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## FINAL EVALUATION OF THE PARTNERSHIP FOR MATERNAL AND NEONATAL HEALTH PROJECT IN ARGHAKHANCHI AND KAPILVASTU DISTRICTS, NEPAL

**August, 2013**

This publication was produced at the request of the United States Agency for International Development. It was prepared independently by Public Health and Infectious Disease Research Center (PHIDReC), Kathmandu, Nepal.

# **FINAL EVALUATION OF THE PARTNERSHIP FOR MATERNAL AND NEONATAL HEALTH PROJECT, ARGHAKHANCHI & KAPILVASTU DISTRICTS, NEPAL**

**THIS STUDY REPORT SUMMARIZES AND COMPARES THE  
FINDINGS OF FINAL EVALUATION AGAINST BASELINE  
INFORMATION. IT ALSO PRESENTS THE EVALUATION OF  
OPERATIONAL RESEARCH CONDUCTED IN ARGHAKHANCHI  
DISTRICT, NEPAL**

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## **DISCLAIMER**

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# CONTENTS

- Contents ..... 3
- Acronyms ..... 4
- Evaluation Purpose and Evaluation Questions ..... 1
  - Evaluation Purpose ..... 1
  - Evaluation Questions ..... 1
- Project Background ..... 2
- Evaluation Methods and Limitations ..... 5
- Findings, Conclusions, and Recommendations ..... 8
  - Findings ..... 8
  - Conclusions ..... 20
  - Recommendations ..... 21
- Annexes ..... 23
- Note: ALI the annexes have been separately provided ..... 23

# ACRONYMS

|        |  |
|--------|--|
| AHW    | Auxiliary Health Worker                              |
| AMTSL  | Active management of the third stage of labor        |
| ANC    | Antenatal Care                                       |
| ANM    | Auxiliary Nurse Midwife                              |
| ARI    | Acute Respiratory Infection                          |
| CATCH  | Core Assessment Tool for Child Health                |
| CB-NCP | Community-based Newborn Care Package                 |
| CHD    | Child Health Division                                |
| CHDK   | Clean Home Delivery Kit                              |
| CHW/V  | Community Health Worker/Volunteer                    |
| CMA    | Community Medical Auxiliary                          |
| CSHGP  | Child Survival and Health Grants Program             |
| EC     | Electoral Constituency                               |
| FCHV   | Female Community Health Volunteer                    |
| FGD    | Focus Group Discussion                               |
| FP     | Family Planning                                      |
| HA     | Health Assistant                                     |
| HFMSPP | Health Facility Management Strengthening Program     |
| HFOMC  | Health Facility Operation and Management Committees  |
| HFOMC  | Health Facility Operational and Management Committee |
| HMIS   | Health Management Information System                 |
| HP     | Health Post  |
| HRI    | HealthRight International                            |
| HW     | Health Worker  |
| IEC    | Information, Education and Communication             |
| IMCI   | Integrated Management of Childhood Illnesses         |
| IPT    | Intermittent Preventive Treatment                    |
| IYCF   | Infant and Young Child Feeding                       |
| KPC    | Knowledge Practice and Coverage                      |
| MCHW   | Maternal and Child Health Worker                     |
| MDG    | Millennium Development Goals                         |
| MMR    | Maternal Mortality Rate                              |
| MNC    | Maternal and Neonatal Care                           |
| MNC-QI | Maternal and Newborn Care-Quality Improvement        |
| MNH    | Maternal and Neonatal Health                         |
| MoHP   | Ministry of Health and Population                    |
| NDHS   | Nepal Demographic and Health Survey                  |
| NDHS   | Nepal Demographic and Health Survey                  |
| NGO    | Non-governmental Organization                        |
| ORS    | Oral Rehydration Solution                            |
| PAC    | Post Abortion Care                                   |
| PCA    | Principal Component Analysis                         |
| PD     | Positive Deviance                                    |

|        |  |
|--------|--|
| PD-MNH | Positive Deviance in Maternal and Newborn Health |
| PHCC   | Primary Health Care Center                       |
| PMNH   | Partnership for Maternal and Neonatal Health     |
| PMTCT  | Prevention of Mother-to-Child Transmission       |
| PNC    | Postnatal Care                                   |
| POU    | Point of Use                                     |
| PPH    | Postpartum Hemorrhage                            |
| PPS    | Probability Proportion to Size                   |
| PSU    | Primary Sampling Unit                            |
| RDW    | Recently Delivered Women                         |
| SBA    | Skilled Birth Attendant                          |
| SES    | Socio-economic Status                            |
| SHP    | Sub-health Post                                  |
| SLC    | School Leaving Certificate                       |
| SPSS   | Statistical Package for Social Sciences          |
| TBA    | Traditional Birth Attendant                      |
| TT     | Tetanus Toxoid                                   |
| TTBA   | Trained Traditional Birth Attendant              |
| UNFPA  | United Nations Fund for Population Associations  |
| UNICEF | United Nations Children's Fund                   |
| USAID  | United State Agency for Internal Development     |
| VDC    | Village Development Committee                    |
| VHW    | Village Health Worker                            |
| WHO    | World Health Organization                        |



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## Final evaluation of the partnership for maternal and neonatal health project in Arghakhanchi and Kapilvastu districts, Nepal - Executive Summary

*This project was funded by the U.S. Agency for International Development through the Child Survival and Health Grants Program.*

**August 2013**

### Evaluation, Purpose, and Evaluation Questions

The main objective of the final evaluation was to set up the final values of target indicators to estimate the current levels of maternal and neonatal care knowledge, practice, coverage, and quality indicators to compare with the baseline status, explore the factors behind and guide the future work in program districts. Identifying the values for knowledge, practices and quality of MNC care, key MNH indicators (as established in baseline), key factors that contributed in program success/failure, the effectiveness of strategies adopted in the project, the recommendations and key learning for future program of actions were the key questions.

Program implementing partners (both government as well as the supporting international organizations), donor agencies and key stakeholders in Arghakhanchi and Kapilvastu districts were the key audiences for disseminating the evaluation results.

### Project Background

The Partnership in Maternal and Neonatal Health (PMNH) Project's goal is to reduce maternal and neonatal morbidity and mortality in Kapilvastu and Arghakhanchi districts of Nepal. The project aims to achieve this goal through the increased use of key maternal and neonatal services and practices. The expected results are: increased knowledge of, and demand for, MNC practices and services; increased quality of MNC services; increased access to, and availability of, MNC services and supplies; and improved social, policy, and enabling environment for MNC services and supplies.

The key interventions of the project concentrated on Arghakhanchi and Kapilvastu districts. However, the positive deviance in MNH was intervened in Shivapur Village Development Committee (VDC) of Kapilvastu district. The operational research activities were conducted only in electoral constituency two (EC-2) of Arghakhanchi district.



Photo: FGD with FCHVs in Khilji VDC, Arghakhanchi]

### Key Findings:

- Promising results from PD-MNC, Near Miss, Death Reviews and MNC-QI; OR developed a promising model of increasing MNC qualities at peripheral health facilities
- HFOMC generated more than 100 % resources from VDCs/DDCs; recruited 18 HWs for just 6 health facilities in Arghakhanchi
- Increasing Birthing Centers in both program districts (Arghakhanchi: 14 from 2 during baseline; Kapilvastu: 7 from 4 during baseline).
- All 119 HFs were found best performing according to CB-NCP incentive performance standard KPC survey showed an improving progress in majority of knowledge and practice related indicators except few indicators such as DPT-III, FP use in Kapilvastu and MTCT knowledge in both districts.

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## Evaluation Questions, Design, Methods, and Limitations

This was a cross-sectional survey conducted to assess the process and achievement of the intended results mentioned in the Detailed Implementation Plan (DIP). Mixed methods (both qualitative and quantitative approaches) were used to collect information and evaluate the outcome and impact of the project as compared to baseline. Quantitative information was also derived from data sets maintained by the project during baseline and mid-term, including monitoring indicators and an in-depth baseline survey. The study utilized data from other project sources, such as operational research (OR), and monitoring data to analyze the implementation process and evaluate results/progress to date. Qualitative information was generated through interviews and observations in the community and at health facilities in the project area. Data were collected from two districts Kapilvastu and Arghakhanchi where HealthRight International implemented partnership for maternal and neonatal health programme. The two electoral constituencies in Arghakhanchi district were considered as separate domains where as Kapilvastu district constituted a single domain for data collection.

Mothers with children 0-23 months were the key respondents for this study. Two stage cluster sampling design was applied to have the required sample size in which 30 clusters were selected in first stage in each domain using Probability Proportion to Size (PPS) method and then within the cluster eligible household were selected by simple random sampling method. Database was prepared into SPSS version 20 and data was entered and cleaned before analysis.

For qualitative data management and analysis, data was translated into English and extracted into tabular form based on variables (questions built in the questionnaires) and respondent categories. Data synthesis and analysis was done based on the themes as per qualitative data analysis guideline. Large sample size in the final evaluation across the electoral constituencies and districts is an advantage for the precise estimates. However, in regards of OR interventions were not implemented across the all VDCs of EC-2 of Arghakhanchi as originally designed, the sample size used to compare the subset of OR area (5 HFs in EC-2 Vs. 5 HFs in EC-1) might be still inadequate to generalize the findings. Possible contamination of the OR findings was also due to the same district selected for intervention, national program (CBNPC, Misoprostol, Chlorhexidine and SBA trainings to all nurses) and control where the learning and lessons happened to discuss among the health facilities from both sides at district level review and planning workshop.

## Findings and Conclusions

The project has accomplished all planned activities very well though there were some delays in meeting the specific activity implementation (for CB-NCP, Misoprostol/Chx) in the given years. Government Official as human resources remained key factor in the project implementation. The Project experienced of six Public Health Officers's transfer in Kapilvastu during the four years of project. There were constraints and challenges mainly related to infrequent logistic supplies and frequent turnover of the DHO staff in both districts.

