were exclusively breastfed in the midline. The corresponding figures in the baseline were 48.2 per cent and 54.6 per cent respectively. The national estimates of exclusive breastfeeding were 62.6 per cent (MICS 2019) and 65 per cent (BDHS 2017). The estimates in the Project area was still slightly lower than the national estimates. Further, in the baseline survey, in the Comparison area, boys were a little less likely to have had breastfed (50.4 per cent) compared to girls (59.2 per cent). On the other hand, in the Project area, boys were little more likely to have had breastfed (49.3 per cent) compared to girls (46.9 per cent). The baseline data further revealed that no uniform relationship existed between 'breastfeeding to children exclusively' and mothers' age, their education or household wealth status in the baseline. In case of the midline data, the number of cases was too small to determine any such relationship, and hence no such attempt has been made (Table-A.4.4.1.1 and Table-A.4.4.1.2).

4.4.2 Complementary feeding

Children are given complementary foods (solid or semi-solid foods in addition to breast milk) at six months of age, as breast milk is no longer sufficient to maintain growth (WHO 2008) of those children. Children should be fed small quantities of solid and semi-solid foods along with breastfeed. For a transition from breast milk to eating regular family diet, the quantity of complementary foods need to be increased gradually from 6 to 23 months for transition to regular diet. In fact, there are key elements for complementary foods to be appropriate. The foods should be age appropriate, with variety, given in right frequency, amount and texture, and responsive feeding. Additionally, foods need to be prepared and given with proper hygiene practice. In both the midline and the baseline surveys, women, who had at least one child aged under-2 years, were asked questions about types of liquid food and solid food given to children in 24 hours preceding the interview. They were asked as to how many times children

were given solid or semi-solid foods during that time. Findings suggest that among children aged 6-8 months, 75.7 per cent in the Project area and 90.2 per cent in the Comparison area in the midline, and 79.7 per cent in the Project area and 72.7 per cent in the Comparison area in the baseline had received complementary foods during the past 24 hours. Findings further suggested that in the baseline, in both the Project and the Comparison areas, girls were a little more likely to have had complementary food (83.3 per cent in the Project area, and 81.8 per cent in the Comparison area) compared to the boys (76.6 per cent in the Project area and 64.4 per cent in the Comparison area). However, due to very small number of cases in the midline data, such assessment could not be performed, and hence was not incorporated in the analysis (Table-A.4.4.2.1 and Table-A.4.4.2.2). Nationally, the proportion of children aged 6-8 months receiving complementary foods was 70 per cent (BDHS 2014).

4.4.3 Continued breastfeeding

The results showed that, during the day or night preceding the midline interview, breast milk was given to 95.5 per cent of children aged 20-23 months in the Project area and 86.0 per cent in the Comparison area. The corresponding baseline percentages were 86 per cent and 88.6 per cent respectively (Table-A.4.4.3.1 and Table-A.4.4.3.2). The national estimate of this indicator was 87.7 per cent (BDHS 2017-2018).

Figures A.4.4.3.1 and A.4.4.3.2 illustrated detailed midline results, and figures A.4.4.3.3 and A.4.4.3.4 illustrate the baseline results at a glance with regard to mothers'/caregivers' key feeding practices to their children aged 0-23 months in the Project and the Comparison areas respectively. Findings suggested that 60 per cent of children aged under-6 months in the Project area and 59.5 per cent in the Comparison area in the midline were exclusively breastfed. The corresponding figures in the baseline were 48.2 per cent and 54.6 per cent in the Comparison area respectively. Most of the children in two areas (95.5 per cent and 86.0 per cent respectively in the midline, and 86.0 per cent and 88.6 per cent respectively in the baseline) continued to be breastfed until two years of age.

4.4.4 Minimum Acceptable Diet (MAD) among infants and young children aged 6-23 months

Findings show that, 40.4 per cent children in the Project area and 50.4 per cent in the Comparison area were given foods from four or more food groups alongside breast milk in the midline. The corresponding figures were 34.6 per cent and 37.1 per cent respectively in the baseline. Further, 72.1 per cent of children in the Project area and 77.4 per cent of children in the Comparison area were fed minimum number of times in the midline. The corresponding figures were 73.3 per cent and 74.5 per cent respectively in the two areas, in the baseline. Again, a lower proportion of children in the Project area (28.7 per cent) compared to that in the Comparison area (41.2 per cent) was fed according to the three IYCF practices (i.e., appropriate feeding practices) in the midline. The corresponding percentages were 28.3 per cent and 30.3 per cent in the baseline. Status of boys and girls was found more-or-less similar with regard to all these IYCF indicators across the areas in the two surveys, except in the Project area in the midline, where girls were a little more likely to have had 'three IYCF practices', i.e., appropriate feeding practices (32.8 per cent) compared to boys (24.8 per cent). Furthermore, 'three IYCF practices' were found to become steadily better as mothers' age and education levels increased in the Project area in the baseline only (Table-A.4.4.4.1 and Table-A.4.4.4.2). Nationally, proportion of breastfed and non-breastfed children (6-23 months) combined with 'three IYCF practices' was 33.7 per cent (BDHS 2017-2018).

4.5 Counseling on nutrition and lactation management

The surveys collected data on the counseling received by women aged 15-49 years with a live birth in two years preceding the interview. For this, women were asked to reveal as to whether they had received counseling for taking nutritious foods with an extra amount than usual during their most recent pregnancies as well as counseling on lactation management (i.e., early initiation of breastfeeding as well as exclusive and continued breastfeeding). The results showed that, in both the surveys, overwhelming majority of the women in the Project and the Comparison areas respectively had reportedly received counseling for taking nutritious foods (78.6 per cent and 71.1 per cent respectively in the midline, and 75.4 per cent and 72.0 per cent respectively in the baseline). As both the midline and the baseline data suggested, apparently a positive relationship was evident between receiving counseling and women's education and household resources. Further, regarding receiving counseling on lactation management by women indicated that proportions of women receiving counseling on such an issue were quite low compared to the proportions receiving counseling on nutritious foods in both the areas. Only 14.2 per cent of women in the Project area and 14.1 per cent in the Comparison area received counseling on lactation management in the midline. The corresponding figures were 19.0 per cent and 5.3 per cent respectively in two areas, in the baseline. There was no association found between receiving such counseling and any of women's background characteristics across the two surveys (Table-A.4.5.1 and Table-A.4.5.2).

4.6 Family planning: knowledge and practices

This section presents the findings of the midline and the baseline household surveys on knowledge and practices of family planning.

4.6.1 Knowledge of family planning methods

Table-4.6.1.1 and Table-4.6.1.2 present the midline and the baseline findings related to the women's knowledge of family planning methods in the Project and the Comparison areas. Table-5.6.1.3 and Table-5.6.1.4 present the corresponding findings related to women's knowledge of family planning methods in the Project and the Comparison areas.

The tables show that, women were highly likely to have an idea about family planning methods of any kind regardless of survey area and time (92.7 per cent of women in the Project area and 89.9 per cent in the Comparison area in the midline survey, and 91.7 per cent and 89.8 per cent respectively in two areas in the baseline survey). The tables further reveal that, in both the Project and the Comparison areas in both the surveys, women who knew about any family planning methods, knew much better about modern methods than they knew about traditional methods (up to 97.0 per cent knew about some of modern methods, while only up to only 2.0 per cent knew about traditional methods in both the surveys). Among modern methods known to the women, pill had the largest share (95-97 per cent in the two areas in the two surveys). 'Injectable' was known to 91 per cent of the women in the Project area, and 87 per cent in the Comparison area in the midline survey. The corresponding figures were 84 per cent and 89 per cent, respectively in the two areas, in the baseline survey. Besides, male condom and implants were two other commonly known methods (56.0 per cent and 60.0 per cent respectively in the Project area and 46.9 per cent and 55.0 per cent respectively in the Comparison area in the midline survey). The corresponding figures were 39.8 per cent and 41.4 per cent respectively in the Project area, and 41.7 per cent and 53.0 per cent respectively in the Comparison area in the baseline survey. Further, Intrauterine Device (IUD) was known to 23.3 per cent of the women in the Project area and 21.5 per cent in the Comparison area in the midline survey. The corresponding figures were 15.9 per cent and 21.9

per cent respectively in the baseline survey. However, female sterilization (ligation/tubectomy) was a little less familiar method, and male sterilization (vasectomy) was even lesser common familiar method in both the surveys. The findings show that 32.1 per cent of the women in the Project area, and 36.0 per cent in the Comparison area knew about female sterilization in the midline survey, and 17.3 per cent and 27.1 per cent respectively in the baseline survey. The corresponding figures for male sterilization were 12.8 per cent and 12.7 per cent respectively in the midline survey, and 5.6 per cent and 4.8 per cent in the two areas respectively in the baseline survey.

Furthermore, 24 per cent of the women in the Project area and 23.5 per cent in the Comparison area in the midline survey, and 11.4 per cent and 17.7 per cent of the women in two areas respectively in the baseline survey knew about at least four modern methods. Remarkable differences did not exist in having knowledge of either modern or traditional methods by background characteristics across areas.

4.6.2 Prevalence of family planning methods

It is important that family planning is widely available and easily accessible through midwives and other trained health workers to anyone, who is sexually active. The use of contraceptives has recently increased in many parts of the world, especially in Asia and Latin America, but it continues to be low in sub-Saharan Africa. Globally, in recent past, the use of modern contraception has increased slightly, from 54 per cent in 1990 to 57.4 per cent in 2015. Regionally, the proportion of women aged 15-49 years reporting use of a modern contraceptive method has risen minimally or plateaued between 2008 and 2015. In Africa, it has risen from 23.6 per cent to 28.5 per cent, in Asia it has risen slightly from 60.9 per cent to 61.8 per cent. In Latin America and the Caribbean, it has remained stable at 66.7 per cent. Use of contraception by men makes up a relatively small subset of the above prevalence rates. The modern contraceptive methods for men are limited to male condoms and sterilization (vasectomy).[7]

The midline and the baseline surveys collected data related to the prevalence of family planning methods among women and their spouses. Table-4.6.2.1 and Table-4.6.2.2 respectively present the midline and the baseline survey findings of the Project area relating to the current prevalence of contraceptive methods among currently married non-pregnant women aged 15-49 years. Table-4.6.2.3 and Table-4.6.2.4 respectively present corresponding findings of the midline and the baseline surveys in the Comparison area.

The tables show that, in the midline survey, 58.5 per cent of women in the Project area and 77 per cent in the Comparison area were currently using any of contraceptive methods (64 per cent and 62.4 per cent respectively in the baseline survey). Further, 56.3 per cent of women in the Project area and 63.9 per cent in the Comparison area used any of the modern methods in the midline survey. The corresponding figures were 59 per cent and 57.3 per cent in the two areas respectively in the baseline survey.

Further, 31.5 per cent of women in the Project area and 32.2 per cent in the Comparison area were more likely to use pills in the midline survey, and 33.7 per cent and 28.9 per cent in the two areas respectively in the baseline survey. It was followed by women who used injectable. The findings show that 14.3 per cent of women in the Project area and 18.4 per cent in the Comparison area used injectable in the midline survey, and 15.6 per cent and 13.2 per cent in two areas respectively in the baseline survey. Male condoms, implants, intra-uterine devices (IUDs) and sterilization were insignificantly used methods (4-6 per cent across areas in the two surveys). Traditional methods (e.g., withdrawal or lactation amenorrhoea methods) were also trivial (only up to 5.0 per cent).

7 World Health Organization, Family Planning/Contraception, Key Facts, 8 February 2018. http://www.who.int/news-room/fact-sheets/detail/family-planning-contraception

According to the BDHS 2014, proportion of currently married Bangladeshi women aged 15-49 years, who were using contraceptive methods, was 62 per cent, where 54 per cent used modern methods. The pill was by far the more commonly used method (27 per cent), followed by injectable (12 per cent).

4.6.3 Sources (persons) of family planning methods

The women aged 15-49 years, who used family planning methods (contraceptives), were further asked to mention persons from whom they had received contraceptives. Table-5.6.3.1 and Table-5.6.3.2 show the midline and the baseline results of the Project area, and Table-5.6.3.3 and Table-5.6.3.4 present the corresponding results of the Comparison area. Findings suggested that, in the midline survey, about a quarter (25.2 per cent in the Project area, and 23.3 per cent in Comparison area) of the women in two areas reported 'community health worker/NGO worker/volunteer' as the source of contraceptives. The corresponding figures were quite low with 1.1 per cent in the Project area and 1.6 per cent in the Comparison area in the baseline survey. On the other hand, in the baseline survey, owners of the allopathic drug store were more common sources, as reported by 27.2 per cent of the women in the Project area and 24.3 per cent in the Comparison area (4.7 per cent and 5.6 per cent in two areas respectively in the midline survey). In addition, 13.5 per cent of women in the Project area and 16.2 per cent in the Comparison area mentioned 'MBBS doctor' as the source in the midline survey. The corresponding figures were relatively lower in the baseline survey (3.8 per cent and 8.5 per cent respectively). 'Village practitioners', 'nurses/paramedics/MAs/SACMOs' and 'FWVs' were other sources, the proportion of women reporting as sources ranged from 4.0 to 5.7 per cent, regardless of survey area and survey time.

4.7 Receiving gender-based services by women

One of the objectives of the CHSS program is to provide gender-focused advice and services to women aged 15-49 years. This section presents the findings of the household survey.

4.7.1 Gender-focused advice, counseling and services

In the midline and the baseline evaluations, women were requested to inform whether or not they received any gender-focused advice, counseling or services in some point of time in life from any organization or person. In addition, the tables present findings related to the sources of advice or services. The findings reveal that, about one-fifth of the women (21-22 per cent) in the midline, but only nominal proportion of the women (4.0 per cent) in the baseline in both the Project and the Comparison areas reported to have ever received gender-focused services or advice. Further, in the Project area in the midline only, women with higher education and belonging to higher socio-economic group were likelier to have received such services (women without education: 19 per cent; those with SSC or above education: 28 per cent; women of the poorest households: 17 per cent, and those of the wealthiest households: 24 per cent) (Table-A.4.7.1.1, Table-A.4.7.1.2, Table-A.4.7.1.3 and Table-A.4.7.1.4).

Regarding sources, from where women had received gender-focused services, in the Project and the Comparison areas, respectively, non-professional and non-institutional sources like 'family member/ relative/neighbor' was a major source in the midline (39 per cent and 81 per cent respectively in the two areas) but institutional sources like 'Community Health Workers (CHWs), or NGO workers' was a major source in the baseline (39 per cent and 44 per cent respectively in the two areas). In addition to the 'family/relative/neighbor', some professional personnel were also notable sources of gender-focused services/advice in the midline, like 'Health Assistant (HA)/Family Welfare Assistants (FWAs)' (27 per cent), and 'other public sources', like nurse, (19 per cent). In the baseline survey, besides 'CHWs/NGO

workers', 'teacher' was another important source of gender-focused services/advice in both areas (23 per cent in the Project area, and 38 per cent in the Comparison area) and 'family/relative/neighbor' in the Comparison area (18 per cent) (Table-A.4.7.1.1, Table-A.4.7.1.2, Table-A.4.7.1.3 and Table-A.4.7.1.4).

4.7.2 Knowledge of adolescents about nearest center for ASRHR services

Knowledge of adolescents regarding any nearest organizations or centers, if any, which would provide gender-focused services or provide counseling concerning ASRHR, is important and influences the health care-seeking behavior. The findings show, in the midline, 26 per cent of the adolescents in the Project area and 19.7 per cent of the adolescents in the Comparison area reportedly knew such organizations or centers located in their areas. These percentages in the baseline were 13.1 per cent in the Project area and 20.9 per cent in the Comparison area. Girls aged 18-19 years and adolescents of the richest households were more likely than other adolescents of both the areas to know such organizations or centers regardless of the midline or the baseline surveys.

Data further show that, among the adolescents who knew nearby organizations or centers providing ASRHR services, 40.2 per cent adolescents in the Project area and 31.3 per cent in the Comparison area cited 'Upazila Health Complexes (UHCs)' to render such services. The corresponding figures in the baseline were 30.9 per cent and 23.7 per cent respectively. 'Community Clinics (CCs)' was cited by 38.8 per cent of adolescent in the Project area, and 46.7 per cent in the Comparison area in the midline. The corresponding figures in the baseline were 23.9 per cent and 27.1 per cent respectively. Findings assure the fact that adolescents across areas in the midline were more likely than adolescents across areas in the baseline to have knowledge of these two facilities - UHCs and CCs, which, as per their knowledge, would provide ASRHR services. Besides, some adolescents in the Project and the Comparison areas respectively cited 'Family Welfare Centers/Satellite Clinics/Rural Dispensaries (FWCs/SCs/RDs)' (17.4 per cent in the Project area and 7.7 per cent in the Comparison area in the midline, and 15.8 per cent and 30.0 per cent respectively in the baseline) indicating higher likelihood of adolescents in the Comparison area in the baseline to have knowledge of and mentioned 'FWCs/SCs/RDs'. 'District Hospital (DH)' was mentioned by 11.6 per cent of adolescents in the Project area and 6.0 per cent in the Comparison area in the midline. The corresponding figures were 22.4 per cent and 1.6 per cent respectively in the two areas in the baseline. Findings indicate that adolescents in the Comparison area were quite less likely than adolescents in the Project area to have identified DHs to provide ASRHR services (Table-A.4.7.2.1, Table-A.4.7.2.2, Table-A.4.7.2.3 and Table-A.4.7.2.4).

Different background dimensions, like sex and age of adolescents, show some differences in citing the centers. Upazila Health Complexes (UHCs) were more familiar as an ASRHR service center to relatively older adolescents (aged 18-19 years) compared to relatively younger adolescents (aged 15-17 years) regardless of area across two surveys. For example: 44.9 per cent as compared to 37 per cent of adolescents in the Project area in the midline survey mentioned 'UHCs'. Moreover, 'UHCs' and 'FWCs/SCs/RDs' were more familiar to girls than to boys in the Project area in both the midline and the baseline surveys.

4.7.3 Receiving ASRHR services by adolescents

After enquiring about their familiarity with any ASRHR service centers close to their inhabitance, adolescents were further enquired as to whether those, who had such knowledge of service centers, had ever visited those centers and received ASRHR services of any kind, and if they had felt or would feel easiness in receiving such services there. Results show that compared to the baseline, adolescents in the midline were quite less likely to visit the centers at some point in time and receive ASRHR services

there. In the midline, 16.3 per cent in the Project area and 10.4 per cent in the Comparison area, and in the baseline 41.3 per cent and 39.9 per cent in the two areas respectively did so. Similarly, adolescents, irrespective of having visited the centers or not, in the midline, were quite less likely to express their feelings that they had felt easiness or would feel easiness if would visit such centers for the said purpose (20.4 per cent in the Project area and 14.7 per cent in the Comparison area in the midline, and 75.0 per cent and 80.6 per cent in two areas respectively in the baseline). As per the responses given by adolescents, the average distance between service centers and their residences was 2-3 kilometers in both the areas across the two surveys (Table-A.5.7.3.1 and Table-A.5.7.3.2).

In the Project area, female adolescents and relatively older adolescents compared to male adolescents and younger adolescents in both the midline and the baseline surveys were more likely to have ever received ASRHR services from the aforesaid centers and have felt or would feel easiness to receive ASRHR services there. However, no specific and uniform relations between ‘receipt of ASRHR services and feeling easiness in receiving the services’ and ‘household wealth category’ was observed in both the areas in the two surveys.

5.

FINDINGS: EFFECTIVENESS – UTILIZATION OF MATERNAL HEALTH CARE DURING PREGNANCY PERIOD

This section presents the findings related to maternal health care. It mainly includes Antenatal Care (ANC), delivery care and Postnatal Care (PNC) to ever-married women aged 15-49 years with a live birth in two years preceding the interview. The live births here refer to those which took place between July 2016 and June 2018 in the baseline survey, and between February 2018 and January 2020 for the first phase of data collection, and between August 2018 and July 2020 for the second phase of data collection in the midline survey. Therefore, data collected in the second phase of the midline might be downward biased because of fall in utilization of MNCH services all over the country due to the COVID-19 pandemic. The facility surveys collected information on the number of normal birth deliveries conducted in the sampled DH, MCWC, UHC, UHFWC and CC in the Project and the Comparison areas in the midline and the baseline. Data on number of patients in the facility for MNCH by disease (OPD/IPD) from July 2019 to December 2019 were collected in the midline. In the baseline, data were collected on number of MNCH patients in the facility (OPD/IPD) from November 2017 to April 2018.

This section discusses the coverage of ANC among women including consumption of iron-folate supplementation and receipt of Tetanus Toxoid (TT) injections, providers and places of ANC and number of ANC visits paid by women. In addition, it covers the assistance during deliveries and postnatal care for women and children. These are some of the outcomes of the interventions of the CHSS program as presented in the Theory of Change (ToC).

5.1 Effect on utilization of ANC

UNICEF and WHO recommend a minimum of four ANC visits during pregnancy. It is of crucial importance for pregnant women to start antenatal visits during pregnancy as early as possible in order to prevent and detect pregnancy conditions that can affect both a woman and her baby. Antenatal care should continue throughout an entire pregnancy. One of the main objectives of the CHSS program is to increase knowledge of seeking ANC and coverage of ANC. CHVs conducted registration of pregnant mothers, and then followed up regularly to ensure at least four ANC visits by women during pregnancy. The household surveys collected data on ANC sought by pregnant women, place of ANC, number of ANC visits in the Project and the Comparison areas during the baseline and the midline. The woman aged 15-49 years with a live birth in two years preceding the interview were asked about the above information of their last birth delivery. The facility surveys also collected information on number of ANC conducted in the sampled DH, MCWC, UHC, UHFWC and CC in the Project and the Comparison areas in the midline and the baseline. The qualitative survey also collected information on knowledge

and awareness regarding seeking ANC. This sub-section presents the data on utilization of ANC in the Project and the Comparison areas in the midline and the baseline.

5.1.1 Seeking ANC

Findings show that, regardless of providers, in the midline survey, overwhelming majority of women in the Project and the Comparison areas received ANC services (95 per cent in the Project area, and 93.4 per cent in the Comparison area). In the baseline survey, the corresponding figures were 86.1 per cent and 83.8 per cent respectively in the two areas. Further, in the midline, majority of women received this service from Medically Trained Providers (MTPs) (86.3 per cent and 75.7 per cent respectively in the two areas).[8] A little lower percentages of pregnant women received ANC in both the areas in the baseline survey (73 per cent and 72.8 per cent in the two areas respectively). In the midline survey, 74.8 per cent of women in the Project area and 67.1 per cent in the Comparison area received ANC from a qualified doctor. In the baseline, the corresponding figures were 52.9 per cent and 55.4 per cent respectively (Table-A.5.1.1.1, Table-A.5.1.1.2, Table-A.5.1.1.3 and Table-A.5.1.1.4). No treatment effect was found in percentage of women receiving ANC from any provider from the Difference-in-Difference (DID) analysis. However, the findings indicate that the CHSS seems to provide a potential treatment effect of an average 10.2 per cent increase in ANC by MTPs.

Findings by different background dimensions show that, regardless of survey area and survey time, the percentages of women with ANC from an MTP increased substantially when women's education level and household wealth status increased. For example, in the Project area in the midline, 76.8 per cent of women of the poorest quintile of the wealth index received the service from an MTP, and 91.8 per cent among women belonging to the highest wealth quintile did so. A similar pattern existed in the Comparison area in this regard. There was supportive qualitative information, which came out through FGDs with selected community mothers with children aged less than two years and pregnant women in the midline survey. The information reveals their knowledge level regarding the required number of ANC visits a pregnant woman should have during pregnancy period. Findings show that majority of them opined that it should be 3-4 times in the whole pregnancy period. Nationally, 81.9 per cent of women aged 15-49 years received ANC from MTPs[9], and 10.1 per cent from non-MTPs, while 8.0 per cent did not receive any ANC (BDHS 2017-2018).

The data of the facility survey show that in Outpatient Department (OPD) of DH, on an average 3,878.7 pregnant women sought ANC in the Project area, and 1,053.7 women did so in the Comparison area in the midline. The corresponding figures were 2,533.3 and 1,201.7 respectively in the baseline. In the midline, on an average 2,542.5 pregnant women sought ANC in Inpatient Department (IPD) in DH in the Project area, and 476.0 women in the Comparison area. The corresponding figures were 2,312.7 and 291.5 respectively in the baseline. The findings indicate that the CHSS seems to provide a potential treatment effect of an average 65.4 per cent increase in ANC in OPD of DH. However, effect of the intervention was found negative in case ANC in IPD. This might be due to reduction in complicacy during pregnancy in the Project area. These findings are consistent with the household survey findings.

The facility survey data show that in OPD of MCWC, on an average 2,071.3 pregnant women sought ANC in the Project area and 1,073.0 women in the Comparison area in the midline. The corresponding

8 that is, any of: a qualified doctor, nurse, midwife, paramedic, Family Welfare Visitor (FWV), and Community Skilled Birth Attendant (CSBA)

9 that is, a qualified doctor, nurse, midwife, paramedic, FWV, CSBAs Medical Assistant (MA), or SACMO. BDHS 2014

figures were 1,830.0 and 1,242.3 respectively in the baseline. No pregnant women sought ANC in IPD of MCWC in the Project area in the midline and the baseline. In the baseline, 68 women in the Project area and 140.0 women in the Comparison area sought ANC in IPD of MCWC. The findings indicate that the CHSS program seems to provide a potential treatment effect of an average 10.2 percentage point increase in ANC in OPD of MCWC.

The findings show that in OPD of UHC, on an average 2,289.0 pregnant women sought ANC in the Project area and 1,297.7 women in the Comparison area in the midline. The corresponding figures were 1,462.7 and 1,225.4 respectively in the baseline. On an average, 514.0 pregnant women sought ANC in IPD in UHC in the Project area, and 241.0 women in the Comparison area in the midline. The corresponding figures were 860.7 and 348.5 respectively in the baseline. The findings indicate that the CHSS program seems to provide a potential treatment effect of an average 50.6 percentage point increase in ANC sought in OPD of UHC. However, effect of the intervention was found negative in case of ANC, sought in IPD. It might be due to decrease in complicacy during pregnancy in the Project area.

The findings show that in UHFWCs, on an average 264.8 pregnant women sought ANC in the Project area, and 523.6 women in the Comparison area in the midline. The corresponding figures were 332.0 and 282.6 respectively in the baseline. In CCs, on an average 146.2 pregnant women sought ANC in the Project area, and 84.0 women in the Comparison area in the midline. The corresponding figures were 74.9 and 59.2 respectively in the baseline.

5.1.2 Place of ANC

Results show that in the midline survey, 47 per cent of women in the Project area and 53 per cent in the Comparison area received ANC in a public health facility, and 56 per cent and 41.4 per cent of women in the two areas respectively received ANC in a private health facility. Still, a few of them received the service in an NGO-managed facility (3.2 per cent and 6.9 per cent in the two areas respectively). In the baseline survey, compared to the midline, a little lower percentages of women received ANC in a public facility (40.8 per cent and 43.7 per cent in the Project and the Comparison areas respectively) and in a private facility (40.8 per cent and 38.2 per cent in two areas respectively). Few women received ANC services from an NGO-managed facility (6.9 per cent and 9.8 per cent in the two areas respectively). A positive relation between “ANC in a private facility” and “women’s education” was found in the Project area in the midline survey. In the baseline survey, a positive relation was evident between “ANC in a private facility” and “women’s education” or “household resources”. Such a relation was also found between “ANC in MBBS doctor’s chamber” and “women’s education” or “household resources”. For example, in the Project area in the midline survey, proportions of women receiving ANC from a private facility were found the lowest in the poorest households (41.1 per cent) and among women with incomplete primary education (52.6 per cent). This proportion was found the highest in the richest households (76.7 per cent) and among women with SSC or higher education (75.5 per cent) (Table-A.6.1.2.1 and Table-A.6.1.2.2). At national level, the private sector was the leading source for ANC (51.8 per cent), followed by the public sector (36.2 per cent), and then the NGO sector (11.3 per cent), according to the BDHS 2014.

In some areas a larger portion of women, who sought ANC care from CCs, were referred to UHCs. On some occasions, some women went to UHFWCs for ANC care, and the reasons cited by them were the same as mentioned for CCs. For complicated pregnancies, some women also went to UHCs for ANC care. Some people also preferred to visit doctors in private chambers or in private clinics, as they stated that the doctors gave proper care in private chambers and pathological tests were available in those places.

