2014/15 An Evaluation Study

REMOTE AREAS MATERNAL AND NEONATAL HEALTH PILOT PROJECT

TAPLEJUNG

Health Research and Social Development Forum (HERD)

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We were able to carry out the evaluation owing to the commitment, enthusiasm and hard work demonstrated by our field supervisors and researchers. This was a challenging assignment amidst the difficult geographical topography.

STUDY TEAM

HERD

ABBREVIATIONS AND ACRONYMS

AHW	auxiliary health worker
ANC	antenatal check-up
ANM	auxiliary nurse midwife
ARI	acute respiratory infection
BC	birthing centre
BEONC	basic emergency obstetric and neonatal care
BP	blood pressure
BPP	Birth Preparedness Package
CB	community based
CHD	Child Health Division
DDC	district development committee
DHO	district health office
DSA	daily subsistence allowance
EAP	Equity and Access Programme
EDD	expected date of delivery
FCHV	female health community volunteer
FGD	focus group discussion
FHD	Family Health Division
FP	family planning
FY	fiscal year
HA	health assistant
HDC	hospital development committee
HERD	Health Research and Social Development Forum
HF	health facility
HFOMC	health facility operation management committee
HMIS	Health Management Information System
HP	health post
IDI	in-depth interview
IFA	iron folic acid
IMCI	Integrated Management of Childhood Illness
INGO	international non-governmental organization
IP	infection prevention
IUCD	intra-uterine contraceptive device
KII	key informant interview
LMIS	Logistic Management Information System
LTFP	long term family planning
NPR	Nepali rupees
MCH	Maternal and Child Health
MNCH	Maternal, Neonatal and Child Health
MNH	maternal and neonatal health
MWRA	married women of reproductive age
NGO	non-governmental organization
NHSP	Nepal Health Sector Programme

NHSSP	Nepal Health Sector Support Programme
NPC	National Planning Commission
NS	not significant
OPD	out-patient department
ORC	outreach clinic
ORS	oral rehydration solution
PHCC	primary health care centre
PHCORC	primary health care centre-outreach clinic
PHCRD	Primary Health Care Revitalization Division
PNC	postnatal care
PSU	primary sampling unit
RAMP	Remote Areas Maternal and Newborn Pilot Project
RDW	recently delivered women
RH	reproductive health
SBA	skilled birth attendant
SHP	sub-health post
SM	social mobilizer
TT	tetanus toxoid
VDC	village development committee
WHO	World Health Organization

EXECUTIVE SUMMARY

Introduction

This report gives the findings of the endline evaluation of the Remote Areas Maternal and Newborn Health Pilot (RAMP) Project in Taplejung district, eastern Nepal. This project was envisaged in light of the efforts of the Family Health Division (FHD) to address the problem of remoteness as it affects the accessibility and use of maternal and neonatal (MNH) health services. Three different intervention packages were piloted:

- Package 1: a district wide intervention aimed at strengthening district level coordination for allocating resources for MNH services.
- Package 2: a supply side intervention implemented in nine VDCs to strengthen the health facilities delivery of MNH services.
- Package 3: implemented in five VDCs where both the supply side intervention and a demand side intervention for creating demand for MNH services were implemented.

This evaluation measured changes in indicators related to:

- maternal and child health service use;
- knowledge of married women of reproductive age (MWRA) about MNH services; and
- availability of physical and human resources to deliver MNH health services.

Methodology

This study had a pre-post design with a comparison group and took a mixed methods approach. For the quantitative data collection, a health facility survey was carried out in 14 health facilities and 1 district hospital. A household survey was conducted in 990 households of 13 VDCs and included 836 married women of reproductive age (MWRA) including 150 women who had recently delivered a baby.

Focus group discussions (FGDs), in-depth interviews and key informant interviews were the main sources of qualitative data. FGDs were conducted among mothers-in-law, male community leaders and MWRA to explore perceptions, practices and barriers to using MNCH services. In-depth interviews were conducted with women who had delivered one year prior to the survey and health facility in-charges.

The household survey used stratified two stage cluster sampling to select its households. In the first stage, three strata were categorized — package 1, package 2 and package 3 strata. Eleven clusters were selected from each stratum with each cluster defined as a primary sampling unit (PSU). In the second stage, 30 households were selected from each PSU using systematic random sampling.

Key Findings

Health Facility Survey

Health facilities were assessed for the availability of maternal and neonatal health care services including the availability of supplies, equipment, drugs and human resources between the baseline and endline surveys.

Physical infrastructure — The capacity of the package 3 health facilities to accommodate their staff improved from the baseline to the endline, but this did not happen at package 1 and 2 facilities.

Most health facilities across all packages were not providing antenatal care (ANC) and postnatal care (PNC) services in a separate room at the endline, although delivery services were being provided in a separate room in all packages. PNC services were being provided in a separate room in only one out of three package 3 birthing centres at the baseline improving to in three out of the four birthing centres at the endline survey. Overall, the availability of a tap with running water and soap/spirit improved substantially at the package 2 and 3 health facilities with only a small improvement at the package 1 facilities. The availability of accessible separate toilets for women in the maternity wards/labour wards had improved in package 3 as two birthing centres out of the four had made such toilets available.

Power supply and emergency transport — Solar energy and electricity were the most commonly used sources of power in most facilities across all packages at the endline with eight facilities reporting either or both as their sources of power. Two facilities (one each from packages 1 and 2) and the district hospital had access to power supplies at all times, and all package 2 and 3 facilities reported having a form of power supply at the endline.

No ambulance service was available in any health facility to transport emergencies cases across all three packages. An ambulance available at a package 1 facility at the baseline was no longer available at the endline. However, ambulances provided by other organizations increased from no to two facilities (both to package 1 facilities) at the endline. It was said to take more than 12 hours to reach the district hospital from only one health facility — a package 3 facility.

Social auditing, budgets and role of HFOMCs — Four health facilities (one each from packages 1 and 2, and two from package 3) had conducted social audits in fiscal year 2014/15. All of them followed MoHP's guidelines, although three (out of four) had not submitted their reports on the audits.

The majority of health facility management and operation committees (HFOMCs) across all packages were meeting at least once a month at both the baseline and endline. Eleven health facilities (out of 14) across all packages were conducting HFOMC monthly meetings at least once a month at the endline. The overall functionality of the package 2 and 3 HFOMCs had improved.

Several decisions related to MNH had been made by the HFOMCs across all packages; but more so at the package 2 and 3 facilities. The practice of making such decisions had most of all improved at the package 2 facilities.

Availability and readiness of maternity services in health facilities — The functioning of health facilities/birthing centres improved across all packages with both package 2 birthing centres providing all signal function services at the endline. Long-term family planning services became more available in the package 2 facilities but availability decreased in the other two packages.

Infection prevention — There was a notable improvement in the availability of cleaning equipment and disinfectants in birthing centres in the delivery rooms of package 2 and 3 facilities; an improved availability of supplies for infection prevention in the package 2 and 3 facilities; and a large improvement in the management of bio-medical wastes at the package 2 and 3 facilities. The district hospital was not using a separate bin for bio-medical waste disposal, except for needles/sharps.

There was considerable adoption of infection prevention measures by all health facilities, but more so by package 2 and 3 facilities. All infection prevention measures were being taken by the district hospital at the baseline and endline. The use of personal protective measures by facility staff increased across all packages, but mostly in packages 2 and 3. Most package 2 and 3 facilities adopted all possible measures to dispose of bio-medical waste separately.

Maternity services in the health facilities — The number of available types of maternity services improved at the package 2 and 3 facilities, improved to a lesser extent in the package 1 facilities and remained exactly the same in the district hospital at the endline. The common maternity services provided in the last fiscal year (2014/15) were normal delivery, the administration of uterotonic drugs, ANC and PNC visits, and the administration of tetanus toxoid+ (TT+) injections.

No birthing centre had all signal functions available at the baseline, but two centres each of packages 2 and 3 had all functions available at the endline. All the basic emergency obstetric and newborn care (BEONC) level birthing centres from packages 2 and 3 (two in each package) had all seven signal functions available 24 hours 7 days-a-week at the endline. However, two package 3 birthing centres (of birthing centres/below BEONC level) were missing one of the four signal functions (parenteral antibiotics), although the other two such package 3 centres had all four signal functions available at the endline.

Drugs, supplies and equipment — The package 3 health facilities had the most improved availability of furniture and supplies for maternity services. The availability of such items decreased in the package 1 and 2 facilities. The availability of maternity service instruments and equipment increased to some extent in the package 2 and 3 facilities compared with the package 1 facilities; however, the package 2 and 3 facilities lacked at least one needed instrument or equipment for maternity services. Nonetheless, almost every birthing centre across all packages had a delivery set with all essential instruments at the endline.

The availability of instruments for resuscitating newborns in the facilities with a birthing centre of packages 2 and 3, and in the hospital, improved a lot. The availability of these instruments decreased in package 1.

Injectable paracetamol 150mg/ml and sulfamethoxazole+trimethorprim (cotrim) tablets 400mg + 160mg (SS) were the two most commonly stocked-out drugs across the facilities of all packages as all four facilities of package 1, four out of five facilities of package 2 and three of the five facilities of package 3 had been stocked out of these drugs at least once in fiscal year 2014/15. Injectable paracetamol 150mg/5ml, metronidazole tablets 400mg, metronidazole benzoate oral suspension 200mg/5ml and sulfamethoxazole+trimethoprim (cotrim) tablets 800mg +160mg DS were the most commonly stocked out drugs at the endline.

Human resources — The number of staff increased in 4 of the 13 health facilities with an increase in one each facility of packages 1 and 2, and two package 3 facilities. The number of current staff remained the same at five facilities (three from package 1 and two from package 2), but decreased in two package 3 facilities. Only one of the 14 facilities had all its sanctioned posts filled at the endline.

All package 1 and 3 facilities reported problems due to insufficient staff at the endline, with the situation being almost the same as at the baseline. Only one package 2 facility reported this at the endline. On the other hand, the proportion of absent staff at package 2 and 3 facilities and in the hospital decreased, whereas this had increased at package 1 facilities.

Household Findings

Socio-demographic profile of household survey's population — The mean age of MWRA in both the baseline and the endline was 31 years. Rais/Limbus made up the highest proportion of the samples. The proportion of recently delivered women was less at the endline than the baseline in all three packages while the proportion of pregnant women was greater in packages 1 and 2 at the endline. A higher proportion of sampled women in package 1 lived close by the health facility at the endline — 34% in package 1, 26% in package 3, and 19% in package 2.

Knowledge and use of maternal health care services — Knowledge on the recommended four ANC visits and their timing as per the protocol slightly declined in packages 1 and 2 while it increased in package 3 from 25% to 35% in the endline.

- Knowledge on any three danger signs during pregnancy increased the most among package 3 women (from 27% at the baseline to 38% at the endline).
- The use of modern contraceptive methods increased among package 1 and 3 women while it decreased among package 2 women from 40% to 26%.
- The proportion of women in package 3 visiting their health facility as per the recommended timing increased from 20% at the baseline to 46% at the endline. This was the greatest increment among all three packages.
- The proportion of deliveries carried out in health facilities (institutional deliveries) increased from 25% at the baseline to 62% at the endline in package 3.

Knowledge and practices related to neonatal health — Knowledge on the benefits of breast feeding within an hour of birth increased from 70% to 79% in package 3 and from 69% to 82% in package 2. The knowledge on any three danger signs of newborns increased in package 3 while in the other packages it declined. The recommended practice of waiting to bathe newborns until after 24 hours increased in package 1 from 51% to 74% of cases. The measles immunization coverage rate was over 90% across all packages. The incidence of diarrhoea in the 12 weeks prior to the survey had declined in all packages with the largest decline among package 2 infants (from 12% to 3%). Pneumonia-related symptoms in the 12 weeks prior to the surveys also declined — from 15% to 7% in package 2, 14% to 8% in package 3 and 16% to 15% in package 1.

Family support and perception on health care services — The proportion of women aware of free health care from the government increased in package 1 from 72% at the baseline to 83% at the endline while it declined in the other packages. The number of women highly satisfied with health care services increased more than five-fold for package 2 respondents while it doubled for package 1 respondents. Recently delivered women who reported that their family permitted them to attend ANC check-ups, leaving domestic and productive work, increased substantially in packages 1 and 3. In package 3 (where the Equity and Access Programme [EAP] was implemented), there was no improvement in mother-in-laws encouraging recently delivered women for institutional delivery or delayed neonatal bathing.

Conclusions and Limitations

The evaluation found that many maternal health indicators related to the demand side part of the intervention (package 3) had improved from the baseline to the endline, including ANC visits as per the protocol, institutional delivery, SBA attended deliveries and IFA intake. The awareness of the package 3 respondents seems to have also improved more compared to the other packages. And the rate of institutional deliveries was much higher for those living nearby a health facility among package 3 women compared to women from the other two non-EAP packages. Other results give a more mixed picture with improvements on some indicators in package 1 (the comparison group), with in some cases better performance than in the intervention (package 2 and 3) groups. It is difficult to conclude from the data whether or not the EAP activities related to family support to pregnant women improved the maternal and neonatal health outcomes. The limitations of the study must be considered while evaluating these results. The main limitation was the inadequate sample size to perform a multilevel analysis of the results to adjust for confounding factors.

The evaluation found that the supply side intervention in the package 2 and 3 areas largely delivered the expected result of improvements from baseline to endline. One prominent and probably sustainable result was the improved performance of HFOMCs. The facilities' quality

improvement action plans were being implemented at the package 2 and 3 health facilities with birthing centres. Staff at these facilities had better infection prevention practices. The major limitation in assessing the health facility results is the poorly maintained Health Management Information System (HMIS) records.

All findings need to be set against the caveat that it was probably not justified to evaluate outcome level changes at the household and health facility levels after just over one year of interventions.

Recommendations

1. An improved road network and the improved availability of ambulances are needed to overcome the distance and transport barriers to accessing MNH care. Motorbike-ambulances should be considered.
2. Health facilities should keep updated lists of local pregnant women to help health workers track the status of pregnant women.
3. Establish subsidized accommodation near birthing centres for the companions of women coming for delivery.
4. Put more effort into reaching the most deprived women target groups with quality ANC services at outreach clinics. Strengthening service delivery, frequency and coverage of such health facility conducted outreach clinics should improve access to MNH service.
5. More effective coordination is needed between EAP implementers and health facility workers when running EAP type programmes.
6. Home delivery attended by SBAs should be considered acceptable in areas with few transport options.

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CHAPTER ONE

INTRODUCTION

1.1 Background

The Ministry of Health and Population (MoHP) implemented the second phase of the Nepal Health Sector Programme (NHSP-2) to improve the health status of the people of Nepal, especially women and poor and excluded people. During the mid-term review of NHSP-2 and the joint annual reviews (JARs) of progress in the health sector in 2012 and 2013, the Government of Nepal (GoN) said that equity gaps were limiting progress towards achieving NHSP-2's targets.

Significant improvements have been achieved against all health indicators and there has been a steady decline in maternal, newborn, infant and under-five mortality over the past two decades. However, disparities persist along economic, socio-cultural and geographic lines in terms of both health outcomes and health service use. For several maternal, newborn and child health (MNCH) outcomes, there is a large equity gap between geographical locations. For instance, under-five and newborn mortality is almost 1.5 times higher in rural areas than in urban areas, and is 1.5 times higher in mountain than in hill and Terai districts. And the stagnation of newborn mortality decline is most obvious in the hill and mountain districts of Nepal as per the findings of the 1996, 2001, 2006 and 2011 Nepal Demographic and Health Surveys. A recent study on maternal mortality and morbidity (Suvedi et al. 2009) in eight districts of Nepal found a higher mortality ratio in two mountain districts compared to the hill and Terai districts.

In 2013, the Family Health Division (FHD) and Child Health Division (CHD) of MoHP, with support of the World Bank and the Nepal Health Sector Support Programme (NHSSP) conducted a study on access to MNCH services in remote areas of Nepal (Regmi et al., 2013). The purpose was to make recommendations for reducing demand-side barriers, improving service coverage and improving health seeking behaviour and service use.

The high financial costs for patients related to the distance/time to travel were found to be the main barrier for reaching maternal health care services, especially for the management of complicated deliveries. Socio-cultural preferences for traditional healers and home deliveries were found to reinforce the barriers of challenging journeys and the costs of travelling to distant facilities. The limited availability of MNH services and providers also increased the distance women have to travel for reaching MNH services. Child health care services, though available in most places, were found to be of poorer quality in remote areas.

The study concluded that both demand and supply-side barriers needed addressing in ways tailored to local contexts to improve access to health services in remote areas. It was also hypothesized that strengthening district health management in remote districts should support the improved availability, quality and responsiveness of health services.

In addition to on-going national level health system strengthening efforts, Regmi et al (2013) concluded that there is a need for tailored inputs for remote districts, especially for strengthening planning and management. The mid-term review of NHSP-2 also recommended strengthening district level planning and the management of health service provision. The provision of a flexible fund (earmarked MNH funds) to enable health service managers to direct additional resources and solve local problems, especially in the more remote VDCs within their districts, was also recommended. The study recommended that a core service delivery and demand-side package of interventions designed to overcome the barriers to access in remote Nepal be piloted in one district to inform the development of strategies for MNCH in remote areas and the preparation of NHSP-3.

A review of policies and programmes revealed that, although Nepal has been successful in reaching its citizens with MNCH services such as family planning, antenatal care, and immunisation (Regmi et al., 2013), these initiatives have not targeted areas where the need is higher and access is poorer. Most attention has gone to achieving population-based targets, with much less for reaching the most disadvantaged people who face greater geographical, social and economic barriers to accessing health services. The study found that remoteness is a factor that effects access to and the use of MNCH services both within and between districts. For example, compared to less remote village development committees (VDCs), remote VDCs (defined as VDCs that lie more than eight hours travel distance from their district headquarters) were found to generally have fewer human resources for health, fewer facilities including birthing centres and long term family planning (LTFP) services, and higher levels of drug stock-outs and expired drugs. The uptake of services was also lower in remote VDCs.

1.2 Pilot project in Taplejung district

Based on the recommendations of Regmi et al. (2013) and other studies, FHD and PHCRD piloted a package of interventions implemented at different health service levels in Taplejung district. Taplejung was identified as a remote district. The package was designed to improve access to and the use of maternal and neonatal health services, and if proved successful, to be replicated in other remote districts. Taplejung district was selected from among the five remote districts of the 2013 study (Taplejung, Rasuwa, Gorkha, Rukum and Bajura districts).

This pilot intervention was implemented the following three types of interventions (Figure 1.1):

1. District wide interventions.
2. District wide interventions plus health facility level supply-side interventions.
3. District wide interventions plus health facility level supply-side interventions plus demand side interventions.

Figure 1.1: The three types of MNH packages and their interventions (Taplejung, 2014–2015)

Package 1	Package 2	Package 3
		Demand side interventions: Equity and Access Programme (EAP) interventions • Behaviour change communication • Emergency fund and transport arrangements • Stakeholder mobilisation and advocacy.
	Supply side health facility interventions: • District level Earmarked MNH Fund for human resources, equipment, supplies. • ANM skill enhancement • HFOMC strengthening.	**Supply side health facility interventions:** • District level Earmarked MNH Fund for human resources, equipment, supplies. • ANM skill enhancement • HFOMC strengthening.
District wide interventions: • District wide coordination for resource mobilisation and drugs distribution • District hospital services • Obstetric first aid to paramedics • FCHV based interventions	**District wide interventions:** • District wide coordination for resource mobilisation and drugs distribution • District hospital services • Obstetric first aid to paramedics • FCHV based interventions	**District wide interventions:** • District wide coordination for resource mobilisation and drugs distribution • District hospital services • Obstetric first aid to paramedics • FCHV based interventions

1.3 Rationale of the Study

This endline study provides the comparative evaluation with baseline indicators for all three clusters where three different types of interventions (packages) were implemented. The aim was to understand the impact of the interventions. The evaluation indicators include maternal and child health service use, knowledge of MWRA, and the availability of the physical and human resources needed to deliver services, especially MNH services. The evaluation also assessed information on social determinants of health (the context) that could positively or negatively impact health-seeking behaviour.

1.4 Endline Survey Objectives

General objective: To evaluate whether the project intervention has led to the desired change in maternal and neonatal health outcomes or not in the communities and if this intervention model can be considered for scaling up.

Specific objectives:

1. To assess the current MNH service status and facility readiness to implement MNH services in selected health facilities in Taplejung district.
2. To assess the current maternal and child health service use trends (including ANC, PNC, and delivery services) compared with the baseline in selected health facilities of Taplejung district.
3. To explore the health service seeking behaviours of married women of reproductive age (MWRA) and recently delivered women (RDW) relating to MNCH services, and barriers and facilitators (social, cultural, economic and physical) to access in selected communities of Taplejung district.
4. To compare endline indicator data related to maternal and child health with baseline data in the pilot areas.

CHAPTER TWO

METHODOLOGY

The September 2015 endline survey aimed to identify and assess changes from the baseline survey of July 2014. The indicators were mainly related to:

- the use of maternal health services
- the use of neonatal and child health services
- barriers to accessing maternal health services
- knowledge and social acceptability of maternal and neonatal health
- availability and quality of maternal and neonatal health services
- the management and governance of health services.

2.1 Study Design

This was a pre-post study with a comparison group. It collected quantitative and qualitative data through a household survey, a health facility survey and a qualitative study.

Household survey: A total of 990 households were surveyed during the endline of which total 836 married women of reproductive age were interviewed to gather information on their knowledge and practices on MNH and the support they receive to enable them to access and use MNH services. One hundred and fifty of the MWRA were defined as recently delivered women (RDW) for having given birth in the last one year. The baseline study had covered 969 households, 845 MWRA and 179 RDW.

Health facility survey: 14 health facilities were surveyed to assess their readiness in terms of availability of services, human resources and infrastructure. However, in the baseline study only 13 health facilities were surveyed as one of the health facilities was closed then.

Qualitative study: This study held focus group discussions (FGD), in-depth interviews (IDI) and key informant interviews (KII). As happened in the baseline, one FGD was conducted with mothers-in-law, married women of reproductive age and male community leaders in each package. Additionally in the endline, key informants interviews were held with health facility in-charges and recently delivered women.

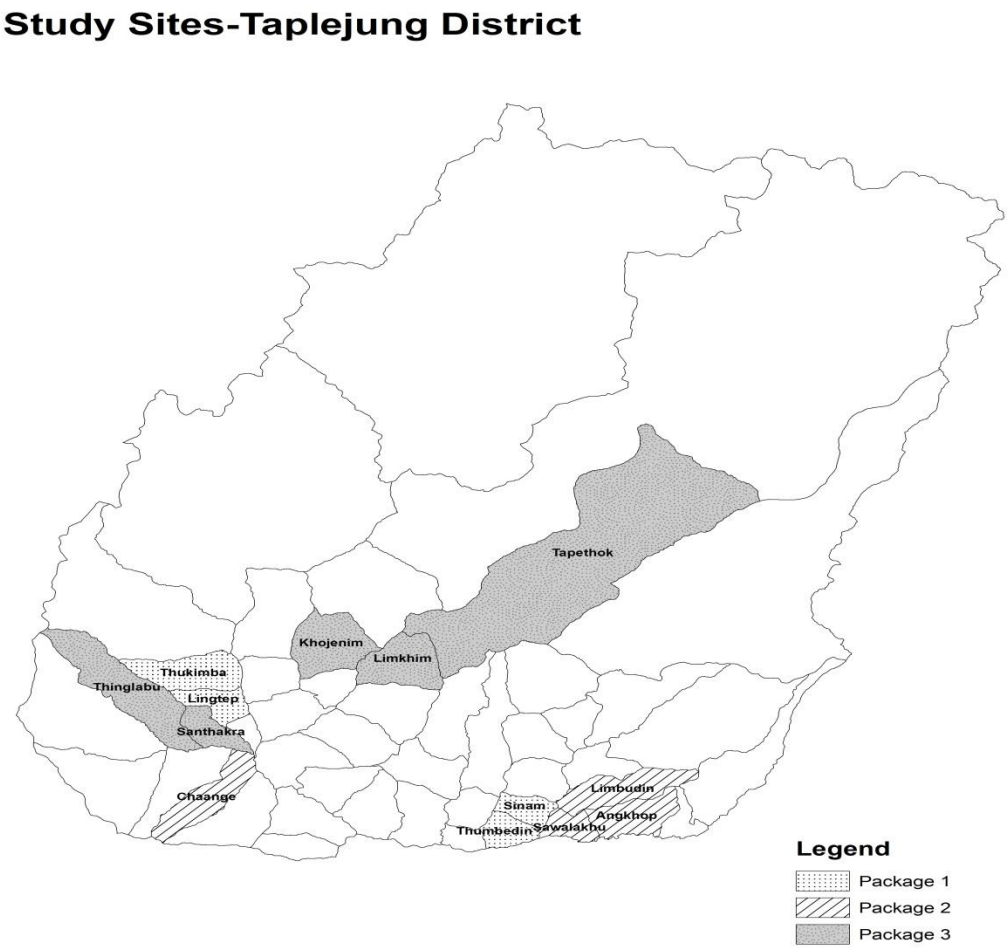
2.2 Study Area

Based on FHD and PHCRD recommendations the survey was carried out in 13 VDCs of Taplejung district, north-eastern Nepal (Figure 2). The details of the VDCs are shown in Table 2.1.