In Shivapur VDC of Kapilvastu District, PMNHP piloted positive deviance in maternal and newborn health (PD-MNH). The PD-MNC process involved 12 health workers, 18 Female Community Health Volunteers, 9 facilitators of Community Health Learning Centres and 7 health facility operation and management committee members. As explored from the PD-MNC implementation record, over a period of 6 months, this project completed a total of 189 PDLC sessions (21 sessions /PDLCs). This enrolled a total of 192

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participants (60 pregnant, 42 lactating mothers, and 90 mother in laws and other mothers) as of the last session on July, 2013. It found an increment in health facility delivery of Shivapur Birthing Centre by 28%, 4-times ANC visits by 29%, iron coverage among pregnant by 22% and de-worming coverage by 28% as compared to the previous 6 months' status of the VDC. By the PD-MNC intervention, knowledge was almost universal (over 90%) in all 4 service components (ANC 4 times visit, TT-2 intake, Albendazole intake and Iron intake) with noteworthy increment in correct timing of Albendazole intake; hundred percent of the mothers knew about it during the post-test in July 2013 compared to near about half of mothers (53%) at pre-test in August 2012.

The CB-NCP as well as Miso/Chx training package oriented VDC/HFOMC members from 119 VDCs of two program districts. Likewise, it oriented 395 traditional healers about CB-NCP key message: referral and early treatment for babies with pneumonia. The training package of CB-NCP also oriented 1918 mothers' groups (each group having 9 -16 members) in the two program districts. The CB-NCP program record showed a catchment of 60% of babies in Arghakhanchi and 76% in Kapilvastu. According this record, there is a substantial increment in delivery at health facility in Arghakhanchi (47%) compared to only 29 % in Kapilvastu district. All VDCs (119) were categorized among the 'best performing VDCs as of last quarter in 2012/2013.

Operational research interventions mainly trainings related to Health Facility Management and Strengthening Program, Essential Newborn Care (ENC), maternal and perinatal verbal autopsy, maternal and neonatal near miss and MNC-QI were the key inputs to increase the MNC service quality from the health facilities. By the endline assessment of MNC-QI, the aggregate of 8 MNC-QI implementing sites has crossed over minimum recommended 80%. Except in tool 4 (81%), the score is about 90% across all remaining tools.

A total of 45 perinatal verbal autopsies at community, 41 perinatal death reviews at health facility, 28 neonatal near miss cases and 31 obstetric near miss cases were reviewed in Arghakhanchi. As per the findings of perinatal death reviews, nearly 2 out of every 5 (40%) cases fell in Group IV of Wiggle's Worth Classification\* that is babies who died of intrauterine asphyxia. there were nearly 2 out of every 5 neonatal near miss cases who had birth asphyxia. Nearly one-fifth (22%) were the newborns who experienced Possible Severe Bacterial Infection.

The final evaluation survey found service utilization indicators (ANC 4th, Iron, TT 2, HF delivery by SBA, PNC visit from health facility and knowledge on ENC danger signs) were found significantly increased. Whereas, DPT-III coverage, knowledge on MTCT and FP use in Kapilvastu were found stable or declining during the final evaluation. The quality ANC has slightly increased in Arghakhanchi; whereas it declined in Kapilvastu district.

This was noted that there was an incredible increment in number of health facilities providing 24 hour delivery service (14 as of final evaluation compared to only 2 during the baseline) in Arghakhanchi. In Kapilvastu, 4 birthing centers were reactivated out of to total 7 BC at present. Regarding the availability of MNC equipments in the district, PMNHP provided different kinds of MNC equipments, beds across the district through its collaboration with 'Project Cure'. This project also supported key 5 health facilities of

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\* Note: Group I = Macerated SB; Group II = Lethal congenital anomaly; Group III = prematurity; Group IV = Intrauterine asphyxia; Group V = Infection

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OR area in EC 2 of Arghakhanchi with basic MNC equipments (14 sets of different MNC equipments).

'Project Advisory Committee' both at central and district level; increasing coordination with Women and Children Office to make the greater use of opportunity in mobilizing MNC through WCO cooperatives and Savings & Credit groups; Regular participation and sharing of project's achievements and implementation experiences at national and district level planning and review meetings and

After the HFOMC training, VDCs increased financial resources by an average of 110% and 135% from 1<sup>st</sup> to 2<sup>nd</sup> year of intervention. The HFOMCs have been successful in mobilizing additional 18 additional staff (5 AHWs, 7 ANMs, 5 OA and 1 Vaccinator) with local recruitment from the VDC and DDC support. During the baseline year, there were none of the HR recruited with local resources. One of the HFOMC, Narapani not having the 24 hour delivery service at baseline, bought 3 Ropani land for 24 hrs birthing centre with the resources generated from its own efforts. The 2 Health facilities (Siddhara and Pokharathok) have established daily functioning PHC-ORCs with local management of 1 auxiliary health worker and 1 office assistant in the unreached areas of Lamidamar (nearly 6-7 hours walk to reach Siddhara HP) and Dadapari (3-4 hours of walk to reach Pokharathok HP). In the OR area, out of 8 VDCs (3 MNC-QI and 5 HFOMC+MNC-QI), all 8 health facilities are providing 24 hour delivery series at present compared to two health facilities (Pokharathok and District Hospital) before.

With the good lessons of HealthRight's HFMSIP implementation in Arghakhanchi district, District Health Office-Arghakhanchi has scaled up this HFMSIP in additional 4 VDCs of the district. The recent 'Health 4 Life' project has already planned to introduce this HFMSIP process in additional 10 VDCs by the end of 2013.

HFOMC is a good lesson from PMNHP that is already in scale up in additional VDCs in Arghakhanchi. Positive Deviance in MNC; maternal and neonatal near miss and implementation of maternal and newborn care quality improvement process are the innovative practices initiated by the project in Arghakhanchi. These innovative practices have promising results, which needs to be taken care for large scale implementation studies/pilot. The tools and process of the implementation experience from PMNHP would be certainly quite useful in future efforts to carry them forward together with DHOs and related divisions of Nepal department of health service. The good progress seen in several MNC areas needs to be continued; and the slightly stable or declining results in DPT-III, MTCT and family planning in Kapilvastu demands further studies. This might also an indication for integrating MNC with Immunization, MTCT and family planning activities of the current Nepalese Health Care System.

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The Partnership for Maternal and Newborn Health Project in Arghakhanchi and Kapilvastu, Nepal is supported by the American people through the United States Agency for International Development (USAID) through its Child Survival and Health Grants Program. The Partnership for Maternal and Newborn Health Project is managed by HealthRight International, under Cooperative Agreement No. GHN-A-00-09-00019-00. The views expressed in this material do not necessarily reflect the views of USAID or the United States Government.

*For more information about Partnership for Maternal and Newborn Health Project (PMNHP), visit:*  
*<http://www.healthright.org/where-we-work/nepal>*

# EVALUATION PURPOSE AND EVALUATION QUESTIONS

## EVALUATION PURPOSE

The main objective of the final evaluation was to set up the final values of target indicators to estimate the current levels of maternal and neonatal care knowledge, practice, coverage, and quality indicators to compare with the baseline status, explore the factors behind and guide the future work in program districts.

The evaluation was solely conducted and coordinated through PHIDReC, Nepal. After initial discussions with the HealthRight staff and the evaluation SOW, PHIDReC led the evaluation activities independently. For the evaluation purpose, PHIDReC also coordinated with the key experts from Child and Family Health Divisions of Department of Health Service, Nepal. There were 26 independent enumerators trained for 5 days for collecting data from the field. The sampling procedures, data entry and analysis were coordinated through independent expert of Statistics. The PMNHP implementing partners were asked to explore the key questions as required for project related records, project documentation reports and management information.

As PMNHP was a 4-years project started in 2009, this final evaluation was meant to compare the values against established baseline findings; the timing for the evaluation was already proposed in project's Detailed Implementation Plan as planned by the implementing partner.

## EVALUATION QUESTIONS

1. What are the final evaluation values for knowledge, practices and quality of MNC care?
2. What are the final evaluation values against the project's baseline status for key MNH indicators (as established in baseline)?
3. What are the key factors that contributed to what worked or did not work regarding some or all aspects of the PMNH program?
4. What is the effectiveness of strategies adopted in the project and the mechanism on which the interventions were delivered during the implementation?
5. What are the recommendations for future program of actions and what are the evidences for key learning during the project period?

# PROJECT BACKGROUND

Maternal and neonatal health (MNH) is one of the priority programs of Ministry of Health and Population, Nepal (MoHP). Nepal is aiming to reach the Millennium Development Goal of reducing Maternal Mortality Rate (MMR) to 134 per 100,000 live births by the end of 2015. As indicated by Nepal Demographic and Health Survey 2006 and a study by Family Health Division under MoHP, Nepal, there is remarkable decline in MMR reaching 281 and 229 respectively.<sup>1, 2</sup> MoHP Nepal has initiated several programming strategies, approaches and interventions to reach the MDG target by 2015. However, still there are many challenges in further reduction. Nationally, about 65% of mothers are delivered without skilled attendance, 72% of mothers deliver at home, 42% of pregnant women do not yet access the ANC check by skilled attendants; postnatal care is still quite low compared to the improvements in ANC and delivery status.<sup>3</sup> Newborn health is given more importance in recent years. However, the NDHS survey 2006 and 2011 shows no progress at all, stagnating Neonatal Mortality Rate at 33 per 1000 live births.<sup>1, 3</sup> Lack of accessibility to functioning health facilities, unavailability of skilled birth attendants at health facilities and socio-economic and cultural barriers to accessing care results in continued low utilization of health services by women and children in Nepal.