5.1.3 Number of ANC visits

In the midline survey, 94.5 per cent of women in the Project area and 92.4 per cent in the Comparison area received at least one ANC. Some 45.2 per cent and 52.1 per cent of women in the two areas, respectively, received ANC4+ with three median numbers of ANC visits. Almost a similar scenario was found in the baseline survey: 86.1 per cent and 83.8 per cent of women in the Project and Comparison areas respectively received at least ANC1, and 34.3 per cent and 35.9 per cent of women in the two areas respectively received ANC4+ with three median number of ANC visits. In the Project area in the midline survey, women of the poorest households and those with no education or with primary education across the two surveys were less likely to have received ANC4+ than more advantaged women did. For example, in the midline survey, 28.6 per cent women of the poorest households, compared to 59.2 per cent women of the richest households, received ANC4+ (Table-A.6.1.3.1 and Table-A.6.1.3.2). Nationally, 47 per cent of women with a live birth in three years preceding the BDHS received ANC4+ during their most recent pregnancies. It was 36.9 per cent, according to the MICS 2019. Therefore, the figures in both the areas were higher than the national average in the midline survey.

Findings related to the coverage of ANC made it clear that ANC with compliance remained quite low. Qualitative findings, collected in the baseline survey, explored the reasons. Unawareness about importance of ANC and thus not visiting health providers or facilities unless facing any problem was a major cause. Similarly, FGDs with mothers in the midline survey reveal that many mothers do not feel that they need health care services during pregnancy, because they feel that they are doing well even without seeking ANC. Besides, backward communication systems particularly in remote rural and hilly areas, long distance, inadequacy of health centers or facilities and medically trained providers at community level and unawareness of poor families (for not frequent in health centers or providers unless facing any emergency situation) about sources or places of services free of cost or with low cost were other major causes in this regard in both the surveys. It was also reported that feeling difficulties with heavy and wearied/sickly body at later stage of pregnancy to move and receive services was another cause in this regard.

5.1.4 Consumption of Iron-Folate Acid (IFA)

Iron Folic Acid (IFA) plays an important role in production of red blood cells and helps neonate's neural tube develop into its brain and spinal cord. It is recommended that women should take a daily supplement of 400 micrograms of folic acid while they are trying to conceive and should continue taking this dose for the first 12 weeks of pregnancy, when baby's spine is developing. However, it is safe to continue taking folic acid supplements after 12 weeks. The findings show that 77.9 per cent and 79.3 per cent of women in the Project and the Comparison areas, respectively, consumed IFA at least once (69.3 per cent and 69.7 per cent respectively in the two areas in the baseline survey). The findings further reveal that 36.8 per cent of women of the Project area and 32.3 per cent in the Comparison area consumed 100+ IFA tablets in the midline (26.3 per cent and 25.2 per cent in the two areas respectively in the baseline survey) (Table-A.5.1.4.1 and Table-A.5.1.4.2).The findings indicate that the CHSS program seems to provide a potential treatment effect of an average 2.0 per cent increase in consumption of 100+ IFA tablets during pregnancy. No treatment effect was found in percentage of women consuming any amount of IFA during pregnancy.

The coverage of iron-folate supplements almost consistently increased among women with an increase in their education or household wealth status in the midline survey. For instance, the coverage of any amount of IFA supplements increased among women from the lowest wealth category (70.4 per cent) to the highest wealth category (83.3 per cent) in the Project area only. Similarly, proportion of women

consuming 100+ IFA tablets increased with an increase in women's education in both the Project and the Comparison areas. For example, in the Project area, 35.1 per cent of women (with primary incomplete) consumed 100+ IFA tablets, and 40.7 per cent women (with SSC or above level of education) consumed 100+ IFA tablets. The corresponding figures were in the Comparison area were 16.7 per cent and 46.1 per cent in two areas respectively (Table-A.5.1.4.1 and Table-A.5.1.4.2).

FGDs with mothers in the midline reveal that regarding their knowledge of taking iron tablets during pregnancy, most of the participants said that a mother should take 90 to 100 IFA tablets during pregnancy. However, many opined that mothers discontinued taking IFA tablets. Regarding the reason for not taking iron tablets during pregnancy, they reported that many pregnant mothers suffer from constipation, dizziness and vomiting after taking IFA tablets, and sometimes they thought that they would gain weight. As a result, mothers did not take adequate IFA tablets during pregnancy.

Figure-5.1.4.1: Consumption of Iron-Folate Acid (IFA) supplements by area (the midline survey)

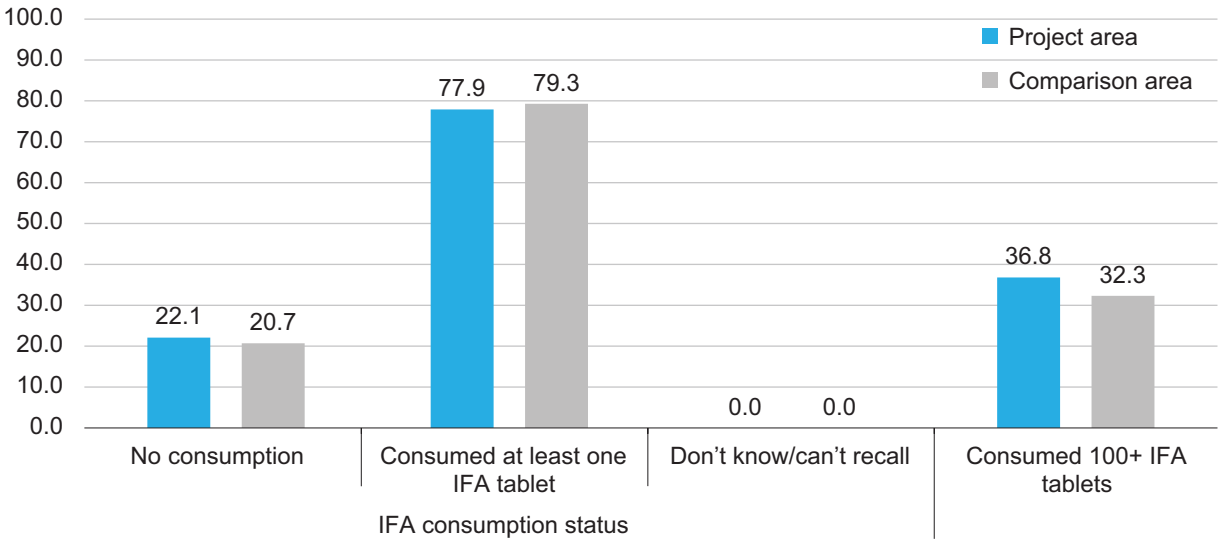
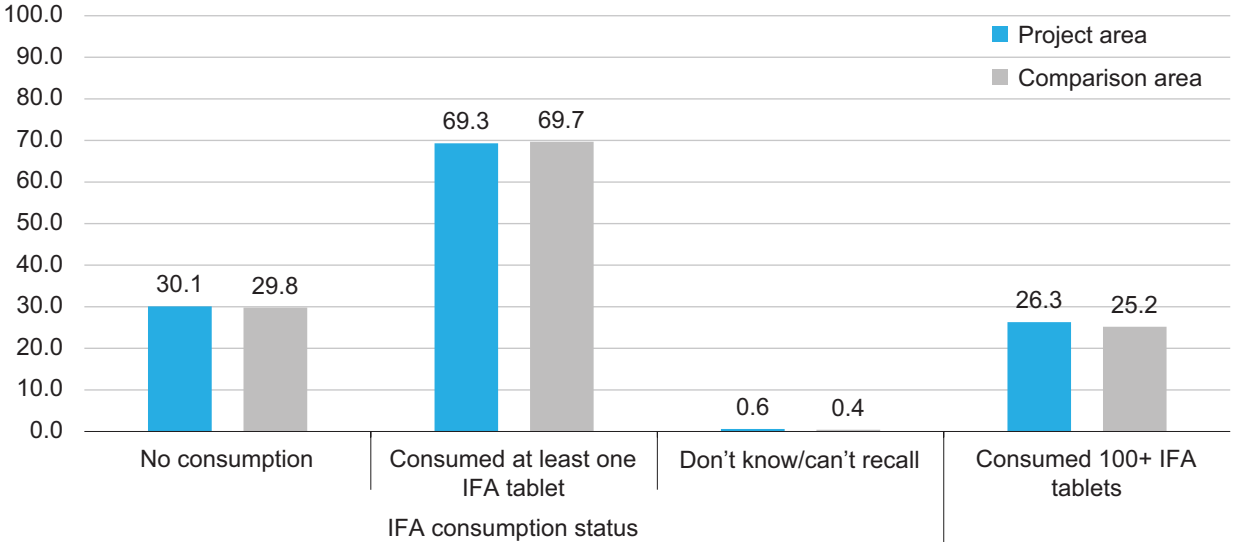


Figure-5.1.4.2: Consumption of Iron-Folate Acid (IFA) supplements by area (the baseline survey)



5.1.5 Tetanus Toxoid (TT) injection

Table-A.5.1.5.1 and Table-A.5.1.5.2 present the midline and the baseline findings respectively regarding women's status in terms of receiving TT vaccines in the most recent pregnancies. Findings suggest that, in the midline survey, 51.1 per cent of women in the Project area and 55.9 per cent of women in the Comparison area received TT vaccines (any dose) during the last pregnancy. The corresponding figures in the baseline survey were 49 per cent and 42.3 per cent in the two areas respectively. Again, in the midline survey, 23 per cent of women in the Project area and 28.3 per cent in the Comparison area received one dose of TT vaccines. The corresponding figures were 25.3 per cent and 19.4 per cent in the two areas respectively. In the midline survey, 28.1 per cent of women in the Project area and 27.6 per cent in the Comparison area received 2+ doses of TT vaccines. The corresponding figures were 23.7 per cent and 22.9 per cent in two areas respectively.

5.1.6 Birth preparedness

In the midline and the baseline surveys, women aged 15-49 years in the Project and the Comparison areas, who had a live birth within two years prior to the survey, were asked about their (and their families') practices regarding birth preparedness. It included planning for place of delivery and persons to assist deliveries. Table-A.5.1.6.1 and Table-A.5.1.6.2 respectively present finding of the midline and the baseline surveys of the Project area, and Table-A.5.1.6.3 and Table-A.5.1.6.4 respectively present those of the Comparison area. Findings show that, in the midline survey, 60.6 per cent and 57.8 per cent of women in the Project and the Comparison areas respectively planned for home delivery, and 27.9 per cent and 23.6 per cent of women in two areas respectively planned for delivery in a health facility. In the baseline survey, 59.2 per cent of women in the Project area and 52.7 per cent in the Comparison area planned for home delivery, while 17.5 per cent and 16.5 per cent of women in the two areas respectively planned for facility-level delivery. Findings further show that, in the midline survey in both the areas, almost consistently the proportions of women planned for home delivery decreased, and proportions of women planned for facility delivery increased with increase in women's education and household wealth status. A similar pattern with regard to the relation between plan for facility delivery and household wealth status was observed in both the areas in the baseline survey. However, in the same survey, a relation of opposite nature was found between plan for facility delivery and women's education.

Table-A.5.1.6.5 and Table-A.5.1.6.6 respectively present findings of the midline and the baseline surveys on planning for birth delivery in the Project area, and Table-A.5.1.6.7 and Table-A.5.1.6.8 respectively present those in the Comparison area. In the midline survey, 37 per cent of the women in the Project area and 37.5 per cent in the Comparison area responded that there was no plan taken beforehand in the regard. The corresponding figures were slightly higher in the baseline survey (41 per cent and 43.9 per cent of women in the two areas respectively). Conversely, around one-third women in the Project area (31.7 per cent) and in the Comparison area (35.5 per cent) had a plan for medically trained persons to assist deliveries. The corresponding figures were 26.6 per cent and 25.6 per cent respectively in the baseline survey. Data further reveal that a positive relationship between "planning for MTPs" and "women's education" or "household wealth categories" was found in the midline survey.

5.1.7 Care-seeking behavior for complications during antenatal period

Figure-A.5.1.7.1 and Figure-A.5.1.7.2 respectively present findings of the midline and the baseline surveys relating to care-seeking behavior of women, who had experienced complications during antenatal period, according to the background characteristics. Findings show that 90.9 per cent of women in the Project area and 91 per cent in the Comparison area sought care from any provider in

the midline survey. The corresponding figures were 83.5 per cent and 83.5 per cent in the two areas respectively in the baseline survey. ‘MTP’ had the largest share with 85.2 per cent and 86.6 per cent in the two areas respectively in the midline survey, and 74.9 per cent and 74.9 per cent in two areas in the baseline survey. However, 9.1 per cent of women in the Project area and 9.0 per cent in the Comparison area in the midline, and 16.5 per cent and 16.6 per cent of women in the two areas respectively in the baseline survey did not seek care from any provider.

6.

FINDINGS: EFFECTIVENESS – UTILIZATION OF MATERNAL HEALTH CARE DURING DELIVERY

The household surveys collected data on place of delivery, assistance during delivery and complications during delivery in the Project and the Comparison areas in the baseline and the midline. Women aged 15-49 years with a live birth in two years preceding the interview were asked about the above information of their last birth delivery. The facility surveys collected information on the number of normal birth deliveries conducted in the sampled DH, MCWC, UHC, UHFWC and CC in the Project and the Comparison areas in the midline and the baseline. Data on number of patients in the facility for MNCH by disease (OPD/IPD) from July 2019 to December 2019 were collected in the midline. In the baseline, data were collected on number of MNCH patients in the facility (OPD/IPD) from November 2017 to April 2018. The data were used to estimate yearly average MNCH patients of each type of facility. This sub-section presents the findings of both the surveys. These are very important outcomes of the interventions of the CHSS program as presented in the Theory of Change (ToC).

6.1 Place and type of delivery

The woman aged 15-49 years were asked about the place of their last birth delivery. If they delivered in health facilities, they were again asked about type of deliveries as to whether it was a normal delivery or caesarean section (C-section). Table-A.6.1.1 and Table-A.6.1.2 (and Figure-6.1.1 and Figure-6.1.2) present the findings on birth delivery in the midline and the baseline by place and by type of delivery according to the background characteristics. Findings show that 52.1 per cent deliveries in the Project area and 59.5 per cent in the Comparison area were conducted at home (62.5 per cent and 61.5 per cent in the two areas respectively in the baseline survey). On the other hand, the remaining 47.9 per cent and 40.5 per cent of women in the two areas respectively in the midline survey, and 37.5 per cent and 38.6 per cent of them in the two areas respectively in the baseline survey gave birth to their last child in a health facility. The findings indicate that the CHSS program seems to provide a potential treatment effect of an average 8.0 per cent increase in institutional delivery. Further, 32.5 per cent of women in the Project area and 23.9 per cent in the Comparison area delivered their last child in a private facility in the midline survey, and 23 per cent and 18.7 per cent in the two areas respectively in the baseline survey. Percentages of women delivered a child in a public facility were relatively lower, 14.1 per cent in the Project area and 14 per cent in the Comparison area in the midline survey. The corresponding figures were 13.1 per cent and 16.1 per cent in the two areas respectively in the baseline survey. Findings further reveal that, in the midline survey, 32.5 per cent and 27.6 per cent of women in the Project and the Comparison areas

respectively delivered a child through C-section. The corresponding figures in the baseline survey were 23.5 per cent and 22.0 per cent in the two areas respectively.

Findings by women's background characteristics reveal that higher educated women were likelier than non-educated or less educated women to deliver in health facilities, irrespective of survey area and survey time. Similarly, women of the richer households were more likely than those of the poorer households to deliver in a health facility in the two areas in both the surveys. For instance, in the Project area in the midline survey, 18.4 per cent of women with incomplete primary education and 73.4 per cent of women with SSC or above level education reportedly gave birth to their last child in a health facility.

The findings of the qualitative survey also confirm the above findings. Most women and their household members felt comfortable to arrange birth delivery at home. Some women sought delivery care in UHFWCs. For most of the complicated cases, pregnant women were referred to UHCs and DHs. According to the women, the main reason for choosing UHC and DH was that these facilities provided treatment for complicated cases for both mothers and children. In some places mothers went to private or NGO health facilities for delivery care.

Figure-6.1.1 and Figure-6.1.2 below show that proportion of home delivery, proportion of normal delivery in health facilities and proportion of C-section in health facilities. The data show that in the midline survey in the Project area, 52.1 per cent of the birth deliveries were conducted at home, 47.9 per cent of the birth deliveries were institutional deliveries, and 32.9 per cent of the deliveries were done by C-section. In the baseline survey, 62.5 per cent of the birth deliveries were conducted at home, 37.5 per cent of the birth deliveries were institutional deliveries, and 23.5 per cent of the deliveries were done by C-section.

The figures show that in the midline survey in the Comparison area, 59.5 per cent of the birth deliveries were conducted at home, 40.5 per cent of the birth deliveries were normal delivery in health facilities, and 27.6 per cent of the deliveries were done by C-section. In the baseline survey, 61.5 per cent of the birth deliveries were conducted at home, 38.5 per cent of the birth deliveries were normal delivery in health facilities, and 22 per cent of the deliveries were done by C-section. The findings indicate that the CHSS program seems to have a potential treatment effect of an average 2.0 per cent increase in birth delivery conducted by C-section.

According to the data of BDHS 2017-2018, 50 per cent of births took place in a health facility with 32 per cent in a private facility, and 14 per cent in a public facility. Among 50 per cent facility deliveries, 33.5 per cent were conducted through C-section. The remaining 50 per cent of births were delivered at home. Therefore, in both the areas the proportion of home delivery was slightly higher than the national average, and the proportion of C-section was significantly lower than the national average.

The facility surveys collected information on the number of normal birth deliveries, conducted in the sampled DH, MCWC, UHC, UHFWC and CC in the Project and the Comparison areas in the midline and the baseline. Data on number of patients in the facility for MNCH by disease (OPD/IPD) from July 2019 to December 2019 were collected in the midline. In the baseline, data were collected on number of MNCH patients in the facility (OPD/IPD) from November 2017 to April 2018. The data of facility survey show that the average number of normal deliveries conducted in IPD of DHs was 598.5 in the Project area and 331.7 in the Comparison area in the midline. The corresponding figures were 680.3 and 338.5 respectively in the baseline. The average number of normal deliveries conducted in UHCs was 403.6 in the Project area and 162.1 in the Comparison area in the midline. The corresponding figures were 314.2 and 160.4 respectively in the baseline. The average number of normal deliveries conducted in OPD of UHFWCs was 19.5 in the Project area and 43 in the Comparison area in the midline. The corresponding

figures were 31.2 and 12.4 respectively in the baseline. Findings show that average number of normal deliveries in DHs decreased both in the Project and the Comparison areas in the midline compared to that in the baseline. However, the number of average normal deliveries conducted in UHCs increased in both the areas in the midline compared to that of the baseline. The findings indicate that the CHSS program seems to have a potential treatment effect of an average 8.0 per cent increase in birth delivery in UHCs.

Figure-6.1.1: Place of delivery (the midline survey)

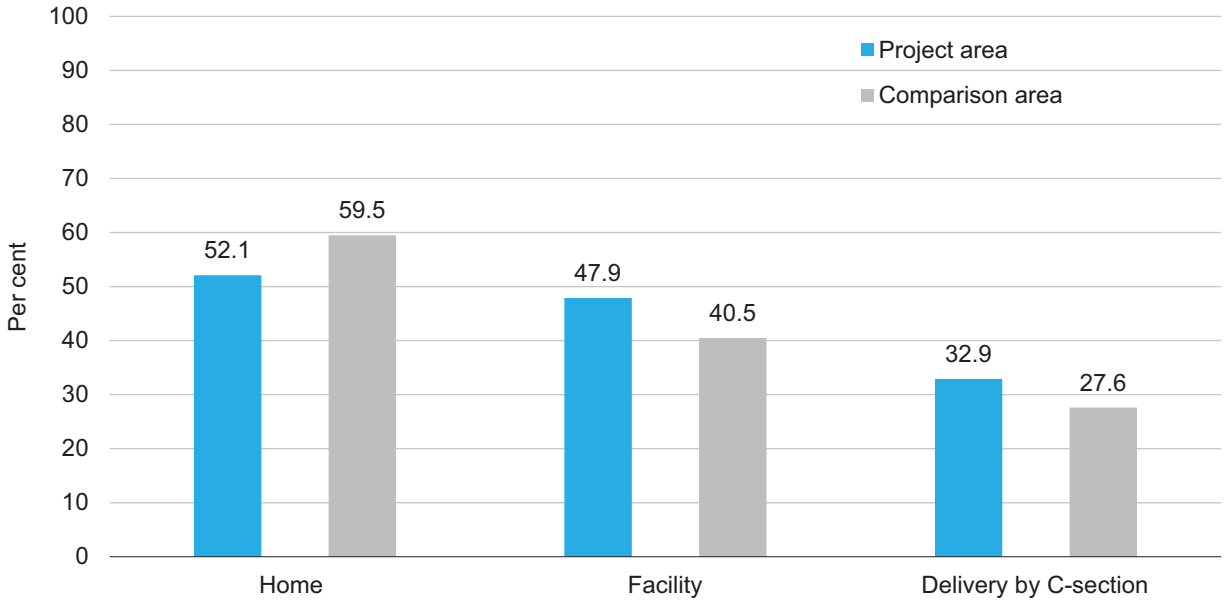
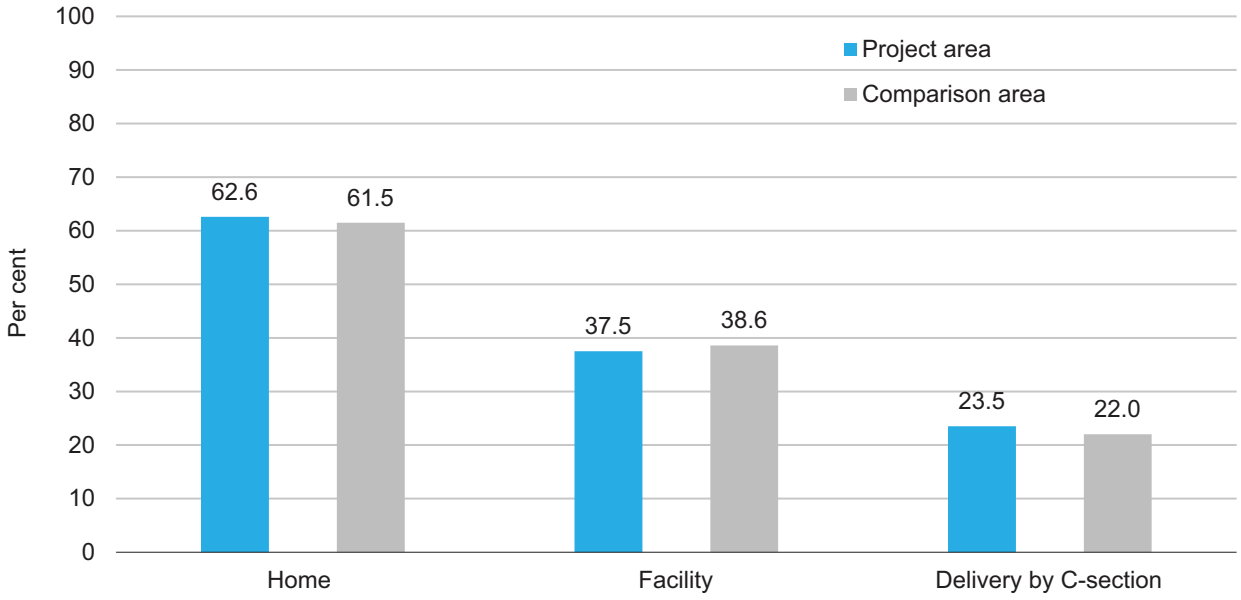


Figure-6.1.2: Place of delivery (the baseline survey)



Qualitative information collected in both the surveys added some reasons for preference of home deliveries. In rural areas there were inadequate numbers of health facilities with adequate arrangements for service delivery. Although MCHs or DHs were well equipped, they were inadequate in number, and often located very far from service recipients' location, and hence they used to choose such facilities only in emergency situation. Thus, rural women and their families often preferred home delivery until facing serious complications. Further, in the midline due to backward communication systems, particularly in the hilly areas, women and their families of remote areas seemed reluctant to visit facilities for delivery services. The UHFPO of Kalapara said that the facility delivery increased after implementation of the CHSS program. Previously only 10/12 deliveries took place per month, which currently increased to 50/60 per month. The utilization of health services in OPD also increased. Also, qualitative information added that due to lack of awareness about importance and benefits of a facility delivery and constraints, like - distance of health facility, backward communication systems with inadequate transport facilities and lack or shortage of money, pregnant women and their families preferred home delivery. Costs for facility delivery, including expenses for transportation, clinical expenses and medicine costs, were considered by many as non-affordable. In the rural areas, TBAs/TTBAs were thought to be easily accessible without much cost, and therefore, still preferred by some of households.

6.2 Assistance during delivery

Figures show that in the midline survey, 51.2 per cent of women aged 15-49 years in the Project area and 44.6 per cent in the Comparison area reported that their last deliveries were assisted by Medically Trained Providers (MTPs). The corresponding figures were 43.3 per cent and 39.1 per cent in the two areas respectively in the baseline survey. The more educated a woman was, the more likely she had received assistance during birth delivery from an MTP. Also, the more a woman belonging to the high socio-economic group, the more likely she had received assistance during delivery from an MTP. It was evident in both the areas in both the surveys (Table-A.6.2.1, Table-A.6.2.2, Table-A.6.2.3 and Table-A.6.2.4). The tables and Figure-6.2.1 and Figure-6.2.2 also show that, in the midline survey, 37.1 per cent of women in the Project area and 29 per cent of women in the Comparison area were assisted during birth delivery by qualified doctors. The corresponding figures were 26.6 per cent and 22.2 per cent in the two areas respectively in the baseline. Still, untrained persons like Traditional Birth Attendants (TBAs) were a major provider, who had assisted during birth delivery in both the areas in both the surveys. In the midline, 31.3 per cent of women in the Project area and 28.1 per cent in the Comparison area were assisted during birth delivery by TBAs. The corresponding figures were 40.8 per cent and 35.7 per cent in the baseline survey in the Project and the Comparison areas respectively in the baseline survey.

Differences were visible between receiving assistance of a qualified doctor during delivery and women's education as well as household wealth status. For example, the more women had education, the more they were assisted by qualified doctors. Similarly, the more women were wealthy, the more they were assisted by qualified doctors (Table-A.6.2.1, Table-A.6.2.2, Table-A.6.2.3 and Table-A.6.2.4). According to the MIC 2019, nationally 59.0 per cent of births in two years preceding the survey were assisted by MTPs, and 35.6 per cent of births were assisted by TBAs. Therefore, in both the areas the proportion of deliveries, assisted by MTPs, was slightly lower than the national average. However, the proportion of deliveries by TBAs in both the areas was lower than the national average in the midline survey.