Table 2.1: Study population and area for the survey

VDCs	Methods	Study population
Package 1		
Lingtep, Thukima, Thumbedin, Sinam	Household survey, health facility survey, FGD, KII and IDI	MWRA, health facility in-charge, mother in law, male community leaders
Package 2		
Sablakhu, Chaange, Ankhop, Limbudin	Household survey, health facility survey, FGD, KII and IDI	MWRA, health facility in-charge, mother in law, male community leaders
Package 3		
Thinglabu, Santhakra, Khejenim, Linkhim, Tapethok	Household survey, health facility survey, FGD, KII and IDI	MWRA, health facility in-charge, mother in law, male community leaders
District hospital	Health Facility survey	Hospital in-charge

Figure 2: The study sites in Taplejung district



2.3 Sample Design

The sample size was the same as had been calculated for the baseline i.e. 990 households. Firstly, the sample size was estimated for the study, which was 123 RDW for both the intervention and compare group based on the following calculation formula:

$$n = C\frac{p_c q_c + p_e q_e}{d^2} + \frac{2}{d} + 2$$

Source: Dell et.al, 2002

where it was assumed that the desired proportion of the experimental group exhibiting the event (pe) = 20% and the desired proportion of the compare group exhibiting the event (pc) = 50%. The calculation was made with 95% confidence interval and power of the test as 0.8.

However, other MWRA are also equally likely to become an RDW during the intervention period so the sample was again calculated for MWRA based on calculated sample for RDW (n = 123). For the calculation we had total expected pregnancy = 729 and total MWRA = 5625 for 13 VDCs (study sites), and thus for 123 RDW (considering expected pregnancy) we estimated 990 households as the needed study sample size.

The HERD team collected data from 969 households where they also interviewed 845 MWRA including 179 RDW, the staff of the 13 health facilities and one hospital and 9 groups of mother-in-laws, community leaders and MWRA. The study used stratified, two stage clusters sampling to select the households. The primary sampling unit (PSU) for the sampling was village ward or combining 2-3

wards depending upon the availability of a minimum of 60 households. In the first stage three strata were categorised where the three different types of interventions were to be implemented. From each stratum 11 clusters were randomly selected with each cluster defined as a PSU. In the second stage, an updated household list for the selected PSUs was prepared with the help of key informants. Thus the prepared list worked as a sampling framework to select 30 households from each cluster using systematic random sampling. From each sampled household all available MWRA were selected including RDW. The intervention had three packages. The VDCs and their (remote) wards/clusters that were sampled in the baseline and endline surveys are listed in Table 2.2.

Table 2.2: Wards/clusters in the baseline and endline surveys

VDC name	Selected wards/clusters in baseline	Selected wards in endline
Lingtep	2, 7	3, 9
Thukimma	3, 6, 9	2, 5, 9
Thinglabu	4, 8	1, 4, 8
Change	2, 4, 6, 9	1, 4, 6, 8
Santhakra	1, 4, 8	2, 9
Khejenim	2, 6	1, 3, 8
Linkhim	2, 6	4, 9
Tapethok	6	7
Sinam	2, 5, 9	2, 5, 9
Thumbedin	2, 5, 8	2, 6, 9
Angkhop	2, 6, 9	1, 5
Limbudin	2, 8	2, 8
Sablakhu	3, 6	3, 6

2.4 Study Instruments

Quantitative survey: Structured questionnaires were developed for the household and health facility surveys to collect information from MWRA including RDW on their MNCH service knowledge and use and of MNCH services at health facilities as well as their use and health behaviours.

Qualitative survey: FGD guidelines were developed to explore the perceptions, practices and barriers of mothers-in-law, community leaders and MWRA in MNH behaviour and the use of MNCH services, for in-depth interviews with RDW and for KIIs with health facility in-charges.

2.5 Recruitment, Training and Fieldwork

Field researchers were trained from 15-19 September 2015. Twenty-five researchers were trained on data collection methods and tools, ensuring data quality, following ethical guidelines and team working. Five teams were formed with one supervisor per team whose primarily responsibility was to ensure data quality at the district level.

Data was collected from 26 September to 18 October 2015 by 5 field supervisors and 20 field researchers all of whom had a university degree. Altogether 836 MWRA, including 150 RDW, were interviewed. The supervisors were responsible for checking filled questionnaires for consistency and appropriateness. Qualitative data was collected at 9 FGDs — 3 each with mothers-in-law, MWRA and male community leaders. Two IDIs and two KIIs were performed with RDW and health facility in-charges from each package.

2.6 Data Processing and Analysis

Quantitative data: Each completed questionnaire was manually edited and coded according to a coding manual. The data was then entered into the computer. Data entry was done in the CSPro programme under the close supervision of the data management officer following which the data was cleaned. IBM PASW version 20.0 was used for the analysis. The database was secured in a password protected computer and could only be accessed by the core research team.

Qualitative data: The FGDs were transcribed in Nepali by the field researchers in the field based on their recordings and notes. Upon return to Kathmandu, the qualitative research team re-read the transcripts and assigned codes to responses. The data was then manually coded and certain themes identified based on which the findings were triangulated with the survey.

2.7 Ethical Approval

The study was designed, planned and approved by NHSSP and the Family Health Division (FHD). Ethnical approval for the study was obtained from the Nepal Health Research Council. In the district, approval was obtained from the district authorities and all sample health facilities. Informed consent was also obtained from the respondents maintaining privacy and confidentiality of their information.

CHAPTER THREE

BACKGROUND CHARACTERISTICS OF HEALTH FACILITIES

This chapter overviews the background characteristics, infrastructure and functionality of the health facilities surveyed in Taplejung district. The survey collected information from 15 health facilities (four facilities in package 1, five facilities in package 2, five facilities in package 3) and the district hospital.

This box is included here and at the start of each finding chapter to remind readers of the three packages as an aid to interpreting results.			
The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 2 plus demand side strengthening

3.1 Physical Infrastructure

This section describes the ownership status of the health facility buildings and the types of accommodation provided by them.

Changes were found in the capacity to accommodate staff across all three packages between the baseline and the endline although the types of accommodation that changed differed from package to package. For instance:

- 'accommodation for nursing staff/ANMs when necessary' was available in one package 2 facility and two package 3 facilities;
- 'residential accommodation for nursing staff/ANMs' was available in only one package 3 facility; and
- 'accommodation for other staff than SN/ANM when necessary' was provided in only one package 2 facility.

However, some accommodation facilities found in the baseline were no longer available in the endline including residential accommodation in one of the health facilities of package 1, and 'accommodation for staff other than SNs/ANMs when necessary' in one package 2 facility.

Table 3.1: Own building of health facility

	Package 1				Package 2				Package 3				District hospital	
	HP		SHP		HP		SHP		HP		SHP			
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Facility with own building	2		2		2		2		3		2		1	
Types of accommodation														
Accommodation for nursing staff/ANMs when necessary	2	2	0	0	0	1	0	1	2	2	0	2	1	1
Accommodation for staff other than SNs/ANMs when necessary	2	2	0	0	1	0	0	1	2	2	0	0	0	1
Residential accommodation for health facility in-charge	2	2	0	0	0	0	0	0	2	2	0	0	1	1
Residential accommodation for nursing staff/ANMs	2	2	0	0	0	0	0	0	2	2	0	1	1	1
Residential accommodation for other staff	1	0	0	0	0	0	0	0	2	2	0	0	1	1
Total health facilities	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**3**	**3**	**2**	**2**	**1**	**1**

Some improvement was found in the capacity of package 3 facilities to accommodate their staff, but not in package 1 and 2 facilities. Monitoring data (KIIs with health facility staff and HFOMC members, HFOMC minutes, observations, HMIS) suggest that the establishment of birthing centres in the package 3 facilities at Santhakra SHP and Tapethok SHP during RAMP's implementation could have led to the availability of accommodation (permanent or temporary) to nursing staff along with the provision of 24 hour delivery services at the birthing centres.

In package 3, post natal care (PNC) services were provided in a separate room in only one of the three birthing centres at the baseline, but in three of the four centres at the endline (Table 3.2). Additional birthing centres were established in Santhakra SHP and Tapethok SHP during the period of RAMP, although Santhakra SHP had been providing delivery services informally at the baseline. Family planning services were being provided in a separate room at one facility of the four in package 1 and in two of the five facilities in package 2 at the baseline, but they had all stopped providing this service at the endline. Similarly, one facilities which was providing PNC services in a separate room during the baseline was not doing this in a separate room at the endline. ANC and family planning services not being given in separate rooms in every health facility may be related to both these services being provided in the same room in most health facilities as observed during the monitoring visits of February to September 2015.

Table 3.2: Types of reproductive health services provided in separate room

	Package 1		Package 2		Package 3		District Hospital	
Reproductive health (RH) services provided in separate room	**Baseline**	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
Delivery service	2	2	2	2	3	4	1	1
PNC service	1	1	1	0	1	3	1	1
Total HFs providing delivery services (N)*	**2**	**2**	**2**	**2**	**3**	**4**	**1**	**1**
ANC service	2	2	0	3	3	3	1	1
OPD service	2	3	3	4	4	5	1	1
Family planning service	1	0	2	0	0	1	1	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

**Only eligible health facilities providing delivery services are included*

There was little change in the size of the waiting rooms for service users and their companions at the facilities (Table 3.3). Nonetheless, the capacity to accommodate an average number of people in the waiting area at a time in the district hospital had doubled. Based on the process monitoring findings (KIIs with HF staff and HFOMC members, and study team observations), most health facilities of packages 2 and 3 had no accommodation for the companions of patients who helped them to the facility for delivery or other MNH related issues. Based on the information from a FGD with male community leaders in a package 2 VDC, the unavailability of a waiting room and/or residence for patients' companions in the facility or nearby was a major barrier to access and use of delivery services at the local health facility. An FGD participant said:

> "….fifteen people carry a pregnant woman to the local health facility. But there is no provision for them to stay in the health post."

However, this might not be relevant to health facilities not providing delivery service. During the monitoring visits (February to September 2015) to the packages 2 and 3 facilities, only Limkhim HP of package 2 had a waiting room for the companions of pregnant women to spend the night. The lack of shelter in local birthing centres to stay overnight was repeatedly quoted by local service users as a discouraging factor for them to deliver at a birthing centre.

Table 3.3: Waiting areas at health facilities

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Waiting area for OPD patients	4	4	4	5	4	4	1	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**
Bench, chair or sitting arrangement in waiting room	4	4	4	5	4	4	1	1
Average number of people accommodated in waiting area at a time	10	11	11	10	11	11	20	40
Total health facilities (N)	**4**	**4**	**4**	**5**	**4**	**4**	**1**	**1**

Many changes can be seen in the availability of taps with running water and soap or spirit in different departments of the health facilities in packages 2 and 3 and the district hospital, whereas, only minimal changes were evident at package 1 facilities (Table 3.4):

- There were no taps with running water in the ANC room of three health facilities each of packages 2 and 3 (out of five each) during the baseline, but they were available here and in the district hospital at the endline, with the same proportion having available soap or spirit at the endline.
- A tap with running water was unavailable in the delivery rooms of two package 2 birthing centres, and in only one of the three delivery service-providing health facilities of package 3 at the baseline, but it was available in both package two birthing centres and in all four package 3 birthing centres at the endline.

Thus only one of the four package 1 facilities improved in terms of having running tap water along with soap or spirit while seven of the ten package 2 and 3 facilities (three in package 2 and four in package 3) improved. This may be attributed to the three-day whole-site infection prevention (IP) training provided to the staff of all health facilities in packages 2 and 3 at the beginning of RAMP.

Table 3.4: Availability of tap with running water and soap or spirit

Availability of tap with running water	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
ANC room	0	0	0	3	0	3	0	1
Delivery room	0	1	0	2	1	4	1	1
Post natal care room	0	0	0	1	1	1	0	1
FP procedures room	0	0	0	3	0	1	0	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**
Availability of soap/spirit								
ANC room	0	0	0	3	1	3	0	1
Delivery room	1	1	1	2	2	4	1	1
Post natal care room	0	0	1	1	0	1	0	1
FP procedures room	0	0	0	2	0	1	1	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

At the baseline, all heath institutions had a functional toilet for patients, although only one birthing centre of package 1 had a separate toilet for women that was functional and an easily accessible separate toilet for women in the maternity ward/labour room. However, at the endline survey, one of the four package 1 facilities had no toilet available for patients and no separate functional toilet for women, but one health facility each of packages 2 and 3 had a separate functional toilet for women. Two package 3 birthing centres had an easily accessible separate toilet for women in the maternity ward/labour room.

Only a few facilities had a separate toilet for women, with only one each such toilet in packages 2 and 3, and none in package 1. Nonetheless, improvements were seen in the availability of easily accessible separate toilets for women in maternity wards/labour wards of two health facilities out of the four birthing centres of package 3. As a major parameter for sanitation, the availability of at least one functional toilet for patients in all health facilities of packages 2 and 3 would help maintain infection prevention there.

Table 3.5: Availability of toilets

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Availability of a toilet for patients	4	3	4	5	5	5	1	1
Separate toilet for women								
Functional	1	0	0	1	0	1	0	0
Not functional	0	0	1	0	0	0	0	0
Easily accessible separate toilet for women in maternity ward/labour room								
Functional	1	1	0	0	0	2	1	1
Not functional	0	0	0	0	1	0	0	0
Total health facilities (N)	**4**	**3**	**4**	**5**	**5**	**5**	**1**	**1**

3.2 Power Supplies

This section describes the common sources of energy/power used by health facilities and the district hospital in 2014/15.

Solar energy and electricity were the two most commonly used sources of power in most of the health facilities across all packages during the baseline. The source of power was slightly changed during the endline due to the availability of electricity in two additional health facilities — one each from packages 2 and 3.

At the baseline, only six of the eleven facilities (including the hospital) with power supplies reported having supplies 24 hours most of the time, with none of these facilities having 24 hour electricity. Two facilities reported having no source of power. The situation had improved by the endline when two facilities (one each from packages 1 and 2) and the hospital had access to power at all times, while none of the package 2 and 3 facilities reported having no form of power supply.

When birthing centres only are considered, none of the birthing centres of packages 2 and 3 had power supplies 24 hours 7 days a week at the baseline. Things had improved by the endline with all such two birthing centres in package 2, three out of the four centres in package 3, and one out of two in package 1 having a power supply 24 hours 7 days a week most of the time. Another package 3 birthing centre had power supplies for 24 hours 7 days a week *sometimes*.

Table 3.6: Source of Power Supply at health facility

Power sources	Package 1				Package 2				Package 3				District Hospital	
	BC		Non-BC		BC		Non-BC		BC		Non-BC			
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Electricity	1	1	0	0	1	2	2	2	1	2	1	1	1	1
Solar	2	2	0	1	1	1	1	1	3	3	0	0	1	1
Kerosene/diesel	0	0	0	0	1	0	0	0	0	0	0	0	0	0
Biogas	0	0	0	0	0	2	0	1	0	0	0	0	0	0
Generator	0	0	0	0	0	0	0	0	0	0	0	0	0	1
No sources available	0	0	2	1	0	0	0	0	0	0	1	0	0	0
Total health facilities (N)	**2**	**2**	**2**	**2**	**2**	**2**	**2**	**3**	**3**	**4**	**2**	**1**	**1**	**1**
Facility have power for 24 hours and 7 days														
Always	0	1	0	0	0	0	0	1	0	0	0	0	0	1
Most of the time	1	1	-	0	0	2	1	2	2	3	1	0	1	0
Sometimes	1	0	-	0	0	0	0	0	0	1	0	1	0	0
Rarely	0	0	-	0	1	0	0	0	1	0	0	0	0	0
Never	0	0	-	1	1	0	1	0	0	0	0	0	0	0
Total health facilities with source of power (N)	**2**	**2**	**0**	**1**	**2**	**2**	**2**	**3**	**3**	**4**	**1**	**1**	**1**	**1**

3.3 Emergency Transport

This section deals with the availability of ambulances in case of emergencies in the health facilities and the time taken to reach the district hospital by the fastest means of available transport.

The availability of emergency transport was unchanged in packages 2 and 3 at the endline compared to the baseline as no facilities of these packages had ambulance service available. The ambulance service available at a package 1 facility at the baseline was no longer available at the endline although two facilities were being provided with a service by separate organizations (which was not evident at the baseline). Inaccessible roads and a lack of bridges over watercourses explain why ambulance services are not available at many health facilities.

Table 3.7: Ambulance services

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Availability of ambulance service	1	0	0	0	0	0	1	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**
Available 24/7	0	0	0	0	0	0	1	1
Total health facilities with ambulance service in their community (N)	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
Other organization providing ambulance to facility	0	2	0	0	0	0	0	1
Total	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

The time taken to reach the district hospital using the fastest means of transport available from health facilities remained almost the same between the baseline and endline (Table 3.8). It required more

than 8 hours to reach the district hospital from four out of five package 3 facilities while it took more than 12 hours to reach the district hospital from one of these facilities.

Table 3.8: Time taken to reach the district hospital

	Package 1		Package 2		Package 3	
Time taken to reach district hospital	**Baseline**	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
4 to 8 hours	2	2	3	3	1	1
8 to 12 hours	2	2	1	2	3	3
More than 12 hours	0	0	0	0	1	1
Total health facilities except hospital (N)	**4**	**4**	**4**	**5**	**5**	**5**

CHAPTER FOUR

SOCIAL AUDIT, BUDGET AND ROLE OF HFOMCS

This chapter describes the status of social auditing in 15 health facilities, including one district hospital and their income and expenditure. It also deals with the functionality of health facility operation and management committees (HFOMC) and their involvement in the overall improvement of MNH services in their health facilities.

The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 1 and 2 plus demand side strengthening

4.1 Social Audits

A health sector social audit is a process by which citizens audit the provision of government health services. The major objectives of social auditing are to monitor how resources are used, to understand who is benefitting, to increase transparency and to hold service providers and officials accountable. As per the Local Authority Financial Administration Regulations, 2007, it is mandatory to hold social audits for all programmes within four months of the completion of each fiscal year (FY). This section looks at the status of social auditing performed at some health facilities of the three different packages.

Four health facilities (one each from packages 1 and 2, and two from package 3) had conducted social audits in fiscal year 2071/72 (2014/15) (Table 4.1). Three of them had not, however, submitted their audit reports, but all had otherwise followed MoHP guidelines for carrying them out.

Table 4.1: Social auditing by health facilities

	Package 1		**Package 2**		**Package 3**	
	Baseline	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
Social audit allocated by district health office (DHO)	2		0		1	
Social audit conducted in last fiscal year	2	1	0	1	1	2
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**
Social audit conducted followed MoHP guidelines	1	1	0	1	1	2
Report of social audit available at health facility						
Yes, seen by enumerator	1	0	0	0	0	0
Yes, not seen by enumerator	0	0	0	0	1	0
No, report not submitted	1	0	0	1	0	2
Don't know	0	1	0	0	0	0
Total health facilities where social audit was conducted (N)	**2**	**1**	**0**	**1**	**1**	**2**

The endline survey found that three health facilities (one from package 2 and two from package 3), that had conducted social audits in the last fiscal year (2014/15), had made their findings public (Table 4.2). They had all used public gatherings as a medium for making their findings public. Another two means of dissemination — facility information boards and HFOMC meetings, were also used by one of the Package 3 facilities.

Table 4.2: Findings of social audits made public

	Package 1		Package 2		Package 3	
Findings of social audit made public via:	**Baseline**	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
Facility information board	1	na	0	0	0	1
Public gathering	1	na	0	1	1	2
HFOMC meeting	0	na	0	0	0	2
Total health facilities where social audit conducted (N)	**2**	**1**	**0**	**1**	**1**	**2**

No notable changes are evident in the frequency of HFOMC and hospital development committee (HDC) meetings (Table 4.3). However, substantial changes were reported by health facility staff and HFOMC members during the process monitoring at most health facilities with RAMP supply side interventions. According to the process monitoring (KIIs with facility staff and HFOMC members, HFOMC minutes), apart from the occasional failure to conduct monthly meetings in some packages 2 and 3 facilities, there had been an improvement in the regularity of meetings at all these facilities. Very few health facility staff and HFOMC members reported that regular HFOMC monthly meetings took place at their health facilities prior to RAMP. According to an HFOMC member of a package 2 facility during a May 2015 monitoring visit, their monthly meetings were being conducted regularly on the 13th of every month after the HFOMC strengthening training provided to them as part of RAMP. He said they had used to conduct their meetings sometimes only every six months or not even once a year. An HFOMC member from another health facility of package 2 said:

"The current committee has improved by more than seventy-five percent when compared with the previous one. For instance, the previous committee used to conduct occasional meetings only every one or two years only if needed on emergency issues; but meetings are being conducted every month now. We have achieved various accomplishments due to regular meetings including the receipt of five ropanis of land for the health post from local donors; the discouragement of staff absenteeism. Previously, staff used to open the health facility on their wishes and it often stayed closed and staff used to stay at home and would say that they were in the district headquarters."

Similar opinions were reflected from HFOMC members of package 3.

Table 4.3: HFOMC meetings

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
HFOMC/HDC in health facility	4	4	4	5	5	5	1	1
Frequency of HFOMC/HDC meeting								
At least once a month	2	2	4	5	4	4	0	0
Every 2-3 months	0	1	0	0	1	0	1	0
As per need	2	1	0	0	0	1	0	1
Total health facilities(N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

There had been many improvements during the last fiscal year across all three packages in terms of decisions made by the HFOMCs. The package 2 HFOMCs took the most decisions in the endline survey compared with the baseline, with the least number made by the package 1 HFOMCs.

The process monitoring (key informant interviews and HFOMC minutes) show that one or the other MNH related decisions were made in all health facilities of packages 2 and 3 over the one year (Table 4.4). Such decisions included deciding to demand an ANM in Angkhop SHP and Tapethok SHP and deciding to extend the stay of contracted ANMs in Sablakhu HP, Change HP, Santhakra SHP, Thinglabu HP and Limkhim HP. All HFOMCs had decided to establish an emergency fund (referral fund) in their facilities. The following major decisions were taken by HFOMCs in 2014/15:

- Limbudin SHP HFOMC decided to run an ANC clinic every Monday to improve access to ANC services and decided to ask for support from the VDC council to manage its five outreach clinics for improving the nutritional status of pregnant and post-partum women and children.
- In Angkhop SHP the HFOMC decided to provide MNH related and other services through outreach clinics to people of distant areas of ward number 8.
- The HFOMCs of Sablakhu HP and Limkhim HP decided to dig placenta pits, repair the delivery room, and ask for a table to look after infants on.
- Sablakhu HP HFOMC decided to inform local people about the availability of implant and IUCD services, to reward the local female community health volunteer (FCHV) who brought the highest number of women to the local health facility for delivery with NPR 5000, to spend twenty percent of the VDC provided budget on supplies for its birthing centre, demand funds from the DHO for vacuum delivery, and to disseminate information on safe motherhood and newborn health in the local community.
- Decisions taken by other HFOMCs included at Change HP to convert the guard room into a maternity waiting room, at Limkhim HP HFOMC to ask the ANM of a nearby VDC (Sawadin) to conduct deliveries in the absence of the local ANM, at Khejenim HP to build a new building with additional rooms, to establish a birthing centre and to spend thirty three percent of the VDC provided fund to purchase MNH related supplies.