Relating to the above scenario, HealthRight International, the international non-governmental organization, with the support from USAID, supported MoHP Nepal to contribute to increase the utilization of MNH services by implementing a 4 years' Partnership for Maternal and Newborn Health Project in Arghakhanchi and Kapilvastu districts of Nepal since October 2009. In partnership with Ministry of Health and Population,

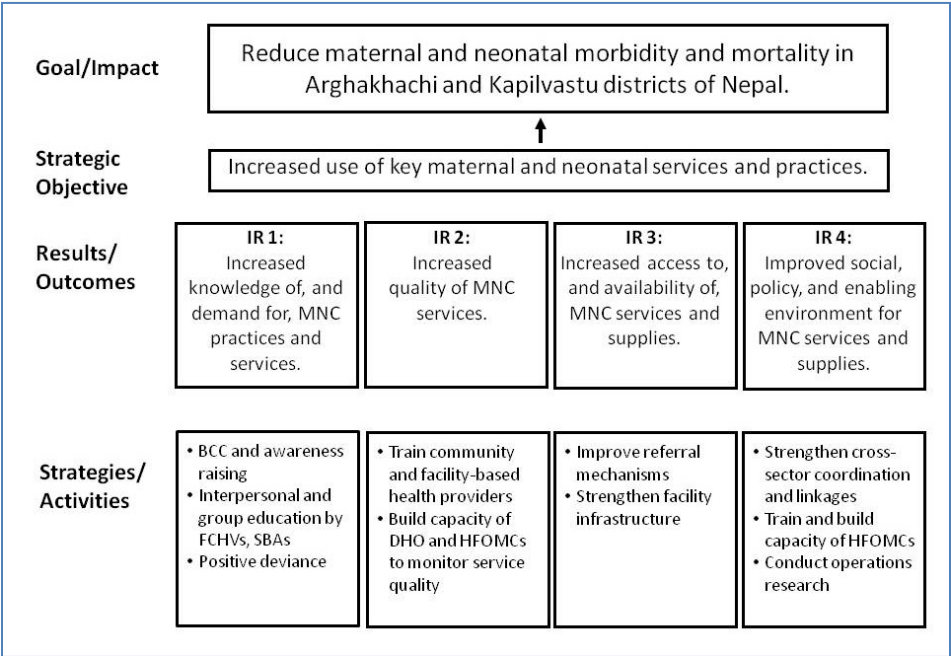


Figure 1 PMNH project goals and intermediate results

Service and local NGOs, the goal of this four-year initiative (from October 1, 2009 – September 30, 2013) was to reduce maternal and neonatal morbidity and mortality in these two districts. The Partnerships for Maternal and Neonatal Health (PMNH) project's goal was to reduce maternal and neonatal morbidity and mortality in Kapilvastu and Arghakhanchi districts of Nepal. The project aimed to achieve this goal through the increased use of key maternal and neonatal services and practices. The expected results are: increased knowledge of, and demand for, MNC practices and services; increased

quality of MNC services; increased access to, and availability of, MNC services and supplies; and improved social, policy, and enabling environment for MNC services and supplies.

The key interventions of the project concentrated on Arghakhanchi and Kapilvastu districts. However, the positive deviance in MNC and practices was intervened in Shivapur Village Development Committee (VDC) of Kapilvastu district. The operational research were conducted only in electoral constituency number 2 of Arghakhanchi district.



Map 1 the project implementation districts (highlighted) in Nepal Map

Therefore, it would be a valuable knowledge to assess the project’s strategies and activities towards their effectiveness, outcomes and impacts in maternal and newborn health knowledge, practice, utilization and quality of care at the end of the project. This final evaluation assessed the process and achievement of the intended results mentioned in the Detailed Implementation Plan (DIP) and to identify significant barriers, as well as successes, and to strategize on barriers to the achievement of objectives.

Table I Population and Target Groups

| Beneficiaries  | Arghakhanchi | Kapilvastu | Total   |
|--|--------------|------------|---------|
| Total population                                     | 242,469      | 580,467    | 822,936 |
| Total neonates                                       | 5,987        | 13,465     | 19,452  |
| Infants 0-11 months                                  | 8,729        | 15,054     | 23,783  |
| Children <5 years                                    | 39,067       | 79,156     | 118,223 |
| Ever married women of reproductive age (15-49 years) | 52,642       | 138,902    | 191,544 |
| Total beneficiaries                                  | 100,438      | 233,112    | 333,550 |
| Expected pregnancies                                 | 6,652        | 14,964     | 21,616  |
| Female Community Health Volunteers (FCHVs)           | 842          | 1,103      | 1,945   |
| Health facility-based providers                      | 267          | 166        | 433     |
| Health facilities (hospital to sub health post)      | 43           | 79         | 122     |
| Village Development Committees (VDCs)                | 42           | 77         | 119     |

Source: PMNHP Detailed Implementation Plan, 2010

**Partnership and Collaboration:** Family Health Division and Child Health Division under Department of Health Service of Nepal Ministry of Health and Population were the key collaborating government partners at the central level. At the program implementing districts, HealthRight mobilized the partnership with District Health Offices, Arghakhanchi and Kapilvastu for implementing PMNH project activities; and Mother and Infant Research Activities (MIRA) to implement the project’s Operational Research. Technical assistance received from the MCHIP, Nepal Family Health Program II and Nepali Technical Assistance Group (NTAG) while project implementation.

PMNHP collaborated with Nepal USAID Mission in each steps of project implementation right from DIP formulation, project activities implementation at program districts, mid-term evaluation and the final evaluation. Experts from the local USAID mission provided regular ongoing supportive supervisions in the implementing districts. The local USAID mission led partners’ meetings, annual and bi-annual reviews were

further effective to get corrected in time for the implementing partners. The periodic project reports forwarded to the local mission were sent back with meaningful feedbacks; these became quite effective for the project's success.

**OR Design:** The operational research study is a quasi-experimental design. The catchment areas of the district's two Primary Health Care Centers (PHCCs), which correspond with the two electoral constituency areas of the district have been purposively assigned to the two intervention packages (described above in Table 2), with the addition of the district centre to intervention package 2 so that the district hospital can be covered. The health systems strengthening, community-facility linkages, and maternal care interventions will be added to CB-NCP in the southern constituency of the district based on poorer key maternal and newborn care indicators in this area, indicating a greater need. It was not possible to randomize a number of clusters to receive health service strengthening because there is only one district hospital and 2 PHCCs in the district. Similarly, since the catchment areas comprise two large population blocks to the north and the south of the district it is also not possible to randomly allocate VDCs which are to receive strengthening of their HMOFCs, as this needs to be done in an areas where health services have been effectively strengthened. This allocation method will have the disadvantage of not only being non-random but also introducing bias from confounders such as socioeconomic status, which may vary systematically between the north and south of the district. Random sampling of 600 households at baseline and endline using population proportional random sampling for monitoring of health care seeking and morbidities and care practices will enable us to compare socioeconomic status of the two population blocks and to control for confounders at least in some of the analyses.

**Table 2. Key interventions of PMNH project**

| Key Interventions   | Kapilvastu | Arghakhanchi             |                              |
|---|------------|--------------------------|------------------------------|
|   |            | Intervention area (EC 2) | Non intervention area (EC 1) |
| Community Based Newborn Care Program (CB-NCP)   | √          | √                        | √                            |
| Use of misoprostol for PPH management at home delivery  | √          | √                        | √                            |
| Use of chlorhexidine for prevention of cord infection   | √          | √                        | √                            |
| Project monitoring and supervision  | √          | √                        | √                            |
| Positive Deviance in MNC and practices  | √          | -                        | -                            |
| <b>Operation Research</b><br>-Training to health workers and HFOMC members and follow up<br>-MNC QI process and follow up<br>-Maternal and Neonatal near miss and Death Review process<br>-Neonatal Care Training to health workers and follow up<br>- Strengthen facility infrastructure and basic MNC | -          | √                        | -                            |

|                   |  |  |  |
|-------------------|--|--|--|
| equipment support |  |  |  |
|-------------------|--|--|--|

# EVALUATION METHODS AND LIMITATIONS

## Evaluation Methods

This was a cross-sectional evaluation study conducted to assess the process and achievements of the intended results mentioned in the Detailed Implementation Plan (DIP) as formulated by the Grantee in 2010. Arghakhanchi and Kapilvastu district were the project implementation districts. Mixed methods (both qualitative and quantitative approaches) were used to collect information and evaluate the outcome and impact of the project as compared to baseline. Quantitative information was also derived from data sets maintained by the project during baseline and mid-term, including the regular data collected at project level by the Grantee and its partners (district health offices and MIRA). Qualitative information was generated through interviews and observations in the community and at health facilities in the project area. For the purpose of evaluating operational research, the two electoral constituencies in Arghakhanchi district were considered as separate domains for data collection.

The study comprised: (a) Household surveys for recently delivered women and mothers with children 0-23 months, (b) Key informant interviews with key personnel of district health office, district development committees, women and children office and child and family health division at center level, (c) In-depth interviews to explore success stories from the field, (d) Focus group discussion with various community stakeholders (health volunteers, women cooperatives, facility management committees) and (d) health facility assessments

Two stage cluster sampling design was applied to have the required sample size in which 30 clusters were selected in first stage in each domain using Probability Proportion to Size (PPS) method and then within the cluster eligible household were selected by simple random sampling method. A ward was referred as a cluster.

ANC coverage of baseline survey of maternal and neonatal health project in Arghakhanchi and Kapilvastu districts was used as reference to determine the required sample size<sup>4</sup>. The survey used the sampling frame provided by the 2011 population census. The survey covered a total of 2100 mothers (900 from mothers with 0-23 months child in Kapilvastu district and 1200 mothers (600 mothers with 0-23 months child in each of the two domains i.e. EC-I and EC-II of Arghakhanchi district.

Household survey tool was developed based on the baseline survey tool of PMNH project, KPC modules, and Rapid CATCH indicators. The questionnaires were pre-tested in Imadol, Lalitpur. The

questionnaire was then finalized incorporating the feedback received from the pre-test result. The final tools were translated into Nepali language for field implementation.

The health facility assessment checklist/guideline was developed based on the baseline and mid-term evaluation of PMNH project of HRI. The tool consisted of human resource situation; services for mothers and newborns including comprehensive emergency obstetric and newborn care; availability of essential equipments; availability of essential drugs and supplies, care practices, record keeping, referral system; status of Health Facility Operation and Management Committees (HFOMC); training and supervision of staff, feasibility of introducing maternity waiting homes at district hospital and PHCC.

Public Health and Infectious Disease Research Center (PHIDReC) conducted the survey coordinated by a team leader. Two coordinators (one for each district) were appointed to co-ordinate the research activities in the districts. The research team was organized in three different sets of teams for this study.