Figure-6.2.1: Assistance during delivery by medically trained provider or qualified doctor by area (the midline survey)

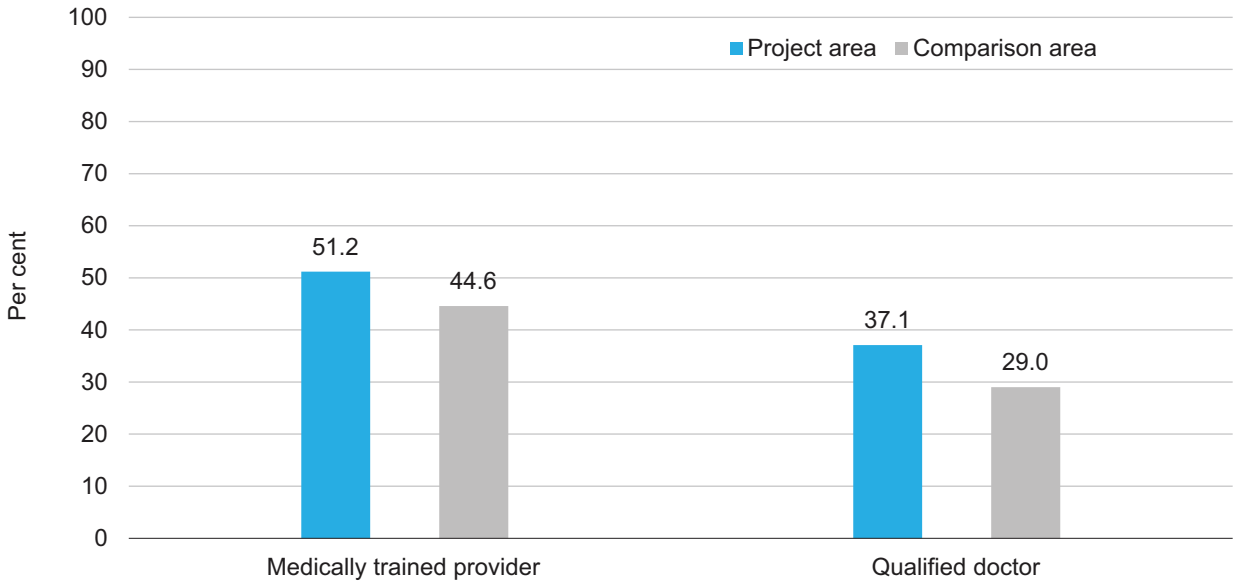
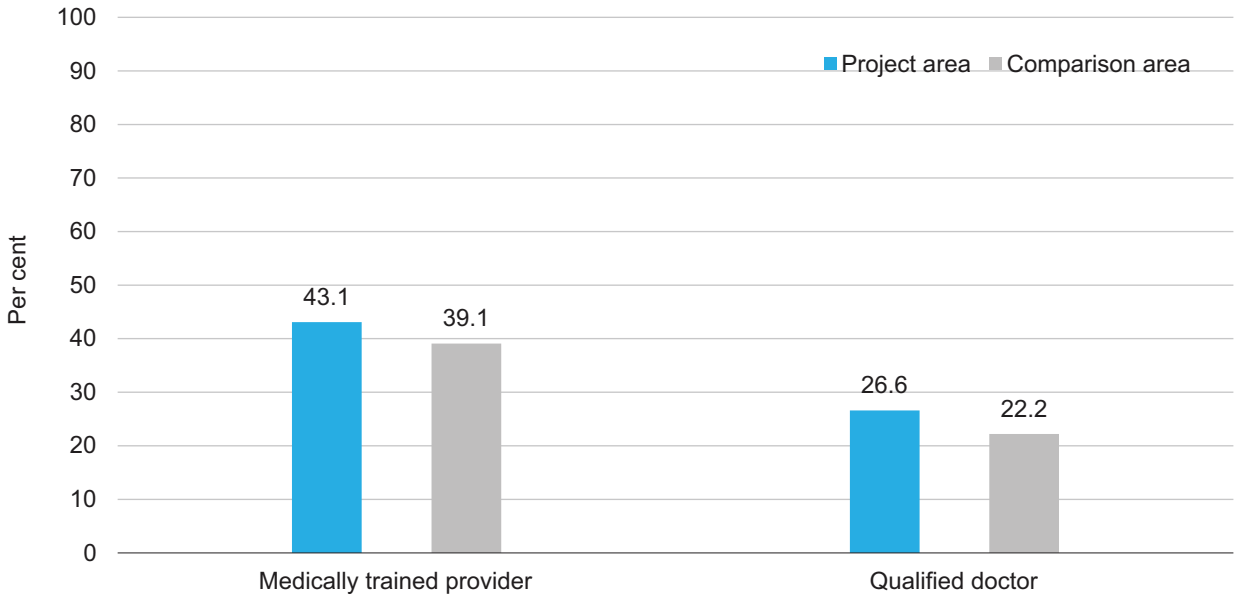


Figure-6.2.2: Assistance during delivery by medically trained provider or qualified doctor by area (the baseline survey)



6.3 Complications during delivery and care

The midline and the baseline surveys collected data on any of the complications during pregnancy, birth delivery and postpartum periods, reported by women in their last pregnancy. Also, the surveys explored nature of care-seeking behavior of women and their families in case they had experienced complications. The women were requested to share experience of any complications during delivery in two years preceding the interview. The findings show that, in the midline survey in the Project and the Comparison areas respectively, 86.9 per cent and 77.3 per cent of women did not experience any complications during delivery. Therefore, the remaining 13.1 per cent of women in the Project area and 22.7 per cent of women in the Comparison area experienced complications during birth delivery. Further, among the women, who had complications, 78 per cent and 53.6 per cent sought care from a provider, while 61 per cent and 44.9 per cent sought care from MTPs in the Project and the Comparison areas respectively (Figure-6.3.1).

However, in the baseline survey in the Project and the Comparison areas respectively, 86.9 per cent and 85.2 per cent of women did not experience any complications during birth delivery. Therefore, the remaining 13.1 per cent of women in the Project area and 14.7 per cent of women in the Comparison area experienced complications during birth delivery. Again, among the women, experiencing complications, 81.4 per cent and 85.2 per cent in the two areas respectively sought care from any provider, while 62.8 per cent and 71.8 per cent in the two areas respectively sought care from MTPs (Figure-6.3.2).

Figure-6.3.1: Complications during delivery and care-seeking behavior by area (the midline survey)

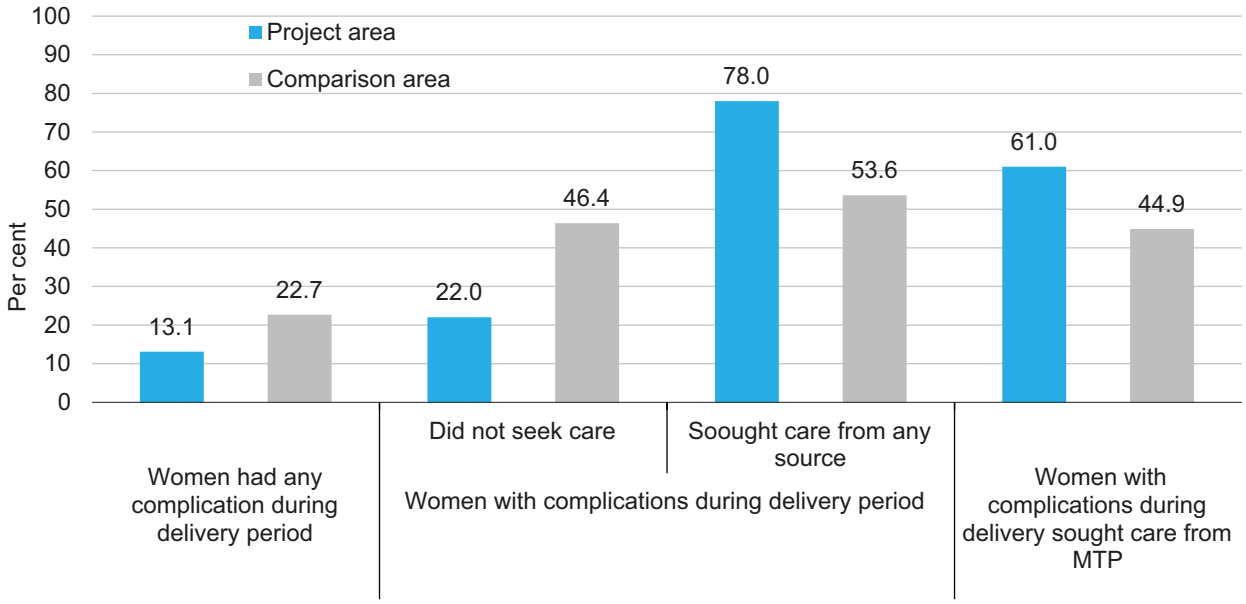
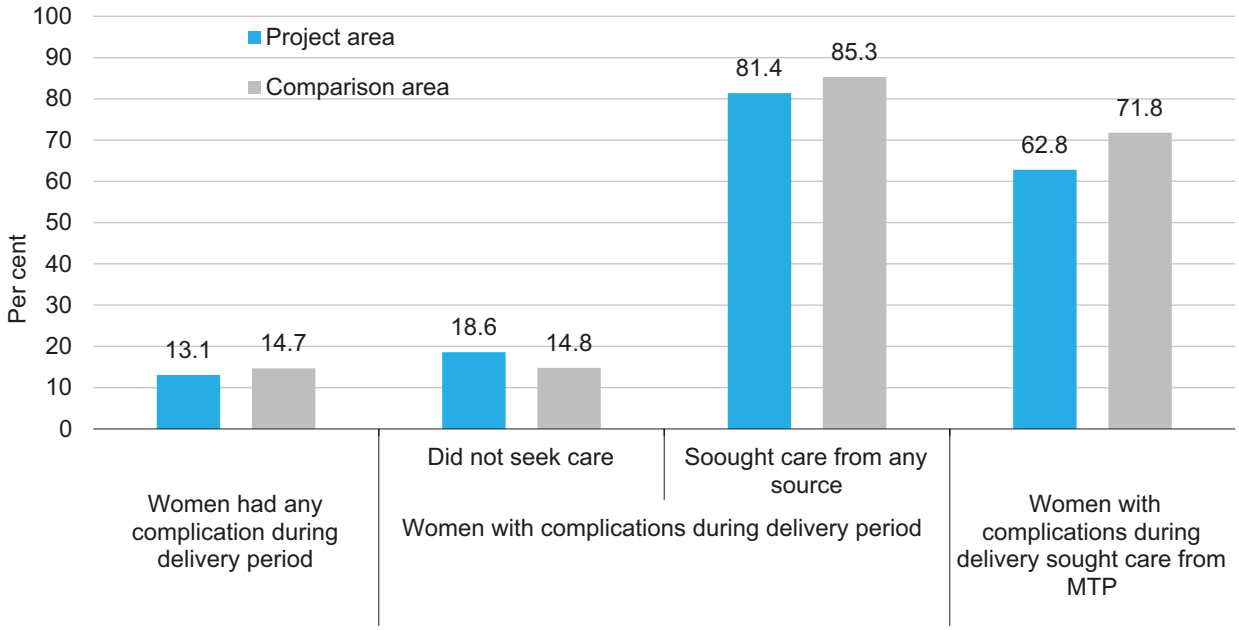


Figure-6.3.2: Complications during delivery and care-seeking behavior by area (the baseline survey)



7.

FINDINGS: EFFECTIVENESS – UTILIZATION OF HEALTH CARE BY MOTHER AND CHILDREN AFTER BIRTH DELIVERY

As mentioned above that the household surveys collected data on utilization of health care after birth delivery and complications after delivery in the Project and the Comparison areas in the baseline and the midline. The woman aged 15-49 years with a live birth in two years preceding the interview were asked about the above information during their last birth delivery. The facility surveys collected information on the number of normal birth deliveries, conducted in the sampled DHs, MCWCs, UHCs, UHFWCs and CCs in the Project and the Comparison areas in the midline and the baseline. This section presents the findings of both the surveys. These are some of the outcomes of the interventions of the CHSS program as presented in Theory of Change (ToC).

7.1 Utilization of post-natal care

Safe motherhood programs recently increased emphasis on the importance of Post-Natal Care (PNC), recommending that all women and newborns should receive a health check within two days of delivery. Otherwise, they should receive PNC at least within 42 days of delivery, i.e., within postpartum period. To assess the extent of PNC utilization, the sampled women were asked if they with their newborn had received a health check within two days and 42 days of delivery, and types of health provider for health checks. The findings indicate that, in the midline survey, 53 per cent and 58.9 per cent of women (61.6 per cent and 58.3 per cent in the baseline), and 60.7 per cent and 62.2 per cent of newborn (76.1 per cent and 66.9 per cent in the baseline) in the Project and Comparison areas, respectively, received PNC from any provider within 42 days of delivery. Further, 46 per cent and 44.2 per cent of women, and 50.5 per cent and 46.9 per cent of newborn in the two areas, respectively, received PNC from MTPs within 42 days of delivery. In the baseline survey, 42.2 per cent and 39 per cent of women, and 42.5 per cent and 39.5 per cent of newborn in the two areas, respectively, received PNC from MTPs within 42 days of delivery (Table-A.7.1.1, Table-A.7.1.2, Table-A.7.1.3 and Table-A.7.1.4). The findings indicate that the CHSS program seems to provide a potential treatment effect of an average 1.0 per cent increase in utilization of PNC by Medically Trained Providers (MTPs).

However, in the midline survey, 43.8 per cent and 49.3 per cent of women, and 55.4 per cent and 56.9 per cent of newborn in the Project and the Comparison areas, respectively, received PNC from any provider within two days of delivery. Further, 37.7 per cent and 35.3 per cent for women, and 45.8 per cent and 41.9 per cent for newborn in the two areas, respectively, received PNC from MTPs within two

days of delivery in the midline. In the baseline survey, 59.5 per cent and 57.0 per cent of women, and 74.4 per cent and 66.4 per cent of newborn in the Project and the Comparison areas, respectively, received PNC from any provider. Further, 33-34 per cent of women and 35-36 per cent of newborn in the two areas received PNC from MTPs in the baseline. The findings show a positive relationship between receipt of PNC by women and newborn, and women's education and household wealth status in both the areas (Table-A.7.1.1, Table-A.7.1.2, Table-A.7.1.3 and Table-A.7.1.4).

The data of facility survey show that the average number of PNC, provided in OPD of DHs, was 1,342.7 in the Project area and 283.5 in the Comparison area in the midline. The corresponding figures were 353.3 and 183.7 respectively in the baseline. In IPD of DHs, the average number of PNC services was 1,884.5 in the Project area and 560.5 in the Comparison area in the midline. The corresponding figures were 1,350.3 and 627.7 respectively in the baseline. The findings indicate that the CHSS program seems to have a potential treatment effect of an average 226 per cent increase in PNC in OPD, and an average 50 per cent increase in PNC in IPD of DHs. The number of PNC, provided in OPD of MCWCs, was 733.7 in the Project area and 391.5 in the Comparison area in the midline. The corresponding figures were 665.0 and 273.0 respectively in the baseline. In IPD of MCWCs, the average number of PNC services was 252 in the Project area and 153 in the Comparison area in the midline. The corresponding figures were 237 and 68 respectively in the baseline. Though utilization increased in both the areas, the findings indicate that the CHSS program seems to have a negative treatment effect in utilization of PNC in MCWCs.

The average number of PNC, provided in OPD of UHCs, was 816.5 in the Project area and 298.7 in the Comparison area in the midline. The corresponding figures were 999 and 557 respectively in the baseline. The number of PNC, provided in IPD of UHCs, was 506.6 in the Project area and 167.7 in the Comparison area in the midline. The corresponding figures were 513.6 and 169.1 respectively in the baseline. The findings indicate that the CHSS program seems to have a potential treatment effect of an average 98 percentage point increase in PNC in OPD of UHCs, and an average -1.0 percentage point effect in PNC in IPD of UHCs. The average number of PNC, provided in UHFWCs, was 82.6 in the Project area and 207.8 in the Comparison area in the midline. The corresponding figures were 147.3 and 104.1 respectively in the baseline. The average number of PNC, provided in CCs, was 47.4 in the Project area and 19.4 in the Comparison area in the midline. The corresponding figures were 18.5 and 13.5 respectively in the baseline. The findings indicate that the program seems to have a potential treatment effect of an average 113 percentage point increase in utilization of PNC in CCs. Findings show that utilization of PNC in DHs, UHCs and CCs increased both in the Project and the Control areas in the midline compared to that of the baseline with positive treatment effects. However, the treatment effect of utilization of PNC in MCWCs and UHFWCs were negative. The findings were consistent with the findings of the household survey.

The data of the qualitative research explored reasons behind the low coverage of PNC with compliance. Findings suggest that women, who delivered in facility, were highly likely to receive PNC services at least once before leaving the facility. But it was very common among them that after returning home, expect a few, majority would not visit health facilities second time to receive PNC unless they face any problem. On the other hand, women who delivered at home were quite less likely to have received even the first time PNC from any medically trained personnel, as they considered it less important and optional. They would not visit facilities unless they faced any problem. However, if newborn suffered from cough, cold or other complications after birth, mothers visited health facilities to get care services for the newborn at that time they received PNC.

7.2 Umbilical cord care

Findings related to umbilical cord care of non-institutional live births in two years preceding the interview show that in both the Project and the Comparison areas in the midline and in the baseline either 'a safe delivery kit or a boiled blade' was reportedly used to cut the cord in 94-96 per cent of births delivered at home. The corresponding national figure was 84.7 per cent (MICS 2019). No relationship was found between the practice and mothers' level of education or household resources. The findings further show that 'nothing was applied' or 'Chlorhexidine or nothing was applied combined' to the cord after it had been cut in 22.2-22.8 per cent of cases in the midline and 26.5-26.9 per cent of cases in the baseline in the Project area. The corresponding figures were 28.5 per cent of cases each in the Comparison area in the midline and 39.8-40.4 per cent of cases in the baseline. It indicates a meager proportion of cases in both the areas in both of the surveys (0.0 or 0.6 per cent in the midline and 0.4-0.6 per cent in the baseline), where Chlorhexidine gel was applied. Other than that, 'mustard oil' was reported in 29 per cent of cases in the midline and 14-19 per cent of cases in the baseline. 'Antibiotic' was applied to the cord in 20-24 per cent of cases in the midline and 15-19 per cent of cases in the baseline in the two areas. Besides, some 'other materials' were also used in 18 per cent of cases in both the Project and the Comparison areas in the midline survey, and 21-23 per cent of cases in the Project and the Comparison areas respectively in the baseline survey. However, in the baseline survey, in a few cases mothers could not recall if anything had been used (4-6 per cent in the two areas) (Table-A.7.2.1 and Table-A.7.2.2). Nationally, 'mustard oil' and 'antibiotic' were reported in 19 per cent cases, followed by antiseptic in 9.0 per cent cases (BDHS 2014).

7.3 Complications immediately after delivery and care-seeking behavior

Figure-7.3.1 and Figure-7.3.2 present findings related to women's experience of any complications immediately after delivery, i.e., within postpartum period and women's health care-seeking behavior (seeking care or advice and types of source of care). The results show that in the midline survey in the Project and the Comparison areas, respectively, 89.7 per cent and 85 per cent of women did not experience any complications immediately after delivery. The remaining 10.3 per cent in the Project area and 15 per cent in the Comparison area experienced complications immediately after delivery. However, in the baseline survey in the Project and Comparison areas, respectively, 84 per cent and 84.9 per cent of women did not experience any complications immediately after delivery in two areas. The remaining 16 per cent in the Project area and 15.1 per cent in the Comparison area experienced complications after birth delivery.

Again, among the women, who had complications, 71.9 per cent and 77.8 per cent in the two areas sought care from any provider, while 53.1 per cent in the Project area and 42.2 per cent in the Comparison area sought care from MTPs. About 28.1 per cent women in the Project area and 22 per cent in the Comparison area did not seek care from any provider in the midline survey. However, among the women, who had complications, 70.9 per cent and 68.8 per cent in the two areas, respectively, sought care from any provider, while 43 per cent and 38.6 per cent in the two areas, respectively, sought care from MTPs in the baseline. About 29.1 per cent in the Project area and 31.4 per cent in the Comparison area did not seek care from any provider in the baseline.

Figure-7.3.1: Complications within 42 days of delivery and care-seeking behavior by area (the midline survey)

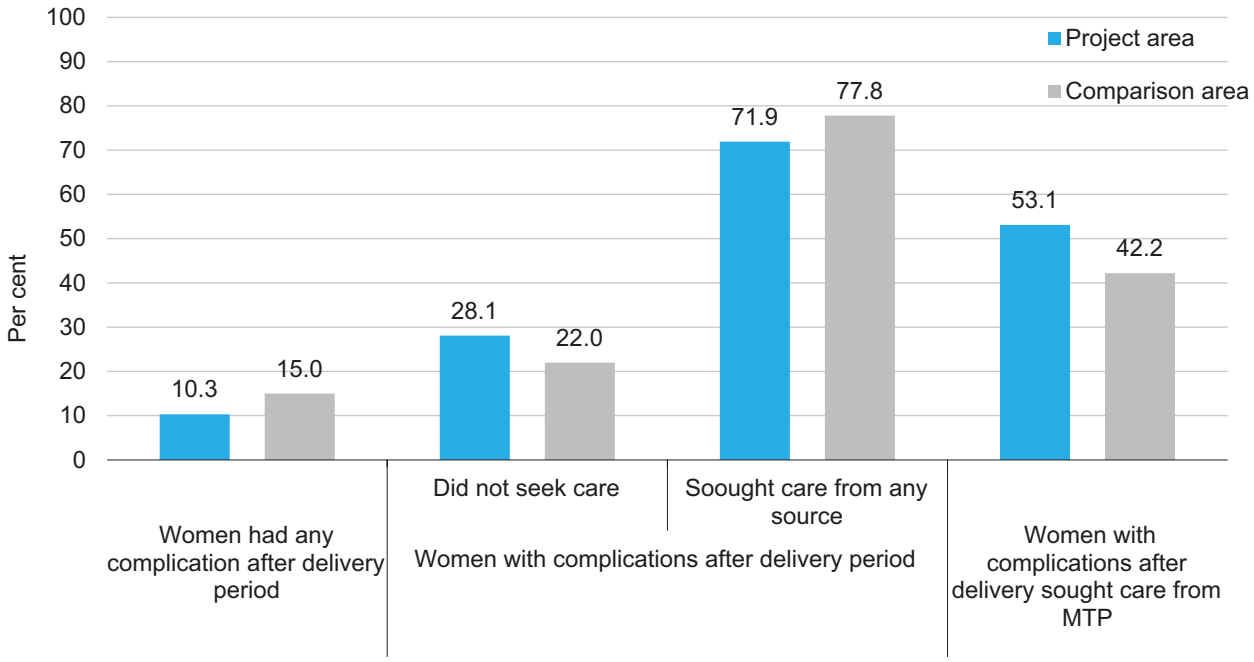
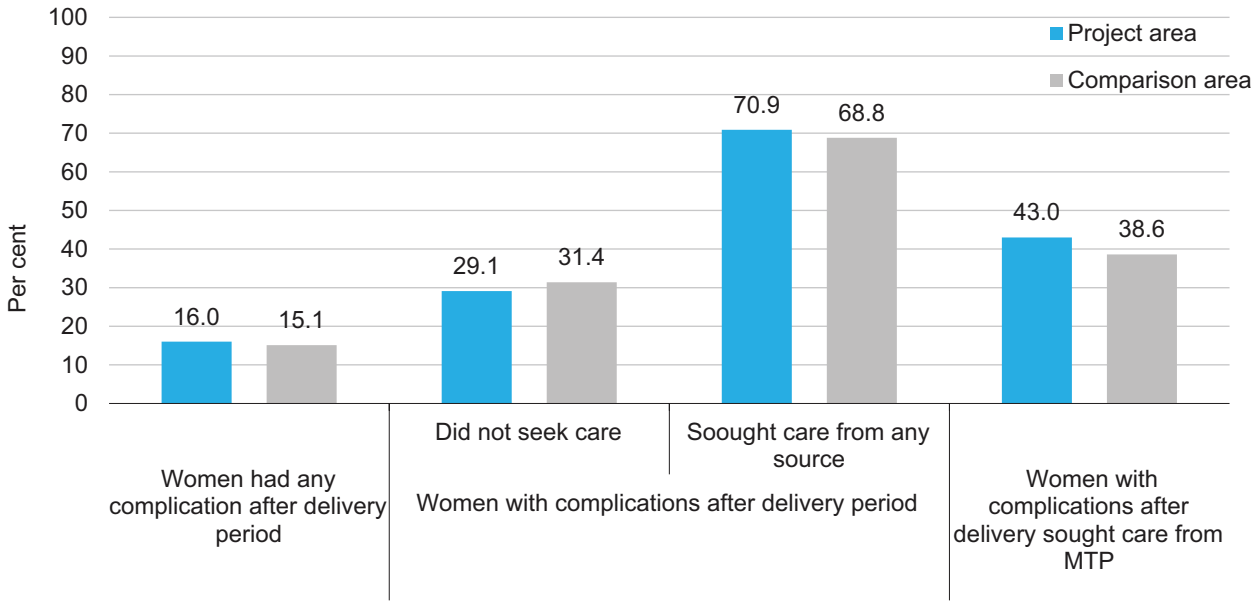


Figure-7.3.2: Complications within 42 days of delivery and care-seeking behavior by area (the baseline survey)



8.

FINDINGS: EFFECTIVENESS – UTILIZATION OF NEWBORN AND CHILD HEALTH CARE

The household survey and the facility survey collected data on utilization of newborn and child health care in the Project and the Comparison areas in the baseline and the midline. These are crucial outcomes of the interventions of the CHSS program, as presented in the Theory of Change (ToC). The women aged 15-49 years with a live birth in two years preceding the interview were asked about the above information of their last child. The facility surveys collected information on the number of normal birth deliveries, conducted in the sample DHs, MCWCs, UHCs, UHFWCs and CCs in the Project and the Comparison areas in the midline and the baseline. This section presents the findings of both surveys.

8.1 Utilization of Essential Newborn Care (ENC)

The National Neonatal Health Strategy and Guidelines for Bangladesh recommended a set of Essential Newborn Care (ENC) practices. It focused on use of instruments to cut umbilical cord, cord care, keeping baby warm, delayed bathing after 72 hours of birth, and initiation of breastfeeding within one hour of birth. Regarding the ENC practices, the data show that in the midline in the Project and the Comparison areas, respectively, 80.9 per cent and 82.2 per cent of newborn were dried up within 10 minutes. The corresponding figures were 84 per cent and 77.4 per cent in the two areas respectively in the baseline. In the midline, 79.6 per cent of newborn in the Project area and 84.4 per cent in the Comparison area were breastfed within one hour of birth. The corresponding figures were 82 per cent and 92.3 per cent respectively in the baseline. Further, 35.2 per cent newborn in the Project area and 50.8 per cent in the Comparison area were given delayed bath after 72 hours of birth in the midline. The corresponding figures were 31.9 per cent and 38.5 per cent respectively in the baseline. Findings indicate that in case of the last two newborn care practices, the proportion of newborn receiving the care was higher in the Comparison area compared to that in the Project area. Further, in the midline, 63 per cent of newborn in the Project area and 63.7 per cent in the Comparison area were wrapped up with a piece of cloth within 10 minutes of birth. The corresponding figures were 60.5 per cent and 61.0 per cent respectively in the baseline (Figure-9.1.1 and Figure-9.1.2). National estimates for the practices (MoHFW 2009) of drying newborns within five minutes, immediate breastfeeding and delayed bathing were 67 per cent, 57 per cent and 34 per cent respectively (BDHS 2014). The findings show that none of the newborn in both the Project and the Comparison areas in the midline and the baseline surveys received all five recommended essential newborn cares, viz., applying Chlorhexidine gel or applying nothing to the umbilical cord, drying the newborn's body in 10 minutes of birth, wrapping in 10 minutes of birth, initiation of breastfeeding within one hour of birth, and bathing after 72 hours to the newborn. The corresponding national figure was 6.0 per cent (BDHS 2014).

The demand creation activities might be more focused on knowledge, awareness and utilization of maternal health care, and less focus was provided on newborn and child health care. CHVs were helping in bringing pregnant women to CCs, and it was expected that institutional delivery and follow-

up check-up would be ensured with the help of supply-side interventions. The number of institutional deliveries in the project area was lower than the national estimates, and it might be the cause of low progress in ENC.