Process monitoring (KII with HF staff and HFOMC members, HFOMC minutes) observed decisions on other important issues including:

- at Angkhop SHP, deciding to inform the DHO about the absenteeism of an auxiliary health worker (AHW) and to ask health staff to inform the HFOMC when they were absent;
- at Sablakhu HP, deciding to ask the DHO for stretchers and other equipment;
- at Change HP, deciding to keep a rack in the delivery room;
- in Khejenim HP, deciding to ask the DHO to fill sanctioned posts, to inform the district health office of the absenteeism of then health assistant (HA), and for staff to stop the practice of going on home call except for deliveries (until the birthing centre was operational); and
- Tapethok SHP deciding to deduct benefits from absent staff and depositing such amounts into their emergency fund, to hold on to the AHW to fill their human resources gap, to provide NPR 5,000 to each mother's group of every ward to buy a stretcher, and to arrange an informative *deusi-bhailo* programme at the Tihar festival to deliver MNH messages.

Table 4.4: Decision made by HFOMC during last fiscal year (2014/15)

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Infrastructure development/maintenance for MNH service strengthening	1	1	1	4	3	4	0	1
Expansion of MNH services	2	0	0	2	5	4	0	0
Financial management	1	1	2	5	3	4	0	0
Staff recruitment and management for MNH service	2	1	0	2	4	5	0	1
MNH camps	0	2	0	0	1	2	0	0
Logistic management for MNH services	1	2	0	4	2	4	0	0
Total health facilities(N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

Table 4.5 details the income sources of the health facilities and their expenditure areas. MoHP/DHO, VDC/municipality and the Aama Programme (Aama Surakshya Karyakram) were the main sources of income for health across all packages at the endline, whereas the main three sources for the district hospital were MoHP/DHO, the Aama Programme and registration fees.

Overall comparing the baseline to the endline findings:

- the total budget provided by MoHP/DHO to packages 2 and 3 facilities and to the district hospital increased, while the amount provided to package 1 facilities decreased;
- the amount provided by VDC/municipality to the health facilities of packages 1 and 3 increased but decreased for package 2 facilities;
- the funds received from the Aama Programme increased in the package 1 facilities, whereas it decreased in the packages 1 and 3 facilities and in the district hospital.

No health facilities across all three packages received any money from internal sources at the baseline, but four package 3 facilities and one package 2 facility did so at the endline. The district hospital received some funds from its internal source in baseline survey, but none in the endline.

The endline survey found the facilities of all packages and the hospital spending the highest proportion of their funds on staff recruitment. The number of health facilities that had spent funds on staff recruitment increased only in package 3 (from three to five), whereas, the number remained the same in packages 1 and 2. Other major areas of expenditure for all facilities and the hospital were infrastructure development, medicine purchase, purchase of equipment and supplies, FCHV incentives, and utility bills (electricity, water, phone, etc.).

There was a substantial difference in the amount of money spent on buying medicines, equipment and supplies between the intervention package (2 and 3) facilities and the non-intervention package 1 facilities. The package 2 and 3 facilities had low expenditure on these areas at the endline, which may be attributable to the supply side interventions helping the package 2 and 3 facilities to meet their demands of medicines, equipment and supplies (especially related to MNH), to some extent.

Table 4.5: Income and expenditure of health facilities and number of facilities receiving/spending) (2014/15)

	Package 1		Package 2		Package 3		District Hospital	
Source of income	**Baseline**	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
MoHP/DHO (no. HFs receiving)	4	1	2	2	4	3	1	1
Average amount received (NPR)	193750	10000	10000	12117	18000	46828	261368	1313200
DDC (as above)	0	0	0	0	0	1	0	0
Average amount received (NPR)	0	0	0	0	0	20685	0	0
VDC/municipality	1	4	3	4	5	4	0	0
Average amount received (NPR)	25000	45875	39166	33750	53600	127346	0	0
Aama Programme	2	2	1	2	2	4	1	1
Average amount received (NPR)	55000	24700	29000	44000	27500	18625	493000	300000
Internal source	0	0	0	1	0	4	1	0
Average amount received (NPR)	0	0	0	20000	0.0	14000	725630	0
Registration	2	2	0	2	1	2	1	1
Average amount received	10000	12500	0	7800	15000	9000	69000	26800
Expenditure items								
Hiring local staff (no. HFs spending)	2	2	2	2	3	5	1	1
Average amount of expenditure	213500	45000	36500	21750	22666	78300	208000	332000
Infrastructure development (as above)	2	1	3	2	2	4	0	0
Average amount of expenditure	18590	5000	21116	15145	6500	73049	0	46784
Medicine purchase	2	2	0	2	2	3	1	1
Average amount of expenditure	8000	10500	0	9408	46000	5850	956389	450000
Purchase of equipment and supplies	0	2	2	3	0	3	1	0
Average amount of expenditure	0	33000	24377	2966	0	2400	223705	10262
Skill development of staff	0	0	0	0	0	0	1	0
Average amount of expenditure	0	0	0	0	0	0	345042	0
FCHV encouragement incentives/prize	2	0	4	1	3	1	0	0
Average amount of expenditure	5050	21600	2225	7700	24333	14650	0	0
Electricity, water, phone	1	0	1	2	2	1	1	1
Average amount of expenditure	600	12245	25350	1000	5600	85000	120895	27622
DSA (allowance)	0	0	0	0	1	0	0	1
Average amount of expenditure	0	0	0	0	10000	0	0	1236000
Stationary	1	1	1	0	0	0	0	1
Average amount of expenditure	31000	1000	4023	0	0	0	0	57000
Total facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

CHAPTER FIVE

MATERNAL AND CHILD HEALTH, FAMILY PLANNING SERVICE DELIVERY AND INFECTION PREVENTION MEASURES

This chapter describes the availability of maternal and child health (MCH) related services such as ANC check-ups, delivery services, postnatal services, safe abortion services and family planning (FP) services. Infection prevention practices at the health facilities are also covered in this chapter.

The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 1 and 2 plus demand side strengthening

5.1 Availability and Readiness of Maternity Services in Facilities

This section deals with the availability and readiness of maternity services in all the health facilities (both with and without a birthing centre). It also examines whether the facilities with birthing centres are capable of providing signal function services.

The types of general maternity services provided by the package 1 and 3 facilities were only slightly changed while it remained exactly the same in the district hospital when compared with the baseline (Table 5.1). Two birthing centres were established in two package 3 facilities, but one of these had been providing delivery services at the baseline too.

There were several changes at the package 2 facilities. No facilities were providing medical abortions at the baseline. But two package 2 facilities (of the four proposed for expansion of medical abortion service in packages 2 and 3) were providing medical abortions at the endline. February to August 2015 monitoring visits to the facilities proposed for medical abortion services found that at least one health staff from each facility was trained on medical abortion; but due to the delay in the site listing and certification process, this service had not started in some of these facilities during July to September 2015 monitoring visits.

None of the birthing centres had all signal functions available at the baseline, while two centres each of packages 2 and 3 had all functions available at the endline; but see following footnote.[1] Notable changes were seen in the capacity of both birthing centres and BEONC centres to provide signal function services in packages 2 and 3, when compared with package 1. When looking across all the packages, all birthing centres and BEONC centres (two, two and four in packages 1, 2 and 3, respectively) were found providing signal functions like parenteral oxytocin, parenteral anti-convulsants/sedatives and neonatal resuscitation with bag and mask 24 hours 7 days a week. All seven functions were available in all four proposed BEONC facilities at the endline (two each of packages 2 and 3).

When the level of health facilities providing delivery services and RAMP's proposed plans are considered, all birthing centres of BEONC level of packages 2 and 3 (two in each packages) had all seven signal functions available 24 hours 7 days a week. However, two birthing centres (of BC/below BEONC level) of package 3 had one (out of four) signal functions (parenteral antibiotics) unavailable at the endline. On the other hand, all birthing centres (two out of two) of birthing centre/below BEONC level of package 1 had all four signal functions available at the endline.

[1] Note that two birthing centres of package 3 had not been proposed to provide BEONC services (based on the monitoring findings/RAMP design document) so two birthing centres of package 3 that were not proposed for additional services providing all seven signal functions may not be relevant for this analysis.

Table 5.1: Availability of maternity services

Services	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Antenatal Care	4	4	4	5	5	5	1	1
Tetanus toxoid injection (TT+)	4	3	3	5	5	5	1	1
Delivery service	2	2	2	2	3	4	1	1
Postnatal care (3rd)	3	3	3	3	5	4	1	1
Medical abortion	0	0	0	2	0	0	1	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**
Assisted vaginal delivery, vacuum extraction	0	1	1	2	1	2	1	1
Parental antibiotics	1	2	0	2	1	2	1	1
Parenteral Oxytocin (available 24/7)	2	2	2	2	2	4	1	1
Parenteral anti-convulsants/sedatives (available 24/7)	2	2	1	2	2	4	1	1
Manual removal of placenta (available 24/7)	0	1	0	2	1	3	1	1
Remove retained products of conception (available 24/7)	0	0	0	2	0	3	1	1
Neonatal resuscitation with bag and mask (available 24/7)	2	2	2	2	3	4	1	1
Total number birthing centres of BEONC level with all signal functions available	0	0	0	2	0	2	1	1
Total health facilities providing delivery services (N)	**2**	**2**	**2**	**2**	**3**	**4**	**1**	**1**

5.2 Availability of Family Planning Services

This section describes the availability of family planning services in the last fiscal year (2014/15) in all 14 health facilities and the district hospital.

The status of availability of short term family planning methods (condoms, oral contraceptive pills (OCPs), Depo) was unchanged from the baseline; but there were some change in the availability of long-term family planning methods, namely, IUCD and implants at the endline.

- At the endline, two package 2 facilities had both long term family planning methods available; two package 3 facilities had implant services available, whereas, only one of its facilities had IUCD service available, and none of the facilities of package 1 had long term family planning methods available (one health facility had IUCD service at the baseline).
- The availability of long term family planning methods in the package 3 facilities had not improved at the endline as only one out of three facilities had IUCD services and two out of three facilities had implant service available then compared to two and one respectively at the baseline. According to the endline qualitative data, one of the package 3 facilities couldn't provide IUCD service due to the unavailability of some equipment. A key informant from this facility explained:

"IUCD and implant services were expanded in the last fiscal year. Despite the addition of IUCD services, we couldn't start that programme immediately due to the lack of necessary equipment. A lot of users are coming for implant services, but due to being busy in workshops/seminars/trainings I am not able to provide this service to all service seekers. People from more remote parts of the VDC (wards 4 and 5) rarely come for service use. Even if they come they often do not participate."

All temporary methods of family planning were available in the district hospital at the baseline and endline.

Table 5.2: Availability of temporary methods of family planning services

Family Planning Services	Package 1		Package 2		Package 3		District hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Condom	4	4	4	5	5	5	1	1
Oral contraceptive pills	4	4	4	5	5	5	1	1
Depo-Provera	4	4	4	5	5	5	1	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**
Intra uterine contraceptive devices (IUCD)	1	0	0	2	2	1	1	1
Implant/Norplant	0	0	0	2	1	2	1	1
Total health posts (N)	**2**	**2**	**2**	**2**	**3**	**3**	**1**	**1**

5.3 Infection Prevention

All birthing centres of packages 2 and 3, and the district hospital had clean floors around patient beds, and clean surface and delivery table hinges with readily available cleaning equipment and disinfectants (Table 5.3). There were notable improvements in the availability of cleaning equipment and disinfectants in delivery rooms as they were available at:

- only one of the two package 2 facilities at the baseline but at both facilities at the endline;
- at none of the package 3 facilities at the baseline but at all four birthing centres at the endline;
- at the district hospital at the endline (unavailable at the baseline).
- at one of the two package 1 birthing centres at the endline (zero at baseline)

However, only one of the two package 1 birthing centres had a clean floor around beds, and clean surfaces and hinges of the delivery table at the endline compared to two at the baseline.

Table 5.3: Observation on cleanliness of delivery room

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Clean floor around bed	2	1	2	2	2	4	1	1
Clean surface of delivery table	2	1	2	2	2	4	1	1
Clean hinges of delivery table	2	1	2	2	1	4	1	1
Cleaning equipment, disinfectants readily available in delivery room	0	1	1	2	0	4	0	1
Total health facility providing delivery services (N)	**2**	**2**	**2**	**2**	**3**	**4**	**1**	**1**

Table 5.4 shows the availability of supplies essential for infection prevention at health facilities and the hospital. A marked improvement was found in the availability of supplies for infection prevention in the package 2 and 3 facilities at the endline:

- Three of the five package 3 facilities had all supplies listed in Table 5.4 available for infection prevention — a good improvement.
- Three out of five package 2 facilities had all but two (water tank and storage of antiseptic) necessary supplies available at the endline.
- At least one health facility of package 1 had all infection prevention supplies available at the endline, a slight improvement from the baseline.
- The status of the district hospital improved a little as the remaining one piece of equipment (2 drum autoclave) was in place at the endline.

The most notable improvement was in the availability of infection prevention supplies at the package 2 facilities. However, a 1000 litres capacity water tank was still unavailable at all package 2 facilities at the endline. The improvements at the packages 2 and 3 facilities may be attributable to the three-day whole-site infection prevention training provided to these health facilities by RAMP.

Key informant interviews with the health facility in-charges of packages 2 and 3 revealed that the improvement in the adoption of infection prevention practices had been the most important change in their health facilities in the year. A package 2 facility in-charge said:

> "The quality of care has improved. Infection prevention is better …. we have changed our practices since RAMP implementation. A complete revolution has come with our adoption of infection prevention practices."

Table 5.4: Availability of supplies for infection prevention practices

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
1. Buckets for preparing 0.5% chlorine solution (at least 2)	0	2	1	5	2	5	1	1
2. Water tank (1000 litres)	1	1	0	0	1	4	1	1
3. Functional 2 drum autoclave	1	2	0	4	1	3	0	1
4. Functional gas stove with cylinder or kerosene stove	2	3	0	3	2	3	1	1
5. Antiseptics stored in cool, dark/shade place in airtight container	1	2	2	2	2	4	1	1
6. Gauze and cotton antiseptics stored in container without antiseptics	1	3	4	5	4	4	1	1
7. Spirit swabs prepared and used every day	1	1	0	3	1	5	1	1
8. Reusable containers washed with soap and water and dried before being refilled with antiseptic solution	0	2	0	5	1	5	1	1
9. Auxiliary instruments such as thermometers, probes and other materials stored in a dried container without antiseptics or disinfectant solutions	0	2	3	5	2	5	1	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

There was a great improvement in the management of biomedical waste in the packages 2 and 3 facilities from the baseline to the endline (Table 5.5). No package 2 and 3 facilities had bins for disposing of infectious items (red buckets) at the baseline, but all five package 2 facilities and four of the five package 3 facilities had these bins and were using them correctly at the endline. Almost

every package 2 and 3 facility had separate bins and were using them correctly for disposing of biomedical waste.

There were no such improvement at the package 1 facilities and the district hospital. Only one out of the four package 1 facilities had separate bins for disposing of biomedical waste and was using them correctly. And the situation at the hospital had deteriorated as it did not have separate bins (except a puncture proof bin for needles/sharps) at the endline, when these were available and being correctly at the baseline.

Table 5.5: Availability and practices of separate use of bins for bio-medical waste

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Puncture proof bin for disposing of needles/sharps								
Available	2	3	2	5	1	5	1	1
Used correctly	1	3	2	5	0	5	1	1
Not used correctly	1	0	0	0	1	0	0	0
Bin for disposing infectious waste (blood, tissue, fluid stained, etc.) items (red bucket)								
Available	0	1	0	5	0	4	1	0
used correctly	0	1	0	5	0	4	1	0
Not used correctly	0	1	0	0	0	0	0	1
Bins for disposing of non-infectious items (blue bucket)								
Available	1	1	0	5	0	4	1	0
used correctly	1	1	0	5	0	4	1	0
Not used correctly	0	1	0	0	0	0	0	1
Bins for organic waste (waste food, vegetables, etc.) (green bucket)								
Available	0	1	0	3	0	4	1	0
used correctly	0	1	0	3	0	4	1	0
Not used correctly	0	0	0	1	0	0	0	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

5.4 Use of Maternity Services at the Health Facilities

Table 5.6 shows the information on types and number of maternity services provided by the birthing centres in FY 2014/15. Common maternity services provided in the last fiscal year were normal deliveries, administration of uterotonic drugs, ANC, PNC visits and administration of TT+ injection. However, the earthquakes and the ensuing landslides and the damage to health facility buildings probably hampered the implementation of RAMP's activities thus influencing the ability of particular health facilities to provide quality care and also local people's seeking of health services. This may have resulted in a lower use of MNH services than expected. A package 2 facility was badly damaged by the earthquakes and was shifted to a safer nearby building soon after.

A quality improvement team has been formed in every birthing centre to oversee quality of care based on the format (tool) aimed at assessing the status of birthing centres to deliver quality services, prepare action plans and act accordingly. During monitoring visits, this tool was found filled in at all birthing centres, and was being acted upon for quality improvement. Quality of care self-assessment tools were found filled in all birthing centres about every three to four months, but were being completed more frequently as per the needs of particular facilities.

The birthing centres of package 1 had conducted an average of 27 normal deliveries in the last FY (2014/15); more than the previous year. Similarly, the average number of normal deliveries increased at the package 2 and 3 birthing centres from 30 to 48 and 13 to 23 respectively.

The average number of completion of 4ANC visit (as per the protocol) remained almost the same in packages 1 and 2, whereas, it decreased in package 3 from the baseline to the endline. On the other hand, the completion of 3 PNC visits (as per protocol) increased in package 1, but decreased in packages 2 and 3.

Table 5.6: Mean number of maternity services provided by birthing centres in last FY (2014/15)

Services	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Normal deliveries	15	27	30.0	48.0	13	23	428.0	467
Total health facilities with birthing centres with available records (N)*	**2**	**2**	**2**	**2**	**3**	**4**	**1**	**1**
Vacuum delivery	0	0.0	2.0	4.5	0.0	1.0	7.0	30.0
Total HFs with available vacuum delivery (N)*	**0**	**1**	**1**	**2**	**1**	**2**	**1**	**1**
Administered parental antibiotics	0.0	0.0	0.0	10.0	0.0	0.5	NA	0.0
Total HFs with available parenteral antibiotics and records (N)*	**0**	**1**	**0**	**2**	**1**	**2**	NA	**1**
Administered uterotonic drugs	0.0	26.0	32.5	19.50	14.5	5.0	395.0	464.0
Total HFs with available uterotonic drugs and records (N)	**0**	**2**	**2**	**2**	**2**	**4**	**1**	**1**
Provided anti-convulsants/sedatives	0.0	0.0	0.0	0.0	0.0	0.5	NA	NA
Total HFs with available anti convulsants (N)*	**0**	**2**	**1**	**2**	**2**	**4**	NA	NA
Performed manual removal of placenta	0.0	0.0	0.0	2.5	2.0	0.33	NA	NA
Total HFs with available service of manual removal of placenta and available records(N)*	**0**	**1**	**0**	**2**	**1**	**3**	NA	NA
Performed removal of retained products	0.0	0.0	0.0	3.0	0.0	0.0	NA	NA
Total HFs with available service of removal of retained products and records (N)	**0**	**1**	**0**	**2**	**0**	**3**	NA	NA
Performed neonatal resuscitation	0.0	2.5	1.0	3.5	0.0	5.0	NA	NA
Total with available service of neonatal resuscitation and records (N)	**0**	**2**	**3**	**2**	**3**	**4**	NA	NA
ANC visit (4th)	26.0	26.0	34	35	31.0	17	304.0	262.0
Total HFs with available records (N)*	**4**	**4**	**3**	**5**	**5**	**5**	**1**	**1**
Tetanus Toxoid injection (TT+)	7.5	48.67	57.33	40.20	39.8	48.60	63.0	75.0
Total HFs with available records (N)*	**2**	**3**	**3**	**5**	**5**	**5**	**1**	**1**
PNC visit (3rd)	16.0	21.0	25.0	16.0	12.0	7.0	0.0	101.0
Total HFs providing PNC service and available records (N)*	**2**	**3**	**3**	**3**	**3**	**4**	**1**	**1**

**Only those health facilities are included where updated recording was maintained. NA = records not available*

Table 5.7 details the average number of maternity services provided to clients in the previous month. The average number of normal deliveries in the previous month was highest at the package 1 facilities (seven) at the endline compared to only two each in packages 2 and 3. The average number of administration of uterotonic drugs used was proportionately higher in package 1.

Table 5.7: Average number of clients provided with maternity services in the previous month

Services	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Normal deliveries	3	7	4	2	1	2	31	NA
Total BCs with available records (N)*	**1**	**2**	**2**	**2**	**3**	**4**	**1**	
Vacuum delivery	0	0	0	0	0	0	1	NA
Total HFs with available vacuum delivery (N)*	**0**	**1**	**1**	**2**	**1**	**2**	**1**	
Forceps delivery	0	0	0	0	0	0	0	NA
Total number BCs with force delivery (N)*	**0**	**1**	**0**	**2**	**0**	**0**	**1**	
Administered parental antibiotics	3	0	0	1	0	0	0	NA
Total number of BCs with parenteral antibiotics and available records (N)*	**1**	**1**	**0**	**2**	**2**	**2**	**0**	
Administered uterotonic drugs	1	7	4	0	2	1	32	NA
Total number of BCs with uterotonic drugs and available records (N)*	**1**	**2**	**2**	**2**	**2**	**4**	**1**	
Provided anti-convulsants/sedatives	0	0	0	0	0	0.25	1	NA
Total number of BCs with anti convulsants and available records (N)*	**1**	**2**	**1**	**2**	**2**	**4**	**1**	
Performed manual removal of placenta	0	0	0	0	0	0	1	NA
Total number BCs with manual removal of placenta service and available records (N)*	**0**	**1**	**0**	**2**	**1**	**3**	**1**	
Performed removal of retained products	0	0	0	0.5	0	0	2	NA
Total number BCs with removal of retained products service and available records (N)*	**0**	**1**	**0**	**2**	**0**	**3**	**1**	
Performed neonatal resuscitation	0	0.5	1	0.5	0	0.25	2	NA
Total number of BCs with neonatal resuscitation and available records (N)*	**1**	**2**	**2**	**2**	**3**	**4**	**1**	
ANC visit (4th)	3.67	1.25	5.33	4.4	2.6	2	42	NA
Total number of HFs with available records (N)*	**3**	**4**	**3**	**5**	**5**	**5**	**1**	
Given Tetanus Toxoid injection (TT+)	3.67	2.67	4.67	1.2	4.4	3.4	25	NA
Total number of HFs with available records (N)*	**3**	**3**	**3**	**5**	**5**	**5**	**1**	
PNC visit (3rd)	1	2	3.67	1.33	1	0.75	0	NA
Total number of HFs where PNC service and record is available (N)*	**2**	**3**	**3**	**3**	**4**	**4**	**1**	

**NA = records not available*

Table 5.8 gives details on the average number of family planning services used in the last fiscal year with package wise disaggregation:

- The average cases of use of short-term family planning services (condom, oral contraceptive pills and Depo-Provera) substantially increased in package 1, slightly increased at the district hospital, but declined in packages 2 and 3 facilities at the endline compared to the baseline.
- The average number of long-term family planning services (IUCD and Norplant/implant) used in package 2 increased at the endline.
- The average number of all family planning services used in package 3 declined except for Norplant/implants.

The decrease in the use of short-term family planning methods in package 2 may be linked with the increase in the use of long-term family planning methods there; but this trend does not explain the package 3 trend where both methods (except Norplant/implant) declined at the endline compared to the baseline. Similarly, the average number of IUCDs use in package 1 decreased, and Norplant/Implant use was zero at the baseline and endline.