- i. Household survey team: For household survey a total of 18 research assistants (10 for Arghakhanchi and 8 for Kapilvastu) were trained for 5 days. A team consisting of two enumerators was formed for data collection.
- ii. Qualitative study team: A total of four research assistants were trained for qualitative study in which each team comprising of two members. One team was responsible for one district.
- iii. Facility assessment team: Four staff nurses were trained to carry out the facility assessment. In this assessment, a team consists of two members and each team assessed the health facility of one district. Multiple training methods were applied during the training of research assistants.

Data Collection Training was conducted for research assistant, field supervisors and enumerators for five days in Kathmandu. The training was conducted by the experts from CHD/FHD, HRI and PHIDReC.

The survey was managed by PHIDReC in co-ordination with HealthRight International, Child Health Division and Family Health Division. At central level, Evaluation Committee was formulated keeping experts from CHD, FHD, USAID, HRI, MIRA and PHIDReC. The Evaluation Committee provided expert supports during protocol finalization, tools development, survey implementation, data analysis and report writing. At the district level, evaluation committee was formulated keeping health managers and experts from DHO/DPHO, MIRA district office, HRI district office and community stakeholders.

### **Ethical considerations**

Before enrolling the selected subject for interview, written consent was obtained as per national ethical guideline. PHIDReC complied with all ethical issues as per local and international guidance.

### **Data management and analysis**

Collected data was undergone series of checks for consistency and completeness. The coordinators checked the completed questionnaire in the field. The questionnaires were gathered at PHIDReC, where second level of checking was conducted. Database was prepared into SPSS version 21 and data was entered and cleaned before analysis. Before entering data, training was provided to data entry persons so as to ensure consistency and quality. After completing the entry, data cleaning was performed.

Data was analyzed using SPSS version 21 and comparative analysis was performed between baseline, midterm and final evaluation of the project in each domain. The project indicators were prepared and compared among three domains/two districts. The descriptive as well as inferential statistics were calculated and 5% level of significance was taken if and when necessary. Logistic regression analysis was carried out to identify the association between independent and outcome variables.

For qualitative data management and analysis, data was translated into English and extracted into tabular form based on variables (questions built in the questionnaires) and respondent categories. Data synthesis and analysis was done based on the themes as per qualitative data analysis guideline.

**Calculation for economic level:** For calculation of wealth categories, the variables type of toilet, availability of electricity, telephone/mobile, television and radio, type of floor of the house, type of roof of the house, type of wall of the house, type of vehicle in the household were included. The variables were recorded in descending order of economic value. The Principal Component Analysis (PCA) in SPSS version 21 was used for calculation of wealth categories.

**Calculation of weight for age:** The weight for age to determine underweight was calculated using WHO AnthroPlus software. The values below  $-2SD$  were considered underweight.

### **Data Quality and Use**

The KPC was conducted by evaluation team. The survey was managed by a team of professional experts from PHIDReC. The team moved for data collection in the program districts after the 5 days of rigorous training to a team of 26 enumerators (separated in three groups: household survey team, health facility assessment team and qualitative study team). The enumerators were provided close supervisions from survey coordinators and supervisors. The size of the sample was almost doubled during the final KPC survey. Therefore, the final KPC estimates were further précised. As the Grantee provided a set of raw data maintained during the baseline KPC, there was no problem in calculating and comparing the final KPC values against the baseline values.

PMNH provided a set of baseline, mid-term, monthly and annual reports and project monitoring records, including the evaluation reports conducted by Social Welfare Council. During the final evaluation, Grantee provided evaluation team with set of all process documentation reports, program briefs and related power point presentations.

For the subset of OR compared between intervention (5 HFs of EC-2) and control arm (5 HFs of EC-1), the randomly selected samples which fell into these selected subset HF-VDCs was utilized to see the changes. However, a comparative finding for EC-1 and EC-2 domain has been also presented. There was no discrepancy in the questionnaire asked as we used the same set of HH survey questionnaires used during the baseline KPC. For 'was there used anything in the umbilicus after cord-cutting?', we could not include it in clean cord care to compare against baseline because of the recent changes in cord care evidence advocates about the use of topical Chlorhexidine ointment in umbilicus.

The operational research of the project was well documented with the use of appropriate qualitative techniques (FGD with health facility management committees, KIIs with nurses, health facility in-charge and key officials of district health office, Arghakhanchi). The project also summarized the findings in

various project reports with the monitoring checklists used to supervise health volunteers and health workers.

It was identified that the project documentation reports utilized HMIS data in addition to primary data. A good aspect of these reports was the use of both the quantitative as well as qualitative inquiries, FGDs, KIs, Case Studies.

The project had a mechanism of collecting monthly reports from the implementing districts; the reporting format comprised key relevant quantitative indicators. The OR progress and implementation status was updated quarterly with a quarterly report from MIRA. The project had its regular mechanism of reporting quarterly reports and monitoring indicators to its headquarter office; and annual reports to USAID mission-both local as well as international mission. The project's baseline findings that noted a significant missed opportunity to address and integrate 'Family Planning Component in MNC' was advocated at district as well as central level; ultimately the project succeeded in receiving the additional fund for integrating a 14 months FP-MNH project in Arghakhanchi district. Likewise, project explored a serious gap in continuity of locally contracted midwives and this resulted in discontinuity of ongoing MNC service delivery from peripheral health facilities. The project advocated this issue at district as well as central level to minimize the discontinuity of midwives from health facilities. It also generated resource for salary support of 31 midwives for 3 months in 2013 in two program districts after receiving a commitment of DHOs and management committees continuity thereafter. As there were relatively poor indicators of quality of care related to MNC, the project realized and formulated a 'Quality Assurance Committee' to strengthen and institutionalize the quality of care. The gaps identified through other regular data from the technical support visits were discussed monthly and quarterly at the health facilities and DHOs of implementing districts.

# **FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS**

## **FINDINGS**

The key findings from the evaluation have been organized according to the intermediate results of the project. While assessing the status of activity implementation with reference to the work plan, the study found almost all activities completed in the given time timeframe (refer to annex Work Plan Table). Though there were slight delays in completing the activities, particularly the implementation of CB-NCP, community based prevention of post partum hemorrhage (PPH), prevention of neonatal cord infection (Chlorohexidine); project has accomplished all these activities very well. The key to success of the implementation of these all activities depended mainly on the project's effective and efficient partnership with implementing and collaborating partners. Family Health Division, Child Health Division, Management Division, National Health Training Center at the central level; and Western Regional Health Directorate and the Arghakhanchi and Kapilvastu District Health Offices were found to have very effectively mobilized to accomplish the enduring results of the PMNHP. For operational research

(OR) activities, PMNHP made partnership with Mother and Infant Research Activities (MIRA), a nationally recognized NGO for research related to maternal and newborn health in Nepal. All the OR activities were implemented as planned. HealthRight and MIRA jointly implemented the all planned OR related activities on (i) health facility community linkage and, (ii) strengthening service MNC service quality from the implementing sites as already outlined in the Detail Implementation Plan-2010. Both the project and OR activities were implemented thoroughly to maintain the quality; HealthRight as well as MIRA mobilized the relevant experts in between the implementations as required. Besides PMNHP sharing its experiences and lessons both at district and central level and its' successful advocacy particularly on health facility operation and management strengthening (HFMS), maternal and newborn care (MNC) quality improvement (QI) process, implementation of positive deviance in maternal and newborn health (refer to list of publications); it was found the project equally utilized the expertise with its collaboration with government health authorities and departments at center, relevant stakeholders of non-governmental agencies and independent experts. The research experiences and lessons were shared more than 8 times at both district and central level in the national health promotion conference, national perinatal conference, national program reviews /planning workshops, the technical workings/partners' meetings of FHD, CHD, and the periodically organized child survival and health grants' program (CSHGP) partners' meetings.

Having very few human resource within the project (only 13 people across district and Kathmandu level), the successful completion of volumes of planned activities in effective collaboration with and; the project's endeavor to advocate and sustain the activities both at district and central level, the study found an accomplishment with remarkable progress.

The project also experienced constraints particularly with the frequent transfer of DHOs from both districts; it was found that the project found four different chiefs of district public health office, Kapilvastu in less than 4 years of its full implementation at the district. Delay reimbursement of government budget, which ultimately delayed the key activities for the fiscal year to the district health offices made slight delays in implementation of the project activities in the respective annual work plan as targeted.

The project record showed that it also complied with the all essential requirements of social welfare council (SWC) mid-term and final evaluations. Regarding the management evaluation, it was identified obliged and met the all HR and management related standards and requirements; the HR policy, auditing and audit results were up to the track. While assessing the status of implementation of key recommendations made during the mid-term evaluations and SWCs' evaluation, PMNHP was found to implement all recommendations as provided. This evaluation found that PMNHP gained its' special momentum in implementation after the mid-term evaluation as more than half of the DIP planned activities were implemented after mid-term.

### **Intermediate Result I: increased knowledge of, and demand for MNC practices and services**



The project mobilized VDC committee members, district development committee/district health management committee members and the all 1918

mother's group members with MNC related orientation meetings as part of training process in CB-NCP, Misoprostol and Chlorohexidine trainings across the both districts.