Figure-8.1.1: Overall essential newborn care by area (the midline survey)

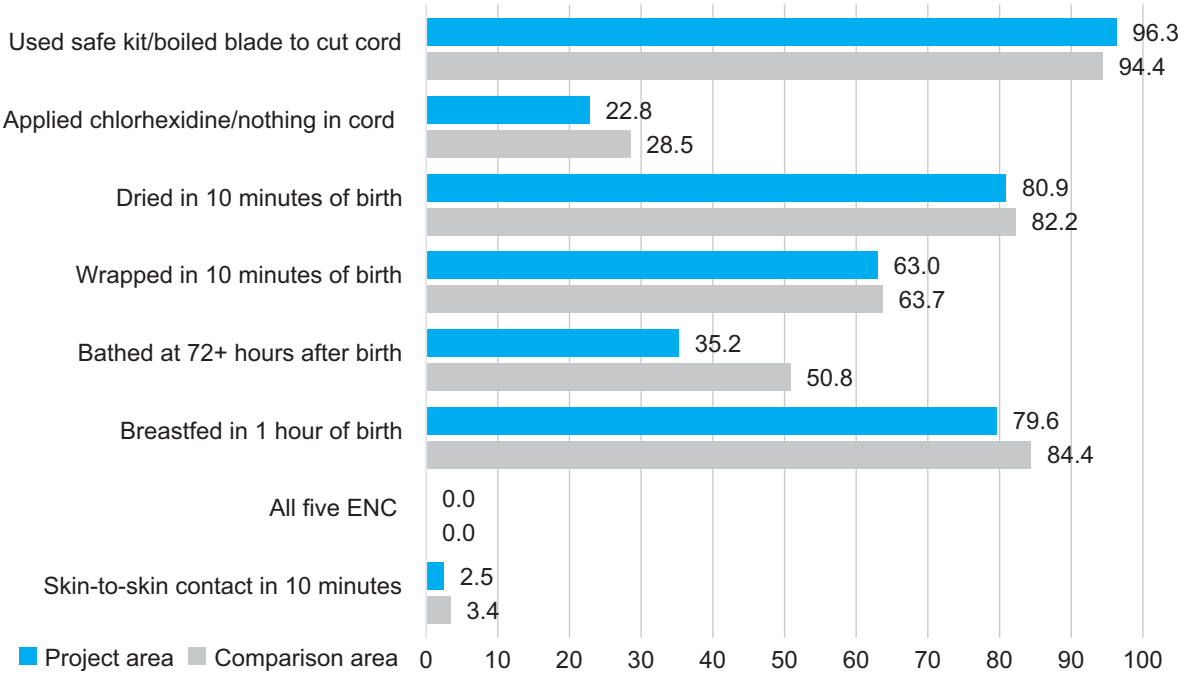
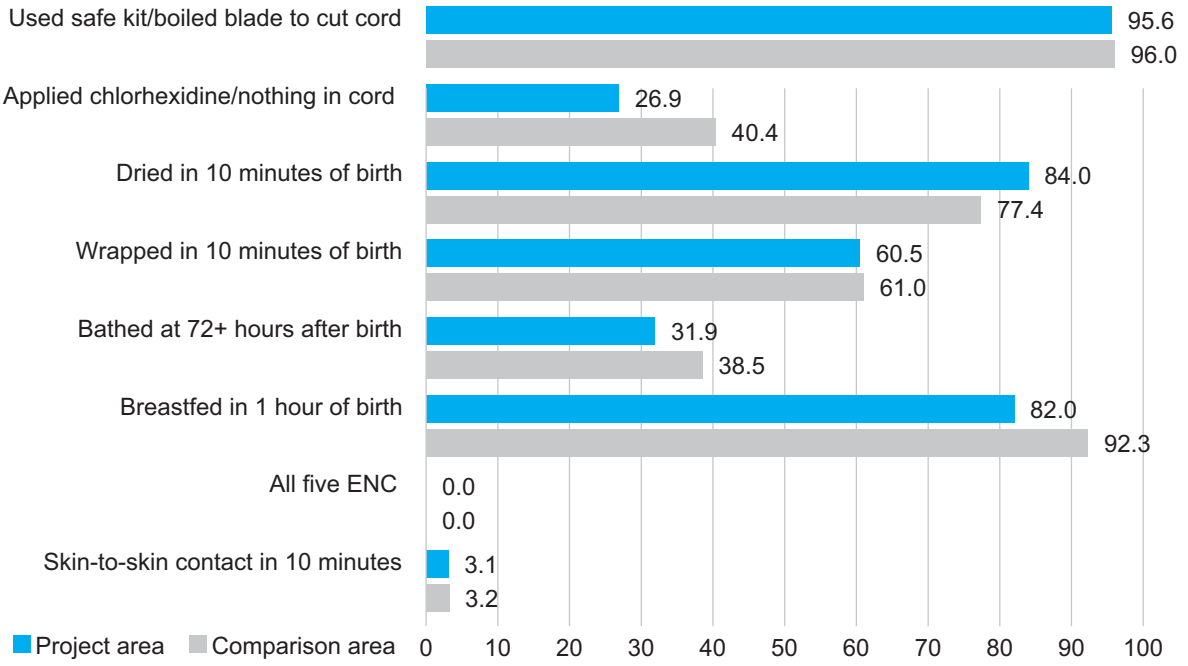


Figure-8.1.2: Overall essential newborn care by area (the baseline survey)



8.2 Newborn illness and complications and care-seeking behavior

Figure-8.2.1 and Figure-8.2.2 present at a glance care-seeking behavior of newborn with complications. The findings show that majority of the newborn, which were reported to have experienced complications, received treatment or advice from medically trained personnel like qualified doctors or nurses. In the midline, the proportion of newborn was 58 per cent in the Project area and 58.7 per cent in the Comparison area, and in the baseline the corresponding figures were 57.8 per cent and 51.9 per cent in the two areas respectively. However, around one-third of the newborn with complications throughout the surveys received treatment or advice from some non-medically trained personnel (33 per cent in the Project area and 29.8 per cent in the Comparison area in the midline, and 35.8 per cent and 33.7 per cent in the two areas respectively in the baseline). Still, around one-tenth of the newborn with complications in the two areas across the two surveys did not receive treatment or advice at all (6-9 per cent in the Project area and 12-14 per cent in the Comparison area).

Figure-8.2.1: Newborn complications in one month after birth and care-seeking behavior by area (the midline survey)

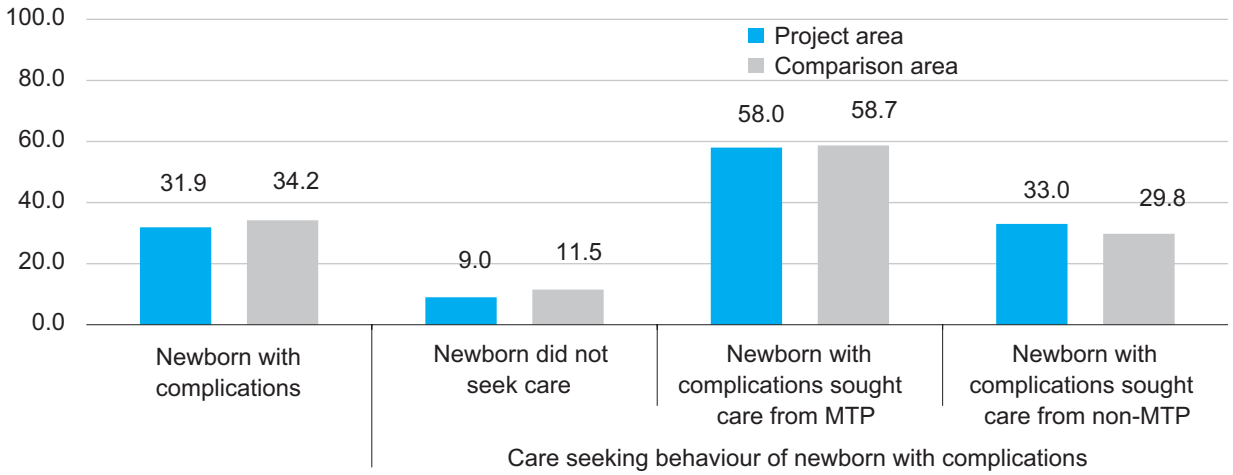
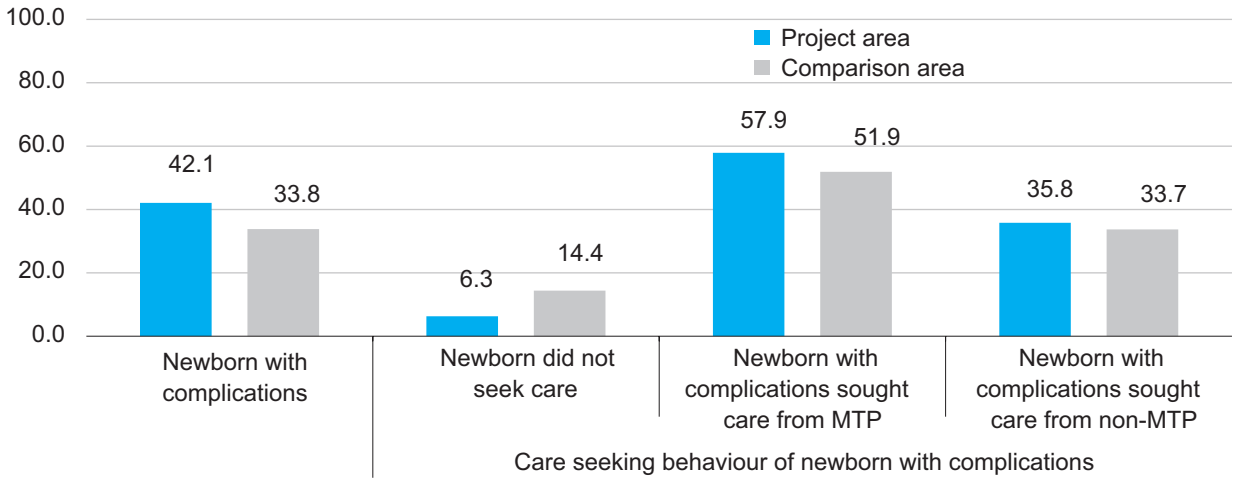


Figure-8.2.2: Newborn complications in one month after birth and care-seeking behavior by area (the baseline survey)



8.3 Effect on utilization of health care of under-five children

This section presents the findings on utilization of health care of under-five children from the data of the household survey and the facility survey.

8.3.1 Effect on utilization of IMCI

The facility surveys collected information on the number of normal birth deliveries, conducted in the sampled DHs, MCWCs, UHCs, UHFWCs and CCs in the Project and the Comparison areas in the midline and the baseline. Data on number of patients in the facility for MNCH by disease (OPD/IPD) from July 2019 to December 2019 were collected in the midline. In the baseline, data were collected on number of MNCH patients in the facility (OPD/IPD) from November 2017 to April 2018. The data of the facility survey show that the average number of IMCI services provided in OPD of DHs was 7,132.7 in the Project area and 5,442.3 in the Comparison area in the midline. The corresponding figures were 4,829.7 and 3,719.0 respectively in the baseline. In PD of DHs, the average number of IMCI services was 5,068.5 in the Project area and 3,702.0 in the Comparison area in the midline. The corresponding figures were 3,049.0 and 785.0, respectively in the baseline. The average number of IMCI provided in OPD of MCWCs was 1,655.7 in the Project area and 148.0 in the Comparison area in the midline. The corresponding figures were 1,141.0 and 1,408.3 respectively in the baseline. In IPD of MCWCs, the average number of IMCI services was 252 in the Project area and zero in the Comparison area in the midline. No IMCI services were provided in IPD of MCWCs in the baseline. The findings indicate that the CHSS program seems to have a potential treatment effect of an average 40 per cent increase in IMCI in OPD of MCWCs.

The average number of IMCI provided in OPD of UHCs was 4,991.4 in the Project area and 2,590.5 in the Comparison area in the midline. The corresponding figures were 4,619.6 and 2,178.7 respectively in the baseline. The average number of IMCI services in IPD of UHCs was 556 in the Project area and 343 in the Comparison area in the midline. The corresponding figures were 728 and 452 respectively in the baseline. The average number of IMCI services in UHFWCs was 493.5 in the Project area and 807.3 in the Comparison area in the midline. The corresponding figures were 501.7 and 770.7 respectively in the baseline. The average number of IMCI services in CCs was 229.1 in the Project area and 289.9 in the Comparison area in the midline. The corresponding figures were 203.6 and 211.6 respectively in the baseline. Findings show that IMCI services increased in the OPD of all types of public health facilities from the baseline to the midline in both the areas with positive treatment effect of the CHSS program only in DHs and MCWCs. The utilization of IMCI services decreased in the IPD in both the areas with negative effect of the program. The CHSS program might be successful in reducing severity of illnesses by increasing knowledge and awareness of mothers, and thus was successful to reduce the number of admission in the public health facilities. In some areas, insufficient HR and lack of facility readiness at the time of the survey might be the cause for the fall in utilization of IPD.

The midline and the baseline surveys estimated the prevalence of suspected pneumonia among under-five children by asking women if their children of this age group had been sick in two weeks preceding the interview with the symptoms of suspected pneumonia. Table-9.3.1 and Table-9.3.2, respectively, present the findings related to the prevalence of suspected pneumonia among under-five children in the midline and the baseline surveys. Tables show that children were quite less likely to have symptoms of pneumonia across the two areas in both the surveys. In the midline, the prevalence of suspected pneumonia among under-five children was 3.4 per cent in the Project area and 1.8 per cent in the Comparison area. The corresponding figures were 3.3 per cent and 2.1 per cent in the two areas respectively. A statistically significant difference with $p<0.05$ between the two areas with regard to

having symptoms of pneumonia was evident in the baseline survey only. Almost no uniform pattern of association was found between the prevalence of pneumonia and different background characteristics of mothers and households. Nationally the prevalence of suspected pneumonia was 5.4 per cent, according to the BDHS 2014.

Table-8.3.1: Suspected pneumonia among children (0-59 months) in two weeks prior to the survey in the midline

Percentage distribution of children aged 0-59 months with suspected pneumonia in two weeks prior to the survey by area during the midline

Background Characteristics	Project area		Comparison area	
	Children with suspected pneumonia	No. of children	Children with suspected pneumonia	No. of children
All	3.4	760	1.8	822
Sex of child				
Boy	2.9	380	2.5	399
Girl	3.9	380	1.2	423
Age of child (in month)				
0-11	3.4	147	1.9	156
12-23	3.7	162	2.0	148
24-35	4.1	148	2.5	162
36-59	3.0	303	1.4	356
Mother's age (in year)				
15-19	2.5	40	1.6	64
20-29	3.8	478	1.7	462
30-49	1.9	210	1.9	270
Mother's education				
No education	1.6	64	1.2	86
Primary incomplete	7.4	94	4.2	96
Primary complete	1.6	125	2.1	146
Above primary but below SSC	1.9	260	1.0	302
SSC/Dakhil and above	4.2	189	1.8	166
Household wealth index				
Lowest	4.3	140	4.0	151

Background Characteristics	Project area		Comparison area	
	Children with suspected pneumonia	No. of children	Children with suspected pneumonia	No. of children
Second	3.4	119	0.6	180
Middle	4.2	142	1.2	164
Fourth	4.0	173	4.0	149
Highest	1.6	186	0.0	178

Table-8.3.2: Suspected pneumonia among children (0-59 months) in two weeks prior to the survey in the baseline

Percentage distribution of children aged 0-59 months with suspected pneumonia in two weeks prior to the survey by area during the baseline

Background Characteristics	Project area		Comparison area	
	Children with suspected pneumonia	No. of children	Children with suspected pneumonia	No. of children
All	3.3	2529	2.1	2645
Sex of child				
Boy	3.2	1288	2.2	1355
Girl	3.4	1241	2.0	1290
Age of child (in month)				
0-11	3.7	508	3.9	478
12-23	2.7	441	1.8	545
24-35	4.6	581	2.9	556
36-59	2.7	999	1.1	1066
Mother's age (in year)				
15-19	2.3	207	4.9	170
20-29	3.2	1601	2.4	1652
30-49	4.1	695	1.2	797
Mother's education				
No education	3.9	311	2.0	299
Primary incomplete	3.7	396	0.9	352
Primary complete	2.3	421	2.2	545

Background Characteristics	Project area		Comparison area	
	Children with suspected pneumonia	No. of children	Children with suspected pneumonia	No. of children
Above primary but below SSC	4.0	900	3.3	977
SSC/Dakhil and above	2.5	475	0.3	446
Household wealth index				
Lowest	3.6	398	3.8	401
Second	3.3	504	2.0	533
Middle	4.6	530	2.7	528
Fourth	1.9	535	2.9	511
Highest	3.4	562	0.7	672

8.3.2 Vitamin A supplementation

In both the midline and the baseline surveys, women were asked if their children aged 6-59 months had taken a vitamin A capsule in the six months prior to the interview date. They were also asked if their children had received vitamin A capsule in the past National Immunization Day (NID), held in August 2018 (in the baseline), and in September 2019 and January 2020 (in the midline), a day routinely observed twice every year in Bangladesh. The findings are presented in Table-A.8.3.2.1 and Table-A.8.3.2.2. The findings show that in the midline, 94.8 per cent and 87.5 per cent of children in the Project and the Comparison areas, respectively, received vitamin A supplementation in the past six months before the interview. In the baseline, the corresponding figures were 84.7 per cent and 90.2 per cent respectively. In addition, 91-92 per cent of children aged 6-59 months in the midline and 60.5 per cent and 71.0 per cent of children of the same age in the baseline in the Project and the Comparison areas, respectively, received vitamin A in the past NIDs (Table-A.8.3.2.1 and Table-A.8.3.2.2). Findings show that no uniform relation existed between women's background characteristics and coverage of vitamin A in both the surveys. The national estimate for the coverage of vitamin A was 79 per cent (BDHS 2017-2018).

9.

FINDINGS: EFFECTIVENESS – MATERNAL DEATHS, STILL BIRTHS, NEONATAL AND CHILDHOOD DEATHS

The midline survey collected HMIS data on maternal deaths, still births, neonatal and childhood deaths of 2018 and 2019 from the Civil Surgeon (CS) offices in the Project and the Comparison areas. This section presents the data on maternal deaths, still births, neonatal and childhood deaths in 2018 and 2019 in the Project and the Comparison districts.

9.1 Maternal deaths

The data related to deaths of women aged 15-49 years with pregnancies of 7+ gestational age show that in the Project area the number of maternal deaths was the highest in Moulvibazar district (76 deaths) and the lowest in Patuakhali district (41 deaths). The number of maternal deaths in Jamalpur district was 42 in 2018. In the Comparison area, the number of maternal deaths was highest in Sylhet district (75 deaths) and the lowest in Barguna district (24 deaths). Lalmonirhat district had 43 maternal deaths in the same year. Moulvibazar and Sylhet observed the highest maternal deaths compared to the other sample districts, and this finding is consistent with the national estimates. Moreover, the sample clusters in Moulvibazar included a few hilly and inaccessible clusters.

In the Project area, the number of maternal deaths was the highest in Moulvibazar district (73 deaths) and the lowest in Patuakhali district (36 deaths) in 2019. The number of maternal deaths was 43 in Jamalpur district in 2019. In the Comparison area during 2019, the highest number of maternal deaths was reported in Sylhet district (73 deaths), and the lowest number of deaths was reported in Barguna district (21 deaths). Lalmonirhat district had 37 maternal deaths in 2019. The number of deaths during 2019 decreased compared to that during 2018 in all districts, except Jamalpur. The percentage changes are also presented in Table-9.1.

Table-9.1: Maternal deaths among women aged 15-49 years with pregnancies of 7+ month gestation in the Project and the Comparison areas

Number of maternal deaths among women aged 15-49 years with pregnancies of 7+ month gestation, by area

Year and district	Maternal deaths in the Project area	Year and district	Maternal deaths in the Comparison area
2018		**2018**	
Patuakhali	41	Barguna	24
Moulvibazar	76	Sylhet	75
Jamalpur	42	Lalmonirhat	43
Total	159	**Total**	142
2019		**2019**	
Patuakhali	36	Barguna	21
Moulvibazar	73	Sylhet	72
Jamalpur	43	Lalmonirhat	37
Total	152		130
Percentage change		**Percentage change**	
Patuakhali	-12.2	Barguna	-12.5
Moulvibazar	-3.9	Sylhet	-4.0
Jamalpur	2.4	Lalmonirhat	-14.0
Total	-4.4	**Total**	-8.5

9.2 Neonatal and childhood mortality

The number of deaths of children aged 0-59 months in 2018 and 2019 are presented in Table-9.2. The percentage changes in number of deaths are also presented in Table-9.2.

The neonatal mortality was the highest (419 neonatal deaths) in Jamalpur district, and the lowest neonatal mortality (146 neonatal deaths) was in Patuakhali district. Moulvibazar district had 418 neonatal deaths - a very close number to that in Jamalpur district. The number of neonatal deaths in the Comparison area was the highest (525 neonatal deaths) in Lalmonirhat district and the lowest (92 neonatal deaths) in Barguna district. In Sylhet district the neonatal death was 296 in 2018 (Table-9.2). The neonatal deaths reduced in all the Project and the Comparison districts in 2019 compared to that of 2018, except Barguna.

The infant mortality in the Project area was the highest (676 deaths) in Moulvibazar district and the lowest (190 deaths) in Patuakhali district. Jamalpur district was in between the two districts with 629 infant deaths in 2018. In the Comparison area, the number of infant deaths was the highest (813 deaths) in Sylhet district and the lowest (130 infant deaths) in Barguna district. Lalmonirhat district was in

between the two districts with 655 infant deaths in 2018. The number of infant deaths reduced in 2019 compared to that of 2018 in the two Project districts (Patuakhali and Jamalpur) and increased in the other (Moulvibazar). The infant mortality in the Project area was 815 deaths in Moulvibazar district (the highest number of deaths) and 142 deaths in Patuakhali district in 2019 (the lowest number of deaths) in 2019. The number of infant deaths increased in 2019 compared to that of 2018 in one Comparison district (Sylhet) and increased in two other districts (Barguna and Lalmonirhat).

Data show that the number of under-five deaths was the highest (798 deaths) in Moulvibazar district, and the lowest (260 deaths) in Patuakhali district in the Project area in 2018. The number of under-five deaths in Jamalpur district was very close to that in Moulvibazar district with 742 under-five deaths in 2018. The corresponding number in the Comparison area was the highest (999 under-five deaths) in Sylhet district and the lowest (206 under-five deaths) in Barguna district. Lalmonirhat district was in between the two with 954 under-five deaths. The under-five mortality was the highest in Moulvibazar (943 under-five deaths) and the lowest (191 under-five deaths) in Patuakhali district in 2019. The number of under-five deaths in Jamalpur District was in between the two with 667 deaths. In Patuakhali district under-five deaths reduced by 26.5 per cent and in Jamalpur district by 10.1 per cent from 2018 to 2019. The number of under-five deaths increased from 2018 to 2019 by 18.2 per cent in Moulvibazar and 13.3 per cent in Sylhet.

Table-9.2: Neonatal and childhood mortality rates in the Project and the Comparison areas

Neonatal, post-neonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey by area (Sample sizes: Project area 9,083 and Comparison area 7,353 ever-married women aged 15-49 years)

Project area						Comparison area					
Years and districts	Neonatal mortality	Post-neonatal mortality	Infant mortality	Child mortality	Under-5 mortality	Years and districts	Neonatal mortality	Post-neonatal mortality	Infant mortality	Child mortality	Under-5 mortality
2018						**2018**					
Patuakhali	146	44	190	70	260	Barguna	92	38	130	76	206
Moulvibazar	418	258	676	122	798	Sylhet	296	517	813	186	999
Jamalpur	419	210	629	113	742	Lalmonirhat	525	130	655	299	954
Total	983	512	1495	305	1800	**Total**	913	685	1598	561	2159
2019						**2019**					
Patuakhali	113	29	142	49	191	Barguna	101	46	147	60	207
Moulvibazar	365	450	815	128	943	Sylhet	178	505	683	183	866
Jamalpur	350	177	527	140	667	Lalmonirhat	418	157	575	320	895
Total	828	656	1484	317	1801	**Total**	697	708	1405	563	1968
Percentage change						**Percentage change**					
Patuakhali	-22.6	-34.1	-25.3	-30.0	-26.5	Barguna	9.8	21.1	13.1	-21.1	0.5
Moulvibazar	-12.7	74.4	20.6	4.9	18.2	Sylhet	-39.9	-2.3	-16.0	-1.6	-13.3
Jamalpur	-16.5	-15.7	-16.2	23.9	-10.1	Lalmonirhat	-20.4	20.8	-12.2	7.0	-6.2
Total	-15.8	28.1	-0.7	3.9	0.1	**Total**	-23.7	3.4	-12.1	0.4	-8.8

9.3 Stillbirths

Data related to stillbirths among pregnancies of 7+ months of gestational age during 2018 and 2019 in the Project and the Comparison areas are presented in Table-9.3. Data show that in the Project area, Moulvibazar district had record of the highest number of stillbirths in 2018 (459 stillbirths), and Patuakhali district had the lowest number of stillbirths in the same year (166 stillbirths). Jamalpur had 203 stillbirths in 2018. In the Comparison area, in 2018, Lalmonirhat district had the highest number of stillbirths, and Barguna had the lowest number of stillbirths. Sylhet district had 431 stillbirths, and the number was very close to the number in Lalmonirhat district.

The number of stillbirths decreased in two out of three districts in the Project area from 2018 to 2019. In Moulvibazar district, the number of stillbirth reduced from 459 in 2018 to 273 in 2019. In Jamalpur district, the number of stillbirth decreased from 203 in 2018 to 159 in 2019. In Patuakhali district the number of stillbirths increased to 178 in 2019 from 166 in 2018. On the other hand, the number of stillbirths increased in two out of three districts in the Comparison area from 2018 to 2019. In Sylhet district, the number of stillbirths decreased from 431 stillbirths in 2018 to 465 stillbirths in 2019. The corresponding figure in Barguna district was 41 and 101 respectively. In Lalmonirhat district the number of stillbirths decreased from 499 in 2018 to 395 in 2019 (Table-9.3).

Table-9.3: Stillbirths among pregnancies of 7+ months of gestation in the Project and the Comparison areas

Number of stillbirths among pregnancies of 7+ months of gestation of women aged 15-49 years, by area

Year and district	Stillbirths in the Project area	Year and district	Stillbirths in the Comparison area
2018		**2018**	
Patuakhali	166	Barguna	41
Moulvibazar	459	Sylhet	431
Jamalpur	203	Lalmonirhat	499
Total	828	**Total**	971
2019		**2019**	
Patuakhali	178	Barguna	101
Moulvibazar	273	Sylhet	465
Jamalpur	159	Lalmonirhat	395
Total	610	**Total**	961
Percentage change		**Percentage change**	
Patuakhali	7.2	**Barguna**	146.3
Moulvibazar	-40.5	**Sylhet**	7.9
Jamalpur	-21.7	**Lalmonirhat**	-20.8
Total	-26.3	**Total**	-1.0

10.

FINDINGS: EFFECTIVENESS – PERFORMANCES OF THE SERVICE PROVIDERS, UTILIZATION OF AVAILABLE RESOURCES, AND PATIENTS' FLOW IN HEALTH FACILITIES

The midline survey covered 93 facilities, of which 47 were in the Project area and 46 in the Comparison area. The baseline survey tried to cover the same 93 facilities, but three sampled facilities were found closed at the time of the survey. Therefore, the baseline survey covered 90 facilities, of which 44 were in the Project area and 46 were in the Comparison area. Further, the midline survey data reveal that in the Project area 13 per cent of the facilities were district-level facilities (District Hospital = DH, and Maternal and Child Welfare Centre = MCWC: 6.4 per cent each), 21 per cent were upazila-level facilities (Upazila Health Complexes = UHCs), while 23 per cent were union-level facilities (Union Health and Family Welfare Centers = UHFWCs, Family Welfare Centers = FWCs, and Union Sub Centers = USCs). Besides, 43 per cent of the union-level facilities were Community Clinics (CCs). By area, two-thirds of the facilities (UHFWCs and CCs) were located in rural areas, while the remaining one-third (district- and upazila-level facilities) were situated in the urban areas. A very similar picture was evident in the Comparison area in the midline survey, and in both the Project and the Comparison areas during the baseline survey. This section presents the findings on Human Resources (HR), trainings of HR, diagnostic services, availability of medicines, and bed occupancy in the health facilities. These are some key interventions and outputs of the CHSS program as presented in the Theory of Change (ToC).

10.1 Human resources

The findings of the facility survey show that on an average 20.3 doctors were employed in DH, one doctor in MCWC, 7.6 doctors in UHC, and 0.5 in UHFWC in the Project area in the midline. The corresponding figures in the baseline were 19.7, 1.3, 6.6, and zero respectively. Therefore, the average number of employed doctors increased in DH and UHC from the baseline to the midline in the Project area. The average number of employed doctors decreased in MCWC and UHFWC from the baseline to the midline in the Project area. The findings of the facility survey show that on an average 11 doctors were employed in DH, one doctor in MCWC, 6.3 doctors in UHC, and 0.8 in UHFWC in the Comparison area in the midline. The corresponding figures in the baseline were 8.7, 0.3, 6.9, and 0.5 respectively. Therefore, the number of doctors employed increased in DH and MCWC, but decreased in UHC and UHFWC from the baseline to the midline in the Project area (Table-A.10.1.1, Table-A.10.1.2, Table-A.10.1.3 and Table-A.10.1.4).

The findings show that on an average 141.3 other service providers were employed in DH, 5.0 other service providers in MCWC, 34.8 other service providers in UHC, 3.1 other service providers in UHFWC, and 2.8 other service providers in CC in the Project area in the midline. The corresponding figures in the baseline were 67.3, 5, 21.3, 2.3 and 2.9 respectively. Therefore, the average number of other service providers employed increased in DH, UHC and UHFWC from the baseline to the midline in the Project area. The average number of other service providers employed decreased in MCWC and in CC from the baseline to the midline in the Project area. The findings show that on an average 67.3 other service providers were employed in DH, five other service providers in MCWC, 27 other service providers in UHC, 3.9 other service providers in UHFWC, and 3.0 other service providers in CC in the Comparison area in the midline. The corresponding figures in the baseline were 58, 2, 24, 2.1 and 2.7 respectively. Therefore, the average number of other service providers employed increased in all types of facilities from the baseline to the midline in the Comparison area (Table-A.10.1.1, Table-A.10.1.2, Table-A.10.1.3 and Table-A.10.1.4).

Figure-10.1.1 shows that the average percentage of vacant posts against sanctioned post was 46.6 in the midline and 37.1 in the baseline in DH in the Project area. The corresponding figures were 54.7 and 56.5 respectively in the Comparison area. The change in average percentage of vacant posts against sanctioned post was 9.5 in the Project area and was -1.8 in the Comparison area.