Table 5.8: Average number of family planning services per year provided last FY (2014/15)

Services	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Condom distribution	188	1524	6706	1835	2545	3383	31690	49115
Oral contraceptive pills	16	37	31	21	26	9	385	402
Depo-Provera	26	57	78	71	71	63	1972	2180
Total HFs where record is available (N)*	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**
Intra uterine contraceptive devices	21	11	1	9	23	14	690	792
Total HFs where IUCD is provided (N)*	**1**	**1**	**0**	**2**	**2**	**3**	**1**	**1**
Norplant/implant	0	0	0	16	14	18	101	157
Total HFs where implants are available (N)	**2**	**2**	**2**	**2**	**3**	**3**	**1**	**1**

5.3 Use of Infection Prevention Measures

There was considerable improvement in the adoption of infection prevention measures by all health facilities, more so by the package 2 and 3 facilities (Table 5.9):

- All measures (six out of six) were taken by the district hospital at the baseline and endline.
- All five package 2 facilities had adopted all the measures for infection prevention except for the air drying of instruments at two of the five facilities.
- Two package 3 facilities had adopted two of the infection prevention measures (air drying instruments and sterilizing instruments before use), while one health facility of this package had not adopted one infection prevention measure (storing sterilized material and instruments).
- There was a slight improvement at the package 1 facilities in the adoption of infection prevention measures, but not as significant as seen in the package 2 and 3 facilities. Only one of the four facilities had adopted all six infection prevention measures. However, this should be considered a positive result when compared with the baseline situation as none of the health facilities of this package were implementing more than three (out of six) of measures then.

RAMP's interventions to make autoclaves, momo cookers and other instruments and equipment available at its package 2 and 3 facilities is probably a major reasons why the practice of sterilizing all instruments before use was found in more health facilities of these packages at the endline. In some cases they were not sterilized as the facility did not have them.

Table 5.9: Infection prevention measures adopted in the health facility

Measures	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
0.5% chlorine solution prepared as per IP guidelines	0	1	1	5	1	5	1	1
Instruments soaked in chlorine solution for at least 10 minutes	0	2	1	5	0	5	1	1
Instruments transferred to soap water for cleaning after soaking in chlorine	0	2	1	5	0	5	1	1
Instruments dried in air	3	2	1	3	2	3	1	1
Storage of sterile materials and instruments	2	3	2	5	2	4	1	1
All instruments sterilized before use	2	3	2	5	2	3	1	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

Another aspect of infection prevention and health worker safety is the use of personal protective measures. At the baseline, except for the staff of one package 3 facility, all were found using disposable gloves (Table 5.10). The staff of half the package 1 facilities used plastic aprons and masks but none used full sleeved clothes, masks and closed shoes. No package 3 staff used plastic aprons, masks and closed shoes.

At the endline:

- the staff of almost every package 2 facility were using all protective measures (except for wearing full sleeved clothes at two health facilities);
- the staff of all package 3 facilities were using protective measures, including disposable gloves, plastic aprons and masks; but staff of four facility were not using full sleeved clothes and the staff of two facilities were not using closed shoes;
- only one of the protective measures for infection prevention (disposable gloves) were being used by the staff of all four package 1 facilities; and
- surprisingly, three of the personal protective measures (full sleeved clothes, masks and closed shoes) were not being used by the district hospital staff at the endline.

These results indicate that the package 2 and 3 facilities are the safest work places for staff.

Table 5.10: Personal protective measures adopted by health facility staff for infection prevention

Measures	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Disposable gloves	4	4	4	5	4	5	1	1
Plastic apron	2	2	2	5	0	5	0	1
Full sleeved clothes	0	0	1	3	1	1	0	0
Mask	0	3	2	5	0	5	0	0
Closed shoes	0	1	0	5	0	3	1	0
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

Table 5.11 shows the measures adopted by facilities to dispose of biomedical waste. At the baseline, all 13 facilities reported that they burned all burnable wastes. Sharp wastes and syringes were disposed of separately by three package 1 facilities and two each package 2 and 3 facilities. No package 2 facility had a placental pit and no package 3 facility had a separate pit for used chlorine solution.

The disposal of biomedical waste had improved by the endline at package 2 and 3 facilities. Four out of the five package 3 facilities (including 4 birthing centres) and all five package 2 facilities (including two birthing centres) had adopted all necessary measures to dispose of biomedical waste.

The process monitoring (KIIs, HFOMC minutes and in-person observations) found that some HFOMCs had discussed and decided at their monthly meetings to dig placenta pits. This happened at Sablakhu HP and Limkhim HP. The number of facilities with a placenta pit was unchanged at the Package 1 facilities as only one out of the two birthing centres had one at the endline as at the baseline. The results for the district hospital deteriorated as it was burning all burnable wastes and burying non-burnable wastes in a pit or sending to a dumping place at the baseline but not at the endline survey.

The results show that the package 2 and 3 facilities have improved significantly while the package 1 facilities remained almost the same.

Table 5.11: Measures adopted to dispose of bio-medical waste

Measures	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Burn all burnable waste	4	4	4	5	5	5	1	0
Dispose sharps/syringes separately	3	3	2	5	2	5	1	1
Bury non burnable waste in a big pit or send to dumping place	3	1	1	5	2	4	1	0
Have a placental pit	1	1	0	2	1	4	1	1
Have a separate pit for used chlorine solution	0	1	1	5	0	4	0	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

Health facility staff were asked whether they examined their patient's condition before referring them to a higher level facility. The positive responses were verified by trying to match such cases with referral records.

- The staff of only one package 1 facility said they did not examine patient's condition before referral (compared to the baseline reporting that this did happen then) (Table 5.12).
- All ten package 2 and 3 facilities said they examined their patient's condition before referral at the endline.

The health facilities were asked about the status of vital signs of the most recently referred patients and the handing over of a referral slip to them or their companions or relatives. At the endline:

- all five health package 2 facilities reported the stable status of vital signs of the most recently referred patient;
- three package 3 facilities and two package 1 facilities reported that the vital signs of their most recently referred patients were stable; and
- two package 3 facilities and one package 1 facility had reported unstable vital signs of their most recently referred patients.

Two facilities each from packages 1 and 3 and one facility from package reported were not providing a referral slip to their most recently referred patients.

Table 5.12: Examination of patients' health before referrals

Measures	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Examine patient's condition before referral	4	3	3	5	5	5	1	1
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**
Were vital signs stable during referral (last referred case)								
Yes, record observed	2	1	1	0	1	0	0	0
Yes, record not observed	2	1	0	5	4	3	1	1
No	0	1	2	0	0	2	0	0
Total HFs ensuring patient condition before referral (N)	**4**	**3**	**3**	**4**	**5**	**5**	**1**	**1**
Referral slip provided during referral								
Yes, record observed	2	1	1	0	1	0	0	0
Yes, record not observed	0	1	1	4	2	3	1	1
No	2	2	2	1	2	2	0	0
Total health facilities (N)	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**

CHAPTER SIX

DRUGS, SUPPLIES AND EQUIPMENT

This chapter presents the results on drugs, supplies and equipment, including furniture to provide maternity services. It also assesses the availability of instruments and equipment in delivery rooms.

The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 1 and 2 plus demand side strengthening

6.1 Availability of Equipment and Supplies for Maternity Services in Birthing Centres

The results on the availability of furniture and supplies for maternity services at the birthing centres are shown in Table 6.1. At the endline:

- neither of the package 2 birthing centres had the recommended 'two mattresses with waterproof covers for beds' or the 'two pillows with waterproof covers', and only one of the centres had 'a cupboard for medicine and instrument' available;
- of the four package 3 birthing centre, one did not have an 'examination bed/table for ANC', two did not have 'two mattresses with waterproof covers for bed', and three did not have 'two pillows with waterproof covers'.

In some cases the availability of furniture and supplies deteriorated:

- in the package 2 facilities, 'two mattresses with waterproof covers for bed' were available in none of the facilities compared to in one at the baseline; and 'a cupboard for medicine and instrument' was available in one facility at the endline compared to two facilities at the baseline;
- in the package 1 facilities, the number of facilities with a birthing centre with an 'examination bed/table for ANC', 'cupboard for medicine and instrument' and 'weighing machine for infant pan') decreased from two at the baseline to one at the endline; and the number of such facilities with 'two mattresses with waterproof covers for bed' and 'two pillows with waterproof covers') decreased from one at the baseline to none at the endline; and
- in the package 3 facilities, 'two pillows with waterproof covers' were available in only one facility compared to in two at the baseline.

Thus the package 3 facilities had the most improvements on the availability of furniture and supplies for maternity services while the situation had somewhat deteriorated in the package 1 facilities.

Table 6.1: Furniture and supplies available for maternity services

	Package 1		**Package 2**		**Package 3**		**District Hospital**	
	Baseline	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**	**Baseline**	**Endline**
Examination bed/table for ANC	2	1	2	2	3	3	1	1
Delivery table	2	2	2	2	2	4	1	1
Mattress with waterproof cover for bed (2)	1	0	1	0	2	2	0	1
Pillow with waterproof cover (2)	1	0	0	0	2	1	0	0
Cupboard for medicine and instrument	2	1	2	1	2	4	1	1
Weighing machine for infants (pan)	2	1	2	2	3	4	1	1
Total health facilities providing delivery services (N)	**2**	**2**	**2**	**2**	**3**	**4**	**1**	**1**

The availability of instruments and equipment for maternity services increased in the package 2 and 3 facilities compared to package 1 (Table 6.2). However, these facilities were still short of a few instruments and equipment at the endline:

- Ten of the 15 instruments and equipment were available in both package 2 facilities, while only 4 of the 15 were available at all four package 3 facilities and only 3 of the 15 were available at both package 1 facilities.
- The availability of the 15 types of instruments and equipment only decreased for the room thermometer at the package 2 facilities, while the number of six types of instruments and equipment decreased between the baseline and endline at the package 1 facilities.
- The status of availability of all instruments and equipment at the district hospital only changed by the addition of a room heater.

Overall, only two types of maternity service instruments and equipment (fetoscopes and cord ties, thread or cord clamp) were available at all health facilities (with a birthing centre) in all three packages, and only one of the eight facilities across all three packages had a gas or electric room heater at the endline.

Table 6.2: Instruments and equipment available for maternity services

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
1. Instrument trolley (2)	1	1	0	1	1	1	1	1
2. Portable light (1)	2	0	1	2	2	4	1	1
3. Emergency light (1)	0	1	0	2	0	1	1	1
4. I/V Stand (2)	2	1	0	1	1	2	0	0
5. Electronic/foot suction (1)	1	1	1	2	1	2	1	1
6. Stethoscope	2	1	2	2	3	3	1	1
7. Blood pressure instrument	2	1	2	2	3	3	1	1
8. Fetoscope	2	2	2	2	3	4	1	1
9. Room heater (gas/electric)	1	0	0	0	0	1	0	1
10. Digital thermometer	1	2	2	2	2	2	1	1
11. Room thermometer	0	0	1	0	1	1	0	0
12. Episiotomy set-2	0	0	1	2	0	3	1	1
13. Perineal, vaginal, cervical repair set -1	0	1	1	2	1	4	1	1
14. Standard Delivery set-3	1	0	1	1	1	2	1	1
15. Cord ties, thread or cord clamp	2	2	1	2	3	4	1	1
Total health facilities providing delivery service (N)	**2**	**2**	**2**	**2**	**3**	**4**	**1**	**1**

Table 6.3 gives the results on the availability of delivery instruments. Almost every birthing centre of all packages had a complete delivery set available with its all essential instruments at the endline. There was thus a significant improvement in the delivery set instruments in the birthing centres of packages 2 and 3 as at the endline:

- Both package 2 birthing centres had a complete set of essential instruments for a delivery set at the endline compared to the baseline when 'two sets of small and big bowl' were absent at both birthing centres, and 'two sets of artery forceps' were absent at one of them.
- Two of the four package 3 birthing centres had only one type of instrument (cord cutting scissors) unavailable at the endline, whereas, two birthing centres had 'two sets of artery forceps',

unavailable and one birthing centre had 'two sets of small and big bowls' unavailable at the baseline.

- Only slight changes were found in the availability of instruments for a delivery set at the birthing centres of package 1 and in the district hospital in the endline. 'Two sets of small and big bowls' were unavailable at one package 1 birthing centre when both of these centres had had a complete delivery set at the baseline.
- A complete delivery set was available at the district hospital at the endline compared to two sets of small and big bowls being unavailable at the baseline.

Table 6.3: Instruments available in delivery set at health facility

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Artery forceps (haemostatic, Rankin-Crile or Rochester-Pean) 16 cm (2 sets)	2	2	1	2	1	4	1	1
Cord cutting scissors (umbilicus- blunt)	2	2	2	2	3	2	1	1
Sponge holding forceps(forester, straight, serrated) 20cm	2	2	2	2	3	4	1	1
Bowl, stainless steel (small and big) 600ml, 750ml (2 sets)	2	1	0	2	2	4	0	1
Total health facilities providing delivery service (N)	**2**	**2**	**2**	**2**	**3**	**4**	**1**	**1**

The availability of instruments for resuscitating newborns improved a lot in packages 2 and 3 facilities with a birthing centre and at the hospital (Table 6.4). However, the availability of these instruments worsened in the birthing centres of package 1:

- Two out of two package 2 birthing centres and three of the four package 3 birthing centres and the district hospital had a complete set of instruments for resuscitating newborns.
- Neither of the two package 1 birthing centres had a meconium aspirator while one did not have a Delee suction set. (Note that either a Delee suction set or a meconium aspirator is adequate for newborn suction purposes.)

Table 6.4: Instruments available for resuscitation at health facilities

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Resuscitation set – infant bag and mask	2	2	2	2	3	4	0	1
Delee suction set	2	1	1	2	1	4	1	1
Meconium aspirators	1	0	0	2	1	3	0	1
Total health facilities providing delivery service (N)	**2**	**2**	**2**	**2**	**3**	**4**	**1**	**1**

6.2 Availability of Essential Drugs

Information related to drug stock outs for the last 12 months was obtained from the Logistics Management Information System (LMIS) register and on-site observations.

Paracetamol inj. 150mg/ml and sulfamethoxazole+trimethorprim (cotrim) tablets 400mg + 160mg (SS) were the two most commonly out of stock drugs across the facilities of all packages as all four package 1 facilities, four of the five package 2 facilities and three of the five package 3 facilities were stocked out of them at least once in 2014/15. Paracetamol Inj. 150mg/ml was the most out of stock drug in the facilities across all packages as ten (three in package 1, four in package 2 and three in package 3) facilities had been out of stock of this drug in 2014/15. It had also been the most commonly stocked out drug at the baseline when all 13 health facilities of all packages had been stocked out at least once in the previous fiscal year (2013/14).

Paracetamol inj. 150mg/5ml, metronidazole tab 400mg, metronidazole benzoate oral sus 200mg/5ml and sulfamethoxazole+trimethoprim (cotrim) tab 800mg +160mg DS were the four most commonly stocked out drugs at the endline. Also, at the endline:

- one package 2 facility stocked out of oxytocin Inj. 10 I.U. in 1ml ampoule once in 2014/15;
- two each package 3 and 1 facilities stocked out of gentamicin twice in 2014/15
- three, four and three health facilities of packages 1, 2 and 3, respectively, stocked out of paracetamol inj. 150mg/ml at least once in 2014/15;
- all health facilities of packages 1 and 2 were stocked out of sulfamethoxazole+trimethoprim (cotrim) tab. 800mg+160mg DS;
- paracetamol inj. 150mg/ml, metronidazole Tab 400mg and metronidazole benzoate oral sus 200mg/5ml were out of stock at all package 2.

Drugs found being stored past their expiry dates at the endline included Pheniramine inj. 22.75mg in one package 2 facility and the district hospital, metronidazole benzoate oral sus 100mg/5ml in the district hospital, and gentamycin 80 mg/2ml injection in one facility each of packages 1 and 3.

CHAPTER SEVEN

HUMAN RESOURCES

This chapter describes the status of the human resources at the Taplejung health facilities.

The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 1 and 2 plus demand side strengthening

7.1 Current Staff at the Health Facilities

The number of current staff working at the 14 facilities at the baseline and the 15 facilities at the endline is presented in Tables 7.1a and 7.1b. The number of staff had increased from 45 at the baseline to 56 at the endline. The number had increased in four of the 13 such facilities including one each from package 1 and 2 facilities and two package 3 facilities. The number of current staff remained the same in five facilities and decreased in two package 3 facilities. RAMP was implemented with the expectation that the government would fill all sanctioned posts in the selected facilities so this might explain the increment in the number of currently working staff in the facilities. In addition to the filling of government sanctioned posts, other temporary posts, mostly for ANMs, were created during RAMP, especially in the facilities with birthing centres.

Table 7.1a: Number of current staff — baseline

Designation	**Package 1**					**Package 2**					**Package 3**						**District hospital**
	Masing HP	**Lingtep SHP**	**Thumbedin SHP**	**Sinam HP**	**Total (%)**	**Sablakhu HP**	**Limbudin SHP**	**Nesung HP**	**Sobuwa SHP**	**Total (%)**	**Thinglabu HP**	**Santhakra SHP**	**Tapethok SHP**	**Siwa HP (Ilaka)**	**Khejenim SHP**	**Total (%)**	
Medical superintendent																	1
Medical officer/MDGP																	1
Staff nurse																	2
HA/Sr. AHW	0	0	0	0	0	0	0	1	0	7.1	1	1	0	1		15.8	1
AHW	2	0	1	1	33.3	1	1	0	1	21.4	1	0	0	2	1	21.1	2
ANM	1	1	0	2	33.3	1	1	2	1	35.7	2	2	1	1	1	36.8	3
Lab assistant																	2
Admin. staff	0	0	0	0	0	1	0	0	0	7.1	0	0	0	0	0	0	1
Office assistant/helper	2	1	0	1	33.3	2	1	1	0	28.6	1	1	1	1	1	26.3	14
Total	**5**	**2**	**1**	**4**	**12**	**5**	**3**	**4**	**2**	**14**	**5**	**4**	**2**	**5**	**3**	**19**	**27**

Table 7.1b: Number of current staff — endline

Designation	Package 1				Package 2					Package 3					District hospital
	Masing HP	Lingtep SHP	Thumbedin SHP	Sinam HP	Sablakhu HP	Limbudin SHP	Nesung HP	Sobuwa SHP	Angkhop SHP	Thinglabu HP	Santhakra SHP	Tapethok SHP	Siwa HP (Ilaka)	Khejenim HP	
Medical officer/MDGP															1
Staff nurse															2
Radiographer															1
HA/Sr. AHW	0	0	0	0	1	0	1	0	0	1	0	0	0	1	0
AHW	2	2	1	2	1	1	1	1	1	0	1	2	2	3	2
ANM	1	1	0	2	1	1	3	1	1	1	2	2	2	1	1
Sr. ANM	0	0	0	0	0		0	0	0	0	0	0	0	0	1
Admin. staff	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Office assistant/helper	2	1	0	1	0	1	1	0	1	1	1	1	2	1	6
Total	**5**	**4**	**1**	**5**	**3**	**3**	**6**	**2**	**3**	**3**	**4**	**5**	**6**	**6**	**15**

7.2 Sanctioned Versus Filled Positions

At the endline, 11 out of 19, 15 out of 21 and 15 out of 23 sanctioned posts were filled in packages 1, 2 and 3 respectively. No notable improvement can be seen in the filling of sanctioned posts at the endline compared to the baseline (Table 7.2):

- Only one of the 14 facilities had all sanctioned posts filled at the endline; although various staff, including ANMs, AHWs and health assistants had been recruited there for delivering existing and expanded services (mostly MNH related) at the time of the February to September 2015 monitoring visits.
- The number of filled sanctioned posts slightly decreased in the district hospital from 18 of the 22 posts at the baseline to 15/22 at the endline.

Table 7.2a: Sanctioned positions and fulfilment (filled versus sanctioned) - baseline

	Package 1					Package 2					Package 3						District Hospital
	Masing HP	Lingtep SHP	Thumbedin SHP	Sinam HP	Total	Sablakhu HP	Limbudin SHP	Nesung HP	Sobuwa SHP	Total	Thinglabu HP	Santhakra SHP	Tapethok SHP	Siwa HP (Ilaka)	Khejenim HP	Total	
Medical superintendent																	**1/1**
Medical officer/MDGP																	**0/1**
Staff nurse																	**2/3**
Lab assistant																	**1/1**
Radiographer																	**0/1**
HA/Sr. AHW	0/1	-	-	0/1	**0/2**	0/1	-	1/1	-	½	1/1	-	-	0/1		**1/2**	**1/1**
AHW	2/2	0/2	½	1/1	**4/7**	1/1	½	0/1	1/2	**3/6**	1/1	½	0/2	2/2	1/1	**5/10**	**2/2**
ANM	0/1	1/1	0/1	½	**2/5**	0/2	1/1	1/2	1/1	**3/6**	0/1	1/1	1/1	1/1	1/1	**4/5**	**2/2**
Admin. staff	0/1	-	-	-	**0/1**	1/1	-	-	-	**1/1**	-	-	-	-	-	**-**	**1/1**
Office asst/help	2/2	0/1	-	1/1	**3/4**	2/2	1/1	1/1	-	**4/4**	1/1	0/1	1/1	1/2	1/1	**4/6**	**8/9**

Total	4/7	1/4	1/3	3/6	9/20	4/7	¾	3/5	2/3	12/19	3/4	2/4	2/4	4/6	3/3	14/21	18/22

Table 7.2b: Sanctioned positions and fulfilment (filled versus sanctioned) – endline

	Package 1					Package 2						Package 3						District Hospital
	Masing HP	Lingtep SHP	Thumbedin SHP	Sinam HP	Total	Sablakhu HP	Limbudin SHP	Nesung HP	Sobuva SHP	Angkhop SHP	Total	Thinglabu HP	Santhakra SHP	Tapethok SHP	Siwa HP (Ilaka)	Khejenim HP	Total	
Medical superintendent																		**0/1**
Medical officer/MDGP																		**1/1**
Staff nurse																		**2/3**
Lab assistant																		**0/1**
Radiographer																		**1/1**
HA/Sr AHW	0/1	-	-	0/1	0/2	1/1	-	1/1	-	-	2/2	1/1	-	-	0/1	1/1	2/3	**0/1**
AHW	1/2	½	½	2/2	5/8	1/1	1/2	1/1	½	1/1	5/7	0/1	2/2	½	2/2	1/2	6/9	**2/2**
ANM	0/1	1/1	0/1	2/2	3/5	1/2	1/1	1/2	1/1	1/1	5/7	1/1	1/1	1/1	0/1	0/1	3/5	**2/2**
Admin. staff	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1/1**
Office asst/helper	2/2	0/1	-	1/1	3/4	0/2	1/1	1/1	-	1/1	5/5	1/1	0/1	0/1	2/2	1/1	4/6	**6/9**
Total	**3/6**	**2/4**	**1/3**	**5/6**	**1/19**	**3/6**	**3/4**	**4/5**	**2/3**	**3/3**	**5/21**	**3/4**	**3/4**	**2/4**	**4/6**	**3/5**	**5/23**	**5/22**

7.3 Types of Recruitment

The number of permanent staff had increased at the package 2 facilities and the district hospital, but had decreased at the package 1 and 3 facilities at the endline survey (Figures 7.1 and 7.2). The number of staff recruited on HFOMC/HDC contracts significantly improved in the package 3 facilities from 5.3% of all positions at the baseline to 25.8% at the endline. The capacity improvement training provided by RAMP to HFOMC members may explain this trend although it cannot be seen consistently enough in the package 2 and 3 facilities to support this interpretation.