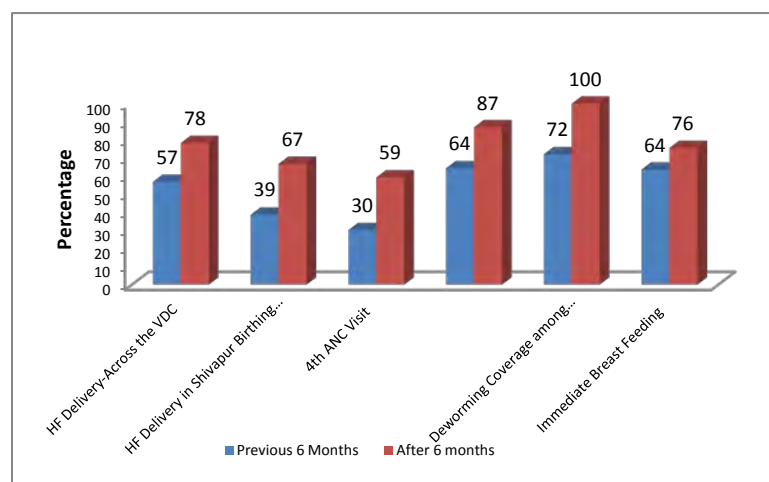
Photo 1 Participants in PD-MNC Quiz Contest in Shivapur

Days celebrations and MNC awareness raising campaigns (Arghakhanchi: 8 events, and Kapilvastu: 6 events) were

the two major activities to sensitize the communities in MNC knowledge and demand. Breast-feeding week, safe motherhood day, HIV/AIDS day, World Population Day and FCHV days were the key days celebrated with MNC message through Lok Dohori, quiz, workshops, rallies, street dramas and exhibitions. The project in Arghakhanchi reached 21 remote VDCs through integrated MNC and FP message with the resource mobilized through additional funding source (World Learning), which was noted as the project's successful strategy to get into MNC mobilization in communities through any available resource channel. The CB-NCP as well as Miso/Chx training package oriented VDC/HFOMC members from 119 VDCs of two program districts. Likewise, it oriented 395 traditional healers about CB-NCP key message: referral and early treatment for babies with pneumonia. The training package of CB-NCP also oriented 1918 mothers' groups (each group having 9 -16 members) in the two program districts.

In Shivapur VDC of Kapilvastu District, PMNHP piloted positive deviance in maternal and newborn health (PD-MNH). The PD-MNH process involved 12 health workers, 18 Female Community Health Volunteers, 9 facilitators of Positive Deviance Learning Centres and 7 health facility operation and management committee members; all of them were oriented about the PD-MNH process implementation in the VDC. As explored from the PD-MNH implementation record, over a period of 6 months, this project completed a total of 189 PDLC sessions (21 sessions /PDLC). This enrolled a total of 192 participants (60 pregnant, 42 lactating mothers, and 90 mother in laws and other mothers) as of the last session on July, 2013.

The intervention showed good progress in maternal and newborn care practice as well as knowledge components. It found an increment in health facility delivery of Shivapur Birthing Centre by 28%, 4-times ANC visits by 29%, iron coverage among pregnant by 22% and de-worming coverage by 28% as compared to the previous 6 months' status of the VDC. As of last 6 months scenario, Shivapur birthing center alone conducted 66% institutional delivery (across the VDC, 78% of mothers were found to delivery in health facilities anywhere); 87% of pregnant mothers had 4-times ANC visits.



**Figure 2 Status of Key MNC Practices; Before and After in Shivapur SHP**  
 Note: previous 6 months (Aug-Jan, 2012) and after 6 months (the PD-MNC implementation period: Feb-July, 2013); [Delivery, N=236, Exp.

Similar progress was noted in iron and de-worming coverage in the VDC.

As also identified in the PD-MNH implementation process document, it was found that knowledge was almost universal (over 90%) in all 4 service components (ANC 4 times visit, TT-2 intake, Albendazole intake and Iron intake) with noteworthy increment in correct timing of Albendazole intake; hundred percent of the mothers knew about it during the post-test in July 2013 compared to near about half of mothers (53%) at pre-test in August 2012.

According to CB-NCP record, nearly half of the deliveries were at institution in Arghakhanchi. However, the catch up of neonates with the program was found higher in Kapilvastu (76%) compared to 60% in Arghakhanchi. All VDCs (119) were categorized among the 'best performing VDCs as of last quarter in 2012/2013 (refer PMNHP brief Overview, 2013).

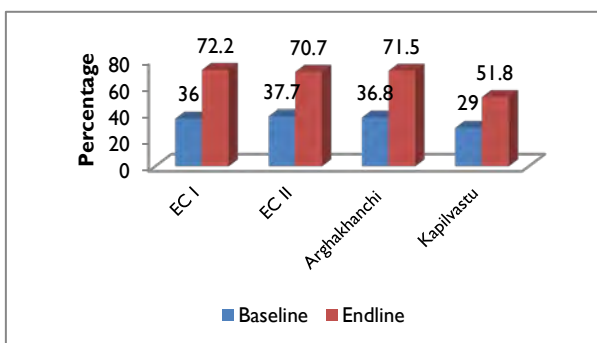
**Table 3 Status of Service Utilization (Community Based Newborn Care: July 2012-June 2013)**

| SN | Indicators                                   | Arghakhanchi |      | Kapilvastu |     |
|----|--|--------------|------|------------|-----|
|    |  | No           | %    | No         | %   |
| 1  | Total Closed Forms out of expected pregnancy | 3700         | 60   | 11420      | 76  |
| 2  | HF Delivery among closed forms               | 1726         | 47   | 3331       | 29  |
| 3  | Home Delivery                                | 1964         | 53   | 8089       | 71  |
| 4  | Total Asphyxiated Babies                     | 121          | 3.3  | 194        | 1.7 |
| 5  | Bag & Mask among total asphyxiated           | 22           | 18   | 62         | 32  |
| 6  | LBW & VLBW babies                            | 111          | 3.1  | 905        | 8   |
| 7  | PNC/NBC 3 <sup>rd</sup> Visit                | 3636         | 98.3 | 11130      | 99  |
| 8  | Neonatal Deaths                              | 39           | 1.1  | 170        | 1.5 |

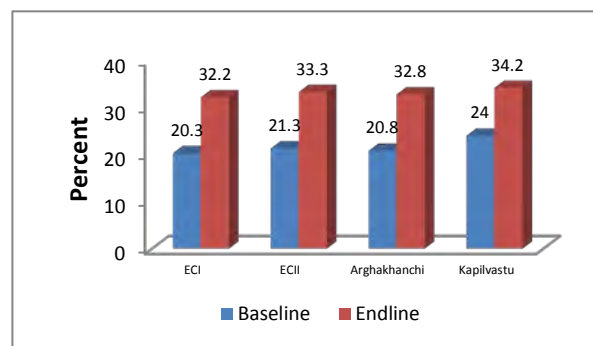
Note: Expected pregnancy (Arghakhanchi: 6215; Kapilvastu: 15026 as of 2012/2013 DoHS target)

Source: HMIS 2012/2013 DHO, Arghakhanchi and Kapilvastu

About 70 percent of the mothers in Arghakhanchi and half of mothers in Kapilvastu district had sought four or more ANC visits during their pregnancy with the youngest child (Fig 5). The proportion of mothers visiting a SBA for antenatal care had also been increased in the study districts (74.6% in Arghakhanchi and 77.2% in Kapilvastu) as compared to the baseline (54% in Arghakhanchi and 58% in Kapilvastu). Proportion of mothers who had had at least two TT vaccines before birth of the youngest child was almost 85 percent in both the study districts, which is slightly increased during the project period (Refer to KPC Annex). The percentage of children age 0-23 months whose births were attended by skilled personal was increased by 10% in both the districts at endline as compared to the baseline (Figure 4). The proportion of non-institutional delivery was



**Figure 3: Four or more ANC Visit Coverage**



**Figure 4: SBA Delivery Coverage**

significantly decreased in both of the districts (Arghakhanchi 3.9%, Kapilvastu 10.9%) as compared to baseline (Arghakhanchi 79.8%, Kapilvastu 76.7%).

The practice of using clean delivery kit during non institutional delivery was double in Arghakhanchi and four times in Kapilvastu at endline as compared to the baseline. The clean cord cutting at the time of birth of the child was also more than 96 percent in both the districts.

The practices of thermal care, immediate drying and wrapping after birth were found significantly increased in both the districts at endline as compared to baseline (Refer to KPC Annex). The endline survey revealed that 53.9 percent of the mothers in Arghakhanchi and 39.6 percent in Kapilvastu district

had their postpartum checkup within two days of delivery of the youngest child (Fig 3). Percentage of children age 0-5 months who were exclusively breastfed during the last 24 hours were 60.5 percent and 55.1 in Arghakhanchi and Kapilvastu districts respectively, which was 10% lower in baseline (Fig 6).

More than two third of the mothers in Arghakhanchi and three fifths in Kapilvastu had the knowledge that a woman should wait for two to five years after the birth of a child before trying to become pregnant again. Knowledge of healthy timing and spacing (2-5 years) was found low in endline because higher proportion of mothers reported that appropriate spacing for healthy pregnancy is more than five years. More than 40 percent of mothers of children age 0-23 months in Arghakhanchi and 25 percent in Kapilvastu knew at least two risks of having a birth to pregnancy interval of less than 24 months. Percentage of mothers of children 0-23 months who knew at least two danger signs during pregnancy had increased in Arghakhanchi; whereas slightly decreased in Kapilvastu. Hundred percent of mothers of children age 0-23 in both the districts knew at least two neonatal danger signs. The findings revealed that more mothers still need to be made aware of birth spacing, pregnancy related danger signs and sustain the knowledge on neonatal danger signs (refer to KPC annex).