Figure-10.1.1: Percentage of vacant posts of doctors against sanctioned posts in DHs

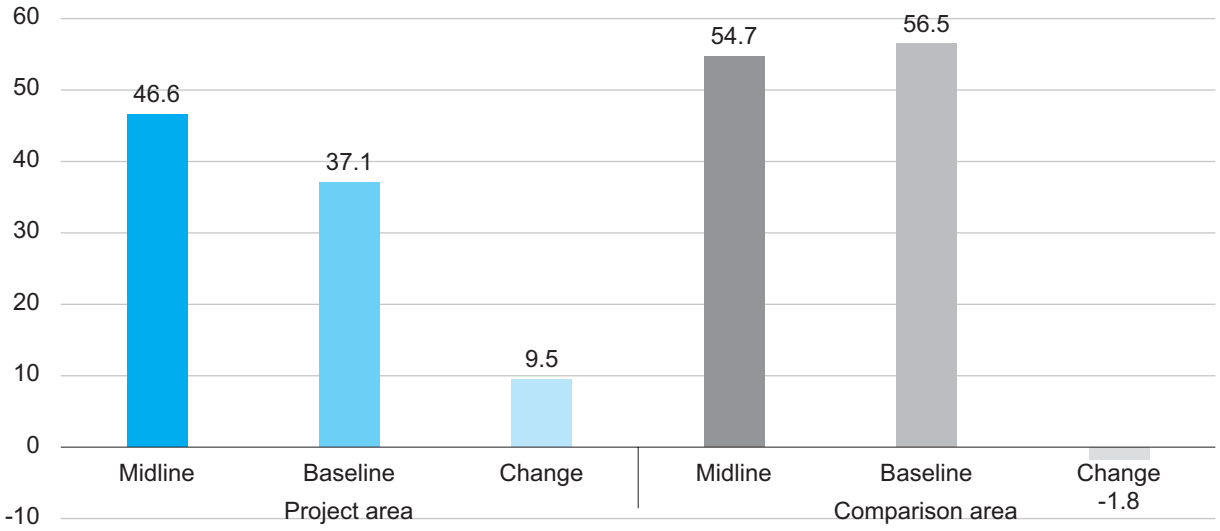


Figure-10.1.2 show that the average percentage of doctors present at the time of the survey was 70.4 in the midline and 82.7 in the baseline in DHs in the Project area. The corresponding figures were 79.1 and 95.4 respectively in the Comparison area. The average percentage of doctors present at the time of the survey decreased in both the Project area (12.3 per cent) and the Comparison area (16.3 per cent).

Figure-10.1.2: Percentage of doctors against employed posts present at survey time in DHs

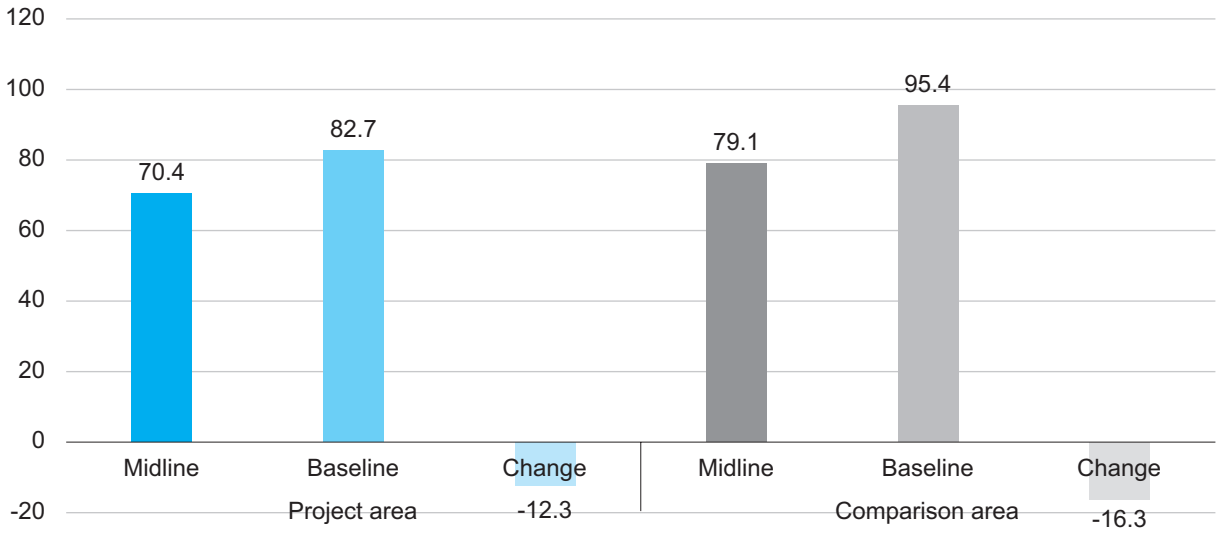


Figure-10.1.3 shows that the average percentage of vacant posts of doctors against sanctioned post was 23.1 in the midline and 23.5 in the baseline in MCWCs in the Project area. The corresponding figures were zero and 76.9 respectively in the Comparison area. The change in average percentage of vacant posts against sanctioned post was -0.4 in the Project area and -76.9 in the Comparison area.

Figure-10.1.3: Percentage of vacant posts of doctors against sanctioned posts in MCWCs

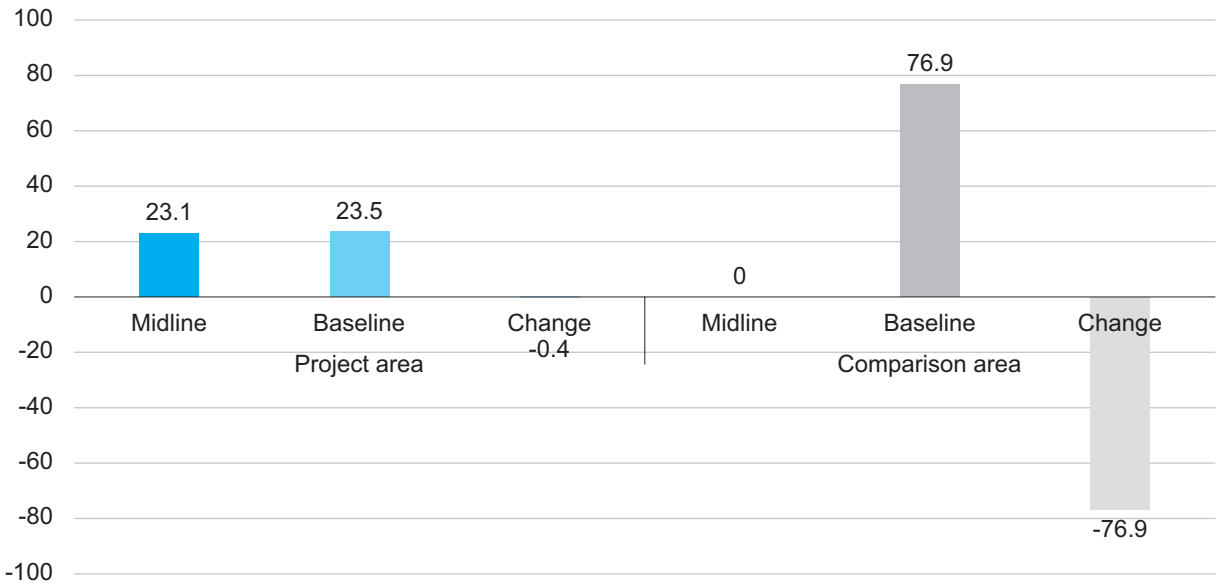


Figure-10.1.4 shows that the average percentage of doctors present at the time of the survey was 100 in the midline and 53.8 in the baseline in MCWCs in the Project area. The corresponding figures were 100 and 100 respectively in the Comparison area. The average percentage of doctors present at the time of the survey increased in the Project area (46.2 per cent) and remained the same in the Comparison area from the baseline to the midline.

Figure 10.1.4: Percentage of doctors against employed posts present at survey time in MCWCs

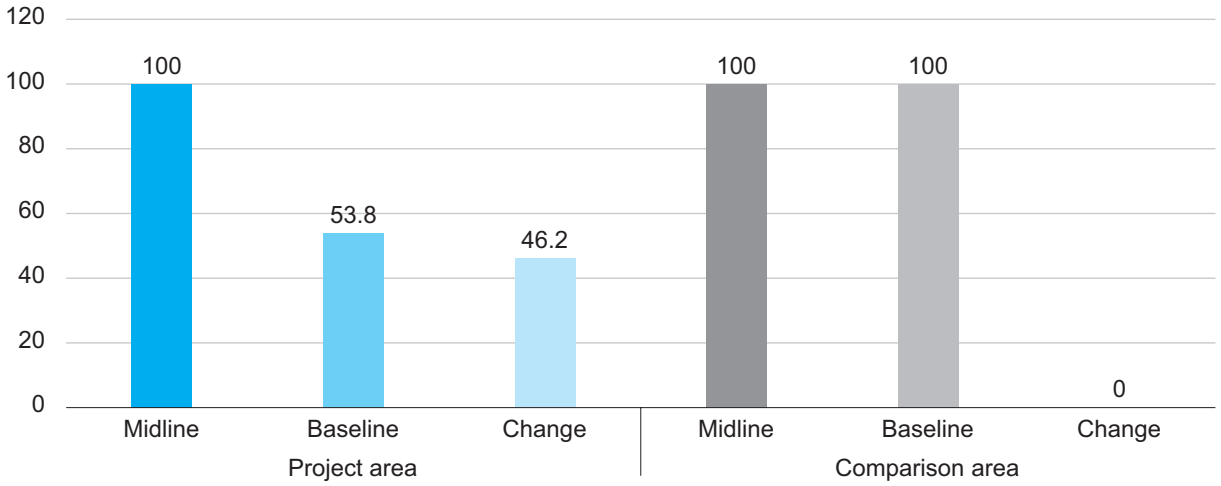


Figure-10.1.5 shows that the average percentage of vacant posts of doctors against sanctioned post was 45.7 in the midline and 47.2 in the baseline in UHCs in the Project area. The corresponding figures were 58 and 55.3 respectively in the Comparison area. The change in average percentage of vacant posts against sanctioned posts decreased by 1.5 per cent in the Project area and increased by 2.7 per cent in the Comparison area from baseline to midline.

Figure-10.1.5: Percentage of vacant posts of doctors against sanctioned posts in UHCs

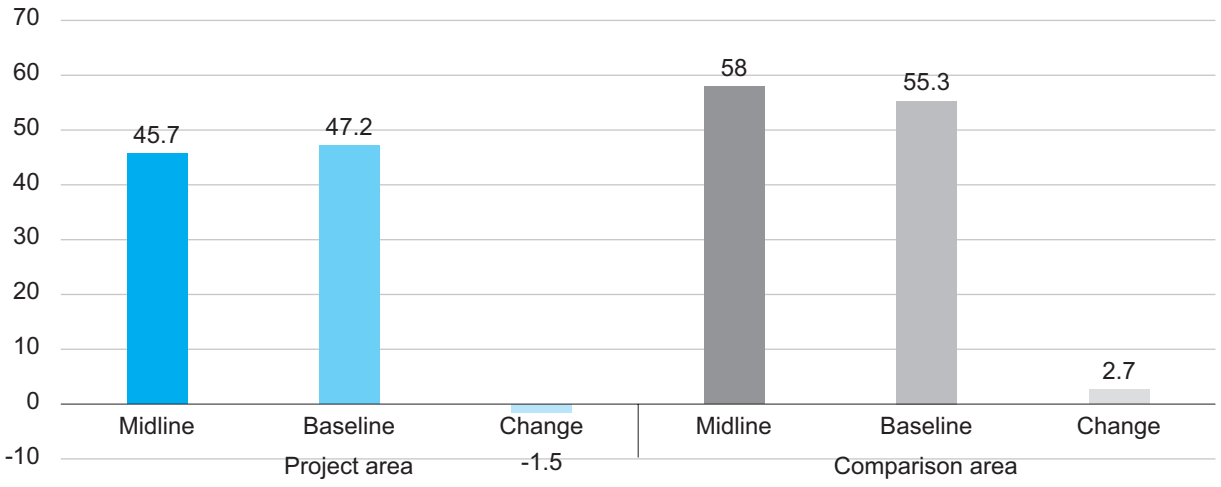


Figure-10.1.6 shows that the average percentage of doctors present at the time of the survey was 82.9 in the midline and 81.8 in the baseline in UHCs in the Project area. The corresponding figures were 95.2 and 81.2 respectively in the Comparison area. The average percentage of doctors present at the time of the survey increased in both the Project area (1.1 per cent) and in the Comparison area (14 per cent) from the baseline to the midline.

Figure-10.1.6: Percentage of doctors against employed posts present at survey time in UHCs

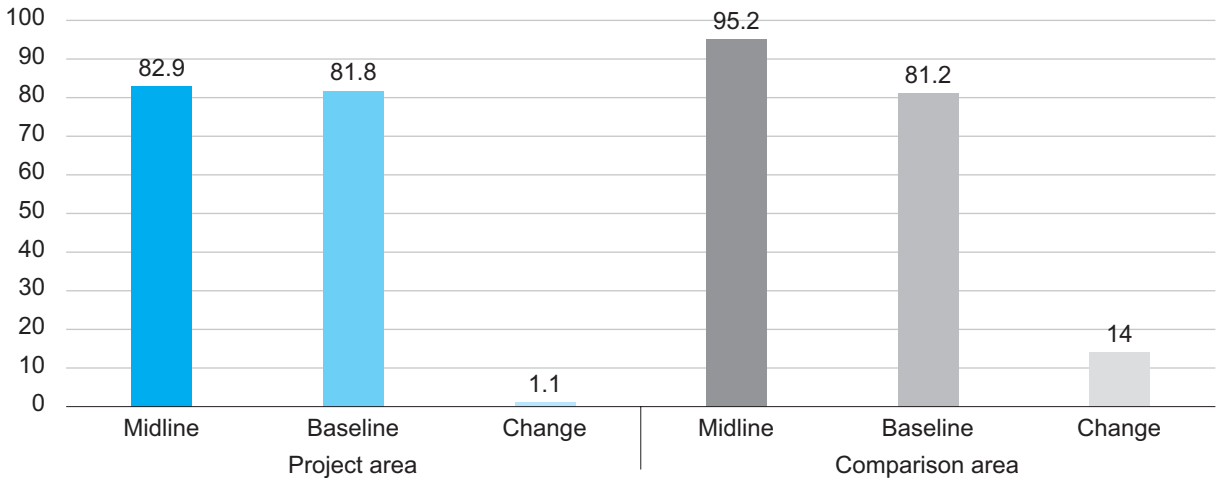


Figure-10.1.7 shows that the average percentage of vacant posts of doctors against sanctioned post was 50 in the midline and 100 in the baseline in UHFWCs in the Project area. The corresponding figures were 33.3 and 70.6 respectively in the Comparison area. The change in average percentage of vacant posts against sanctioned posts decreased by 50 per cent in the Project area and by 37.3 per cent in the Comparison area from the baseline to the midline.

Figure-10.1.7: Percentage of vacant posts of doctors against sanctioned posts in UHFWCs

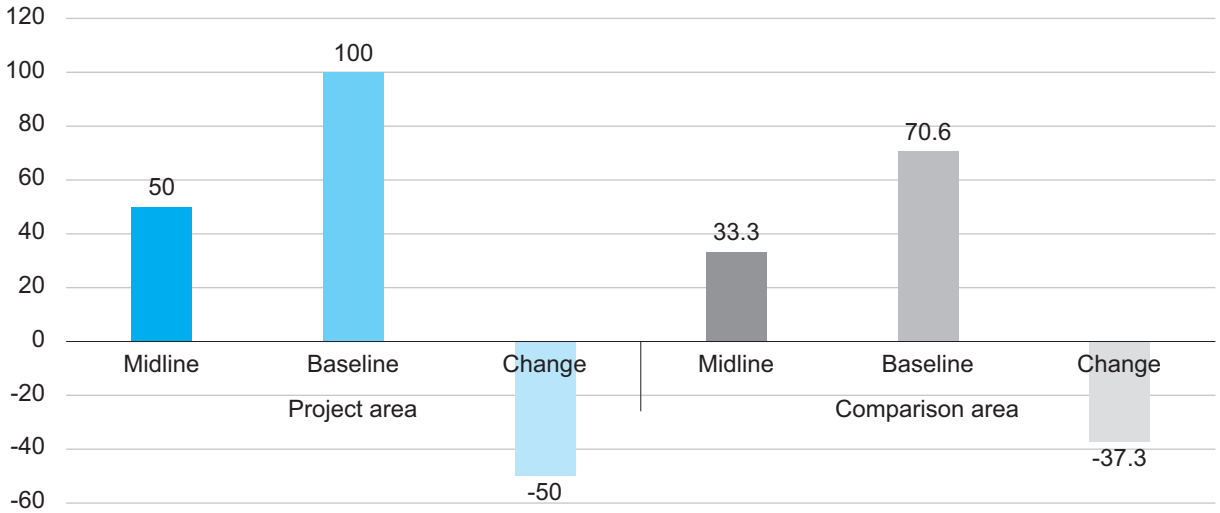


Figure-10.1.8 shows that the average percentage of doctors present at the time of the survey was 60 in the midline and zero in the baseline in UHFWCs in the Project area. The corresponding figures were 75 and zero respectively in the Comparison area. The average percentage of doctors present at the time of the survey increased in both the Project area (60 per cent) and in the Comparison area (75 per cent) from the baseline to the midline.

Figure-10.1.8: Percentage of doctors against employed posts present at survey time in UHFWCs

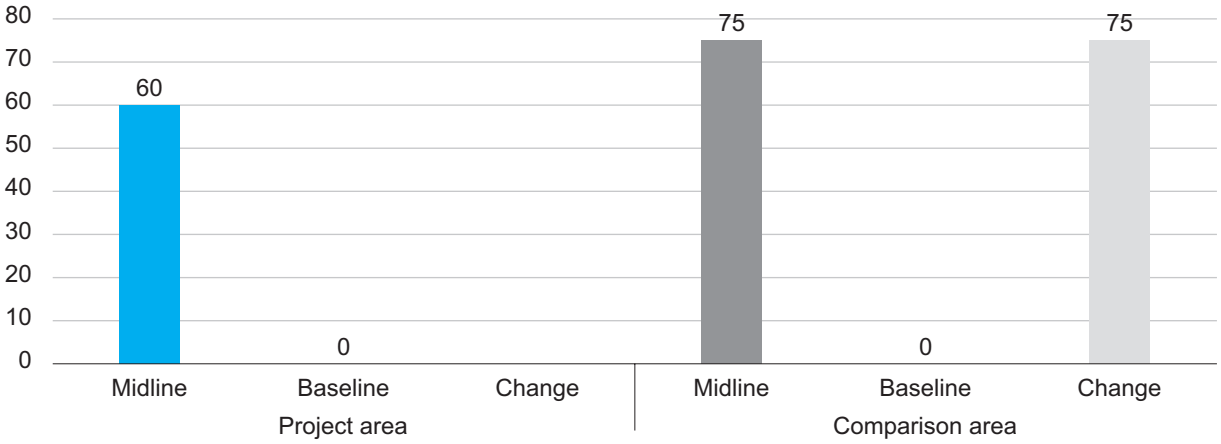


Figure-10.1.9 shows that the average percentage of vacant posts of other health service providers against sanctioned posts was 11.7 in the midline and 28.2 in the baseline in DHs in the Project area. The corresponding figures were 33.3 and 70.6 respectively in the Comparison area. The change in average percentage of vacant posts against sanctioned posts decreased by 16.5 per cent in the Project area and by 9.7 per cent in the Comparison area from the baseline to the midline.

Figure-10.1.9: Percentage of vacant posts of other health service providers against sanctioned posts in DHs

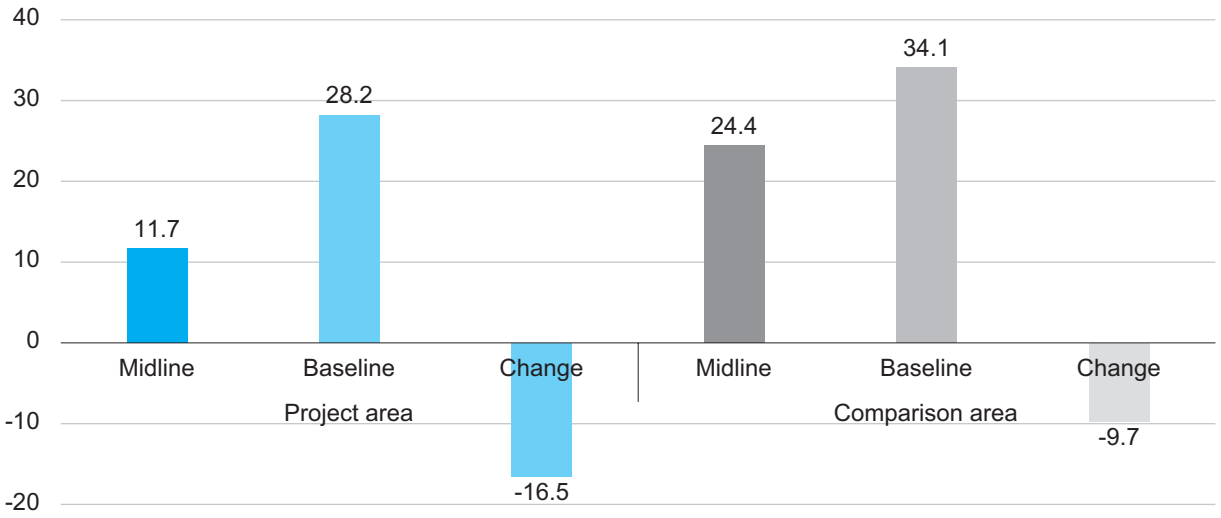


Figure-10.1.10 shows that the average percentage of other health service providers present at the time of the survey was 56.8 in the midline and 89.2 in the baseline in DHs in the Project area. The

corresponding figures were 57.5 and 54.0 respectively in the Comparison area. The average percentage of other health service providers present at the time of the survey decreased in the Project area (32.4 per cent) and increased in the Comparison area (3.5 per cent) from the baseline to the midline.

Figure-10.1.10: Percentage of other health service providers against employed posts present at survey time in DHs

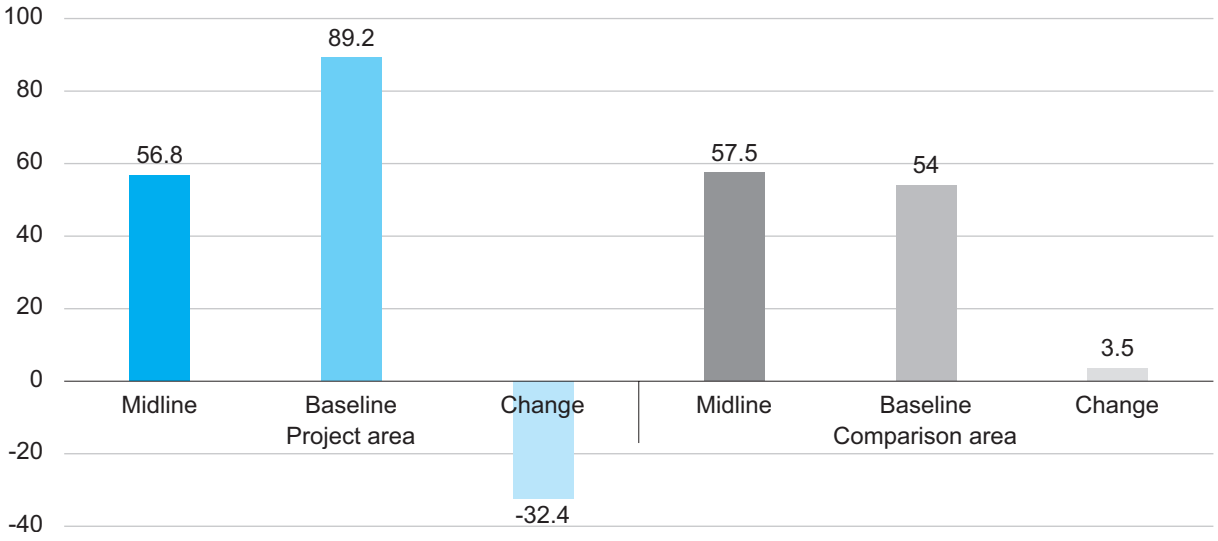


Figure-10.1.11 shows that the average percentage of vacant posts of other health service providers against sanctioned posts was 11.7 in the midline and 28.2 in the baseline in MCWCs in the Project area. The corresponding figures were 33.3 and 70.6 respectively in the Comparison area. The change in average percentage of vacant posts against sanctioned posts decreased by 16.5 per cent in the Project area and by 9.7 per cent in the Comparison area from the baseline to the midline.

Figure-10.1.11: Percentage of vacant posts of other health service providers against sanctioned posts in MCWCs

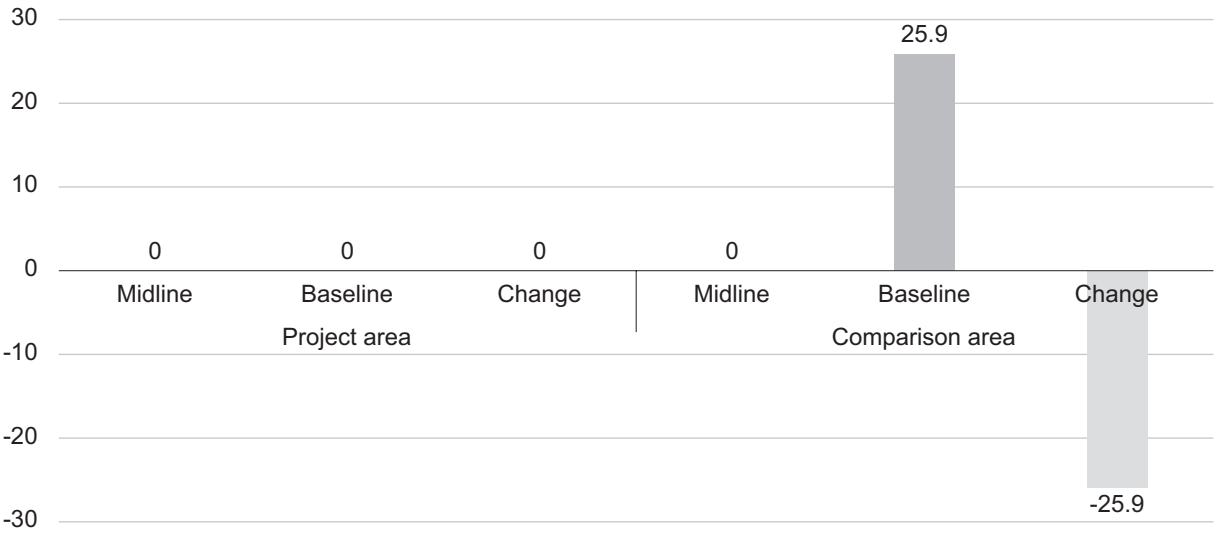


Figure-10.1.12 shows that the average percentage of other health service providers present at the time of the survey was 74 in the midline and 60 in the baseline in MCWCs in the Project area. The corresponding figures were 80 and 100 respectively in the Comparison area. The average percentage of other health service providers present at the time of the survey increased in the Project area (14 per cent) and decreased in the Comparison area (20 per cent) from the baseline to the midline.

Figure-10.1.12: Percentage of other health service providers against employed posts present at survey time in MCWCs

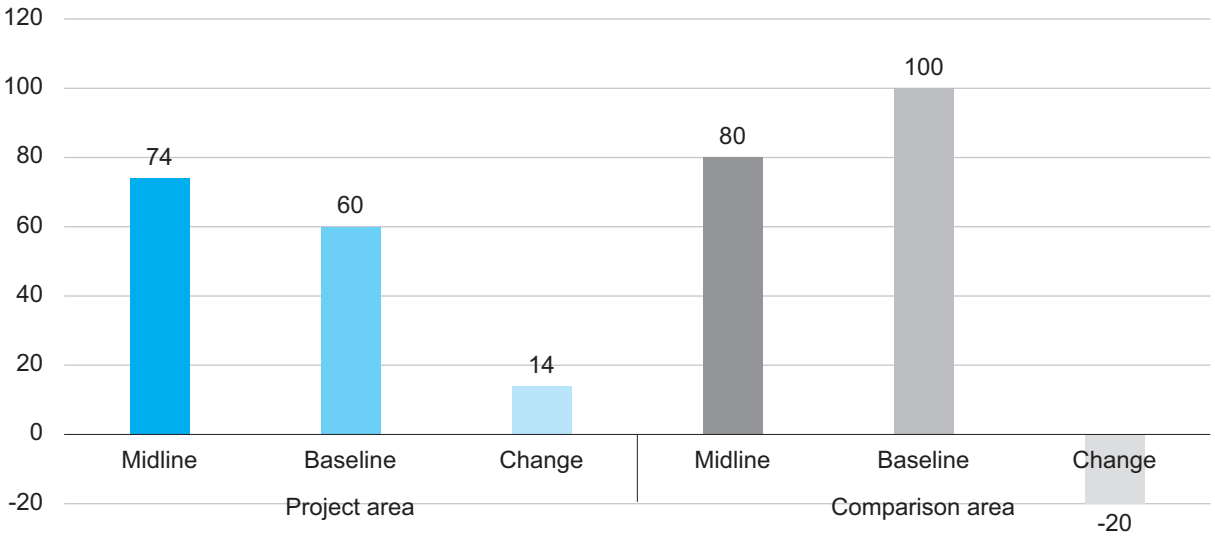


Figure-10.1.13 shows that the average percentage of vacant posts of other health service providers against sanctioned posts was 15.7 in the midline and 20.2 in the baseline in UHCs in the Project area. The corresponding figures were 26.8 and 26.6 respectively in the Comparison area. The change in average percentage of vacant posts against sanctioned posts decreased by 4.5 per cent in the Project area and increased by 0.2 per cent in the Comparison area from the baseline to the midline.