Figure 7.1: Types of recruitment (%) - baseline

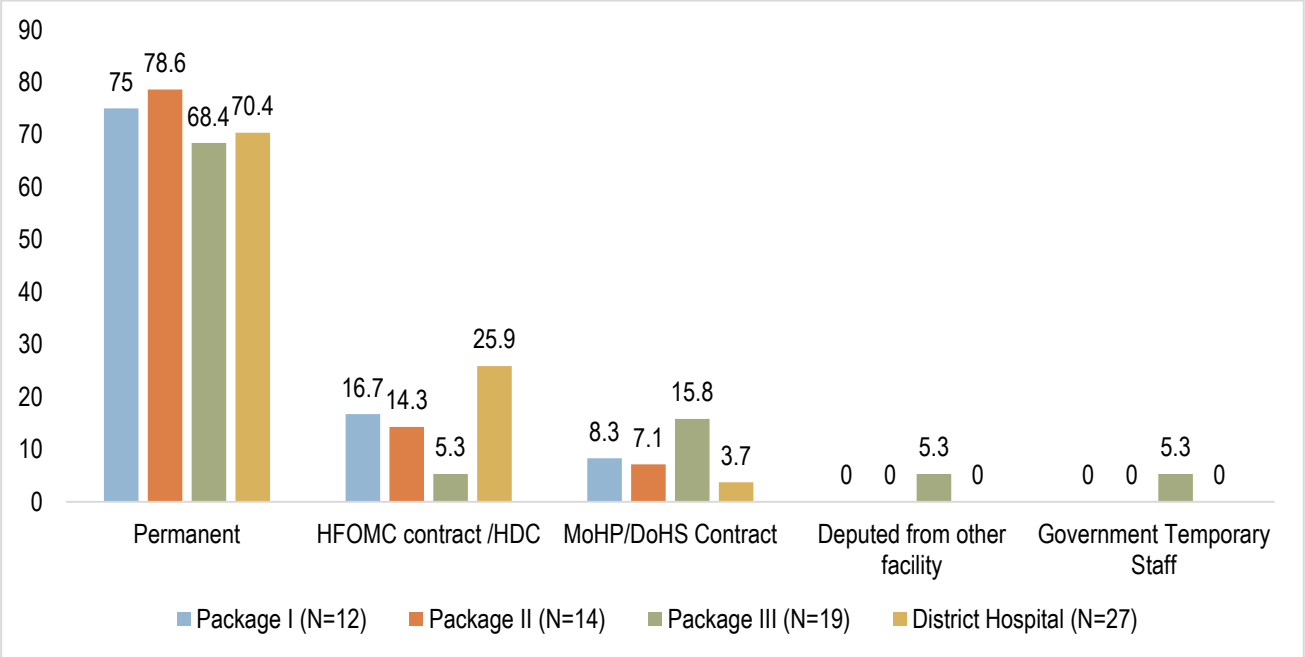
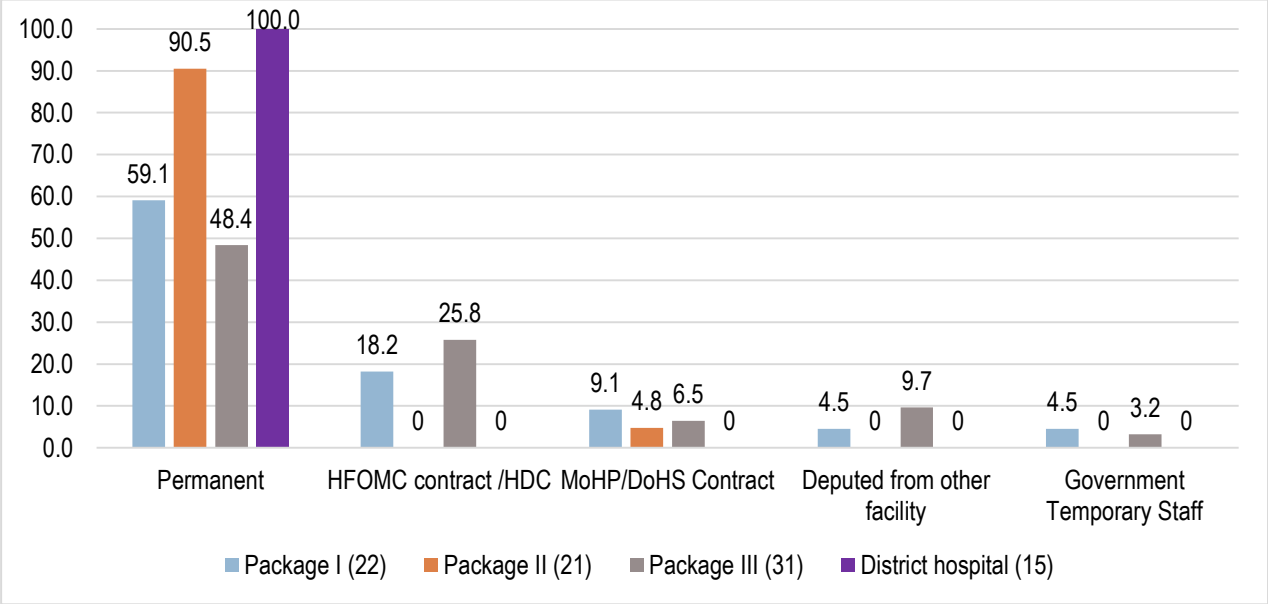


Figure 7.1: Types of recruitment (%) - endline



All package 1 and 3 facilities reported problems due to insufficient staff at the baseline and endline surveys. Only one package 2 facility reported this at the endline:

- The package 2 facilities reported the least number of services (only one) affected by insufficient number of staff at the endline.
- Three facilities each from packages 1 and 3 reported delivery services affected due to insufficient staff, whereas only one package 2 facility reported this (although the number of such facilities may be irrelevant due to some of them not having a birthing centre).
- The number of health facilities reporting services affected due to insufficient staff decreased significantly in package 2, but remained the same or worsened in packages 1 and 3.

Table 7.3: Types of services affected due to insufficient staff

	Package 1		Package 2		Package 3		Dist. hospital	
	Baseline (N=4)	Endline (N=4)	Baseline (N=3)	Endline (N=1)	Baseline (N=4)	Endline (N=5)	Baseline (N=1)	Endline (N=1)
Number HFs reporting problems due to insufficient staff	4	4	3	1	4	5	1	1
Total HFs	**4**	**4**	**4**	**5**	**5**	**5**	**1**	**1**
Types of services affected:	**N**		**N**		**N**		**N**	
Delivery service	2	3	1	1	3	3	0	0
OPD service	3	3	2	0	1	2	1	1
Recording/reporting	0	0	0	0	1	0	0	0
ANC/PNC	1	2	1	0	1	1	0	0
Immunization	2	1	0	0	1	1	0	0
PHCORC service	1	2	0	0	0	1	0	0
Cleanliness	1	1	1	0	0	0	0	0
CB-IMCI	0	0	0	0	1	0	0	0
Emergency	0	0	0	0	0	0	1	1
Laboratory service	0	0	0	0	0	0	1	1
Family planning	0	2	0	0	0	0	0	1
Indoor services	0	0	0	0	0	0	0	1

The number of current staff in the health facilities had increased across all packages, but decreased at the district hospital at the endline (Tables 7.4 a and b):

- Ten ANMs across all packages, three each in packages 1 and 3, and four in package 2 were in government permanent positions.
- One ANM in a package 2 facility was on a National Planning Commission (NPC) contract, which wasn't the case at the baseline.
- four ANMs (one from package 1 and three from package 3) were on HFOMC contracts.
- One each ANM in packages 2 and 3 were on MoHP/DoHS contracts and deputized.

Overall, nineteen ANMs, four each in packages 1, eight in package 3, and seven in package 2, were working at the time of the endline survey, while 16 ANMs, (four in package 1, five in package 2 and seven in package 3), had been in post for more than a year at the baseline.

Table 7.4a: Post of staff by types of recruitment (baseline)

Designation	Package 1			Package 2			Package 3					District hospital		
	Permanent	HFOMC contract/ HDC	MoHP/DoHS Contract	Permanent	HFOMC contract/ HDC	MoHP/DoHS Contract	Permanent	HFOMC contract /HDC	MoHP/DoHS Contract	Deputed from other facility	Govt temp staff	Permanent	HFOMC contract HDC	MoHP/DoHS Contract
Medical superintendent												1	0	0
Medical officer/MDGP												0	0	1
Staff nurse												2	0	0
HA/Sr AHW	0	0	0	1	0	0	1	0	0	1	0	1	0	0
AHW	4	0	0	3	0	0	5	0	0	0	0	2	0	0
ANM	2	1	1	3	1	1	4	1	2	0	0	2	1	0
Lab assistant	0	0	0	0	0	0	0	0	0	0	0	1	1	0
Administrative staff	0	0	0	1	0	0	0	0	0	0	0	1	0	0
Office asst/helper	3	1	0	4	1	0	4	0	1	0	1	9	5	0
Total	**9**	**2**	**1**	**12**	**2**	**1**	**12**	**1**	**3**	**1**	**1**	**19**	**7**	**1**

Table 7.4b: Posts of staff by type of recruitment (baseline)

Designation	Package 1				Package 2			Package 3					District hospital
	Permanent	HFOMC contract/ HDC	Deputed	Govt temp. staff	Permanent	NPC contract	MoHP/DoHS contract	Permanent	HFOMC contract/HDC	NGO/INGO contract	NPC contract	Deputed	Permanent
Medical officer/MDGP													1
Staff nurse													2
Radiographer													1
HA/Sr. AHW	0	0	0	0	2	0	0	2	0	0	0	0	0
AHW	4	0	1	1	5	0	0	5	0	0	1	2	2
ANM	3	1	0	0	5	1	1	3	3	1	0	1	1
Sr. ANM	0	0	0	0		0	0	0	0	0	0	0	1
Administrative staff	0	0	0	0	0	0	0	0	0	0	0	0	1
Office asst/helper	3	1	0	0	3	0	0	4	2	0	0	0	6
Total	**10**	**2**	**1**	**1**	**15**	**1**	**1**	**14**	**5**	**1**	**1**	**3**	**15**

7.4 Number of Staff Present on Day of Data Collection

The proportion of staff in attendance on the day of data collection provides data on the trend of absenteeism of facility staff (Table 7.5):

- The proportion of absent staff at health facilities of packages 2 and 3 decreased from 50% at the baseline to 35% at the endline and from 64% at the baseline to 58% at the endline respectively.
- In contrast, the proportion of absent staff at health facilities of package 1 facilities increased from 17% at the baseline to 29% at the endline.
- This proportion at the hospital decreased from 15% at the baseline to 8% at the endline.

The majority of absent staff of package 3 were on leave and field/deputation, while multiple reasons were found for the absence of package 1 and 2 staff.

Table 7.5: Staff attendance at day of data collection

	Package 1		Package 2		Package 3		District Hospital	
	Baseline	Endline	Baseline	Endline	Baseline	Endline	Baseline	Endline
Present at health facility								
Yes	83.3 (10)	71.4 (10)	50.0 (7)	64.7 (11)	31.6 (6)	41.7 (10)	85.2 (23)	93.3 (14)
No	16.7 (2)	28.6 (4)	50.0 (7)	35.3 (6)	68.4 (13)	58.3 (14)	14.8 (4)	6.7 (1)
Total staff (N)	**12**	**14**	**14**	**17**	**19**	**24**	**27**	**15**
Reason for absence								
Leave	0	0	28.6 (2)	33.3 (2)	46.2 (6)	35.7 (5)	25.0 (1)	100.0 (1)
Training	50.0 (1)	0	14.3 (1)	33.3 (2)	30.8 (4)	7.1 (1)	0	0
Field/deputation	0	25.0 (1)	28.6 (2)	0	7.7 (1)	35.7 (5)	50.0 (2)	0
No information	50.0 (1)	50.0 (2)	28.6 (2)	16.7 (1)	15.4 (2)	14.3 (2)	25.0 (1)	0
On seminar	0	25.0 (1)	0	16.7 (1)	0	7.1 (1)	0	0
Total absent staff (N)	**2**	**4**	**7**	**6**	**13**	**14**	**4**	**1**

CHAPTER EIGHT

SOCIO-DEMOGRAPHIC PROFILE OF RESPONDENTS

This chapter provides a summary of the socio-demographic characteristics of the married women of reproductive age (MWRA) who were surveyed for the baseline and endline surveys. This is relevant for looking at the impact of package 3

The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 1 and 2 plus demand side strengthening

8.1 Demographic Characteristics of Respondents

The majority of women were from ethnic groups in all packages and at the baseline and endline (Table 8.1). Ethnicity was significantly different between the baseline and endline in packages 1 (P-value<0.05) and 3 (p-value<0.001). The mean age of the MWRA in package 2 (30.6 years) was slightly less than at the baseline (31.3 years) whereas it was almost the same at the other two packages. Evidence suggests that education is an important indicator regarding the knowledge and behaviour of individuals. However, no significant difference was observed on this between the baseline and the endline in all packages. The availability of health care services close by households is an important determinant of accessing services; otherwise travel distance and cost comes into play to access services. Distance to the nearest birthing centre was significantly different across all packages.

Table 8.1: Demographic characteristics of married women of the reproductive age group

	Package 1		Package 2		Package 3	
	Baseline (N=282) %	Endline (N=279) %	Baseline (N=268) %	Endline (N=285) %	Baseline (N=295) %	Endline (N=272) %
Women's age	NS		NS		NS	
15-24	27.0	28.0	26.5	30.9	30.8	34.2
25-34	32.6	35.8	35.4	30.9	35.9	33.1
35-49	40.4	36.2	38.1	38.2	33.2	32.7
Mean (SD) years	31.4 (8.7)	31.1 (8.9)	31.3 (8.6)	30.6 (9.1)	30.6 (9.3)	30.9 (8.9)
Ethnicity	P<0.05		NS		P<0.001	
Ethnic group	64.2	75.6	69.8	76.5	91.5	75.0
Brahmans and Chhetris	20.6	14.0	19.8	16.5	4.7	15.4
Dalits	15.2	10.4	10.4	7.0	3.7	9.6
Education	NS		NS		NS	
Illiterate	27.7	24.4	20.1	18.6	22.0	16.9
Literate	72.3	75.6	79.9	81.4	78.0	83.1
Age at first marriage	NS		NS		NS	
<20 years	58.5	59.9	57.5	57.9	58.3	64.0
20+ years	41.5	40.1	42.5	42.1	41.7	36.0
Number of living children	NS		NS		NS	
None	7.8	8.2	9.3	12.6	9.2	7.0
1	29.1	27.6	21.6	23.5	27.8	24.6
2 or more	63.1	64.2	69.0	63.9	63.1	68.4
Distance to nearest birthing centre	P>0.01		P>0.001		P>0.001	
Within 30 minutes	22.7	34.4	4.1	18.6	10.5	25.7
30-60 minutes	46.8	47.7	35.8	49.1	37.6	40.1
More than 1 hour	29.8	17.9	58.6	31.9	49.8	33.1
Don't know	0.7	0.0	1.5	0.4	2.0	1.1
Recently delivered women	21.3	20.1	17.9	14.7	24.1	19.1
Currently pregnant	5.7	8.6	4.9	7.7	7.1	7

**NS=Not significant*

More women resided within the 30 minutes distance at the endline than at the baseline in all packages. More package 1 women lived within 30 minutes distance of a health facility than in the other two packages (34% compared to 19% and 26%).

These days, television and radio are found in mountain districts like Taplejung. Exposure to mass media can influence the knowledge of the general public which can lead to behaviour change. More than a half of surveyed women listened to the radio at least once a week across all packages (Table 8.2). However more women in package 3 had no exposure to radio. The survey findings show changes in exposure to television with fewer women in package 1 watching TV at the endline compared to the baseline while TV watching increased in the other two packages.

The above differences need to be taken into account while comparing the findings related to MNH service access and use.

Table 8.2: Exposure to radio and television among married women of the reproductive age group

	Package 1		Package 2		Package 3	
	Baseline (N=282) %	Endline (N=279) %	Baseline (N=268) %	Endline (N=285) %	Baseline (N=295) %	Endline (N=272) %
Listening to radio						
At least once a week	54.6	58.1	52.6	51.6	52	52.6
Less than once a week	13.5	28.3	22.8	30.2	23.8	39.0
Not at all	31.9	13.6	24.6	18.2	24.2	8.5
Watching television						
At least once a week	23.8	15.1	21.3	21.1	17.3	22.8
Less than once a week	4.3	26.5	16.4	23.9	15.9	29.4
Not at all	72	58.4	62.3	55.1	66.8	47.8
Exposure to radio and television	P<0.001		P<0.001		P<0.001	
Low (not exposed to any media)	41.5	12.5	42.5	15.1	45.8	6.6
Medium (exposed to only one media)	38.7	47.0	41	43.2	39.3	43.0
High (exposed to both media)	19.9	40.5	16.4	41.8	14.9	50.4

CHAPTER NINE

KNOWLEDGE AND USE OF MATERNAL HEALTH CARE SERVICE

Maternal healthcare services received during the pregnancy, delivery and postpartum periods are important to prevent maternal and neonatal health complications. Such complication can lead to death. Besides, awareness of mothers on these subjects is also important to enable their use of health care services. This chapter describes the knowledge of married women of reproductive age on antenatal care services, place of delivery care, emergency obstetric funds, and newborn care. The related practices were also measured of MWRA women who had delivered in the last year.

The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 1 and 2 plus demand side strengthening

9.1 Knowledge on Pregnancy Care

Antenatal care — The findings on antenatal care (ANC) were as follows:

- The proportion of package 1 women who had heard of ANC visits increased from 77% at the baseline to 91% at the endline while the proportion in the two intervention packages (2 and 3) slightly declined and stayed the same (Figure 9.1).
- The proportion of package 3 women knowing that the recommendation for ANC is four visits at the fourth, sixth, eighth and ninth months of pregnancy (4ANC) improved from 25% at the baseline to 35% at the endline. This knowledge however, decreased in the other two packages from the baseline to the endline.

One possible reason for the above trends could be differences in demographic characteristics from the baseline to the endline including the number of women of reproductive age with no parity (no liveborn children) and the higher proportion of younger women at the endline across all packages. The increased knowledge of 4ANC among married women of reproductive age found in the quantitative study was echoed by the qualitative results. At FGDs with MWRA in all packages, most participants said they were aware of the 4ANC protocol, but did not know which months they should go for ANC check-ups.

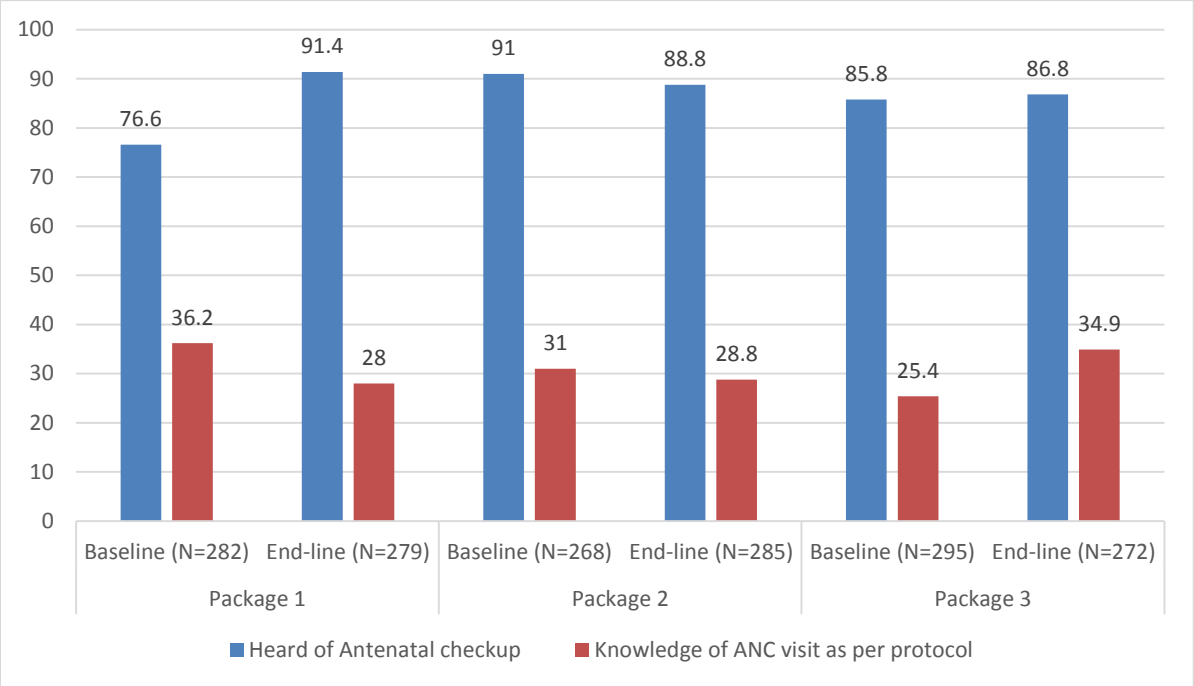


Figure 9.1: Knowledge on ANC services among married women of reproductive age

Comparatively, more package 3 women knew about the importance of ANC check-ups and four ANC visits. An FGD participant from package 3 said:

> "In our community women ask pregnant women if they are making their ANC visits in the recommended month or not. This encourages these women to go for their ANC check-ups."

The increased level of awareness in package 3 about the protocol may be linked with their involvement in RAMP's Equity and Access Programme (EAP) and its community based awareness raising activities. They were found referring to '*Samata ra pahuch*' (EAP) and programmes such as Suaahara as principal sources of information on these matters.

Iron tablets — The use of iron folic acid (IFA) is an important part of ANC and PNC. It is recommended that women take IFA tablets/syrup for at least 180 days during pregnancy and for 45 days postpartum. The women were asked about the number of days that pregnant and postpartum women should take these tablets. Of all women interviewed, there was a significant increase in the knowledge on this of package 2 and 3 women from the baseline to the endline (20% to 37% and 21% to 37% respectively) (Figure 9.2). The level of knowledge was almost unchanged among package 1 women.

> "I started taking iron tablets from the beginning of the fourth month of my pregnancy and took it until 45 days after delivery." Package 3 MWRA FGD participant.

> "I have heard about the recommendation of taking iron tablets for 45 days after delivery, but don't know the exact duration of taking them during pregnancy… I took them for only two months as health staff provided them to me when I visited the local health facility for bleeding problem. Later, I didn't consume them due to excessive vomiting and disgust." Package 1IDI RDW.

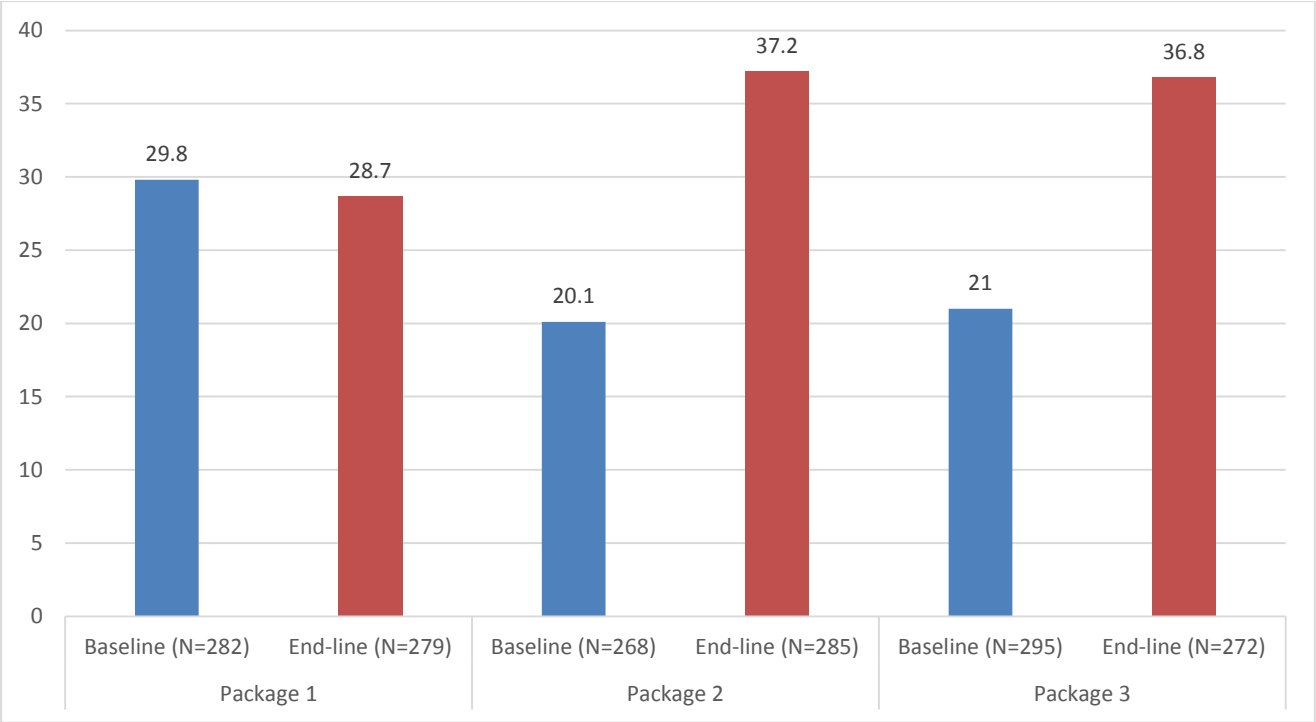


Figure 9.2: Knowledge on recommended number of days to consume IFA during pregnancy and postpartum periods among married women of reproductive age

In line with the finding among package 3 women, surveyed married women of reproductive age showed improved knowledge on the use of iron tablets although the majority reported a lack of knowledge in their communities on the total duration of intake. Despite knowledge on the need to consume iron tablets during and after pregnancy, some women were not taking iron tablets prescribed by health workers. The reasons given included side-effects, misconceptions (makes baby big resulting in difficult delivery), and receiving adequate iron from barley malt. These findings were supported by the process monitoring where frequent interactions took place with community people. Some participants from package 1 and 2 did not take the tablets because they believed they had adverse health effects.