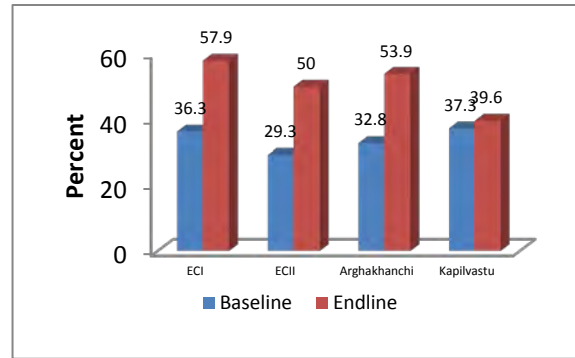


Figure 5 Postnatal Coverage

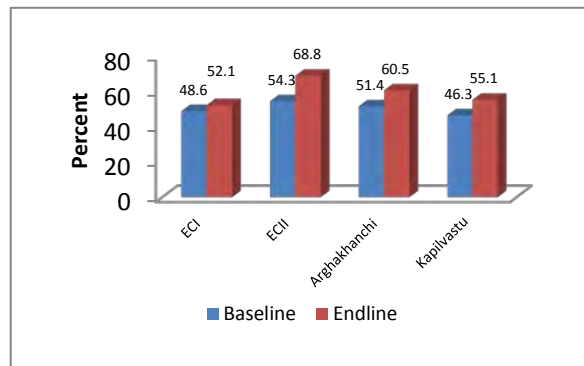


Figure 6 Exclusive Breastfeeding Coverage

## Intermediate Result 2: Increased quality of MNC services

Project provided three key trainings (i) community based newborn care (CB-NCP), (ii) community based prevention of postpartum hemorrhage (PPH) through Misoprostol, (iii) prevention of cord infection by Chlorhexidine across the district to increase the quality of MNC services delivered during: pregnancy, child birth, immediate newborn care and postpartum period. Other activities especially training on essential newborn care (ENC), maternal and neonatal verbal autopsies, near miss and MNCQI implemented in selective intervention areas of Arghakhanchi EC-2 were other interventions to contributing to increase knowledge and demand of MNC services. The evaluation found, a total of over 1918 female community health volunteers, 157 maternal and child health workers and 445 health workers (auxiliary nurse, nurse, assistant health workers, medical officers) from both program districts trained on for the two major trainings (CB-NCP and Miso/Chx). The Kathmandu project staff and experts from collaborating partners (central departments: FHD, CHD, ministry of health and population, RHD) made frequent joint monitoring visits. The district based project staff and the supervisors from district health office made regular technical support visits to the peripheral health facilities/out- reach clinics (FCHVs, VHW/MCHWs and HWs) as planned. The CB-NCP training was followed up with coverage of 34 among the 42 VDCs of Arghakhanchi and 62 among the 77 VDCs/municipality of Kapilvastu. The follow up after training of CB-NCP included review of core 5 CB-NCP skills (hand washing, weighing, temperature reading, kangaroo mother care and resuscitation); and the knowledge components of pregnancy, delivery, immediate newborn care and postpartum period.

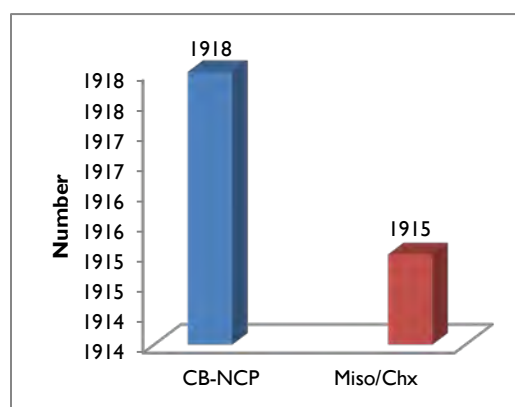


Figure 7 FCHVs trained for two major training (CB-NCP and Miso/Chx)

Operational research interventions mainly trainings related to ENC, maternal and perinatal verbal autopsy, maternal and neonatal near miss and MNC-QI were the key inputs to increase the MNC service quality from the health facilities. By the endline assessment of MNC-QI, the district aggregate of 8 MNC-QI implementing sites has crossed over minimum recommended 80%. Except in tool 4 (81%), the score is about 90% across all remaining tools (Fig 8).

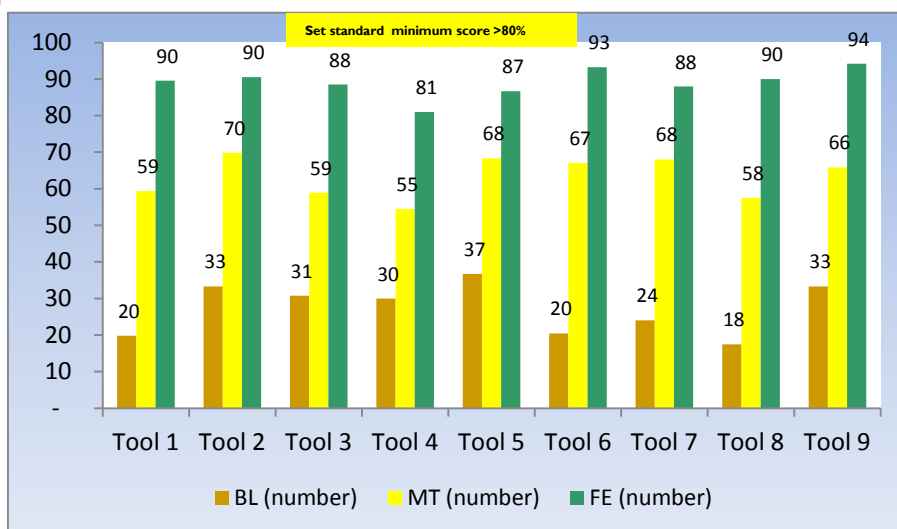


Figure 8 MNC QI District Aggregated Score across Different Tools

As the MNC QI tools were traditionally used for SBA training site assessment in the past. This study shows possibilities of implementation of the MNC QI tools at peripheral level health facilities as well. Based on the lessons learned from the PMNH project the Suaahara Project Jhpiego implemented the

process in 15 health facilities of Dolakha district adapting the existing MNC QI tools integrating with nutrition.

Maternal and Neonatal Verbal Autopsy; and obstetric and neonatal near miss review practices were implemented in 6 health facilities of EC 2 including district hospital, Sandhikharka.

PMNHP reviewed deaths as well as near miss cases of mothers and newborn at health facilities in its OR area. A total of 45 perinatal verbal autopsies at community, 41 perinatal death reviews at health facility, 28 neonatal near miss cases and 31 obstetric near miss cases were reviewed in Arghakhanchi (Table 4).

| <b>Table 4 Verbal Autopsy/Death Review and Near Miss Review, Arghakhanchi</b>      |                             |
|--|-----------------------------|
| Activities   | No of deaths/cases reviewed |
| <b>Verbal Autopsy/Death Review</b>   |                             |
| Community Based Perinatal Verbal Autopsy   | 45                          |
| Health Facility Based Perinatal verbal Autopsy (Stillbirth + Early Neonatal Death) | 41                          |
| Health Facility Based Late Neonatal Verbal Autopsy                                 | 2                           |
| Maternal Verbal Autopsy  | 2                           |
| <b>Near Miss Review</b>  |                             |
| Neonatal Near Miss   | 28                          |
| Obstetric near miss  | 31                          |

Arghakhanchi district formulated a district based 'maternal and neonatal death/near miss review coordination committee to continue the review practices for deaths/near miss cases of mothers as well as newborn. This committee has also worked as 'Quality of Care' committee to ensure the quality MNC service delivery from district hospital and peripheral health facilities.

As per the findings of perinatal death reviews, nearly 2 out of every 5 (40%) cases fell in Group IV of Wiggle's Worth Classification<sup>2</sup> that is babies who died of intrauterine asphyxia (Fig 9).

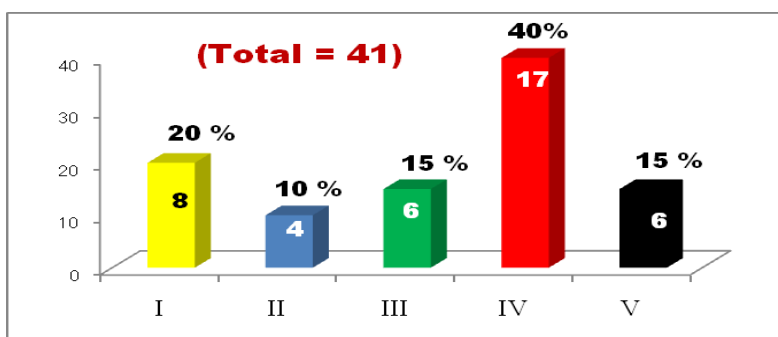


Figure 9 Perinatal Deaths according to Wiggle's Worth Classification

Likewise, vast majority (85%) of the obstetric near miss cases fell in 'Post Partum Hemorrhage' category, thus signaling an urgent need for appropriate management of PPH (Fig 10).

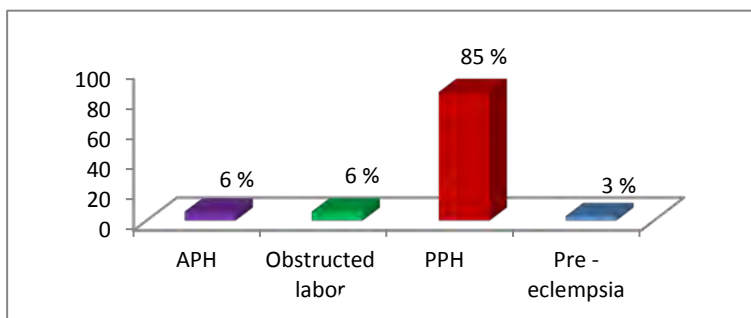


Figure 10 Diagnosis of Obstetric Near Miss Cases

<sup>2</sup> Note: Group I = Macerated SB; Group II = Lethal congenital anomaly; Group III = prematurity; Group IV = Intrauterine asphyxia; Group V = Infection

| SN | Suspected Diagnosis                        | Number    | %          |
|----|--|-----------|------------|
| 1  | Birth asphyxia                             | 12        | 43         |
| 2  | Possible Severe Bacterial Infection (PSBI) | 6         | 22         |
| 2  | Septicemia                                 | 5         | 18         |
| 3  | Very Low birth weight                      | 2         | 7          |
| 5  | Pneumonia                                  | 2         | 7          |
| 8  | Meconium aspiration                        | 1         | 3          |
|    | <b>Total</b>                               | <b>28</b> | <b>100</b> |

Similarly, there were nearly 2 out of every 5 neonatal near miss cases who had birth asphyxia. Nearly one-fifth (22%) were the newborns who experienced Possible Severe Bacterial Infection (Table 5). With the promising experiences in obstetric and near miss cases from Arghakhanchi, FHD, Department of Health Service also committed to incorporate Arghakhanchi district as one of the

Maternal and Perinatal Death Review implementing districts. The technical working group of CHD has shown a growing interest in further standardization of neonatal near-miss tools to get it across many other districts. Based on the experience HealthRight recently awarded with the WHO grant to implement the maternal and neonatal near miss review process in Arghakhanchi entire district.

The final evaluation survey found increasing percentage of mothers utilizing quality ANC services in Arghakhanchi, almost double the number of mothers utilizing it in Arghakhanchi compared to Kapilvastu. This quality ANC service comprised those mothers who had ANC from skilled providers, had four or more ANC visits, and were 'adequately counseled' (Refer to KPC annex).