Figure-10.1.13: Percentage of vacant posts of other health service providers against sanctioned posts in UHCs

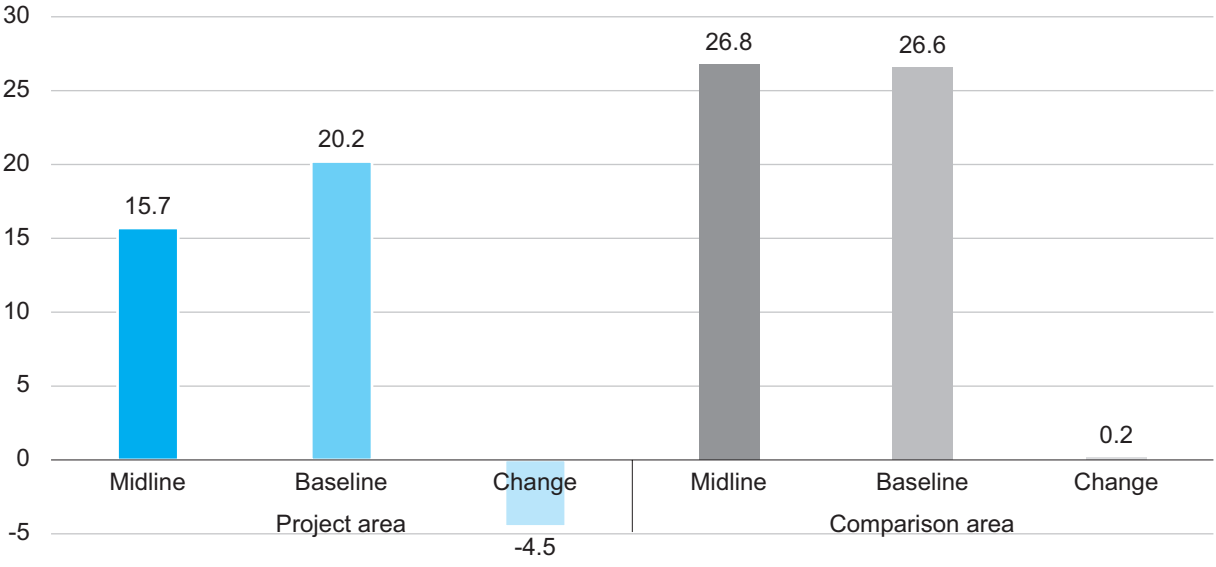


Figure-10.1.14 shows that the average percentage of other health service providers present at the time of the survey was 71.3 in the midline and 78.9 in the baseline in UHCs in the Project area. The corresponding figures were 76.7 and 73.8 respectively in the Comparison area. The average percentage of other health service providers present at the time of the survey decreased in the Project area (7.6 per cent) and increased in the Comparison area (2.9 per cent) from the baseline to the midline.

Figure-10.1.14: Percentage of other health service providers against employed posts present at survey time in UHCs

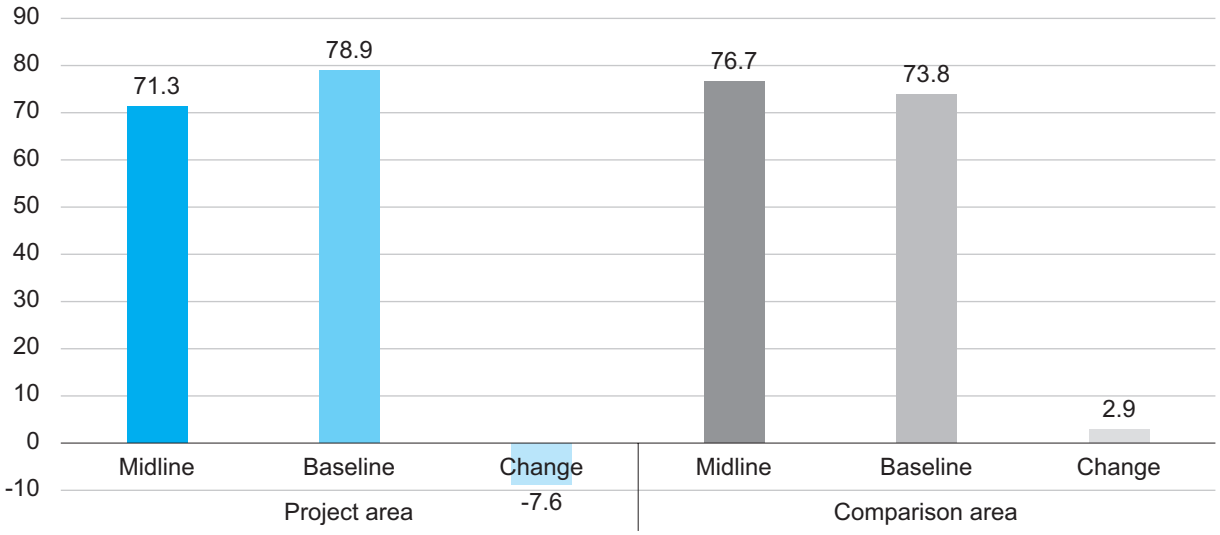


Figure-10.1.15 shows that the average percentage of vacant posts of other health service providers against sanctioned posts was 50 in the midline and 25.8 in the baseline in UHCs in the Project area. The corresponding figures were 41.8 and 52.3 respectively in the Comparison area. The change in average percentage of vacant posts against sanctioned posts increased by 24.2 per cent in the Project area and decreased by 10.5 per cent in the Comparison area from the baseline to the midline.

Figure-10.1.15: Percentage of vacant posts of other health service providers against sanctioned posts in UHFWCs

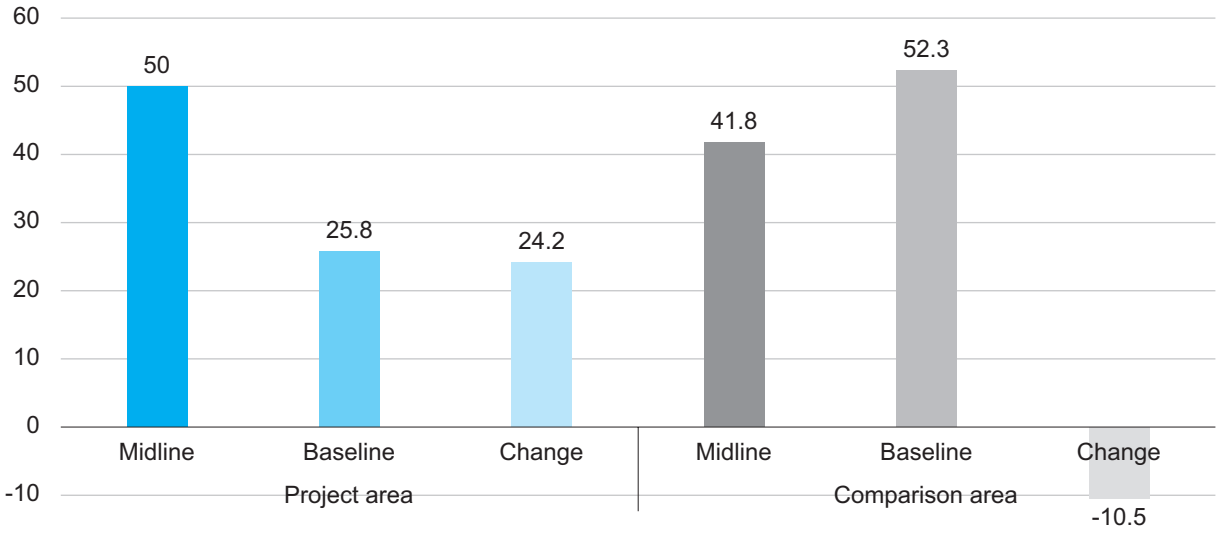


Figure-10.1.16 shows that the average percentage of other health service providers present at the time of the survey was 54.8 in the midline and 78.3 in the baseline in UHFWCs in the Project area. The corresponding figures were 74.4 and 61.9 respectively in the Comparison area. The average percentage of other health service providers present at the time of the survey decreased in the Project area (23.5 per cent) and increased in the Comparison area (12.5 per cent) from the baseline to the midline.

Figure-10.1.16: Percentage of other health service providers against employed posts present at survey time in UHFWCs

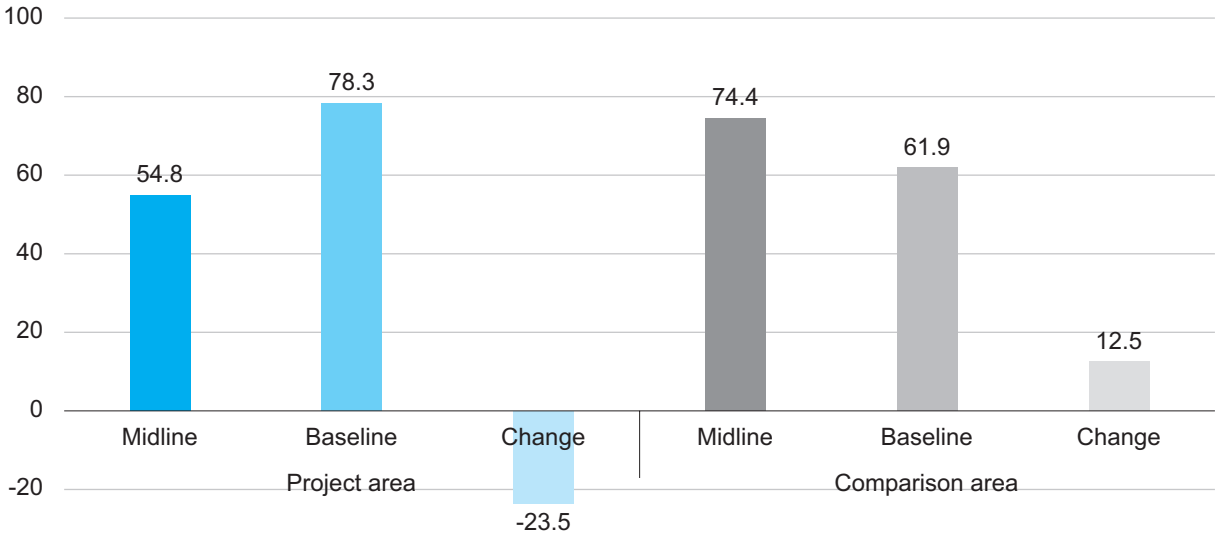


Figure-10.1.17 shows that the average percentage of vacant posts of other health service providers against sanctioned posts was 6.7 in the midline and 9.4 in the baseline in CCs in the Project area. The corresponding figures were 6.3 and 10 respectively in the Comparison area. The change in average percentage of vacant posts against sanctioned posts decreased by 2.7 per cent in the Project area and decreased by 3.7 per cent in the Comparison area from the baseline to the midline.

Figure-10.1.17: Percentage of vacant posts of other health service providers against sanctioned posts in CCs

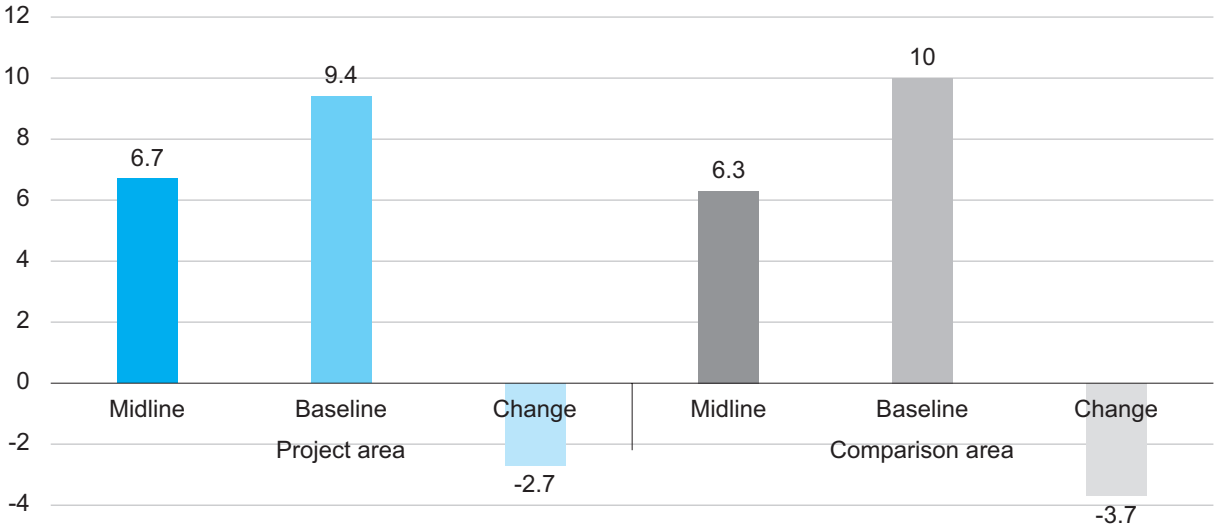
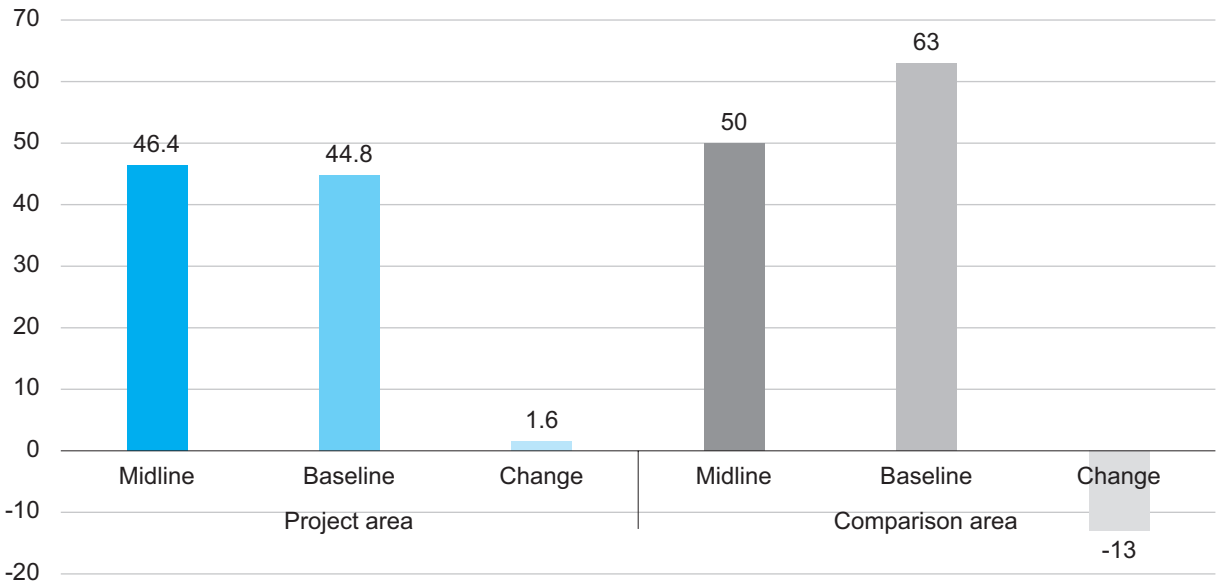


Figure-10.1.18 shows that the average percentage of other health service providers present at the time of the survey was 46.4 in the midline and 44.8 in the baseline in CCs in the Project area. The corresponding figures were 50 and 63 respectively in the Comparison area. The average percentage of other health service providers present at the time of the survey increased in the Project area (1.6 per cent) and decreased in the Comparison area (13 per cent) from the baseline to the midline.

Figure-10.1.18: Percentage of other health service providers against employed posts present at survey time in CCs



10.2 Training of HR

As already mentioned before, imparting training to providers and staff on a regular basis is crucial for improving quality of providers and services. New diseases and health risks are appearing at regular interval. Knowledge and technology as well as methods and management techniques for preventing new and existing diseases are increasingly being explored. So, the providers should be well acquainted with new methods and techniques. Regular training might help them to attain such a capacity. This section discusses the findings related to training received by service providers on some selected topics (i.e., birth preparedness, ETAT/newborn care, ENC, QI), which are helpful for MNCAH services. Table-A.10.2.1 and Table-A.10.2.2 present percentages of service providers in the Project area in the midline and the baseline surveys, respectively, who received trainings. Table-A.10.2.3 and Table-A.10.2.4 present corresponding percentages of service providers receiving trainings in the Comparison area in the midline and the baseline surveys respectively.

Findings of the Project area in the midline survey suggest that little over a quarter of doctors in DHs received trainings on ENC (30 per cent) and ETAT (28 per cent), followed by those, who received trainings on QI (23 per cent) and DEPB (16 per cent). The findings on training received by the service providers in UHCs were similar to that of DHs. Doctors in MCWCs were less likely to receive such trainings. Other service providers in DHs were more likely to receive training on ETAT (37 per cent) than

other training (4-8 per cent), but those in UHCs were less likely to receive any of the training listed (<1 to 13 per cent). Other service providers in UHFWCs were more likely to receive training on ENC (65 per cent) than other trainings (5-20 per cent). Findings of the Project area during the baseline survey indicate that relatively a small proportion of doctors and other service providers in DHs or UHCs received any of the listed trainings (doctors: up to 21 per cent, other providers: up to 20 per cent). In MCWCs, higher proportions of other providers received such trainings (up to nine out of 10 providers, i.e., 90 per cent). Out of 20 other providers in UHFWCs, up to 20 per cent received any of the trainings listed.

In the Comparison area in the midline survey, only up to 9.0 per cent of doctors in DHs, while up to 16 per cent in UHCs received training on any of the four issues mentioned above. In MCWCs there were only three doctors, and of them up to two doctors received some of the trainings listed. These proportions for other service providers were up to 21 per cent in DHs, but only up to 4.0 per cent in UHCs. However, in MCWCs 73 per cent of other service providers received training on QI and 18 per cent on ENC, but none on other two issues. There were only three doctors in UHFWCs, and none of them received training on any of the issues mentioned. However, out of 20 other providers working in UHFWCs, 25 per cent received training on ETAT, 15 per cent on ENC and 10 per cent on DEPB. In the baseline survey, proportions of doctors or other providers in DHs or UHCs or UHFWCs receiving any training were quite low (up to 12 per cent of doctors and 6.0 per cent of other providers received some of the training listed).

10.3 Laboratory-based diagnostic capacity

Diagnosis is an important part of healthcare. In fact, proper treatment of diseases is highly dependent on appropriate diagnosis. A key criterion for judging the capacity of facilities to provide MNCH care is the existence of adequate diagnosis ability at their laboratories, so that patients can receive accompanying services as and when necessary. However, this study considered a health facility to be equipped with diagnostic capacity, if the facility reportedly had any of the functioning equipment and logistics listed in the facility survey questionnaire. Table-10.3.1 and Table-10.3.2 present the capacity of the sampled facilities in the midline and the baseline surveys respectively.

As indicated in Table-10.3.1, during the midline survey, all DHs in both the Project and the Comparison areas had the capacity to conduct diagnostic tests and had X-ray and ultra-sonogram (USG) machines when the midline survey was conducted. Almost all UHCs in the Project area (90-100 per cent) and 60-90 per cent in the Comparison area had all three capacities mentioned above. MCWCs in both the areas were less likely to have such capacities or technologies (33 per cent, i.e., one out of three MCWCs in the Project area had only diagnostic capacity, while in the Comparison area no health facilities had any of such capacities).

As Table-10.3.2 suggests, the situation in the baseline survey was more or less similar to the midline situation except that two-thirds of DHs during the baseline survey (as compared to 100 per cent during the midline survey) in the Project area had X-ray machines. Also, a lower proportion of UHCs in the Comparison area during the baseline survey (30 per cent) compared to that in the same area during the midline survey (60 per cent) had USG machines.

Only the health facilities located in the urban areas had the capacity to conduct diagnostic tests and had X-ray and USG machines. No rural health facilities had such facilities/capacities in the Project or the Comparison areas in the midline (Table-11.3.1 and Table-11.3.2).

Table-10.3.1: Laboratory diagnostic capacities during the midline survey

Among all the facilities, the number with capacity to conduct basic laboratory diagnostic tests in the facility, by type of facilities and area during the midline survey

Type of facilities and area of location of the facilities	Project area				Comparison area			
	Diagnostic test	X-ray machine	Ultra-sonogram machine	No. of facilities	Diagnostic test	X-ray machine	Ultra-sonogram machine	No. of facilities
Type of facility								
District- and upazila-level public facilities								
DH	100.0	100.0	100.0	3	100.0	100.0	100.0	3
MCWC	33.3	0.0	0.0	3	0.0	0.0	0.0	3
UHC	100.0	90.0	90.0	10	90.0	70.0	60.0	10
Union-level public facilities								
UHFWC/FWC/USC/Other	0.0	0.0	0.0	11	0.0	0.0	0.0	10
Community clinic	0.0	0.0	0.0	20	0.0	0.0	0.0	20
Area of facility								
Urban	87.5	75.0	75.0	16	75.5	62.5	56.3	16
Rural	0.0	0.0	0.0	31	0.0	0.0	0.0	30
Total				47				46

Table-10.3.2: Laboratory diagnostic capacities during the baseline survey

Among all the facilities, the number with capacity to conduct basic laboratory diagnostic tests in the facility, by type of facilities and area during the baseline survey.

Type of facilities and area of location of the facilities	Project area				Comparison area			
	Diagnostic test	X-ray machine	Ultra-sonogram machine	No. of facilities	Diagnostic test	X-ray machine	Ultra-sonogram machine	No. of facilities
Type of facility								
District- and upazila-level public facilities								
DH	100.0	66.7	100.0	3	100.0	100.0	100.0	3
MCWC	0.0	0.0	0.0	3	0.0	0.0	0.0	3
UHC	100.0	100.0	100.0	10	80.0	60.0	30.0	10
Union-level public facilities								
UHFWC/FWC/USC/Other	0.0	0.0	0.0	9	0.0	0.0	0.0	10
Community clinic	0.0	0.0	0.0	19	0.0	0.0	0.0	20
Area of facility								
Urban	81.2	75.0	81.2	16	68.8	56.2	37.5	16
Rural	0.0	0.0	0.0	28	0.0	0.0	0.0	30
Total				44				46

10.4 Availability and stockout status of essential medicines and vaccines

To ensure quality services, the facilities need regular supply of essential medicines and vaccines. However, the sampled facilities faced problem when some, if not all, medicines and vaccines were out of stock for a certain time - hampering the service delivery seriously. Hence, data related to a list of selected medicines and vaccines were collected from DHs and UHCs in the two areas in the midline and the baseline surveys. The list includes antibiotic, ORS, zinc, oxytocin, magnesium sulfate, pentavalent vaccines and other vaccines. Table-10.4.1 and Table-10.4.2 present the findings related to the availability of selected medicines and vaccines on the day of visit in the midline and the baseline surveys respectively, and Table-10.4.3 and Table-10.4.4 discuss the findings related to the stockout status of those medicines and vaccines in any time during three months preceding the midline and the baseline surveys respectively.

10.5 Availability of essential medicines and vaccines on the day of visit

Findings reveal that on the day of visit, four out of seven items (antibiotic, ORS and zinc and vaccines other than pentavalent were indicated as 'other vaccines') were reportedly available in all DHs in the Project area in the midline survey. While, on the other hand, oxytocin and pentavalent vaccines were available in two-thirds and one-third of the DHs respectively in the Project area in the same survey. Findings of the Project area in the baseline survey reveal a more or less similar pattern in this regard with the exception that one-third of the DHs in the baseline survey (but none of the DHs in the midline survey) had magnesium sulfate when data were collected. Compared to DHs, UHCs had a little bit poor situation in the midline survey, but almost similar in the baseline survey. For example, all UHCs in the baseline survey, but 90 per cent in the midline survey, had antibiotic, whereas 90 per cent of UHCs in the baseline survey and 80 per cent of UHCs in the midline survey had ORS. The reason behind the situation might be that about 70 per cent of the facilities were covered after the lockdown due to the COVID-19 outbreak in the midline survey.

Findings of the Comparison area in the midline survey reveal that all DHs had five out of seven medicines and vaccines listed, except zinc and magnesium sulfate (which were available in 67 per cent of DHs each). The situation in UHCs was not satisfactory as compared to the situation in DHs: all UHCs had two out of seven items (antibiotic and ORS: 100 per cent), where 80-90 per cent had zinc and oxytocin, and 60 per cent had pentavalent and other vaccines. A very similar situation was found in DHs during the baseline survey. However, the availability of essential medicines and vaccines in UHCs were better in the baseline compared to that in the midline (90-100 per cent of UHCs had four out of seven items in the baseline survey, and three out of seven items in the midline survey). These findings also reflect that the stockout situation was affected by the COVID-19-induced lockdown, and showed a downward bias in the midline.

Table-10.4.1: Availability of essential medicines and vaccines on the day of interview in the midline survey

Distribution of health facilities by selected medicines or vaccines available in DHs and UHCs on the day of interview, by type of facilities and area during the midline survey

Type of facilities and area	Project area								Comparison area							
	Antibiotic	ORS	Zinc	Oxytocin	Mag. Sulfate	Pentavalent vaccine	Other vaccine	No. of facilities	Antibiotic	ORS	Zinc	Oxytocin	Mag. Sulfate	Pentavalent vaccine	Other vaccine	No. of facilities
Type of facility																
District- and upazila-level public facilities																
DH	100.0	100.0	100.0	66.7	0.0	33.3	100.0	3	100.0	100.0	66.7	100.0	66.7	100.0	100.0	3
UHC	90.0	80.0	90.0	70.0	60.0	40.0	40.0	10	100.0	100.0	80.0	90.0	30.0	60.0	60.0	10
Area of facility																
Urban	92.3	84.6	92.3	69.2	46.2	38.5	53.8	13	100.0	100.0	76.9	92.3	38.5	69.2	69.2	13
Total								13								13

Note: ORS refers to Oral Rehydration Solution, and Mag. refers to Magnesium

Table-10.4.2: Availability of essential medicines and vaccines on the day of interview in the baseline survey

Distribution of health facilities by selected medicines or vaccines available in DHs and UHCs on the day of interview, by type of facilities and area during the baseline survey

Type of facilities and area	Project area								Comparison area							
	Antibiotic	ORS	Zinc	Oxytocin	Mag. Sulfate	Pentavalent vaccine	Other vaccine	No. of facilities	Antibiotic	ORS	Zinc	Oxytocin	Mag. Sulfate	Pentavalent vaccine	Other vaccine	No. of facilities
Type of facility																
District- and upazila-level public facilities																
DH	100.0	100.0	100.0	66.7	33.3	66.7	66.7	3	100.0	100.0	66.7	100.0	66.7	100.0	100.0	3
UHC	100.0	90.0	100.0	50.0	30.0	100.0	100.0	10	90.0	95.5	70.0	70.0	40.0	100.0	100.0	10
Area of facility																
Urban	100.0	92.3	100.0	53.8	30.8	92.3	92.3	13	92.3	100.0	69.2	76.9	46.2	100.0	100.0	13
Total								13								13

Note: ORS refers to Oral Rehydration Solution, and Mag. refers to Magnesium

10.6 Stockout status of essential medicines and vaccines in the past three months

Table-11.6.1 and Table-11.6.2 present stockout status of essential medicines and vaccines in DHs and UHCs in three months preceding the interview (i.e., any incident of no-stock in any time during three months preceding the midline and the baseline surveys respectively).

In the Project area, DHs had no stockout record for antibiotic, ORS and zinc in the midline survey. However, every DH had stockout for magnesium sulfate and one-third for oxytocin during the same survey. In the baseline survey, no DH had stockout record for antibiotic, ORS and oxytocin (in place of 'zinc' in the midline survey), but two-thirds had stockout record for zinc and one-third for magnesium sulfate. In case of UHCs, in the Project area, none had stockout record for ORS, but 10-20 per cent had stockout record for antibiotic, zinc and oxytocin and 50-70 per cent for magnesium sulfate and vaccines in the midline survey. Except stockout situation for vaccines, stockout status of essential medicines were better in the midline compared to that in the baseline, as there were no UHCs which were completely free from stockout records of any item listed in the baseline. For example, at least 10 per cent of UHCs during the baseline survey had stockout record of ORS (which was zero per cent in the midline survey), while up to 80 per cent had stockout of other items (which was up to 50 per cent in the midline survey). However, the situation was better in case of vaccines in the baseline survey (30-40 per cent had stockout) than the situation in the midline survey (60-70 per cent had stockout).