> "I bled a lot when I took iron tablets and if I stop taking them the bleeding stops in four to five days." IDI, RDW, package 2.

> "I didn't consume iron tablets as I used to vomit as soon as I took them." FGD, MWRA, package 1.

The married women of reproductive age of package 3 took part in RAMP's EAP MNH awareness raising activities. Their improved knowledge could thus be due to this here and elsewhere.

Danger signs — The women were asked about the danger signs during pregnancy that may complicate pregnancies and can lead to a fatal outcome. Such signs include excessive weakness, severe lower abdominal pain, vaginal bleeding, fits/convulsions, swelling of hands/face, severe headaches, blurred vision, foul smelling vaginal discharge, high blood pressure and high fever.

The percentage of package 3 women aware of at least three of the danger signs during pregnancy increased from 27% at the baseline to 38% at the endline, whereas in package 2 it declined from 39% to 22% while in package 1 there was a slight increase (Figure 9.3). The qualitative findings also showed that the package 3 women were more aware of at least three danger signs compared to women from the other two packages. The involvement of the package 3 women in the RAMP EAP programme is probably a major factor here as the programme disseminated MNH related information, including danger signs during pregnancy, through monthly meetings of healthy mothers' groups and other activities.

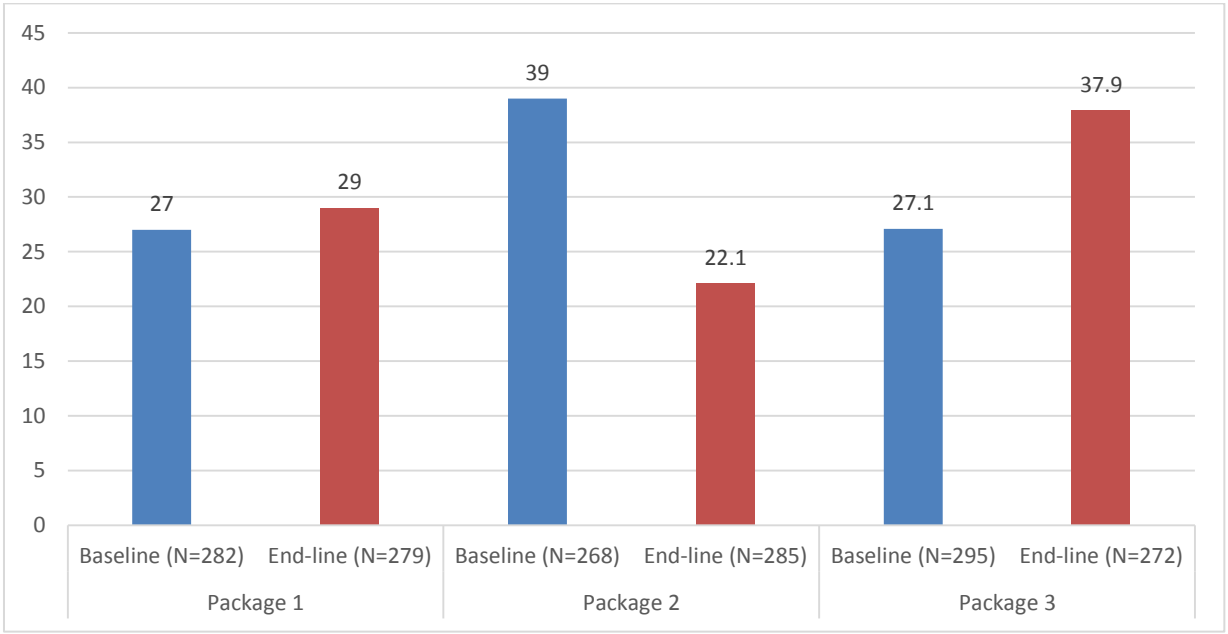


Figure 9.3: Knowledge on any three danger signs during pregnancy among married women of reproductive age groups

"I had heard about some danger signs and symptoms, such as, abdominal pain, white discharge, etc. from my sisters-in-law." *IDI, RDW, package 2.*

"I have heard that convulsions, fever, bleeding from the vagina, severe abdominal pain, headaches, etc. are danger signs during pregnancy." *FGD, MWRA, package 3.*

Women who were aware of at least one danger sign during pregnancy were further asked about where they should go if they experienced such complications. There was a slight increase in the proportion of package 1 and 2 women who said 'health posts/sub health posts' (Table 9.1) whereas in package 3 this proportion declined from 88% to 73%. The proportion giving the hospital as the place to visit increased across all packages with the largest increase among package 3 women (from 19% to 48%). This could explain the decreased proportion of women reporting health posts/sub-health posts in package 3 as they had come to prefer hospitals. The preference to visit traditional healers like dhamis and jhakris declined across all packages (Table 9.1). Note that respondents could select more than one place to visit.

The practice of health facilities sometimes referring danger sign cases to hospital, as with the following case of vaginal bleeding, may influence women to straightaway go to a hospital:

"I had been to this health post in my third month of pregnancy due to bleeding, and its staff suggested I went to Phidim hospital and so I went there…." IDI, RDW, package 1.

Table 9.1: Knowledge of married women of reproductive age on place to visit if pregnancy danger signs and symptoms occur

Knowledge on place to visit	Package 1		Package 2		Package 3	
	Baseline (n=201) %	Endline (n=170) %	Baseline (n=213) %	Endline (n=157) %	Baseline (n=201) %	Endline (n=187) %
HP/SHP	90	93.5	87.8	90.4	87.6	72.7
Hospital	21.9	40.0	31	37.6	18.9	47.6
Seek help from FCHV	12.4	9.4	6.1	3.2	8	4.3
Go to traditional healer (dhami/jhankri)	5	2.9	12.2	0.6	7	3.2

Most MWRA in the package 1 and package 2 FGDs had inadequate understanding of the danger signs during pregnancy, although some package 3 women could identify one or two signs including vaginal bleeding and feelings of excessive weakness. However, one FGD participant argued that pregnancy has no complications!

"Pregnancy is a natural process; there will be pain and problems. These are not danger signs but the test of upcoming motherhood." *MWRA FGD, package 2.*

Incentives — In 2005, Nepal introduced a maternity incentive scheme to encourage institutional deliveries. Women residing in mountain districts like Taplejung get NPR 1500 as a transport incentive. Women who complete four ANC visits as per the protocol and have institutional delivery get an additional NPR 400 as ANC incentive.

- The proportion of package 1 women aware of the transport incentive increased from 82% at the baseline to 90% at the endline (Table 9.2). The proportion was almost unchanged in the other two packages.
- Awareness of the ANC incentive doubled among package 2 and 3 women but declined among package 1 women.
- Awareness of amount received as 4ANC incentive almost doubled among package 3 women
- Awareness of the amount of the transport incentive declined across all three packages.

Table 9.2 Knowledge on Aama incentive during pregnancy and delivery among married women of reproductive age groups

	Package 1		Package 2		Package 3	
	Baseline (N=282) %	Endline (N=279) %	Baseline (N=268) %	Endline (N=285) %	Baseline (N=295) %	Endline (N=272) %
Heard of transport incentive	81.9	90.3	92.2	93.3	84.7	83.5
Heard of 4ANC incentive payment	44.3	38.4	26.9	57.5	33.6	70.2
Aware of amount for 4ANC visit incentive as per protocol	23.0	18.6	13.1	18.2	19.3	34.9
Aware of transport incentive amount for institutional delivery	69.1	67.0	78.4	74.4	78.6	69.1

The large increases in the awareness of package 3 women about the 4ANC incentive payment and amount may be attributable to the RAMP EAP activities, which only the package 3 women took part in. Based on the findings of the FGD with package 3 women, most married women of reproductive age in their communities were aware of the Aama Programme transport incentive, but most were unaware of the amount. They said that this encouraged women to visit a health facility for antenatal check-ups and delivery.

9.2 Awareness and Use of Emergency Funds for Obstetric Care

Many communities use local government funds, FCHV funds and community emergency funds to facilitate local women's access to obstetric care. The awareness of the package 3 women about such funds increased more than three folds from the baseline (Table 9.3) although this is probably due to the establishment of emergency funds between the baseline and endline as an EAP activity.

Table 9.3 Awareness and use of emergency obstetric fund among married women of reproductive age groups

	Package 1		Package 2		Package 3	
	Baseline (N=282) %	Endline (N=279) %	Baseline (N=268) %	Endline (N=285) %	Baseline (N=295) %	Endline (N=272) %
Aware about the existence of emergency obstetric fund	16.7	4.3	27.2	16.1	13.2	47.1
Total MWRA who know about emergency fund	**(n=47) %**	**(n=12) %**	**(n=73) %**	**(n=46) %**	**(n=39) %**	**(n=128) %**
% women who heard of anyone in their community using emergency obstetric fund	57.4	100	46.6	71.4	41	52.2
Women who had delivered 1 year ago	**(n=60) %**	**(n=56) %**	**(n=48) %**	**(n=42) %**	**(n=71) %**	**(n=52) %**
% of women who received fund from local government, FCHV fund, or community emergency fund to access obstetric care	0.0	1.8	2.1	2.4	2.8	3.8

There was a small increase in the proportion of recently delivered women accessing emergency funds in all three packages. However due to limitations of the questionnaire, women in need of the fund were not explored and thus it is difficult to predict the proportion of needs met by the fund.

Based on the information gathered during process monitoring visits and qualitative findings, specific obstetric emergency funds have only been established in the package 3 VDCs where 13 healthy

mothers groups were given NPR 4,000 by the EAP to establish such a fund. Package 2 and 3 VDCs have established community funds affiliated to programmes or organizations including the Poverty Alleviation Fund, Suaahara, FCHVs, women's development programme and the Local Governance and Community Development Programme. In some cases these are being used to pay for obstetric emergencies.

As specific emergency obstetric funds were only established in the EAP implemented VDCs (package 3 VDCs), married women of reproductive age in package 3 were found well aware of such a fund and its uses, whereas, women from the other two packages were completely unaware about such funds but referred to alternative local funds for the same purpose.

> "There is no emergency fund in our community for MNH services. There are various groups such as mothers' groups, Poverty Alleviation Fund groups, groups related to agriculture, woman development groups that have funds which can be withdrawn on payment of interest. These can be used for any purpose by members as they don't have any criteria for their release…." FGD, MWRA, package 2.

> "EAP has established an emergency fund of four thousand rupees in our community. This fund gains interest when not in use, and is used for obstetric emergency for fifteen days free of interest. When returned, it is again put on interest… A part of it is being kept in cash at home by a group member, and three thousand is provided at a time." FGD, MWRA, package 3.

9.3 Use of Family Planning Methods

The results from asking all of the married women of reproductive age if they were using any method of family planning to delay or avoid pregnancy were as follows at the baseline and endline:

- In packages 1 and 3, the proportion of women using modern contraceptives increased from 22% to 32% in package 1 and from 31% to 41% in package 3 (Table 9.4).
- In package 2 there was a large decline in the use of modern contraceptives.

Among those using family planning methods, the injectable method (Depo) was the most common across all packages and at the baseline and endline.

A component of the package 2 and 3 RAMP interventions was expanded availability of long term family planning methods like implants and IUCD. The increased use of implants could be due to this. The fact that the proportion of IUCD users declined from the baseline despite the fact that IUCD availability was expanded at Limkhim HP of package 3 indicates that other factors were involved.

RAMP planned to extend the provision of IUCDs and implants as a part of its packages 2 and 3. However, various reasons, including a lack of equipment, affected service delivery as reported by key informants at the endline. This may have resulted in less use of any type of family planning and modern methods among package 2 and 3 women at the endline.

> "Implant service has increased, but community people have misconceptions. Also, there is one problem in implant service. They are provided in limited number only. Only ten such rods are supplied by the district each year, whereas, ten users demand it each month. Due to their absence, I have to stop administering it after 11 users." Health staff key informant, package 2.

Package 3 informants also reported a lack of essential equipment for the delivery of long term family planning as a reason why this service couldn't be started on time in the last fiscal year. During a February 2015 monitoring visit a health worker key informant from package 3 said:

> "We have not started IUCD service until now due to the unavailability of required equipment…."

A health worker key informant of the endline survey said:

"Despite the addition of IUCDs, we couldn't start that programme immediately due to lack of equipment. The inability to provide services to willing service users has resulted in a decrease in IUCD users." Key informant, package 3

Table 9.4: Use of contraceptives among married women of reproductive age groups

	Package 1		Package 2		Package 3	
	Baseline (N=282) %	Endline (N=279) %	Baseline (N=268) %	Endline (N=285) %	Baseline (N=295) %	Endline (N=272) %
Use of any family planning method	21.6	33.7	41.4	27.0	31.5	41.5
Use of modern contraceptives	21.6	31.5	40.3	26.3	30.8	41.2
Family planning methods used:	**(n=61) %**	**(n=96) %**	**(n=111) %**	**(n=77) %**	**(n=93) %**	**(n=113) %**
Injectable	63.9	45.8	64	66.2	69.9	61.1
Oral pills	18.0	17.7	15.3	10.4	5.4	10.6
Implants (Norplant)	8.2	6.3	0	5.2	3.2	7.1
Male sterilization	6.6	13.5	6.3	1.3	5.4	8.8
Condoms	1.6	5.2	6.3	7.8	4.3	2.7
IUCD	0	3.1	5.4	6.5	9.7	8.8
Withdrawal	0	2.1	2.7	0	0	0.9
Rhythm	0	1.0	0	2.6	2.2	0.0
Breastfeeding	0	5.2	0	0	0	0.0
Female sterilization	1.6	2.1	0	0	0	0.0

9.3 Experience of Abortion and Use of Safe Abortion Service

The number of interviewed women of package 1 reporting that they had had an abortion decreased from 14 out of 282 at the baseline to 10 out of 279 at the endline (Table 9.5). The number remained the same or almost the same in the other two packages. Importantly none of these women said they had their abortions at home or in the community or by 'quacks' in package 1 whereas in package 2 and 3 unsafe abortion were still happening. It is important to note that the expansion of medical abortion services was planned for RAMP packages 2 and 3 but could not be implemented at all sites of these packages due to staff certification and site listing issues. Also, the number of women who received contraceptives after safe abortion increased among package 1 and 3 women.

Table 9.5: Experience of abortion among married women of reproductive age groups *(N: number)*

	Package 1		Package 2		Package 3	
	Baseline (N=282) N	Endline (N=279) N	Baseline (N=268) N	Endline (N=285) n	Baseline (N=295) N	Endline (N=272) N
Ever aborted pregnancy	14	10	9	9	9	10
Number of pregnancies aborted	**(n=14) N**	**(n=10) N**	**(n=9) N**	**(n=9) n**	**(n=9) N**	**(n=10) N**
1	4	7	9	8	5	7
2 or more	10	3	0	1	4	3
Place where pregnancy was aborted						
Home/community/'quacks'	10	0	1	4	4	3
Government hospital	0	6	4		3	6
Private clinic	0	4	2	2	0	1
HP	3	0	1	2	2	0
Private hospital	1	0	1	1	0	0
Total safe abortion (n)	**1**	**10**	**7**	**5**	**3**	**7**
Number women who received contraceptives after safe abortion	**1**	**7**	**5**	**4**	**2**	**7**

9.4 Pregnancy Care Practices

The proportion of women who had delivered in the year prior to the endline survey and who had received ANC services increased across all three packages (Figure 9.4) with the proportion doubling among package 3 women. However, many fewer of these women completed the recommended four ANC visits. The package 3 women performed the best with an increase from 25% at the baseline to 48% at the endline. These results should, however, be carefully assessed as a higher proportion of women in package 3 resided at a distance from their health facility than package 1 women. The household survey also found that the uptake of ANC service had increased.

> "Now, pregnant women themselves take the initiative to visit the health facility for antenatal check-ups even before suggested by others…." FGD, Mothers-in-law, package 2.

> "Since the last one year, pregnant women have started coming for check-ups three to four times. They didn't use to come before, but they are coming now for ANC check-up as they have become aware about it. The reason behind this change is due to the mobilization of mothers' groups and local FCHVs. FCHVs are instructed to tell women about the 4ANC scheme. Mothers' groups have been made active and they have also sensitized and made women aware on MNH related issues." Key informant, package 3.

However, some in-depth interviews with recently delivered women gave a slightly different insight. An interview with a recently delivered women of package 1 found that she had only made one ANC visit (during her 4th month of pregnancy). She went to her local health facility with bleeding from her vagina and received ANC service as well as treatment. She was unaware on the recommended frequency and timing of ANC visits. Other in-depth interviews with package 2 RDW found them unaware of the need to make four ANC visits and of the timing although they had made four visits during their last pregnancies but not as per protocol timing. On the other hand, an IDI respondent of package 2 expressed dissatisfaction with the unavailability of staff when she had made an ANC visit.

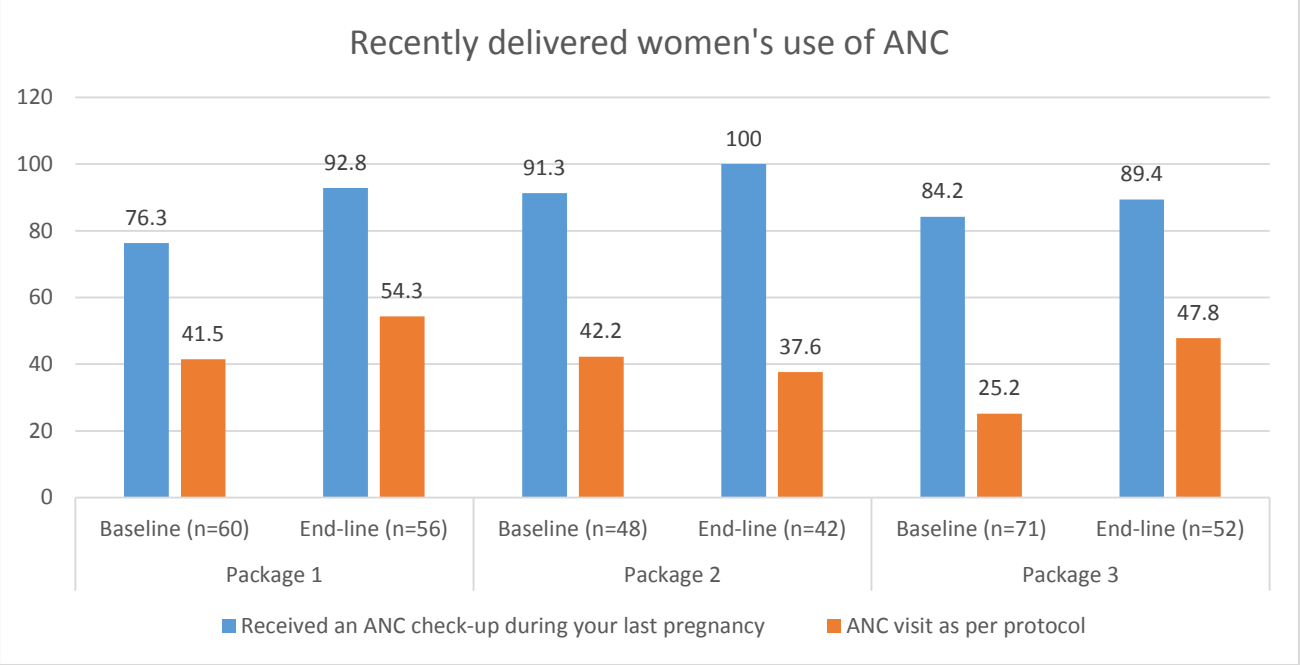


Figure 9.4: Recently delivered women with at least one ANC visit and ANC visit as per protocol

**The above figures have been adjusted for the clustering effect*

> "It is not good here. The doctor and sister were not in the facility when I visited twice. They said that staff were in the district HQ for training so I went to another health facility (in the neighbouring VDC)." RDW IDI, package 2

"My family members did not know about antenatal check-ups and so didn't tell me to visit the health facility for a check-up." IDI, RDW, package 1.

"They feel shyness. They might not have visited the health facility due to feeling shyness…" FGD, MWRA, package 2.

The women who had made an ANC visit were asked where they received the service. The proportion of package 1 women visiting a health post or SHP increased from 85% at the baseline to 96% at the endline while the proportion of package 3 women decreased from 95% to 82% (Table 9.6).

Endline quantitative and qualitative data shows that some pregnant women (including those who also visited health facilities) also visited other places including government hospitals, outreach clinics in the same VDC and private hospitals. In this context, a slight decrease in the percentage of recently delivered women visiting health facilities may be related to increases in the percentage visiting other places. For instance, in package 3, pregnant women had visited the government hospital (3.5% in baseline, 10% in endline), outreach clinics (1.7% in baseline, 6% in endline) and other places more often. Besides at the endline, 5% of package 2 women also reported other places including a pharmacy, which was not reported at the baseline.

"An outreach clinic is conducted in our village once a month. The sister from the health post comes here so I went there for a pregnancy check-up…" IDI, RDW, package 2.

Table 9.6: Place of visit by recently delivered women for ANC visit

	Package 1		Package 2		Package 3	
	Baseline (n=47) %	Endline (n=51) %	Baseline (n=43) %	Endline (n=42) %	Baseline (n=59) %	Endline (n=50) %
Place where ANC received:						
HP/SHP	85.1	96.1	76.8	76.2	94.9	82.0
Government hospital	8.5	0.0	7.0	7.1	3.4	10.0
Outreach clinic	2.1	2.0	14.0	11.9	1.7	6.0
FCHV	2.1	0.0	2.3	0.0	0.0	0.0
Other	0.0	0.0	0.0	4.8	0.0	2.0
Private hospital	2.1	0.0	0.0	0.0	0.0	0.0
Don't know	0.0	2.0	0.0	0.0	0.0	0.0

The recently delivered women were asked if they had consumed IFA during their pregnancies and post-partum periods. All the packages showed an increased trend for the complete intake of IFA from baseline to endline (Table 9.7). The highest increment was found in package 2 where complete IFA intake increased from 28% of women at the baseline to 60% at the endline (Table 9.7). Package 3 women had a higher increment (28 percentage points) compared to package 1 women (7 points).

However, the qualitative data did not show any differences between packages on the consumption of IFA. A package 2 woman was uncertain about how long she needed to take the tablets:

"I have been taking iron tablets since my fourth month. Now, they have given me iron tablets to take until 22 days of delivery…..42 days or how many days? And, I have been taking them now."