### **Intermediate Result 3: Increased access to, and availability of MNC services and supplies**

The evaluation assessed the availability and accessibility of basic MNC services and supplies which were originally planned in the DIP document. The project advocated at central and district level for birthing center reactivation and establishment, and strengthening along with its collaborating government partners: Family Health Division and Child Health Division. This was noted that there was an incredible increment in number of health facilities providing 24 hour delivery service (14 as of final evaluation compared to only 2 during the baseline) in Arghakhanchi. In Kapilvastu, 4 birthing centers were reactivated out of to total 7 BC at present (refer to PPTs during final evaluation).



**Photo 2 Nurse in Thada PHCC utilizing 'DSM Warm-Cot' to prevent hypothermia**

It was also noted that there were very few Skilled Birth Attendants in program districts during the baseline. By the final evaluation, we found all nursing staff (staff nurse and auxiliary nursing midwives trained in 'Skilled Birth Attendant' training in Arghakhanchi; and there were increasing number of SBAs available in Kapilvastu district as well.

Regarding the availability of MNC equipments in the district, PMNHP provided different kinds of MNC equipments, beds across the district through its collaboration with 'Project Cure'. This project also supported key 5 health facilities of OR area in EC 2 of Arghakhanchi with basic MNC equipments

(14 sets of different MNC equipments: refer to PPT of final evaluation sharing) through its OR implementing partner, MIRA.

Health workers from all 119 VDCs of 2 program districts are equipped with basic equipments (weighing machine, thermometer, Bag & Mask and De-Lee Suction and Chlorohexidine doll), the project also supplied required recording and reporting formats for the duration of its implementation in the 2 districts; and it also provided cotrimoxazole, gentamycin and misoprostol one shot during the training period.

The district hospital Arghkhanchi has recently resumed its caesarean section services. Kapilvastu hospital is also providing caesarean section, however, it is infrequent. Both districts are at the urgent requirement of Blood Bank, and needed to continue and sustain the caesarean section facility in future.

The 4 out of 5 HFMSF health facilities in Arghkhanchi have initiated Emergency Revolving funds compared to none before. There were very few women already utilizing, and it needs to be advocated at further level. With the project’s participation monitoring visit, Arghkhanchi district upgraded 2 PHC-ORCs (functioning once a month) into daily functioning static clinic (Pokharathok-Dadapari and Siddhara-Lamidamar) of the district.

**Intermediate Result 4: Improved social policy and enabling environment for MNC services and supplies**

The project provided different inputs to create enabling environment for service delivery and community mobilization of MNC services at district as well as central level. It included formulation of ‘Project Advisory Committee’ both at central and district level; increasing coordination with Women and Children Office to make the greater use of opportunity in mobilizing MNC through WCO cooperatives and Saving & Credit groups; Regular participation and sharing of project’s achievements and implementation experiences.

Review of project’s major accomplishments; challenges and constraints; exploring/linking any available opportunities to generate the resources (both cash and kind) for the effective implementation of the project were the major areas discussed during the PAC meetings. The project did altogether 12 PAC meetings at district and central level. To increase the linkage of female community health volunteers and maximize MNC awareness among the women of reproductive age, the project organized 5 resource sharing/linking workshops with WCOs of Arghkhanchi (3) and Kapilvastu (2). The project also involved WCO focal person in a series of project activities including trainings, meetings, orientations, and workshops related to MNC areas.



Photo 3: HFOMCs members in Narapani HP: discussing during the short training break

The project conducted HFMSF in 3 phases as per National Health Training Centre guideline. It trained 18 District Supervisors as Trainer and 58 HFOMC members from five health facilities (1 PHC and 4 HPs) involved in the process.

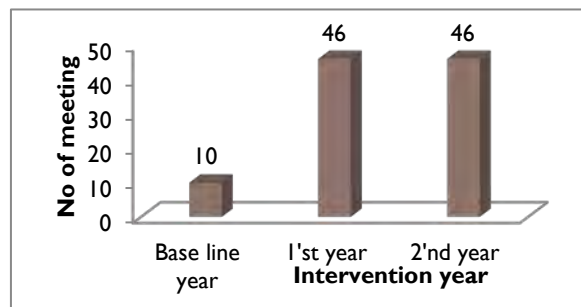


Figure 11 Status of HFOMC meeting in 5 HFMSF HF, Arghkhanchi

After the HFOMC training, VDCs increased financial resources by an average of 110% and 135% 1st and 2nd year of intervention. The HFOMCs have been successful in mobilizing additional 18 additional staff (5 AHWs, 7 ANMs, 5 OA and 1 Vaccinator) with local recruitment from the VDC and DDC support. During the baseline year, there were none of the HR recruited with local resources. One of the HFOMC, Narapani not having the 24 hour delivery service at baseline, bought 3 Ropani (about 5476 sq. ft) land for 24 hrs birthing centre with the resources generated from its own efforts. The 2 Health facilities (Siddhara and Pokharathok) have established daily functioning PHC-ORCs with local management of 1 auxiliary health worker and 1 office assistant in the

unreached areas of Lamidamar (nearly 6-7 hours walk to reach Siddhara HP) and Dadapari (3-4 hours of walk to reach Pokharathok HP). In the OR area, out of 8 VDCs (3 MNC-QI and 5 HFOMC+MNC-QI), all 8 health facilities are providing 24 hour delivery series at present compared to two health facilities (Pokharathok and District Hospital) before (Refer to Final Evaluation PPT/HFOMC Process Document).

With the good lessons of HealthRight's HFMSIP implementation in Arghakhanchi district, District Health Office-Arghakhanchi has scaled up this HFMSIP in additional 4 VDCs of the district. The recent 'Health 4 Life' project has already planned to introduce this HFMSIP process in additional 10 VDCs by the end of 2013 (KII with DHO, Arghakhanchi).

The project at central level included the annual project activities in CHD and FHD's annual program plan; and at district level, the project activities were reflected District Development Council's list of planned activities. Project also mobilized the PAC members from center and district for frequent joint monitoring visits at district and sub district level.

| <b>Table 6 Summary Table of Inputs, Activities, and Outputs that Contributed to Key Outcomes</b>   |   |  |  |
|--|---|--|--|
| <b>Project Inputs</b>  | <b>Activities</b>   | <b>Outputs</b>   | <b>Outcome</b>   |
| <i>IR 1: increase knowledge of, and demand for, MNC practices and services</i>   |   |  |  |
| <p>Awareness raising campaign supported</p> <p>MNH Positive Deviance process initiated</p> <p>CBNCP orientation to communities and traditional healers</p> | <p>Organize rallies/celebrate days on FCHV days, breastfeeding weeks, world population day, HIV/AIDS day, Teej Celebration (Nepali festival of women)</p> <p>Conducted orientations, training, PD Inquiries, and gathered community feedback in Shivapur VDC, Kapilvastu</p> <p>Orientation to HFOMCs, VDCs, MGMs</p> <p>CBNCP orientation given to traditional healers and mothers' group for health</p> | <p>Organized 14 rallies/day celebrations in 2 program districts</p> <p>Trained 9 PD Learning Centre facilitators and 3 health workers with BCC skill development training.</p> <p>Established 9 PD LC centers in Shivapur</p> <p>Oriented seven HFOMC members on PD-LC monitoring and supervision</p> <p>Oriented 119 VDC members, 70 HFOMC members, 395 traditional healers and 1918 mothers group for health on CB-NCP</p> | <p>Reached all population of Arghakhanchi through coverage of all 42 VDCs with the MNC and FP message through local radio.</p> <p>Total 189 sessions run in 9 PD-LC six months</p> <p>Total 117 pregnant women enrolled in the PD-LC.</p> <p>Practice (ANC 4th, Iron, TT 2, HF delivery by SBA, PNC visit from health facility and utilization of 'quality ANC' and knowledge on ENC danger signs were found significantly increasing during the final evaluation survey</p> <p>All 119 VDCs were categorized in 'best performing category' according to CB-NCP incentive management system.</p> <p>DPT-III coverage, knowledge on MTCT and FP use in Kapilvastu were found stable or declining during the final evaluation.</p> |
| <i>IR2: increase quality of MNC services</i>   |   |  |  |
| <p>Maternal and Newborn Care (MNC) Quality Improvement (QI) process implemented</p>  | <p>Conducted MNC QI Baseline, midline and endline assessment and implemented In eight health facilities of Arghakhanchi district</p> <p>Reward and Recognition</p>  | <p>Trained 18 SBAs and ANMs and two medical doctors on MNC-QI process</p> <p>MNC QI implemented in eight health facilities</p> <p>Rewarded to eight health facilities</p>  | <p>Eight intervention health facilities aggregated scores is more than 80% as per the national MNC QI standards.</p> <p>Some innovations like newborn baby clothes sets for health facility delivery, establishment of</p>   |