The stockout situation in DHs in the Comparison area was similar to that in the Project area in the midline survey (no stockout of three of seven items in both the areas), except that all DHs in the Project area while one-third in the Comparison area had stockout of magnesium sulfate. Also, a more or less similar stockout situation was found in UHCs in the Comparison area as compared to those in the Project area. For example, no UHCs had stockout of ORS in both the areas, but 10-30 per cent in the Comparison area and 10-20 per cent in the Project area had stockout of antibiotics, zinc and oxytocin. However, the proportion of health facilities with stock out of magnesium sulfate and vaccines varied between the Project and the Comparison areas. Stockout record for magnesium sulfate was higher in the Comparison area (80 per cent) than that in the Project area (50 per cent). On the other hand, stockout record for vaccines was lower in the Comparison area (40 per cent each) than that in the Project area (60-70 per cent). In the baseline survey, there was no stockout of three out of five items (antibiotic, ORS and oxytocin) in DHs. But stockout record was found for the remaining two items (zinc: 33 per cent, and magnesium sulfate: 67 per cent). A better stockout situation was found in case of UHCs in the Comparison area (up to 60 per cent stockout for one item) compared to that in the Project area (up to 80 per cent stockout for two items).

In short, the stockout situation was found better (i.e., less likely to have stockout) in the midline survey compared to that in the baseline survey in the Project area only.

Table-10.6.1: Stockout status of essential medicines and vaccines in three months preceding the midline survey

Distribution of health facilities by stockout status of specific medicines or vaccines in DHs and UHCs in any time during three months preceding the midline survey, by type of facilities and area

Type of facilities and area	Project area								Comparison area							
	Antibiotic	ORS	Zinc	Oxytocin	Mag. Sulfate	Pentavalent vaccine	Other EPI vaccines	No. of facilities	Antibiotic	ORS	Zinc	Oxytocin	Mag. Sulfate	Pentavalent vaccine	Other EPI vaccines	No. of facilities
Type of facility																
District- and upazila-level public facilities																
DH	0.0	0.0	0.0	33.3	100.0			3	0.0	0.0	66.7	0.0	33.3			3
UHC	10.0	0.0	20.0	20.0	50.0	60.0	70.0	10	10.0	0.0	30.0	20.0	80.0	40.0	40.0	10
Area of facility																
Urban	7.7	0.0	15.4	23.1	61.5	60.0	70.0	13	7.7	0.0	38.5	15.4	69.2	40.0	40.0	13
Total								13								1326

Table-10.6.2: Stockout status of essential medicines and vaccines in three months preceding the baseline survey

Distribution of health facilities by stockout status of specific medicines or vaccines in DHs and UHCs in any time during three months preceding the baseline survey, by type of facilities and area

Type of facilities and area	Project area								Comparison area							
	Antibiotic	ORS	Zinc	Oxytocin	Mag. Sulfate	Pentavalent vaccine	Other EPI vaccines	No. of facilities	Antibiotic	ORS	Zinc	Oxytocin	Mag. Sulfate	Pentavalent vaccine	Other EPI vaccines	No. of facilities
Type of facility																
District- and upazila-level public facilities																
DH	0.0	0.0	0.0	66.7	100.0			3	0.0	0.0	33.3	0.0	66.7			3
UHC	10.0	10.0	20.0	80.0	80.0	30.0	40.0	10	10.0	10.0	60.0	30.0	40.0	0.0	10.0	10
Area of facility																
Urban	7.7	7.7	15.4	76.9	84.6	30.0	40.0	13	7.7	7.7	53.8	23.8	46.2	0.0	10.0	13
Total								13								13

10.7 Bed occupancy

Hospital bed occupancy rate is a measure that reflects the accommodation ability of a health facility to provide proper care to patients. The calculation of Bed Occupancy Rates (BORs) of a health facility needs the data on number of beds available and beds occupied in that facility for a specific period of time to see average status of the occupancy of beds. However, the midline and the baseline surveys collected relevant data on the survey dates only. Then, based on the collected data, the BORs were obtained through dividing the number of patients admitted (in the beds) by the number of beds available in a particular ward or section of a health facility at the survey time. Therefore, the BORs in these surveys may be treated as 'bed admission rates' to avoid confusion.

Table-A.10.7.1 and Table-A.10.7.2 present the distribution of DHs, MCWCs and UHCs in the Project area during the midline and the baseline surveys respectively according to the average number of total beds available, average number of total beds patients admitted and average occupancy rates among total beds. The tables also present the distribution of the facilities according to the average number of beds available and average number of beds admitted and occupancy rates among maternity, delivery, neonatal and pediatric beds in the facilities visited. Table-A.10.7.3 and Table-A.10.7.4 present the corresponding distribution of DHs, MCWCs and UHCs in the Comparison area in the midline and the baseline surveys respectively.

The tables show that, in the Project area in the midline survey, the average number of total available beds was the highest in DHs (250) and the lowest in MCWCs (17). The corresponding numbers in the baseline survey were also 250 in DHs and 17 in MCWCs respectively. The average number of total beds occupied (admitted) was also highest in DHs (167) and the lowest in MCWCs (1), while during the baseline survey it was 197 and one respectively. Similarly, the bed occupancy rate in case of total beds was the highest in DHs (66.8) and the lowest in MCWCs (6). These were 78.7 and 19.8 respectively in the baseline survey. The average number of total beds available and the average number of total beds occupied (admitted) in UHCs in the Project area were 43 and 27 respectively, where occupancy rate was 62.8 in the midline survey. The corresponding baseline figures in UHCs were 41 (total beds available), 37 (total beds admitted) and 92.3 (occupancy rate) respectively. In case of beds of different sections, occupancy rates in DHs were more than hundred for beds of two out of four sections listed (neonatal and pediatric beds) in the midline survey and for all four sections in the baseline survey. It indicates that there was higher number of patients than the number of beds available there. Further, the occupancy rate was as high as 75 across different sections in UHCs of the Project area in the midline survey. It was 600 in the baseline survey.

The situation in the Comparison area was poor with less number of beds than the numbers in the Project area. This was evident in both the midline and the baseline surveys. For example, the average number of total beds available and average number of beds admitted in DHs were 100 and 88 in the midline survey, whereas these were 100 and 103 respectively in the baseline survey.

It is to be noted that, overall low bed occupancy rates in the midline survey might be due to the fact that most part of the facility data collection for the survey took place during the lockdown declared for the COVID-19 outbreak. Newspaper reports assured that admission of patients to health facilities decreased in the lockdown. This is reflected in the low occupancy rates of the survey.

10.8 Challenges in Implementation of the CHSS program

This subsection discusses the barriers/challenges in implementation of the CHSS program. The major challenges in implementation of the CHSS program are as follows:

- CSs opined that more human resources are needed for successful implementation of the CHSS program. The number of CHVs is inadequate compared to the need of the population, especially, in the low-performing areas.
- Some managers reported that inadequate training of the health workers is a major challenge in successful implementation of the CHSS program. Insufficient space and logistics to conduct mothers' assembly is another challenge in some areas.
- The honorarium paid to CHVs is very low (monthly BDT 500). CHVs reported that sometimes it does not even cover their travel costs of home visits.
- CHVs refer patients to CCs, but the CCs are not always open. In some areas lack of diagnostic facilities and availability of service providers are still hampering the increase in utilization of MNCH services at community level and the referral mechanism.
- According to some CHCPs, the most important challenge in implementing the program is lack of coordination between CHCPs and CHVs. There is lack of information, and the reporting procedure of CHVs should be improved. UHFPOs, who join recently, are also not fully aware of the activities of CHVs in few areas.
- In many CCs, there are male service providers. So, mothers do not feel comfortable to seek care from them. Lack of women-friendly services in some areas is hampering MNCAH services delivery in CCs, and still some mothers are less interested to seek care in CCs. They are reluctant even after repeated home visits and counseling by the health workers.
- In CCs only weight and blood pressure are measured. This might be one the barriers for proper diagnosis of clients/patients and effective referral system at primary health care level (Bashkanda CC).
- Both the data of the facility survey and the qualitative survey show that in some project areas few meetings of CGs and CSGs could be organized during the CHSS project implementation period. This is hampering community participation in MNCAH delivery and successful implementation of the CHSS program.
- Vacant post in the public health facilities and lack of facility readiness are the main challenges, as reported by CHVs and NGOs. Inadequate government human resources, absenteeism, and lack of drugs and equipment are also crucial for successful implementation of the program. Data of the facility survey show that the proportion of vacant posts was very high, and presence of service providers is low in UHFWCs in the Project areas.
- Some UHFPOs reported that inadequate knowledge of CHVs to carry out birth preparedness session with pregnant mothers and insufficient fund to organize the awareness raising program, i.e., mothers' assembly, courtyard meetings etc, are hindering implementation of the CHSS program.

Other NGOs (BRAC) are providing food for mothers in courtyard sessions in Jamalpur. There is no such provision in the CHSS program, which gives incentives for mothers to attend mothers' assembly.

- Some UHFPOs opined that there are still demand-side barriers in seeking maternal, neonatal and child health care, especially in the case of institutional delivery. The proportion of institutional delivery, conducted in the Project areas, is lower than the national estimates. This might be one of the causes behind the low progress in utilization of ENC. In some areas, husband or family members are reluctant to plan and arrange institutional birth delivery for pregnant women in the family.
- Still waiting time in health facilities is very high in some places. Mothers-in-law do not allow pregnant women or mothers to visit health facilities due to the time needed to seek care. They feel that it would hamper household works and is just wastage of time.
- In some areas, the roads are flooded during monsoon and communications with the health facilities are disrupted. Moreover, there are no arrangements of birth delivery in CCs, and UHCs or DHs are located far away from residences.
- Inadequacy of medicines in some CCs is another challenge for successful implementation of the program (Mohadan CC Jamalpur).
- Some pregnant women thought that if they take Iron-Folate Acid (IFA) tablet, normal delivery would be difficult due to the growth of baby. As a result, they do not complete the course of IFA intake during pregnancy. Some women have misconception that it may cause nausea or constipation.
- Some pregnant women thought that checkup may create problem for baby, so they avoid it (Chitlia CC Kamalganj, Dipasa CC Bauphal). Elderly members of family or mothers-in-law of some families interfere when field workers visit pregnant women. According to them, without any check-up they give birth to babies properly. So, it is not needed.
- Due to the COVID-19 pandemic many activities of the CHSS program cannot be completed within the timeframe in 2020.

11.

FINDINGS: RELEVANCE, EFFICIENCY, IMPACT AND SUSTAINABILITY OF THE CHSS PROGRAM

This section presents the findings of the midline survey on the relevance, efficiency, impact, sustainability, coherence and coordination and challenges of the CHSS program. These are assessed against some of the rationale, outputs and outcomes of the interventions of the CHSS program as presented in the Theory of Change (ToC).

11.1 Relevance of the CHSS Program

The evaluation has clearly shown that the program is greatly relevant to the areas where it is being implemented. The performances of the general health program were not sufficient to raise the use of services to the national level. The implementation of the program is rapidly improving the situation, as was expected by the policymakers. A number of studies show that the CHSS program was implemented in 2018 in districts, which were lagging behind the national situation in respect of the major maternal, neonatal and child health indicators. UNICEF and UNFPA have partnered with the Government of Bangladesh, and have jointly launched the project titled “Improving sexual reproductive health and rights including maternal and neonatal health (ImSRHR&MNH)” in five low-performing districts of Bangladesh with financial support from Global Affairs Canada (GAC). The program included both demand-creation interventions and supply-side interventions. The objective of this evaluation is to focus on the demand creation activities and involvement of the communities in the program, i.e., the Community Health System Strengthening (CHSS) program. The detailed results framework of ImSRHR&MNH, which includes the CHSS program, is presented in Annex-I.

The low-performing districts selected for the program were: Patuakhali, Sirajganj, Jamalpur, Moulvibazar and Rangamati. The MICS 2012-2013 reveals the baseline situation in the project districts, which provides evidences for the relevance of the selection of these districts for the CHSS program. The MICS results indicate that the prevalence of underweight (<-2 SD) among under-five children was higher in Barisal division (35.2 per cent) compared to the national average (31.9 per cent). The same was the case in Patuakhali (34.2 per cent), Sirajganj (34.6 per cent) and Moulvibazar (44.1 per cent). The coverage of ANC 4+ from any provider was 10.2 per cent in Patuakhali, 9.6 per cent in Jamalpur, 11.1 per cent in Sirajganj and 13.2 per cent in Moulvibazar; whereas nationally it was 24.7 per cent. The proportion of deliveries assisted by a skilled attendant was 43.5 per cent nationally; which was 58.9 per cent in Patuakhali, 23.2 per cent in Jamalpur, 55.7 per cent in Sirajganj and 29.5 per cent in Moulvibazar. The proportion of institutional deliveries was 43.5 per cent nationally; which was 11.9 per cent in Patuakhali, 13.3 per cent in Jamalpur, 25.6 per cent in Sirajganj and 27.6 per cent in Moulvibazar. Such results reflect the relevance of launching an intervention for maternal and child health improvement in these districts and the CHSS program.

The findings of the present evaluation have shown the relevance of the program in another way as well. It has shown that the intervention has considerably improved a number of indicators, showing that the areas had unmet need for health services. Mothers' knowledge on the danger signs during pregnancy, delivery and after delivery, preferences for service providers, utilization of ANC, and modern family planning methods increased considerably, and services of CHVs played a key role in this regard. Moreover, the relevance of the intervention is also demonstrated by some other effects of the program. The capacity of the providers has considerably increased and awareness of the clients has appreciably risen as the result of the intervention. The services providers opined that they received training on various MNACH issues, and pregnant women and mothers reported that their knowledge and health care-seeking behavior improved due to the intervention. The managers of the health facilities at upazila and union levels skillfully performed supportive monitoring. The repeated counseling through courtyard meetings and home visits made the community women aware of and motivated for MNCAH-oriented behavior and services. Findings below demonstrate such improvements.

The finding of the qualitative survey reveals that the objectives of the CHSS program are synchronized with the objectives of the health, nutrition and population sector of Bangladesh. The government is giving utmost focus on increasing the utilization of services in CCs and strengthening referral mechanisms. In some areas, Multipurpose Health Volunteers (MHVs) have been recruited under the CBHC (Community Based Health Care) program. The Civil Surgeons (CSs) opined that the activities of frontline health workers, like CHVs, are expected to reduce the demand-side barriers in MNCAH service delivery. Some CHVs said that they already applied or would like to apply for the post of MHV, and thus would be able to use their skills as CHVs. The training under the CHSS, recruitment of Community Health Volunteers (CHVs), demand-creation events and community mobilization are expected to reduce demand-side barriers in MNCAH service utilization, improve knowledge and health care-seeking behavior and increase utilization of MNCH services and thus, would help to increase efficiency in the health facilities by ensuring appropriate use of resources. The service providers in UHFWCs and CCs also commented that the activities under the CHSS program are very important for increasing their capacity and MNCH service provision in UHFWC and CC.

The managers in the Project districts opined that the CHSS program is very important, as it provides an additional frontline workforce. The resources used in the awareness raising program by the government are inadequate. The CHSS program supports the NGOs and works with the government health workers in parallel, reducing the workload of the government health workers. He added that the NGOs are playing the main role in recruiting field staff under the CHSS program. In addition, they train and monitor them. The main goal of the CHSS program is to reduce the maternal and child mortality rate. Under the program, one CHV has been appointed in each ward. The CHVs are raising awareness in the area by counseling the mothers in various ways. The frontline health workers are provided training to improve their skills under the program.

11.2 Efficiency of the CHSS Program

Under the CHSS, the assigned NGOs are receiving funds to conduct some activities to increase capacity of frontline health workers, ensure additional resources, and increase awareness and community participation in MNCH service delivery, which are specified in the plan. This subsection describes the activities under the CHSS and fund allocated in each intervention district, the cost of the CHSS program, the total MNCH output of the district, and the efficiency or cost effectiveness of the CHSS program.

11.2.1 Cost of the CHSS Program

The total costs of the CHSS interventions in three intervention districts are presented in Table-11.2.1. A total of BDT 24,553,024 was spent in Jamalpur district, BDT 28,333,819 was spent in Moulvibazar, and BDT 30,509,346 was spent in Patuakhali.

Table-11.2.1: Budget of the CHSS program (from Oct-Dec 2018 to Oct-Dec 2019)

District	Total cost according to the plan (in BDT)				
	Training, meeting and workshop	Inputs (HR, logistics and supplies)	Demand creation events	Monitoring, supervision and evaluation	Total cost
Jamalpur	2,210,849	3,477,900	6,849,525	12,014,750	24,553,024
Moulvibazar	8,832,414	16,239,665	1,637,403	1,624,337	28,333,819
Patuakhali	6,815,041	5,256,291	8,835,278	9,602,735	30,509,346
Total	17,858,304	24,973,856	17,322,206	23,241,822	83,396,189

11.2.2 Average MNCH output of the health facilities

Data on number of patients in the facility for MNCH by disease (OPD/IPD) from July 2019 to December 2019 (six months) were collected in the midline. In the baseline, data were collected on number of MNCH patients in the facility (OPD/IPD) from November 2017 to April 2018 (six months). The data were used to estimate the yearly average MNCH patients of each type of facility. The facility survey collected information on the MNCH patients, receiving services from the facilities in both OPD and IPD. Total output of the facility was estimated using weights for maternal care and child health care. The weight was calculated based on the average cost of maternal care and child care taken from recent studies. The estimated weight for one client seeking maternal health care is 2.65, compared to one client seeking child health care (Khan, et. al., 2012). Weights were also used for inpatients and outpatients to calculate the total patient flow in health facilities. The assumption used was that one inpatient is equivalent to 2.27 outpatients. This is also taken from a recent study on costing of inpatients and outpatients (Howlader, et. al., 2012)[10].

The results show that, the yearly average MNCH output of DH was 66,953.5 in the midline and 48,752.1 in the baseline in the Project area. The corresponding figures were 26,672.5 and 9,038.3 respectively in the Comparison area. On an average, 18,201.5 output increased (37.3 per cent) from the baseline to the midline in DH in the Project area and 9,038.3 (51.3 per cent) in the Comparison area. The yearly average MNCH output of MCWC was 14,320.1 in the midline and 13,013.8 in the baseline in the Project area. The corresponding figures were 7,806.2 and 6,770.8, respectively, in the Comparison area. On an average, 1,306.3 output increased (10 per cent) in MCWC from the baseline to the midline in the Project area and 1,035.4 (15.3 per cent) in the Comparison area. The yearly average MNCH output of UHC was 24,784.8 in the midline and 22,160.3 in the baseline in the Project area. The corresponding figures were 14,237.3 and 12,712.1 respectively in the Comparison area. On an average, 2,624.5 output increased (11.8 per cent) in UHC from the baseline to the midline in the Project area and 1,525.2 (12 per cent) in the Comparison area. The yearly average MNCH output of UHFWC was 1,485.6 in the midline and 1,894.3 in the baseline in the Project area. The corresponding figures were 2,867.4 and 1,936.9

10 These weights were also used in calculating total MNCH output of health facilities in other studies (Jahan, et. al., 2017)

respectively in the Comparison area. On an average, 408.6 output decreased (21.6 per cent) in UHFWC from the baseline to the midline in the Project area and 930.5 (48 per cent) increased in the Comparison area. The yearly average MNCH output of CC was 742.1 in the midline and 453.8 in the baseline in the Project area. The corresponding figures were 583.8 and 413.5 respectively in the Comparison area. On an average, 288.4 output increased (63.6 per cent) from the baseline to the midline in CC in the Project area and 170.3 (41.2 per cent) in the Comparison area.

The percentage increase in MNCH output was higher in the Comparison area compared to that in the Project area in all health facilities, except CCs. One reason behind this could be due to the fact that there are other MNCH interventions in the Comparison districts. It is very difficult to select a perfect comparison for the intervention districts of the CHSS program, as other MNCH programs are running in almost all districts in Bangladesh. Another reason could be that the CHSS program intends to increase the knowledge and awareness of pregnant women and mothers, and change their practices, and encourages nutritional diets for household members. This could in turn reduce overall need for health care and admission in health facilities. The CHVs are also helping to bring pregnant women, mothers and children to CCs and strengthen the referral mechanism. Therefore, patient turnover in the Project area increased at a rate in CCs compared to that in the Comparison area and a lower rate in other health facilities.

In all health facilities, MNCH patients' flow was higher in the Project area compared to that in the Comparison area except UHFWC. The utilization of public health facilities in hard-to-reach areas, where there are limited health care providers, is usually higher than the relatively developed areas. This finding is also supported by other recent studies (Jahan, et. al., 2017). The decrease in MNCH patients in UHFWC might be due to the increase in average percentage of vacant posts against sanctioned posts by 24.2 per cent from the baseline to the midline in UHFWC in the Project area. The average percentage of other health service providers, present at the time of the survey, also decreased (23.5 per cent) from the baseline to the midline in UHFWC in the Project area. Therefore, total output in UHFWC fell by 21.6 per cent from the baseline to the midline.

Table-11.2.2: Yearly average output of different health facilities

Type of facility	Average Output							
	Project area				Comparison area			
	Baseline	Midline	Change	% Change	Baseline	Midline	Change	% Change
DH	48,752.1	66,953.5	18,201.5	37.3	17,634.3	26,672.5	9,038.3	51.3
MCWC	13,013.8	14,320.1	1,306.3	10.0	6,770.8	7,806.3	1,035.4	15.3
UHC	22,160.3	24,784.8	2,624.5	11.8	12,712.1	14,237.3	1,525.2	12.0
UHFWC	1894.3	1485.7	-408.6	-21.6	1936.9	2867.4	930.5	48.0
CC	453.8	742.1	288.4	63.6	413.5	583.8	170.3	41.2

11.2.3 Average cost of MNCH patients

The study also attempted to estimate per MNCH cost in the midline and the baseline in the Project and the Comparison area. The scope of calculating the total cost of health service delivery was limited, as it was decided that the midline survey would use the same questionnaire as the baseline survey.

Therefore, the evaluation used the data on costs of health service delivery, estimated in similar health facilities in 2017 in the evaluation of DEPB. The average cost of the UHCs, UHFWCs and CCs were used to estimate per patient cost in the sampled health facilities. On an average, BDT 25,928,281.7 was spent yearly in UHC, BDT 788,551.6 in UHFWC, and BDT 597,721.6 in CC in 2017. The cost in 2018 and 2019 was estimated using 3.0 per cent interest rate, and cost during six months was estimated as the output was for six months.

Table-11.2.3: Average per MNCH patient cost in UHC, UHFWC and CC (in BDT)

Type of facility	Project area				Comparison area			
	Baseline	Midline	Change	% change	Baseline	Midline	Change	% change
UHC	602.6	554.9	-47.7	-7.9	1,050.4	966.0	-84.4	-8.0
UHFWC	214.4	281.6	67.2	31.3	209.7	145.9	-63.8	-30.4
CC	447.5	281.8	-165.7	-37.0	491.0	358.3	-132.8	-27.0

The results show that per MNCH patient cost reduced from BDT 602.6 in the baseline to BDT 554.9 in the midline in UHCs in the Project area. Per MNCH patient cost in UHCs was higher in the Comparison area compared to that in the Project area in both the midline and the baseline. Per MNCH patient cost reduced from BDT 1,050.4 in the baseline to BDT 966.0 in the midline in UHCs in the Comparison area. In both the areas, per patient cost reduced by about 8.0 per cent from the baseline to the midline. Per MNCH patient cost was BDT 214.3 in the baseline and BDT 281.6 in the midline in UHFWCs in the Project area. Per MNCH patient cost was BDT 209.7 in the baseline and BDT 145.9 in the midline in UHFWCs in the Comparison area. Therefore, per MNCH patient cost in UHFWCs decreased in the Comparison area, but increased in the Project area (Table-11.2.3). This is due to the unexpected fall in patient flow in UHFWCs from the baseline to the midline in the Project area. One reason behind this could be that the percentage of vacant posts increased by 24.2 per cent and presence of service providers reduced by 23.5 per cent from the baseline to the midline in UHFWCs (Figure-10.1.15 and Figure-10.1.16). The other reason could be the increased utilization of MNCH services in CCs from the baseline to the midline in the Project area.

As the main activities of the CHSS program were concentrated around CCs, the notable changes in utilization of MNCH services and per MNCH patient cost were observed in CCs. Per patient MNCH cost in CCs was BDT 281.8 in the midline and BDT 447.5 in the baseline in the Project area. The corresponding figures were BDT 358.3 and BDT 491.0 respectively in the Comparison area. On an average, per MNCH patient cost decreased by BDT 165.7 (37 per cent) from the baseline to the midline in CCs in the Project area and by BDT132.8 (27 per cent) in the Comparison area. The findings indicate that the program seems to have a potential treatment effect of an average 10 percentage point reduction in average cost of MNCH patients in CCs.

One of the limitations of per MNCH patient cost in different types of facilities was that the fund allocated for the CHSS program was provided to NGOs. The NGOs hired CHVs and organized training programs and demand creation events. The facilities did not receive any fund directly. Therefore, it was not possible to estimate the CHSS fund, used by each facility. Further, the utilization in the health facilities was not the only outcome of the program. There were many other expected outcomes of the CHSS program. For example, reducing morbidity and mortality of MNCH-related complications of the households. Therefore, the study attempted to calculate MNCH-related DALY in the Project area.

The DALY has two parts: Years of Life Lost (YLL) and Years Lived with Disability (YLD). This study estimated the MNCH-related YLL in 2018 and 2019 using the HMIS data, collected from the CS offices. The MNCH-related YLD could not be estimated using the data of the baseline and the midline. This was due to two reasons: the requirement to use the same questionnaire in the midline as in the baseline, and the duration of the illness or complaints were not collected in the baseline or the midline. Therefore, the evaluation could estimate only the MNCH-related YLL using some assumptions on life years lost due to premature mortality. The YLL averted in Patuakhali, Moulvibazar and Jamalpur districts were 4,234.2, 2,752.6 and 8,309.5 DALYs respectively. The cost of the CHSS program was BDT 30,509,346 in Patuakhali district, BDT 28,333,819 in Moulvibazar and BDT 24,553,024 in Jamalpur. The estimated incremental cost effectiveness ratio, i.e., cost per MNCH-related YLL averted was the lowest in Jamalpur (BDT 2,954.8), followed by Patuakhali (BDT 7,205.4) and Moulvibazar (BDT 10,293.2). The reason might be that the number of under-five deaths increased by 18.2 per cent in Moulvibazar from 2018 to 2019.

Table-11.2.4: Incremental cost-effectiveness ratio of the CHSS program (in BDT)

Project area	Incremental effectiveness (change in YLL)	Incremental cost (in BDT)	Cost per YLL averted (in BDT)	Cost per YLL averted (in US$)
Patuakhali	4,234.23	30,509,346	7,205.41	85.27
Moulvibazar	2,752.67	28,333,819	10,293.21	121.81
Jamalpur	8,309.57	24,553,024	2,954.79	34.97
Total	15,296.47	83,396,189.00	5,451.99	64.52

11.3 Impact, sustainability, coherence and coordination

This sub-section presents the findings on progress towards impact, indications of sustainability, and coherence and coordination.

11.3.1 Progress towards impact

Every CC should have one or more Community Groups (CGs) and Community Support Groups (CSGs) to work under each CC in an area. Accordingly, in the midline and the baseline surveys, respondents of the facility surveys were asked about availability of any CG or CSG in the area of respective CC, and if so, the number of such groups being active in the community under each CC. CG is headed by the local government and plays a crucial role in the activities of CSGs. In the facility survey, the respondents were asked to report the number of active CGs and CSGs in the area. The findings of the midline and the baseline surveys are presented in Table-11.3.1.1 and Table-11.3.1.2. The tables present the number of available CGs and CSGs by districts in the Project and the Comparison areas. As the tables indicate, one CG, on an average, was available under every CC in the Project and the Comparison areas in the midline and the baseline surveys. Proportions of CGs working actively in the area varied across districts. In the Project area, all CGs in Moulvibazar district, 88 per cent of CGs in Jamalpur district and only 33 per cent of CGs in Patuakhali district were found to be active in their areas in the midline survey. In the baseline, the corresponding proportions were 83 per cent in Moulvibazar, 75 per cent in Jamalpur and 100 per cent in Patuakhali districts in the Project area. Therefore, the number of active CGs increased in the midline, compared to that in the baseline in the two Project districts, but reduced in another Project district.

These proportions were 100 per cent in Barguna district, 100 per cent in Lalmonirhat district and only 30 per cent in Sylhet district in the Comparison area in the midline survey. In the baseline, the corresponding figures were 75 per cent in Barguna, 100 per cent in Lalmonirhat and 80 per cent in Sylhet. Overall, the performances of the CGs were better in the Comparison area.