One in-depth interviewee from package 1 was following the recommendation for taking IFA:

"I started to take iron tablets from the beginning of the fourth month of my pregnancy and I have been taking them as per the protocol." IDI, RDW, package 1.

The baseline survey found the most commonly reported reason for incomplete or no intake of the full dose of iron tablets was lack of awareness; but this reason dropped sharply across all packages at the endline (Table 9.7) suggesting increased awareness on IFA intake. Other reasons such as 'side effects' and 'forget to take' were reported more at the endline (Table 9.7).

Qualitative findings — At FGDs, package 1 and 2 MWRAs gave side effects, conservative beliefs and bad taste as prominent reasons apart from lack of awareness why they did not take a complete dose of IFA tablets. Other reasons given were that iron intake cause enlargement of the foetus, difficult labour, the production of much blood leading to excessive bleeding, and the belief that enough iron was available from barley malts. Also, a dislike of its taste and smell (increased across all packages at the endline) were other reasons.

Table 9.7: Iron folic acid intake by recently delivered women during pregnancy and after delivery

	Package 1		Package 2		Package 3	
	Baseline (n=60) %	**Endline (n=56) %**	**Baseline (n=48) %**	**Endline (n=42) %**	**Baseline (n=71) %**	**Endline (n=52) %**
***Iron tablet intake**						
Incomplete intake	34.7	39.5	60.2	39.8	61.6	51.4
Complete intake	40.6	47.3	27.8	60.2	11.1	39.1
No intake	24.8	13.2	12.0	0	27.3	9.5
Reasons for incomplete/no intake of full dose of iron tablet						
	(n=37) %	**(n=29) %**	**(n=36) %**	**(n=15) %**	**(n=64) %**	**(n=31) %**
Unaware	40.5	13.8	33.3	6.7	26.6	9.7
Ran out of supplies	24.3	24.1	27.8	20	17.2	16.1
Side effects	16.2	34.5	2.8	20	28.1	29
Forgot to take	8.1	20.7	13.9	20	7.8	19.4
Lack of importance	5.4	3.4	16.7	0	9.4	3.2
Currently taking	5.4	0	5.6	20	1.6	6.5
Lack of time to visit HF	10.8	3.4	5.6	0	6.3	0
Recommendation from health worker to buy IFA	0	0	2.8	6.7	3.1	6.5
Do not like smell/do not like to eat	0	3.4	0	6.7	0	6.5
Worried it may harm the foetus	5.4	3.4	0	0	3.1	0
Unwanted growth of foetus	5.4	0	0	0	1.6	0
Not allowed to eat	0	0	0	0	3.1	0
Unavailability of IFA in HF	0	0	0	0	0	6.5
Change in colour of stools	0	3.4	0	0	0	0

*The calculated proportion was made adjusting the clustering effect

The proportion of pregnant women who said they were receiving IFA only increased among package 2 women (Figure 9.5).

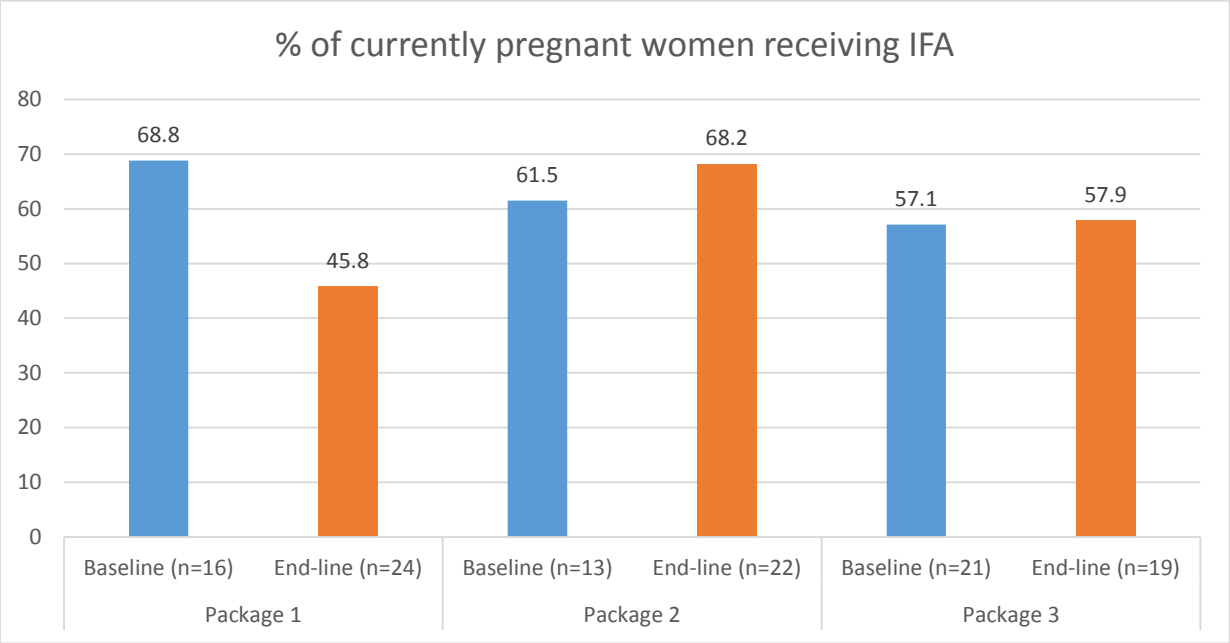


Figure 9.5: Pregnant women receiving iron folic acid

To promote birth preparedness a 'birth preparedness package (BPP)" has been promoted in Nepal since 2008/09. Birth preparedness includes the advance preparation of food, clothes, money, transport, consulting a health worker for delivery, discussing place of delivery, discussing about companion for the delivery, purchase of safe delivery kit and arrangement of blood donor (see in Table 9.8). The arrangement of a blood donor had not improved in any package (Table 9.8) while, in package 3, practices like saving money, arranging clothes/food and purchasing safe delivery kit occurred less at the endline.

Certain practices were found more at the endline among package 3 women/households including discussing about a companion for the birth (51% to 75%), discussing who would accompany the women to the health facility (48% to 67%) and consulting with health workers (52% to 62%). Similar increments were observed for these practices in the other packages. There seems to be no substantial difference between the packages.

Table 9.8: Birth preparedness package prepared by recently delivered women at last pregnancy

Practices of BPP	Package 1		Package 2		Package 3	
	Baseline (n=60) %	Endline (n=56) %	Baseline (n=48) %	Endline (n=42) %	Baseline (n=71) %	Endline (n=52) %
Arranged food	96.7	92.9	89.6	100	90.1	88.5
Arranged clothing	85	92.9	83.3	97.6	87.3	84.6
Saved money	73.3	89.3	83.3	92.9	90.1	86.5
Arranged transport	21.7	30.4	25	21.4	31	25
Consulted health worker to discuss assistance with delivery	46.7	58.9	56.3	61.9	52.1	61.5
Discussed place of delivery	55	55.4	75	76.2	53.5	67.3
Discussed who would accompany to facility	48.3	53.6	60.4	76.2	47.9	67.3
Discussed who would be companion /present at birth	41.7	55.4	54.2	76.2	50.7	75
Bought safe delivery kit	23.3	10.7	12.5	23.8	15.5	7.7
Found blood donor	15	8.9	6.3	7.1	11.3	5.8

The qualitative endline data shows that married women of reproductive age, mothers-in-law and recently delivered women do not have detailed information on the birth preparedness package (BPP). However, some aspects such as arranging food, clothes and money were more frequently found for impending deliveries. For instance, one of the recently delivered women of package 1 (who delivered at home) said that she had saved money for if they needed to go to the hospital for delivery. The endline survey found mothers-in-law and married women of reproductive age making preparations such as preparing barley malts (mostly in Limbu and Sherpa communities), arranging warm clothes for mothers and babies, fetching nutritional foods (such as jwain, ghee, honey), keeping chickens for meat (for hot soup for mothers). Similar findings were obtained during monitoring visits.

9.5 Delivery Care Practices

Place of delivery

Table 9.9 details preference on place of delivery and the actual place of delivery of recently delivered women at their last delivery. Home preference sharply declined in packages 2 and 3 (from 40% to 12% in package 2 and from 35% to 15% in package 3), with much less of a decrease in package 1. The preference for giving birth at a health facility increased across all packages and most notably in package 2 (33% to 60%) and package 3 (39% to 64%) in comparison with package 1 (42% to 48%). An in-depth interviewee from package 3 explained why she preferred to give birth in the hospital:

> "Doctors can manage any condition during delivery. It is difficult to deliver at home. Doctors know everything about the condition of the baby, such as position and presentation." IDI, RDW, package 3.

The improved availability of health staff (see Chapter 7) and the expansion of delivery services in the facilities due to RAMP may have caused the large increase in the preference of package 2 and 3 users to deliver at their local health facility. Furthermore, the implementation of the EAP component in the package 3 VDCs could have enhanced the awareness of local service users thus encouraging them to deliver at their local facility. Of six recently delivered women interviewed at the endline survey (two in each package), three gave their local health facility as their preferred place of delivery, while two gave home and one the district hospital as the preferred place. Surprisingly, one of the recently delivered women of package 2 had delivered at the local health facility despite her preferred place for delivery being home, and three of them had delivered at home despite their preferred place being the health facility. The woman who had delivered at the health facility against her will said that she couldn't deliver her baby normally at home so she had to be taken to the local 'hospital' for delivery. She clarified the reason for not originally choosing the health facility:

> "Others used to say it would be difficult in the 'hospital' so I felt it would be better at home."

Another woman said:

> "I wanted to deliver at the health post, but health staff told us that 'this is the second child so we have to wait for eight hours, and so I delivered here at home..." IDI, RDW, package 1.

The actual place of delivery changed from baseline to endline for the recently delivered women in line with the trend of preferred place of delivery:

- The proportion of women delivering at home reduced across all packages reducing the most among package 1 (from 72% to 41%) and package 3 women (56% to 37%).
- The proportion delivering at a health facility increased across all packages with the highest increase among the package 3 women (from 17% to 42%).
- The proportion of women delivering at a private or NGO hospital or a medical college was less among package 3 compared to package 1 and 2 women at the endline.

Table 9.9: Preferred place for delivery reported by recently delivered women at last delivery

	Package 1		Package 2		Package 3	
	Baseline (n=60) %	Endline (n=56) %	Baseline (n=48) %	Endline (n=42) %	Baseline (n=71) %	Endline (n=52) %
Preferred place for delivery						
PHCC/HP/SHP	41.7	48.2	33.3	59.5	39.4	63.5
At home	31.7	28.6	39.6	11.9	35.2	15.4
Government hospital	18.3	19.6	22.9	21.4	16.9	19.2
Mission/NGO/community hospital	6.7	3.6	4.2	7.1	8.5	0.0
Didn't think about it	1.7	0.0	0.0	0.0	0.0	0.0
Place of delivery						
At home	71.7	41.1	56.2	50.0	56.3	36.5
PHCC/HP/SHP	11.7	33.9	16.6	33.3	16.7	42.3
Government hospital	8.3	14.3	25.0	7.1	25.0	15.4
Private-NGO hospital/medical college	8.4	8.9	0.0	9.5	0.0	1.9
On way to health facility	0.0	0.0	2.1	0.0	2.1	1.9

The interactions with community stakeholders and monitoring observations revealed that package 1 and 2 women from better-off households with relatives in urban areas preferred to deliver there in private hospitals/medical colleges such as the BP Koirala Institute of Health Sciences.

The increment in institutional deliveries was highest in package 3 (from 25% to 62%) (Figure 9.6). The proportion of institutional deliveries also increased among package 1 women. However, the killing of an AHW in a package 1 facility just before the baseline study badly affected the availability of health workers in that facility and hindered service delivery there meaning that fewer women had delivered there at the baseline than would have otherwise been the case. The increase among package 1 women at the endline could be due to the resumption of full delivery services at that facility. RAMP activities for encouraging institutional delivery seem to have worked in package 3.

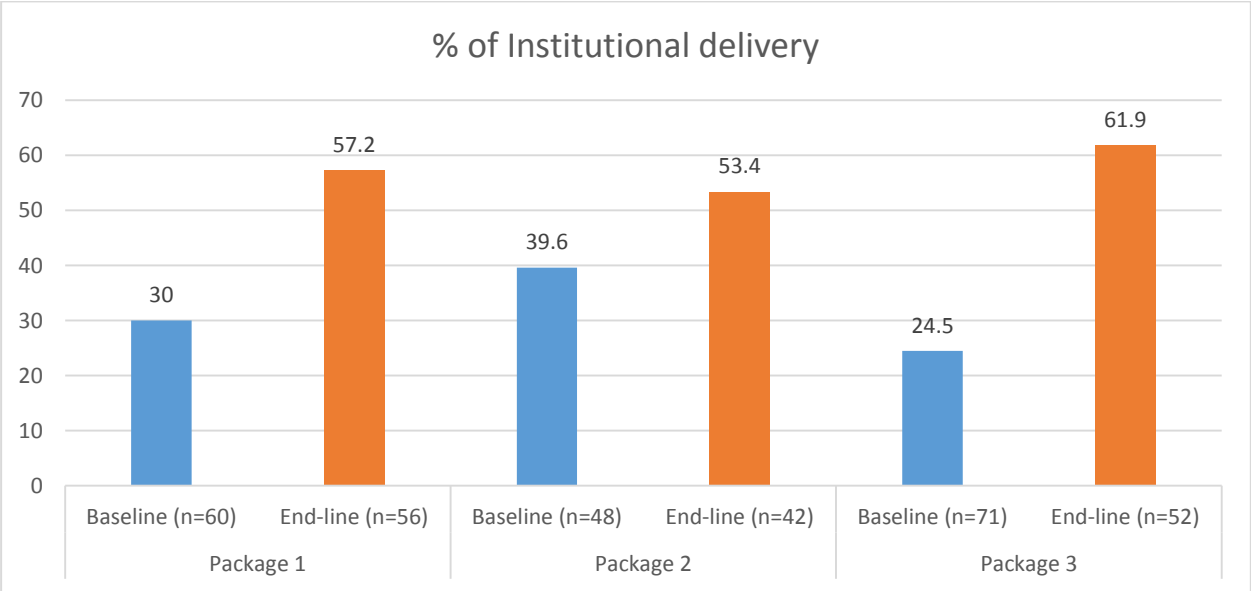


Figure 9.6: Proportion of recently delivered women with institutional delivery

**The calculated proportion is adjusted for clustering effect*

The following reasons given for not delivering at a health facility at the endline show why a significant proportion of women who were ready to deliver at a health facility could not:

- a third of package 2 and 3 women reported not having enough time to get to a facility;
- between 20% and 30% of all women gave the reason as difficulty to travel whilst in labour;
- 25% of package 1 and 14% of package 3 (14%) blamed the unavailability of transport.

These findings on why recently delivered women didn't deliver at a health facility can be corroborated with other endline and process monitoring findings. Things like lack of expenses, lack of transportation, difficult geographical terrain, long walking distance, initiation of labour at night, lack of family support, preterm delivery, short duration of labour, delivering earlier than expected, practice of taking pregnant women to the health facility only after initiation of labour, preference of local people (family members and herself, too) for home delivery and shyness were found contributing to delivering at home and/or not delivering at the preferred place.

"..We went to the 'hospital' (= local birthing centre), but nobody was there so we returned home …none of the sisters were present at the 'hospital'." IDI, RDW, package 3.

"It is due to the fact of being far, too. Where to stay after going there? It is okay to stay in the 'hospital', too, but we didn't, thinking that the birth might take many days." IDI, RDW, package 1.

"Others used to say that it would be difficult in the 'hospital' so I felt it would be better at home." IDI, RDW, package 2.

"I opted to deliver this baby at home expecting my delivery would be normal as before….." IDI, RDW, package 3.

Table 9.10: Reported reasons for not delivering at the health facility by recently delivered women who did not deliver in an institution

	Package 1		Package 2		Package 3	
	Baseline (n=43) %	Endline (n=24) %	Baseline (n=27) %	Endline (n=21) %	Baseline (n=53) %	Endline (n=21) %
Reasons for not delivering in health facility						
Did not feel the need	27.9	45.8	33.3	47.6	28.3	19.0
Preferred to deliver at home	32.6	41.7	25.9	4.8	20.8	14.3
Too difficult to travel in labour	30.2	33.3	22.2	9.5	20.8	23.8
Did not have enough time to get there/delivered on the way	16.3	8.3	7.4	33.3	26.5	33.3
Felt shameful	30.2	20.8	0.0	0.0	3.8	4.8
Facility too far away	16.3	29.2	25.9	0.0	22.6	14.3
Night time	11.6	25.0	29.6	23.8	1.9	0.0
No transport	7.0	25.0	3.7	0.0	7.5	14.3
No permission from household members	7.0	0.0	0.0	0.0	5.7	4.8
Expensive travel and treatment	4.6	0.0	0.0	0.0	3.8	0.0
Didn't know about importance	0.0	0.0	0.0	0.0	0.0	50.0
Thought that health provider may not be present	0.0	0.0	7.4	0.0	0.0	0.0

The level of education, ethnicity and distance to the nearest health facility seem to be related to whether or not women gave birth in an institution (Table 9.11). The results show the distance to the health facility as a strong influence. In all three packages the proportion of women having an

institutional delivery declined sharply for women residing more than an hour from the nearest facility. A higher proportion of package 3 women who lived within 30 minutes of the nearest facility had delivered there (93%) compared to such package 1 and 2 women (65% and 50%). This could be due to the package 3 women having taken part in the RAMP/EAP MNH awareness raising activities.

Table 9.11 Institutional deliveries disaggregated by socio-demographic characteristics

Characteristics	Package 1		Package 2		Package 3	
	Delivered in health facility	Total (N)	Delivered in health facility	Total (N)	Delivered in health facility	Total (N)
Women's education						
Illiterate	50.0	8	33.3	3	66.7	9
Literate	58.3	48	51.3	39	58.1	43
Caste/ethnicity						
Ethnic group	60.5	38	53.8	26	56.8	44
Brahmans and Chhetris	50.0	12	54.5	11	100.0	3
Dalits	50.0	6	20.0	5	60.0	5
Distance/time to reach nearest government health facility						
Within 30 minutes	64.7	17	50.0	2	92.9	14
30-60 minutes	56.7	30	65.0	20	50.0	18
More than 1 hour	44.4	9	35.0	20	45.0	20
Total (N)	**57.1**	**56**	**50.0**	**42**	**59.6**	**52**

Community level case studies were collected during the process monitoring on access to MNH services. The study in Box 1 shows how one woman benefitted from RAMP EAP activities.

Box 1: Encouragement led the journey to happiness (Taplejung)

Sita Limbu (name changed), a 21-year-old woman, lives a two and half hours' walk from the nearest health facility in a small house with her family. She went to school to fourth grade.

She wasn't much aware of ANC check-ups, institutional delivery, and aspects of antenatal and postnatal care. Her mother- and father-in-law were not so positive on seeking medical advice for MNH related issues. She had also heard misconceptions from her elders and friends about injections during pregnancy. They said receiving them led to miscarriages. She said, 'When I went to the health facility the first time, they advised me on things like the needs to visit the facility regularly for check-ups, to take deworming tablets and iron tablets regularly; to receive TT vaccine. After that, I started frequently attending other meetings."

She attended some RAMP EAP activities (interaction programmes with husbands and mothers-in-law) She said the information provided at the interactions and the monthly healthy mothers' group meetings gave her confidence to deliver her baby easily and comfortably at the health facility. She found the interaction programme with her husband most informative and fruitful in terms of understanding and realizing the necessity of taking medical advice for any MNH related issues.

She had a very good experience of giving birth to her first baby at the health facility and recommends other prospective mothers to go for regular ANC check-ups and institutional delivery.

The three delays

The three potential delays of seeking care, reaching the health facility and receiving the care are important to address for preventing obstetric complications. The first two delays are very much concerned with the demand side of MNH as they concern the behaviour of household members, while the last delay is related to the supply side. The Birth Preparedness Package is aimed at reducing the first two delays. All the women who had institutional deliveries were asked about these delays.

Regarding the first delay, at the baseline all women reported to have gone to the health facility only after labour pain started while at the endline, 22% of package 1, 10% of package 2 and 19% of package 3 women reported going to the facility for their delivery before the start of labour pain (Table 9.12). The endline finding of more women going before the start of labour pains could be due to improved financial status, relatives living in bigger cities or in close proximity of hospitals, maternal home of pregnant woman being in a more developed part of the country, fear of women or family members of potential complications during delivery, prior suggestion by local health facilities to visit bigger hospitals for impending delivery

The proportion of women who reported a delay of four or more hours seeking medical help after labour pain started declined the most in packages 2 and 3 (55% to 33% and 62% to 29% respectively). In these packages, the proportion of women reaching the health facility within an hour increased by 20 percentage points although it is important to relate this finding with the finding in Table 9.8 that the pre-arrangement of transport in these two packages had declined. It seems that at the endline more women avoided the first delay by visiting the health facility prior to the start of labour pains. This may have provided them time to arrange transport. This further implies that if the first delay is reduced then this will impact the second delay (reaching a facility).

Nearly 10% of women in package 3, 6% in package 1 and 5% in package 2 received delivery care only an hour or more after reaching the health facility. The proportion of women reporting they had to bear no cost to reach and return from the health facility increased across all packages.

Table 9.12: Delays in seeking, reaching and receiving delivery care service among recently delivered women who had institutional deliveries

	Package 1		Package 2		Package 3	
	Baseline (n=17) %	Endline (n=32) %	Baseline (n=20) %	Endline (n=21) %	Baseline (n=15) %	Endline (n=31) %
Time taken to decide to seek medical help after the start of labour pain:						
Immediately/Within an hour	47.1	9.4	25.0	14.3	15.4	9.7
1-2 hour	17.6	12.5	15.0	23.8	15.4	22.6
2-4 hour	11.8	15.6	5.0	19.0	7.7	19.4
4 hours or more	23.5	37.5	55.0	33.3	61.6	29.0
Do not know	0.0	3.1	0.0	0.0	0.0	0.0
Visited HF without labour pain	0.0	21.9	0.0	9.5	0.0	19.4
Time taken to reach an appropriate obstetric facility:						
Immediately/within an hour	47.1	40.6	20.0	42.9	40.0	61.3
1-2 hour	0.0	31.3	30.0	42.9	20.0	19.4
2 hours or more	52.9	34.4	50.0	23.8	40.0	35.5
Time taken to receive obstetric care after reaching the facility:						
Immediately/Within an hour	88.2	93.8	100.0	95.2	86.7	90.3
One or more than an hour	11.8	6.3	0.0	4.8	13.3	9.7
Cost to reach and return from HF (NPR):						
No cost	35.3	59.4	45.0	66.7	20.0	54.8
Up to 1500	23.5	25.0	15.0	9.5	46.7	9.7
>1500	41.2	15.6	35.0	23.8	33.3	22.6
Don't know	0.0	0.0	5.0	0.0	0.0	12.9

Despite the decrease in the number of women deciding immediately to seek medical help after the start of labour pain in packages 2 and 3, notable changes can be seen in the number of women deciding in less than four hours to seek help after the start of labour pain in both these packages. Similarly, the number of women deciding to seek medical advice only after four or more hours

decreased sharply in packages 2 and 3. The improvement in package 3 may be linked with knowledge gained from RAMP's EAP programme especially on the length of labour pain to consider as indicating forthcoming delivery and the benefits of seeking medical help straightaway:

Who accompanied the women

Recently delivered women who had institutional deliveries were asked about who accompanied them to the health facility for the delivery. Interestingly, in spite of the RAMP/EAP intervention (package 3) that included husband and mother-in-law interactions with pregnant women, the proportion of husbands as a companion decreased a little in package 3 from 67% to 61% (Table 9.13).

At the endline survey, all recently institutionally delivered women had reported that they were accompanied by their husbands in addition to other family members, relatives and neighbours. Monitoring observed that many husbands were living and working away from home, which would indicate a decrease in the number of accompanying husbands, which may explain the increase in the number of other accompanying persons (sisters-in-law, brothers-in-law, others) across all packages. The qualitative endline data also revealed that some recently institutionally delivered women had been accompanied by other relatives including mothers-in-law, brothers and sisters-in-law, brothers, sisters and mothers.