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| <p>Maternal and Neonatal Near-miss and death review process initiated</p> <p>Community Based Newborn Care (CBNCP) Training</p> <p>Use of misoprostol for prevention of Post Partum Hemorrhage at home delivery Training</p> <p>Use of Chlorhexidine for prevention of umbilical cord infection Training</p> | <p>Tools and guideline developed/ adapted</p> <p>Trained health facility incharges and nurses</p> <p>Conducted CB-NCP, Misoprostol, and Chlorhexidine training to health workers including VHWs, MCHWs and FCHVs district-wide.</p> <p>Neonatal care training to health facilities incharges and nurses of intervention areas.</p>   | <p>with HFOMC members.</p> <p>Trained 148 Doctors and Nurses on Essential Newborn Care, maternal and neonatal near-miss and death review</p> <p>Trained 251 health workers on CBNBP</p> <p>Trained 194 VHW/MCHWs on CB-NCP</p> <p>Trained 1918 FCHVs on CB-NCP</p> <p>Trained 139 of HWs on use of Misoprostol and Chlorhexidine</p> <p>Trained 161 VHW/MCHWs on use of Misoprostol and Chlorhexidine</p> <p>Trained 1915 FCHVs on use Misoprostol and Chlorhexidine</p> | <p>maternity waiting room.</p> <p>Suaahara Project Jhpiego adapted this process integrating nutrition components into 15 health facilities of Dolakha district.</p> <p>District Quality Assurance (QA) Committee formed as per the MoHP policy and guideline</p> <p>Three meetings held with minutes</p> <p>Papers published and presented in national conference.</p> <p>HealthRight will implement Maternal and neonatal near miss district –wide through WHO fund</p> <p>Misoprostol coverage reached 39% of expected pregnant in 6 months of implementation in ARG where as it was 60% in KPV</p> <p>Chlorhexidine applied to 72% of newborns in ARG and 49% in KPV.</p> |
| <p><i>IR3: increased access to, and availability of, MNC services and supplies</i></p>  |  |  |  |
| <p>Training materials and Basic MNC equipment supplied</p>  | <p>Supplied resuscitation doll, weighing scale, thermometer, ambu bag for CB-NCP</p> <p>Supplied misoprostol tablets through UNICEF and HealthRight's fund.</p> <p>Supplied Chlorhexidine: ointments and dolls through Grand Challenges JSI's Chlorhexidine Navi Care Project (CNCP)</p> <p>Supplied CBNCP, Misoprostol and Chlorhexidine training material, recoding &amp; reporting formats</p> <p>Provided basic neonatal care equipment to Arghakhanchi through the PMNH Project</p> | <p><i>Received basic neonatal equipments by 6 health facilities</i></p>  | <p>Increased use of MNC equipments</p>   |
| <p><i>IR4: improved social, policy, and enabling environment for MNC services and supplies</i></p>  |  |  |  |
| <p>Health Facility Operation and Management Committee (HFOMC) strengthen</p> <p>Opportunities to link MNH with Women and Children Office (WCO), Women's Cooperatives and their savings and Credit Groups explored</p>   | <p>Prepared trainers for HFOMC training</p> <p>Trained HFOMC members</p> <p>Involved Women and Children Officers in related orientation, trainings and meetings</p> <p>Organized joint monitoring visits with DHO, WCO and DDC officers</p>  | <p>Received HFOMC training by 58 HFOMC members through 18 trainers</p> <p>Conducted 46 HFOMC meetings with minutes</p> <p>Received orientation/training by Women and Children Officer on Family Planning and MNH</p> <p>Incorporated PMNHP plan into CHD's annual and district level planning in three consecutive years</p>   | <p>Increased resource allocation from local governance from Rs. 564,000 (about USD 5937) in baseline to Rs. 1,063,000 (about USD 11189) by this final evaluation.</p> <p>Increased 24hrs birthing centers from one before intervention to seven health facilities after the intervention excluding.</p> <p>Shows huge opportunities to integrate MNH issues through FCHVs collaborating with</p>   |

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| Coordination strengthened | Participated in annual planning meetings of FHD, CHD, DHOs, DDCs, VDCs<br><br>Sharing findings with government, USAID and stakeholders at district, center and international level | Shared project and OR findings (MNC-QI, HFOMC, Maternal and Neonatal Verbal Autopsy) 3 times at district, 6 times at central level, and 1 time at international forum. | Women's Cooperatives Groups.<br><br>Developed better understanding of PMNH project by governments. |
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## CONCLUSIONS

The project has accomplished all planned activities very well though there were some delays in meeting the specific activity implementation (for CB-NCP, Misoprostol/Chx) in the given years. Project implemented Positive Deviance in MNC as piloting intervention in Shivapur, Kapilvastu; which has been one of the promising interventions to continue and pilot in the large scale. The project's approach of utilizing existing health facilities (HFOMCs, MGMs, PHC-ORCs and Female Community Health Volunteers) in MNC behavior change has been found one of the most potential strength in implementing this PD-MNC approach. Project's contribution in scale up of Misoprostol and Chlorohexidine across its program districts, which was not planned during the DIP (planned Misoprostol training only for SBAs during the DIP) with the same previous level of budgetary resources, is one of the evidences of projects effective resource management and partnership with FHD and CHD of Nepal Department of Health Services. Large number of female community health workers (1918), village health workers/maternal and child health workers (157) and health workers (445), traditional healers (395), mothers groups (1918) and VDC members (119) from 2 program districts have been reached through the CB-NCP, Miso/Chx training/orientation activities.

The OR results show significant changes in some of the quality of care indicators in interventions area, while inconsistency in the progress noted in the control area. The project successfully implemented MNC-QI approach in health facilities, which is found as another promising intervention to continue in future. The project's strength in utilizing the established MNC-QI tools and making it a pilot/OR intervention in Arghakhanchi has advocated very well to prioritize the quality aspects in MNC service delivery at present from the peripheral health facilities. Project also utilized the necessary technical supports from MCHIP during the implementation. There is a good progress in all quality components (tools of MNC-QI), has crossed a minimum set standard of 80% across all tools in Arghakhanchi district.

Health Facility Management and Strengthening Process (HFMSPP) has created an evidence of success by utilizing the local resources (HR and Cash) and improving health facility performance. As this particular intervention is already scaled up by DHOs in other additional VDCs of Arghakhanchi, this should be taken forward as an agenda to scale up in other districts as well.

One of the innovative interventions (neonatal near miss) has been for the first time implemented from the project's experience of CB-NCP implementation. The tools and techniques documented in the project's documentation report would be crucial for scaling up the intervention in other districts of Nepal. Project also implemented maternal and perinatal verbal autopsy/health facility based death reviews in OR area; as a result of this, FHD has committed to incorporate the district in 'Maternal and Perinatal Death Review' list to continue the efforts in future. Great success of the intervention is uptake of maternal and neonatal near miss intervention district-wide in Arghakhanchi by the HealthRight through WHO fund. The project's approach of formulating 'Quality Assurance Committee' at Arghakhanchi district was found a foundation for sustainability of near miss/death review activities in future. One of the promising evidence from project's OR was the project developed quality strengthening model for the peripheral health facilities.

Project's approach of increasing collaboration and involvement of other key stakeholders through 'Project Advisory Committee' was found key in increasing resource generation from DDCs and VDCs at district level. PMNHP inquired a very good potential area for community mobilization of MNC through 'Women and Children Office' utilizing their 'Women's Cooperatives; and saving and Credit Groups'. The greater representation of women from disadvantaged groups across the corners of the VDCs through large number of women's saving and credit groups (3-5 in each ward) shows a good future step to link MNC through these groups.

Project also experienced constraints and challenges during its implementation. Particularly, high staff /Chief of DHO turn-over from districts, not to have smooth and timely supply of logistics/commodities (Cotrim, Gentamycin and Miso) from the government counter parts was difficult though project managed it with its lobby at central logistic department, FHD and CHD.

There is an improving progress in major MNC areas (ANC 4<sup>th</sup>, TT immunization, Iron and Deworming coverage, delivery by SBAs, PNC visits and ENC components), areas such as baby immunization with DPT-III, family planning use in Kapilvastu, PMTCT knowledge and practice components and increasing underweight babies in Arghakhanchi have remained stable or in declining trend. This needs to be further investigated; it also alerted in utilizing the missing opportunities of integrating FP, nutrition and MTCT in with MNC related activities at district and sub-district level in future.

## RECOMMENDATIONS

### Table of Recommendations

| Finding   | Conclusion   | Recommendation  | Action  | Who Is Responsible           |
|---|--|---|---|------------------------------|
| Increasing Resource Mobilization through DDC/VDCs in HFOMCs active initiation | Increased DDC/VDC contribution in hiring staff (ANMs, OA and auxiliary health workers) through local resources | Continue/Scale it up in other VDCs                        | Organize advocacy meetings with District Health Management Committee and all relevant stakeholders to plan for scale up | DHOs and other related INGOs |
| Innovative interventions like Maternal and Neonatal Near Miss Review practice | Have a very good documentation of the lessons from the field; showed a way forward for piloting in large scale | lobby for district wide implementation and national level | Will uptake district wide implementation in Arghakhanchi and increase coordination at national level                    | HealthRight, DHOs, WHO       |

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|  |   |   | with FHD/CHD and professional groups, Revise guideline and tools  |                                 |
| Management of Emergency Fund by 4 Health Facilities in OR area, provision of warm clothes (Bhoto Topi) for recently delivered baby in HF   | Very Good start   | Would be better to continue it and emphasize on whether mothers have benefitted from it and are utilizing it  | FHD have allocated funds for newly mothers and newborns who delivered at health facilities from this year | FHD, DHOs and local communities |
| Excellent Result observed from MNC-QI progress (baseline to end line);<br><br>The project's experience on MNC quality strengthening approach at HF level sounds quite appropriate in many HFs of Nepal | Good process to review the quality and strengthen it at local health facility level | Would be better to link the review process continuously with the existing HMIS reviews at district level, the central authorities (Management Divison) would be better to adopt the process for large scale pilot in similar other districts. | Health 4 Life has planned to continue and revitalize the District QA committees                           | HealthRight, USAID              |
| Low progress on modern contraceptive use (Kapilvastu); Low progress in immunization (DPT 3), Low progress observed in knowledge level of MTCT; Increasing Underweight children in Arghakhanchi         | Needs further studies and inquiries   | Needs further studies and efforts in integrating MNC with the MTCT, Immunization and Nutritional interventions.   | Review the DHO's HMIS data, conduct separate studies<br><br>Continue writing proposal                     | DHO<br><br>HealthRight          |
| Good progress in ANC practices and Knowledge; Good Progress in PNC visit coverage, Good progress in Exclusive Breastfeeding, Infant and young child feeding, ORT use, Increasing                       | Keep the progress   | Would be better continue reinforcement of the good progress   | Continue reinforcement of the good progress   | DHOs, HealthRight               |

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| cases of Pneumonia sought care from health facilities, Good progress in effective drinking water treatment, hand washing practices |  |  |  |                   |
| Needs to ensure logistics for the program, minimize staff turn-over in the district  | DHOs and central divisions (FHD, CHD) should pay special attention in ensuring logistics | Would be very synergy in the Project's efforts if DHOs, FHD, CHDs could ensure smooth management of program related logistics (eg cotrimoxazole, Genta supply, Miso supply ) | Continue coordination with concerned divisions | DHO, HealthRight, |

## ANNEXES

**Note: All the annexes have been separately provided**

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