The tables further reveal that, about three CSGs, on an average, were available under every CC in the Project and the Comparison areas in the midline and the baseline surveys. Proportions of CSGs working actively in the area varied across districts: in the Project area, 75 per cent of CSGs in Jamalpur district, while 50 per cent of CSGs in Patuakhali district and only 33 per cent of CSGs in Moulvibazar district were active in their areas in the midline survey. In the baseline survey, the corresponding proportions were about 63 per cent in Jamalpur, 50 per cent in Patuakhali and only 17 per cent in Moulvibazar districts in the Project area. Therefore, the number of active CSGs increased in the midline, compared to that in the baseline in the two Project districts, but remained the same in the other Project district.

These proportions were 100 per cent in each of Barguna and Lalmonirhat districts and 60 per cent in Sylhet district in the Comparison area in the midline survey, and 75 per cent in Barguna, 100 per cent in Lalmonirhat and 70 per cent in Sylhet in the baseline survey. Overall, the performances of the CSGs were better in the Comparison area.

The findings indicate that the Project areas were chosen, as they were low-performing and had low levels of community-level activities. The CHSS helped to improve the activities, and the CGs, CSGs and consequently the local government were more active in the midline compared to the baseline. However, one of the limitations of the evaluation is that the Comparison districts were performing well in community-level activities even in the baseline, and continued to do so. It is difficult to choose the control of an intervention districts, as many other programs are implemented in parallel in the control districts.

Table-11.3.1.1: Community groups and community support groups in the midline survey

Number of district-wise available and active community groups and community support groups by area during the midline survey

Name of districts	Average number of community groups in each CC	Percentage of active community groups	Average number of community support groups in each CC	Percentage of active community support groups
Project area				
Patuakhali	1.0	33.3	3.00	50.0
Moulvibazar	1.0	100.0	3.00	33.3
Jamalpur	1.0	87.5	2.6	75.0
Comparison area				
Barguna	1.0	100.0	3.00	100.0
Sylhet	1.0	30.0	3.00	60.0
Lalmonirhat	1.0	100.0	3.00	100.0

Table-11.3.1.2: Community groups and community support groups in the baseline survey

Number of district-wise available and active community groups and community support groups by area during the baseline survey

Name of districts	Average number of community groups in each CC	Percentage of active community groups	Average number of community support groups in each CC	Percentage of active community support groups
Project area				
Patuakhali	1.0	100.0	3.0	50.0
Moulvibazar	1.0	83.3	3.0	16.7
Jamalpur	0.9	75.0	2.6	62.5
Comparison area				
Barguna	1.0	75.0	3.0	75.0
Sylhet	1.0	80.0	3.0	70.0
Lalmonirhat	1.0	100.0	3.0	100.0

The findings from the qualitative survey revealed that capacity of the frontline health workers increased through trainings and workshops on various MNCAH issues under the CHSS program. The CS of Patuakhali opined that the health workers seemed to be more comfortable to provide services and the service users were also satisfied. The UHFPO of Kamalganj reported that the quality of services improved due to implementation of the CHSS program. The number of service users increased, and at the same time their level of satisfaction also increased. Both service providers and users felt more comfortable, and mothers complained less regarding MNCAH services in the health facilities.

The CHCPs in Jamalpur reported that their skills increased through trainings and workshops under the CHSS program. For example, they learned about the danger signs during pregnancy in the trainings and felt more confident in providing services. The utilization of ANC and PNC services as well as the coverage of family planning services also increased. The satisfaction of service recipients increased, and they had fewer complaints than before. Regarding the quality of services and the efficiency of health care providers, mothers present in the FGD sessions said that the quality of services seemed to be increasing, as they were prescribing and providing more medicines, behaving well and giving more advices on MNCAH issues (Dumki CC). Mothers participating in the FGD sessions in Hatbari CC opined that the efficiency of service providers seemed to have increased, because the consultation time increased, and service providers examined patients properly and then prescribed medicines.

11.3.2 Sustainability

All the upazila-level managers felt the need for continuation of DP's support for the CHSS for at least a few more years. The local rich and solvent people should be encouraged to contribute to providing financial support for increased delivery of MNCAH services. It would be difficult to continue the program, if the development partners withdraw funds. But GoB would be able to continue it, if local funds are available. The service providers of UHFWCs and CCs said that the trainings under the CHSS helped to improve their skills, and such activities should continue for a longer period of time to increase use of MNCAH services. Most of the service providers also opined that community financing could be another option for long-term financial sustainability of the program.

The findings indicate that it is too early for the managers and service providers for commenting on sustainability of the CHSS program as well as whether the local government and community would be able to carry on the activities of the CHSS program or not. The CHCPs in Jamalpur opined that their skills improved due to the trainings on MNCAH issues, and they would be able to continue providing better MNACH services. They thought that it would be sustainable in the long-run. They also believed that financial support would be available from the community and local leaders. In some project areas, the local government representatives helped to increase institutional delivery in their areas, providing financial support where it was needed. They also helped in organizing meetings or mothers' assembly. However, most of the service providers commented that immediate withdrawal of funds might have some adverse effects on home visits by service providers, courtyard meetings, default tracking, and Maternal and Perinatal Death Surveillance and Response (MPDSR). Most of the NGOs reported that immediate withdrawal of funds might hamper the ongoing demand creation activities and thus MNCAH service delivery at the community level.

11.3.3 Coherence and coordination

CHVs refer pregnant women to CCs for ANC with an aim to ensure utilization of institutional delivery, PNC, ENC, and child health care in coordination with the relevant GoB service providers and managers to reach the targets of the CHSS program. CHCPs provide health services in CCs as well as refer MNCH patients to UHFWC and UHC when needed. However, the roles and responsibilities of CHCPs and CHVs are not well defined and synchronized yet (UHFPO, Bakshiganj). According to some CHCPs, the most important challenge in implementing the CHSS program is the lack of coordination between CHCPs and CHVs. In some cases, there is lack of information and CHVs do not report properly. CHVs are supposed to participate in monthly meetings with CGs, CSGs and CHCPs. However, inadequate number of meetings at community level is hindering the achievements of the targets. The low role of UH&FWC is also adversely affecting health services in the upazilas. Therefore, the level of coordination between UHC and UHFWC on the one hand and coordination between UHFWC and CC on the other hand should also increase.The household survey findings on the referral system for MNCH care, i.e., whether they were advised by health workers, family or friends to seek health care or not, is presented below.

11.3.3.1 Advice and referral for care-seeking behavior for complications in ANC period

Findings in Table-11.3.3.1 present the proportion of women, who had complications in their ANC periods, who sought health care for complications, and received advice to seek care for the complications. Also, the tables present percentages of the women with complications, who sought health care for complications, were advised to seek health care and referred to higher-level health facilities to receive better services.

Tables show that, during the midline survey, among the women with complications, who sought care, 60.2 per cent in the Project area and 67.2 per cent in the Comparison area were advised for seeking care for complications (44.1 per cent and 42.2 per cent respectively in the baseline survey). On the other hand, among the women with complications, who sought care and were advised for care seeking, only 5.7 per cent and 6.0 per cent in the Project and the Comparison areas, respectively, were referred from one facility to another for required services in the midline survey (2.7 per cent and 2.4 per cent respectively in the baseline survey).

Table-11.3.3.1: Advice and referral for care-seeking for complications during ANC period in the midline and the baseline surveys

Percentage of women aged 15-49 years with a live birth in two years preceding the interview, who had complications during ANC period and sought care for complications, by receiving suggestions or advice for care-seeking for complications, and percentage of women who had complications, sought care and were suggested for care-seeking, by referring them from one facility to another to receive care from referred facility according to background characteristics by area during the midline survey

Background characteristics	Project area			Comparison area		
	Percentage of women with complications got advice for care-seeking	Percentage of women with complications referred for complications	No. of women aged 15-49 years with complications	Percentage of women with complications got advice for care-seeking	Percentage of women with complications referred for complications	No. of women aged 15-49 years with complications
Midline survey	60.2	5.7	88	67.2	6.0	67
Baseline survey	44.1	2.7	247	42.2	2.4	201

11.3.3.2 Advice and referral for care-seeking behavior for complications during delivery

Findings in Table-11.3.3.2 present proportion of women, who suffered from complications during delivery and sought care for the complications, and received advice for complications. In addition, the tables present the distributions of women with complications during the last deliveries, who sought care, were advised for seeking health care for complications, and were referred to improved facilities to get better care.

The tables show that among the women with complications, who sought health care, 60.5 per cent in the Project area and 55.2 per cent in the Comparison area were advised for seeking health care for complications in the midline survey (45.4 per cent and 51.7 per cent respectively in the baseline survey). On the other hand, among the women with complications, who sought care and were advised for seeking health care for complications, only 2.6 per cent and 1.7 per cent respectively were referred from one facility to another in the midline survey (3.8 per cent and 3.4 per cent respectively in the baseline survey).

Table-11.3.3.2: Advice and referral for complications during delivery in the midline and the baseline surveys

Percentage of women aged 15-49 years with a live birth in two years preceding the interview, who had complications during delivery and sought care for these complications, by receiving suggestions or advice for seeking care for complications and percentage of women with complications in delivery, who sought care and were suggested for care-seeking, by referring them to an improved facility according to background characteristics by area during the midline survey

Background characteristics	Project area			Comparison area		
	Percentage of women with complications got advice for care-seeking	Percentage of women with complications referred for complication	No. of women aged 15-49 years with complications	Percentage of women with complications got advice for care-seeking	Percentage of women with complications referred for complication	No. of women aged 15-49 years with complications
Midline survey	60.5	2.6	38	55.2	1.7	58
Baseline survey	45.4	3.8	128	51.7	3.4	146

11.3.3.3 Advice and referral for care-seeking behavior for complications after delivery

Findings in Table-11.3.3.3 present proportion of women aged 15-49 years with a live birth in two years preceding the interview, who had complications immediately after delivery, sought care for such complications, by receiving advice for seeking health care. Further, the tables present the midline and the baseline percentages of women with complications, who received advice for seeking health care and sought care, and were referred to improved facilities for improved services.

The tables show that among women with complications, who sought care, 34.4 per cent in the Project area and 37.8 per cent in the Comparison area were advised for seeking health care for complications in the midline survey (40.9 per cent and 28.1 per cent respectively in the baseline survey). However, only negligible proportions of women, with complications and advised for seeking care, were referred from one facility to another in the midline survey (zero per cent and 4.4 per cent respectively) and the baseline survey (3.1 per cent and 1.3 per cent respectively).

Table-11.3.3.3: Advice and referral for complications after delivery during the midline and the baseline surveys

Percentage of women aged 15-49 years with a live birth in two years preceding the interview, who had complications immediately after delivery, sought care for such complications, by receiving advice for care-seeking, and percentage of women with complications after delivery who sought care and were suggested for care-seeking by referring them to a facility according to background characteristics by area during the midline survey

Background characteristics	Project area			Comparison area		
	Percentage of women with complications got advice for care-seeking	Percentage of women with complications referred for complications	No. of women aged 15-49 years with complications	Percentage of women with complications got advice for care-seeking	Percentage of women with complications referred for complications	No. of women aged 15-49 years with complications
Midline survey	34.4	0.0	32	37.8	4.4	45
Baseline survey	40.9	3.1	170	28.1	1.3	149

11.3.3.4 Advice and referral for care-seeking for newborn complications

Mothers or caregivers of the newborn with complications in one month of birth were asked if they were advised by someone for care-seeking for their newborn, and if so, the mothers or caregivers were further enquired as to whether the newborn had been referred from one facility to another. Findings show that, during the midline 58 per cent of the newborn with complications in the Project area were advised, but only 8.0 per cent of them were referred from one facility to another for better services. The corresponding percentages in the Comparison area were 44 and 7.0 per cent respectively. In the baseline 37 per cent of newborn with complications in the Project area were advised and only 3.0 per cent were referred. The corresponding percentages in the Comparison area were 41 per cent and 2.0 per cent respectively. The findings do not show any noticeable relationship between newborn, who were advised or referred to another facility, and mothers' age, education and household wealth status during both the surveys.

As mentioned above, among newborns with complications, during the midline, 58 per cent sought care/ treatment from MTP, 33 per cent sought care from non-MTP. In the Comparison area, corresponding percentages were 59 per cent and 30 per cent respectively. During the baseline, the percentages were 58 per cent and 36 per cent respectively in the Project area and 52 per cent and 34 per cent respectively in the Comparison area. (Table-A.11.3.3.4.1, Table-A.11.3.3.4.2, Table-A.11.3.3.4.3 and Table-A.11.3.3.4.4). Further, it is evident from the tables below that there are no clear relationships between seeking care from MTP and mothers' age, education and household resources.

12.

CONCLUSIONS AND LESSONS LEARNED

This section presents the conclusions in line with the evaluation objectives and the Theory of Change (ToC), as well as the lessons learned and recommendations for the CHSS program.

12.1 Conclusions

The CHSS program started in October 2018 in the Project districts with the aims to reduce demand-side barriers in MNCAH service delivery, to improve knowledge and awareness of the service users and families, to increase capacity of the frontline health workers, to increase community participation in MNCAH service delivery, to establish effective referral mechanism for primary health care, and to strengthen the local government. The midline evaluation was conducted in February-March 2020, and then postponed due to the COVID-19 pandemic. It resumed again in July 2020. Thus, the effective time lag between the starting of the program and the midline evaluation was less than one and a half years. Therefore, the evaluation could capture properly the effect of the program on knowledge and awareness, health care-seeking behavior, utilization of MNCAH services, and partially the effect of the program on capacity and motivation of the health workers and reducing inequity in use of MNCAH services. Due to very low gestation gap there were little changes in other indicators like community participation, and strengthening of local government. It is also too early to determine the scalability and sustainability of the CHSS program.

The CHSS program was successful in increasing knowledge and awareness on maternal health issues. For example, about 73.8 per cent and 53.9 per cent of women in the Project and the Comparison areas, respectively, were aware of three or more danger signs in the pregnancy period in the midline. These corresponding figures in both the areas in the baseline (about 23 per cent) were comparatively quite lower than those of the midline. In the midline survey, 69.6 per cent and 57.8 per cent of women in the Project and the Comparison areas, respectively, were aware of three or more danger signs of delivery period. However, in the baseline survey only one-tenth of the women in the two areas were aware of three or more such danger signs. It seems that the CHSS program had a potential treatment effect of an average 20 per cent increase in proportion of women having knowledge of three or more danger signs during delivery. In the midline survey, 57.2 per cent of the women in the Project area and 42.8 per cent in the Comparison area were aware of three or more danger signs of postnatal period. However, the corresponding figures were comparatively lower, about one-third in both the areas, in the baseline. The interventions of the CHSS program, like - pregnant mothers' registration, regular home visits by CHVs, and mothers' assembly, birth preparedness sessions etc, conducted at community level might be the driving factors behind the relatively higher improvement in knowledge and awareness regarding maternal care in the Project areas from the baseline to the midline.

The health care-seeking behavior during pregnancy also improved in the Project area from the baseline to the midline. For example, in the midline survey 74.8 per cent of women in the Project area and 67.1 per cent in the Comparison area received ANC from a qualified doctor. Whereas, in the baseline, the

corresponding figures in the two areas were 52.9 per cent and 55.4 per cent respectively. The findings indicate that the CHSS program seems to provide a potential treatment effect of an average10.2 percentage point increase in ANC by a medically trained provider. The coverage of ANC4+ increased from 34.3 per cent in the baseline to 45.2 per cent in the midline in the Project area, and from 35.9 per cent in the baseline to 52.1 per cent in the midline in the Comparison area. The coverage of consumption of iron-folate supplements (100+ tablets) increased from 26.3 per cent in the baseline to 36.8 per cent in the midline in the Project area, and from 25.2 per cent in the baseline to 32.3 per cent in the midline in the Comparison area. The findings indicate that the CHSS program seems to provide a potential treatment effect of an average 2.0 percentage point increase in consumption of 100+ IFA during pregnancy. The reasons behind this also might be increase in the registration of pregnant mothers, regular home visits by CHVs, and mothers' assembly, birth preparedness sessions etc, conducted at the community level in the Project area.

The CHSS program is yet to be successful in increasing institutional delivery, ENC, IYCF practices and child health care. In some project areas, the delayed implementation of demand-side activities and recruitment of CHVs might have also hindered the process. For example, in some areas the recruitment of CHVs were delayed, and CHVs started working after 6-8 months (in April-May 2020). So, effectively the time lag between the implementation of the program and the midline evaluation was only eight months in those areas. This time lag might not be sufficient to have an effect of the CHSS program on institutional delivery. Therefore, there are still some demand-side and supply-side barriers. More counseling is needed for families/husband/relatives of pregnant women, bringing in a gender lens to this intervention. Facility readiness is another challenge cited by the frontline health workers. For example, CHVs refer patients to CCs, but some CCs were found to provide services only 2/3 days per week. In many CCs there are male service providers, so pregnant women and mothers do not feel comfortable to seek care from them due to inadequate privacy. Lack of women-friendly services in some areas is hampering MNCAH services delivery in CCs. Again, a stronger gender analysis of the program would benefit the on-the-ground implementation of activities. Lack of diagnostic facilities and availability of service providers are also hampering the increase in utilization of MNCAH services at community level and the referral mechanism. Inadequate government human resources, vacant posts, absenteeism, and lack of drugs and equipment are also crucial for successful implementation of the CHSS program.

The findings of the qualitative survey show that the CHSS program is partially adolescent- and girl-friendly, and in some areas it is expected to reduce child marriage. In the midline, 26 per cent of the adolescents in the Project area and 19.7 per cent of the adolescents in the Comparison area reportedly knew organizations or centers providing ASRHR services located in their area. These percentages in the baseline were 13.1 per cent in the Project area and 20.9 per cent in the Comparison area. Girls aged 18-19 years and adolescents of the richest households were more likely than other adolescents of both areas to know such organizations or centers regardless of the midline or the baseline surveys. In the Project area, female adolescents and relatively older adolescents compared to the male adolescents and younger adolescents in both the midline and the baseline surveys were more likely to have ever received ASRHR services from the aforesaid centers and more likely to feel comfortable in receiving ASRHR services there.

Community participation increased in the midline in two Project districts, but reduced in the other Project district. Proportions of CGs working actively in the Project area varied across districts. All CGs in Moulvibazar district, while 88 per cent of CGs in Jamalpur district and only 33 per cent of CGs in Patuakhali district were reportedly active in their areas in the midline survey. In the baseline, the corresponding proportions were 83 per cent in Moulvibazar, 75 per cent in Jamalpur and 100 per cent in Patuakhali district in the Project area. Therefore, the number of active CGs increased in the

midline compared to that in the baseline in two Project districts, but reduced in the other Project district. Frequent transfers of UHFPOs, inadequate coordination between the service providers and the local government, weak monitoring and supervision by the managers in some areas might be the reasons behind inadequate activities conducted by the CGs and CSGs.

The utilization of some MNCAH services might be hampered by the COVID-19 pandemic. For example, overall low bed occupancy rates in the midline survey might be due to the fact that most part of the facility data collection for the survey took place during the lockdown declared for the COVID-19 outbreak. Newspaper reports assure that admission of patients to health facilities decreased during the lockdown. This is reflected in the low bed occupancy rates in the health facilities, covered in the survey.

The findings indicate that the CHSS program increased capacity of the service providers. For example, notable skill development (among both doctors and other service providers) took place through trainings and workshops. For instance, proportions of doctors in UHCs, who received training on ETAT/newborn care, increased from 16.1 per cent in the baseline to 20.3 per cent in the midline in the Project area, and from 6.2 per cent in the baseline to 15.9 per cent in the midline in the Comparison area. However, the managers and service providers opined that more trainings and refresher trainings are required to improve MNCAH service delivery and health status of population. Moreover, the proportion of vacant posts and absenteeism reduced in UHCs and CCs in the Project area. But the proportion of vacant posts was very high and presence of service providers was low in UHFWC in the Project areas. This hampered utilization of MNCH services in UHFWCs in the Project areas and was also reflected in the estimated average MNCH output of UHFWCs.

The findings show that per MNCH patient cost reduced from BDT 447.5 in the baseline to BDT 281.8 in the midline in the UHCs in the Project area. Per MNCH patient cost reduced from BDT 491.0 in the baseline to BDT 358.3 in the midline in UHCs in the Project area. The reduction in average cost of MNCH patients was BDT 165.7 (37 per cent) in the Project area and BDT 132.8 (27 per cent) in the Comparison area. The findings indicate that the program seems to have a potential treatment effect of an average 10 percentage point reduction in average cost of MNCH patients in CCs.

A number of studies show that the CHSS program was implemented in the districts, which were lagging behind the national situation in respect of the major maternal, neonatal and child health indicators. It is important for the country to reduce geographical inequity in utilization of MNCAH services as well as existing inequity among different socio-economic groups in order to achieve universal health coverage. The findings indicate inequity in knowledge and awareness, health care-seeking behavior and utilization of many MNCAH indicators. However, the intervention was successful in reducing inequity in many MNACH indicators in the Project area. For example, proportions of women citing ‘experienced traditional birth attendant is safe’ decreased with an increase in the education level or household resources. In the Project area in the midline survey, 30.4 per cent of women of the poorest wealth quintile received assistance during delivery from an MTP, which was 75.3 per cent among women belonging to the highest wealth quintile. A similar pattern existed in the Comparison area in this regard. However, the inequity among different socioeconomic groups reduced from the baseline to the midline.

The effect of the CHSS program on MNCAH status and mortality could not be assessed due to the small sample size in the midline and very short gestation gap. However, the data on mortality, collected from the CS offices, was used to calculate the Years of Life Lost (YLL) in 2018 and 2019, and incremental cost effectiveness ratio of the CHSS program. The YLL averted in Patuakhali, Moulvibazar and Jamalpur districts were 4,234.2, 2,752.7 and 8,309.6 DALYs respectively. The cost of the CHSS program was BDT 30,509,346 in Patuakhali, BDT 28,333,819 in Moulvibazar, and BDT 24,553,024 in Jamalpur district. The estimated incremental cost effectiveness ratio, i.e., cost per MNCH-related YLL averted was lowest in

Jamalpur (BDT 2,954.8), followed by Patuakhali (BDT 7,205.4) and Moulvibazar (BDT 10,293.2). The reason for high cost per MNCH-related YLL averted in Moulvibazar might be that the number of under-five deaths increased by 18.2 per cent in Moulvibazar from 2018 to 2019.

On the whole, the CHSS program has started creating positive effects in the areas, although the effects are still not as much as expected, and worse still, it is yet to produce any effect in the higher-level primary facilities. There is always a gestation gap between implementation of the program and production of outcomes, and this is especially so for the health sector interventions, which are implemented in challenging program context areas.

The households in those areas hold more traditional attitudes and outlook on life and wellbeing. So, it takes a longer time (than one year) for changing the sense of values around healthcare existing in the society there. The project has to continue the activities being undertaken with its vigor and commitment before it can yield the desired level of outcomes. The gradual upward trend in the crucial indicators provides ample indication that the program would likely to achieve the expected outcomes, after end of the gestation period.

12.2 Lessons Learned

The key lessons learned are presented below:

- The demand-creation activities are helping to overcome bottlenecks in use of many MNCAH services. However, community participation should be increased and the activities should be better coordinated with the regular government programs.
- The supply-side barriers should also be removed to ensure an effective referral system.
- Low institutional delivery might be one of the reasons for low progress in ENC in the Project areas. The demand creation activities might have been more focused towards increasing knowledge, awareness and utilization of maternal health care, and less emphasis was provided on newborn and child health care. CHVs are helping in bringing pregnant women to CCs, and it is expected that institutional delivery and follow-up check-up would be ensured, consequently, with the help of resources of the regular GoB programs. The institutional delivery in the project area was lower than the national estimates, and this might be one of the causes of low progress in ENC in the Project area.
- There is inequity in knowledge, and awareness and utilization of MNCAH services among different socio-economic groups and districts. The inequity decreased for many MNCAH-related indicators from the baseline to the midline, but still there are scopes for improvement.
- Proportion of women (aged 15-49 years) receiving gender-focused advice, counseling and services increased in the midline compared to that of the baseline in both the areas. However, now they are receiving more counseling from their relatives/friends/neighbors. A strong gender analysis of the on-the-ground implementation of the activities is needed to best strengthen outcomes for male and female adolescents and mothers.
- The CHSS program was implemented in 2018 in districts, which were lagging behind the national situation in respect of the major maternal, neonatal and child health indicators. The findings of the midline evaluation show that MNCAH indicators of the districts improved in the midline, but many indictors are still lower than the national estimates. Continuation of the CHSS program and further interventions are needed to reach the national targets.

13

RECOMMENDATIONS

The evaluation team developed draft recommendations based on findings and conclusions of the evaluation. UNICEF later provided feedback on these, including from both program staff as well as independent evaluation staff, and the following recommendations were re-formulated based on these suggested revisions. The recommendations presented below are in order of priority and urgency, and should be addressed by UNICEF and GoB without delay, in order to increase the project's performance and increase likelihood of sustainability. If more than one intended primary users are listed, they are listed in terms of primary responsibility first and supplementary role second.

1. **More Multipurpose Health Volunteers (MHVs) should be recruited under the government Community-based Health Care Program.** The activities of Community Health Volunteers (CHVs) helped to increase knowledge, awareness and increased utilization of some maternal health services (ANC, delivery care, PNC) in the Project areas. But the number of CHVs is not sufficient to cater to the existing need. Therefore, more MHVs should be recruited within the government Community-Based Health Care program. GoB should mobilize additional resources to adequately budget community-based health care program with proper incentive structures for MHVs. UNICEF and NGOs may gradually reduce their implementing roles, and increase facilitating role and capacity building for community health programs run by GoB.

   Target Primary User(s): MoHFW and UNICEF

2. **Continue to strengthen the capacity of male and female MHVs and other frontline health workers.** CHVs and frontline health workers are receiving trainings on MNACH issues under the CHSS program. The managers and service providers opined that more trainings and refresher trainings should be organized for successful implementation of the CHSS program. Therefore, UNICEF should provide technical assistance to GoB to develop effective training modules and tools for trainings and refresher trainings of frontline health workers. GoB and UNICEF should generate additional fund to budget the required capacity building programs. Gender and human rights, from the lens of CRC, should be included as one of the frameworks for ensuring that these training modules and tools are responsive to all needs of the targeted groups.

   Target Primary User(s): UNICEF and MoHFW

3. **Measures should be taken to revitalize Community Groups (CGs) and Community Support Groups (CSGs).** The role of CGs and CSGs should be increased substantially for increasing community participation to ensure increase in use of primary health care. More frequent meetings should be organized, involving all the stakeholders and local government. UNICEF should support GoB to develop a system to vitalize CGs and CSGs within the existing health resources and structures.

   Target Primary User(s): MoHFW and UNICEF

4. **The roles and responsibilities of male and female community health volunteers and frontline health workers (separately) should be clearly defined and synchronized to improve coordination under the CHSS program.** Ensuring a gender lens within the recruitment would be critical. This is expected to increase coordination between CHCPs and CHVs in delivery of primary health care at community level. GoB with the help of UNICEF should immediately develop a mechanism to increase coordination between community health workers and MHVs/CHVs. Ensuring a gender lens on the roles and capacities of men and women CHWs and frontline health workers is specifically required.

   Target Primary User(s): MoHFW and UNICEF

5. **UNICEF should provide support to GoB for women-friendly health services at communities.** Availability of female service providers at community level is very crucial for ensuring optimal utilization of MNCAH services. Female frontline health workers and female service providers at the first service delivery point are the key to successful implementation of any MNCAH intervention. Therefore, UNICEF should provide support to GoB for developing women-friendly health service tools for communities, including strengthening the capacity of female health workers and better utilizing the role of male service providers in these contexts.

   Target Primary User: UNICEF

6. **Measures should be taken to ensure safe service deliveries at communities against COVID-19.** Some of the demand creation activities halted, and some have not started yet in the Project area due to the COVID-19 pandemic. All the demand creation events should be organized as soon as the situation permits, and GoB and UNICEF should ensure safe community health programs against COVID-19 with adequate capacity buildings and logistics support.

   Target Primary User(s): MoHFW and UNICEF

7. **UNICEF and local government should support GoB to develop innovative referral model for hard-to-reach areas.** Availability of transports and better communication in the hard-to-reach areas play vital role in appropriate and timely use of MNCH services. Under the CHSS program, transports have been arranged for mothers and children in few areas with the help of the local government. Proper gate keeping at community level and at the same time prompt referral and access to higher level health facilities (UHCs and DHs) should be ensured in all areas. UNICEF and local government should support GoB to develop an innovative referral mechanism and remote primary health care service delivery models and provide services according to necessity.

   Target Primary User: UNICEF

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