Table 9.13: Person accompanying the recently delivered women to go for institutional delivery

	Package 1		Package 2		Package 3	
	Baseline (n=17) %	Endline (n=32) %	Baseline (n=20) %	Endline (n=21) %	Baseline (n=15) %	Endline (n=31) %
Accompanying person to go to health facility for delivery						
Husband	70.6	68.8	50.0	66.7	66.7	61.3
Parents in law	5.9	12.5	20.0	14.3	20.0	12.9
Parents	23.5	28.1	15.0	23.8	6.7	9.7
Sister/brother	47.1	28.1	75.0	28.6	46.7	32.3
FCHV	11.8	0.0	10.0	9.5	6.7	6.5
Neighbour/friends	0.0	6.3	20.0	9.6	13.3	12.9
Sister in law/Brother in law	35.3	40.6	20.0	42.9	13.3	35.5
Maternal uncle/aunt	0.0	3.1	0.0	4.8	0.0	3.2
Health worker	0.0	0.0	0.0	0.0	0.0	3.2
Daughter/daughter in law	0.0	0.0	0.0	4.8	0.0	3.2

Attendance by SBAs

Deliveries being attended by an SBA or health workers trained on safe birthing attendance is a key indicator of maternal health. There was an improvement on this across all three packages (Figure 9.7).

The increment was the highest in package 3 (35 percentage points) followed by package 1 (27 percentage points) and the least in package 2 (6 percentage points). Note that the proportion of institutional deliveries is slightly higher in package 3 at 59.6% (see Table 9.11) compared to SBA attended delivery (57.7%). This could be due to the absence of an SBA from the facility (only one SBA was available in all package 2 and 3 birthing centres, except for Santhakra SHP where none was available). Thus a few deliveries were performed by non-SBA health workers in their absence and at Santhakra SHP all deliveries were conducted by non-SBA health workers.

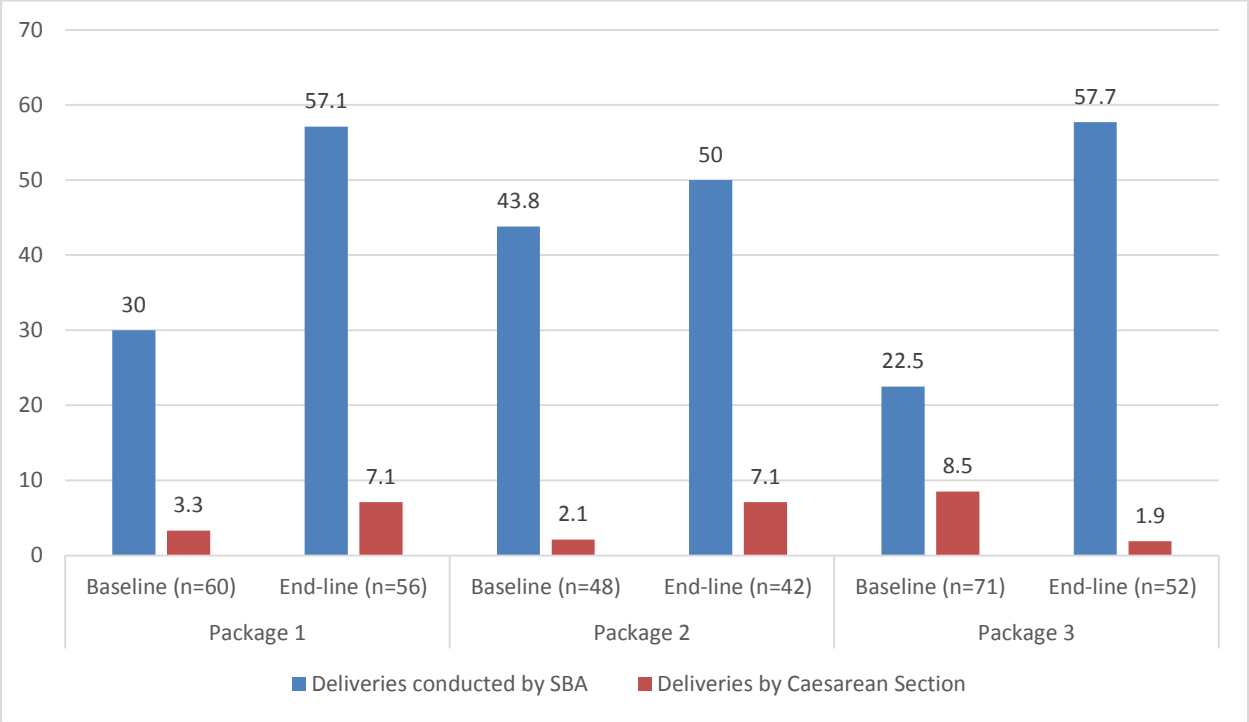


Figure 9.7: Deliveries attended by skilled birth attendants (SBA) and proportion of caesarean section deliveries

The monitoring found that at one package 3 facilities the FCHV and health assistant had performed a delivery due to the absence of SBA trained staff. A local FCHV of another VDC of this package also reported assisting a health assistant deliver a baby in the absence of the SBA. Such a situation may be common if there is just one SBA as was the case at some birthing centres.

> "I brought a pregnant woman to this health post for delivery, but no nursing staff were there so a health assistant and I delivered the baby." Key informant, FCHV, package 3.

The increase in SBA attended deliveries may be related to the RAMP interventions. Additional nursing staff (SBAs and non-SBAs, but mostly SBAs) had been recruited at the package 2 and 3 facilities on a contract basis, and were rotated to training sites (if SBAs) and to the district hospital (if non-SBAs) for skill enhancement during the whole period of RAMP. There was also an increment in package 1 as discussed above as one of its birthing centres resumed full-fledged services during RAMP.

Receipt of incentives

There was a considerable increase in the proportion of both package 1 and 3 women receiving the 4ANC and transport incentives (Table 9.14). The proportion of package 3 women receiving the 4ANC incentive increased by 23 percentage points while those receiving the transport incentive increased by 19 percentage points. The proportion of package 1 and 3 women increased by 16 and 12 percentage points, respectively. There was a slight decrease (3 percentage points) in the proportion of package 2 women who received the transport incentive.

Of all RDW who had made an ANC visit, the proportion of women receiving information on the 4ANC incentive increased across all packages. However, in packages 2 and 3, of the women who had an institutional delivery only 76% in package 2 and 74% in package 3 received information on the transport incentive, which is a decline from the baseline levels of 100% in package 2 and 80% in package 3.

All recently institutionally delivered women interviewed in-depth at the endline reported having received the transport incentive only, as none of them had made 4ANC visits as per the protocol.

Table 9.14: Recently delivered women (RDW) who received services related to AAMA benefits

Recently delivered women	Package 1		Package 2		Package 3	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
	(n=60) %	(n=56) %	(n=48) %	(n=42) %	(n=71) %	(n=52) %
Received 4ANC incentives *	4.4	16.0	11.2	11.8	6.0	28.9
Received AAMA benefits (Transportation benefits)*	20.7	32.5	31.2	27.7	21.0	40.2
RDW with ANC visit	**(n=47) %**	**(n=51) %**	**(n=43) %**	**(n=42) %**	**(n=59) %**	**(n=50) %**
Informed about 4ANC incentives by health care provider	46.8	52.9	27.9	47.6	30.5	68
RDW with Institutional delivery	**(n=17) %**	**(n=32) %**	**(n=20) %**	**(n=21) %**	**(n=15) %**	**(n=31) %**
Informed about transport incentives during delivery	70.6	90.6	100	76.2	80	74.2

**The calculated proportion are adjusted for clustering effect*

CHAPTER TEN

KNOWLEDGE AND PRACTICES RELATED TO NEONATAL HEALTH

This chapter explains the findings on the knowledge of currently married women on newborn care. It also details the practices of recently delivered women related to newborns, and the use of child health services by the mothers of under-five year old children.

The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 1 and 2 plus demand side strengthening

10.1 Knowledge on Newborn Care

Figure 10.1 shows that relative to the baseline, knowledge on the necessity of breastfeeding within an hour of birth improved among package 2 and 3 women. In package 2 the knowledge of breastfeeding within an hour increased from 69% to 82%. However, knowledge on neonatal bathing only after 24 hours declined from 69% of to 50% of women in package 2 and from 62% to 52% of women in package 3.

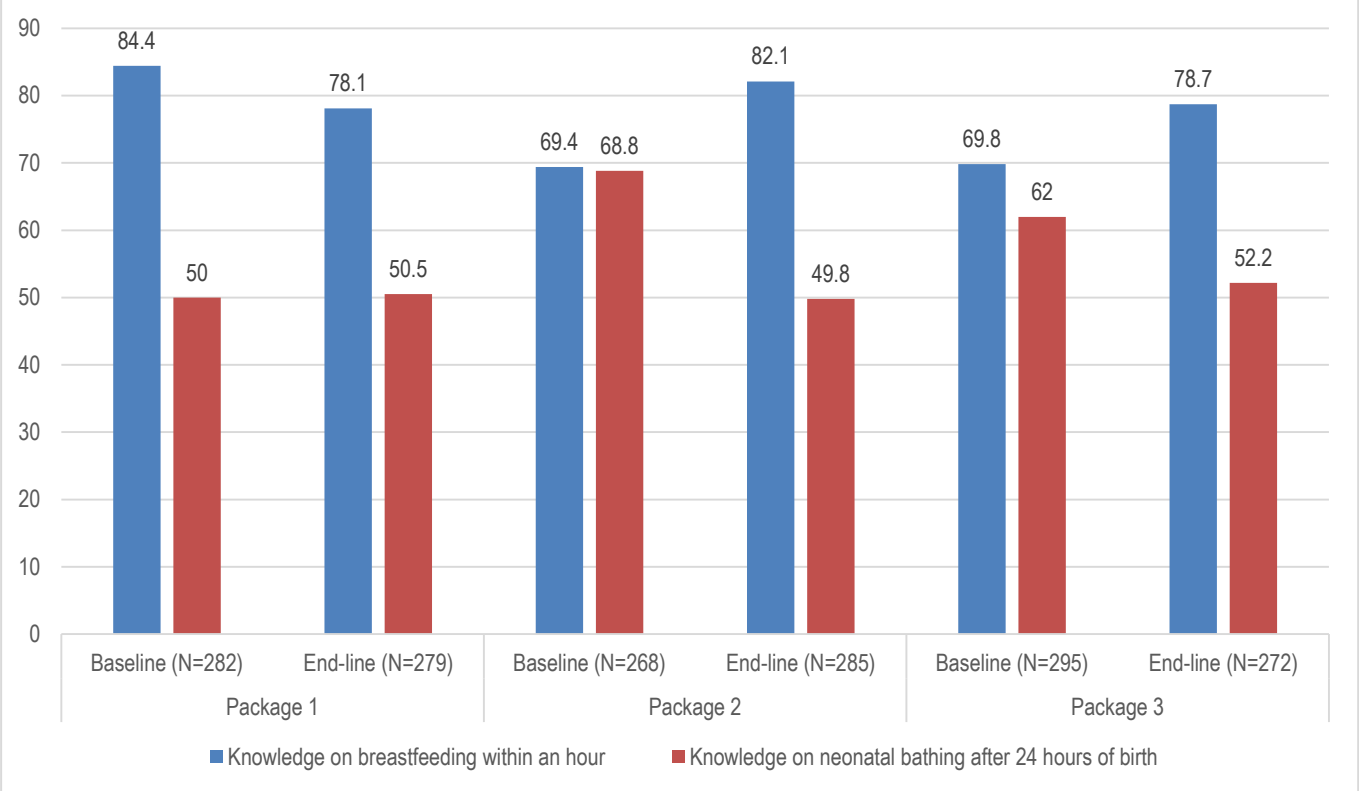


Figure 10.1: Knowledge of breastfeeding and neonatal bathing

Figure 10.2 depicts the knowledge of mothers on danger signs and symptoms related to newborn babies. It is important that mothers are aware of the danger signs related to newborns so they know when they should seek medical attention. These danger signs include difficult fast breathing/difficult breathing, red swollen eyes, too cold or too warm, red and swollen cord, yellow skin, unresponsive/weak cry and unable to suckle. The proportion of recently delivered women with knowledge of at least three of these danger signs is shown in Figure 10.2a while Figure 10.2b shows the knowledge of married women of reproductive age.

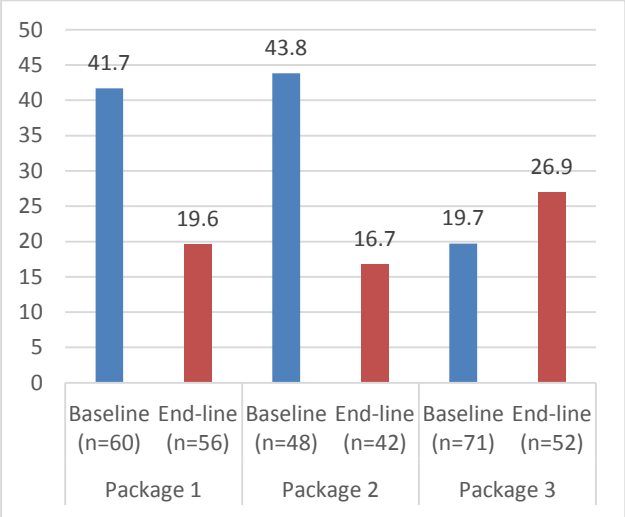
Only in package 3, the proportion of married women of reproductive age and recently delivered women had improved knowledge at the endline compared to the baseline (from 17% to 25% among married women of reproductive age and from 20% to 30.8% among recently delivered women).

Contrary to the above findings, women's improved knowledge on newborn care, including the early initiation of breastfeeding and delayed bathing, was reported in almost all focus group discussions with married women of reproductive age and mothers-in-law, and in-depth interviews with recently delivered women across all packages. They were found to be aware on the changing recommendations on these practices and the majority of respondents were aware on the benefits of breastfeeding within an hour and delayed bathing. In package 3, during the discussion and interviews, respondents frequently reporting RAMP's EAP programme as their source of information on improved knowledge and practice. The following quotes show perceptions on newborn care:

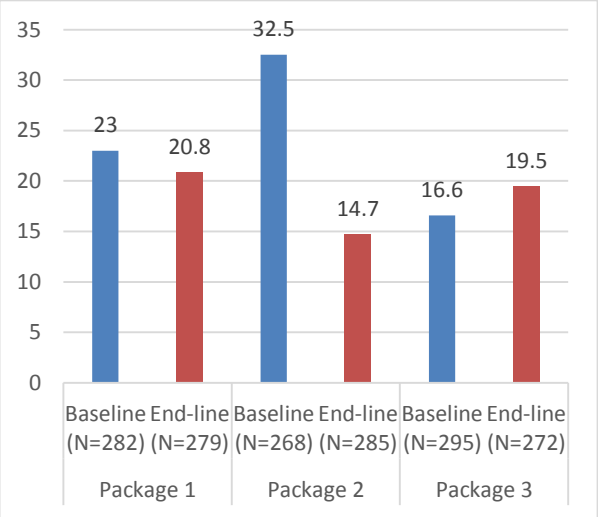
> "Mother's first milk used to be squeezed out before feeding newborn babies, but now the first milk/colostrum is termed the first vaccination for newborn babies." FGD, MWRA, package 3.

> "Newborns are not bathed immediately after birth now. Most babies are delivered at the health facility so there is no bathing of newborns at their homes now. Health staff tell us not to bathe newborns immediately after birth. We used to bathe them with warm water and massage them with oil." FGD, Mothers-in-law, package 2.

Monitoring visits at package 3 sites showed EAP regularly engaging married women of reproductive age and recently delivered women over a period of one year in FY 2014/15. They were provided with information on MNH related issues, including maternal and newborn care; danger signs during labour, the post-partum period and in infants and newborns at monthly meetings of healthy mothers' groups and other community-based activities.



a. Among RDW



b. Among MWRA

Figure 10.2: Knowledge of any 3 signs of neo-natal danger among married women of reproductive age group and recently delivered women

10.2 Newborn Care Practices

The early initiation of breastfeeding and delayed bathing are important for improving neonatal health. The largest improvement among recently delivered women was in the early initiation among package 3 women where it improved by 24 percentage points (Figure 10.3). However, the trend of

colostrum feeding was almost unchanged among package 3 women and slightly decreased among package 1 and 3 women.

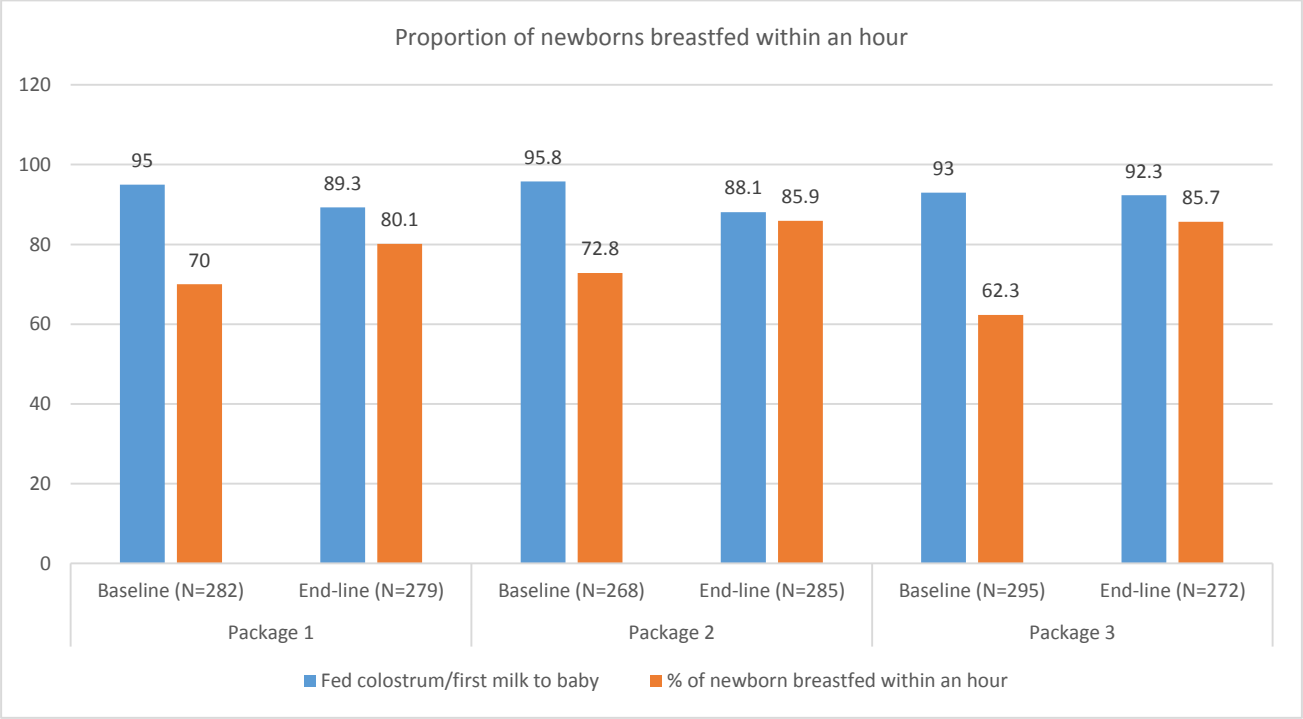


Figure 10.3: Proportion of newborn with colostrum fed and breastfed within an hour

Note: The calculated proportion is adjusted for clustering effect

Table 10.1 shows the reasons reported by recently delivered women who had not initiated breastfeeding within an hour of the birth. No women reported the reasons related to traditional values at the endline whereas they were reported them across all packages at the baseline.

Table 10.1 Reasons for not breastfeeding within an hour

	Package 1		Package 2		Package 3	
	Baseline (n=130)	Endline (n=11)	Baseline (n=14)	Endline (n=5)	Baseline (n=23)	Endline (n=7)
Reasons for not feeding within an hour						
Mother too ill	23.1	9.1	42.9	60.0	39.1	14.3
No milk secretion	23.1	36.4	21.4		17.4	28.6
Baby wouldn't drink	7.7	0.0	14.3	20.0	17.4	28.6
Traditional values	23.1	0.0	7.1	0.0	4.3	0.0
Believe first milk is harmful	7.7	9.1	0.0	0.0	0.0	0.0
Mother in law prevented	0.0	0.0	0.0	0.0	4.3	0.0
Don't know	15.4	45.5	14.3	20.0	21.7	14.3

Delayed bathing of newborns at least to 24 hours prevents hypothermia and other complication. The proportion of women who had delayed the bathing of their newborns increased from the baseline in packages 1 and 3. In package 1, it improved from 51% to 74% while in package 3 it increased from 60% to 74%. The extent of improvement was less than expected in package 3 given the EAP activities in these areas.

The mothers who bathed their babies within 24 hours were asked why. Traditional values and cleansing the baby were the most common responses of package 1 and 3 women whereas for package 2 women it was to clean the baby (33%) (Table 10.2).

The quantitative findings on improved newborn care are in line with the qualitative findings. Mothers-in-law and married women of reproductive age were found discussing improved newborn care practices. Package 3 participants believed the changes are attributable to the EAP and Suaahara programmes. The FGD discussions in package 3 asserted that the traditional practices of discarding the colostrum and newborn bathing had almost disappeared, while a few package 1 and 2 participants continued the practice:

> "My husband cleaned the baby with a dry clean soft cloth and wrapped him up in a warm cloth. We did not bathe him until the following day. ….sister (referring to local EAP mobiliser) had advised us at our mothers' group meeting to only bathe babies after 24 hours …" IDI, RDW, package 3.

> "There was the practice of bathing babies as soon as they were born; but it is non-existent now……they now wipe the baby with a clean cloth and keep it warm and bathe only after 24 hours of delivery; people take care of newborn babies now and inspect whether they suckle/breastfeed well or not….." FGD, MWRA, package 3.

> "Change has occurred in newborn care. Newborns used to be left as they were when they did not suckle; but it is mandatory now to feed newborn babies the colostrum." FGD, MWRA, package 2.

Surprisingly, in a few cases facility staff had bathed babies within 24 hours.

Based on the qualitative and monitoring data from different points of time, participants were found to have information on recommended newborn care practices. However, a few FGD participants across all packages mentioned that some women still follow traditional unhealthy practices either due to not having internalized it or felt its importance or feeling compelled by their traditional values.

Table 10.2: Practices of delayed bathing (RDW)

	Package 1		Package 2		Package 3	
	Baseline (n=60) %	Endline (n=56) %	Baseline (n=48) %	Endline (n=42) %	Baseline (n=71) %	Endline (n=52) %
Time when baby first bathed:						
After 24 hours*	50.7	73.7	71.0	69.1	60.1	73.2
	(n=30) %	(n=16) %	(n=15) %	(n=12) %	(n=27) %	(n=11) %
Reasons for bathing baby within 24 hours:						
To clean the baby	64.3	31.3	53.3	33.3	61.5	18.2
Traditional values	42.9	43.8	20	25.0	15.4	63.6
Mother-in-law insisted	7.1	0.0	6.7	8.3	11.5	0.0
Thought this was right thing to do	0.0	12.5	13.3	8.3	11.5	9.1
To purify the baby	3.6	0.0	0.0	16.7	11.5	9.1
Other relative insisted	0.0	6.3	0.0	0.0	0.0	0.0
Facility staff bathed infant	0.0	6.3	0.0	8.3	0.0	0.0

**The calculated proportion is made adjusting the clustering effect*

10.3 Child Health Service Use

Measles immunization coverage among the 136 12-23 months children surveyed was above 90% across all packages at the baseline and endline (Table 10.3). Coverage in packages 1 and 2 was almost stagnant, while it declined in package 3. Table 10.3 gives the reasons for not immunizing.

Table 10.3: Immunization against measles among 1 year old child (12-23 months) reported by women with under-five years children

	Package 1		Package 2		Package 3	
	Baseline (n=24) %	Endline (n=45) %	Baseline (n=35) %	Endline (n=43) %	Baseline (n=44) %	Endline (n=48) %
Immunized against measles	91.7	91.1	94.3	95.3	100	95.8
	(n=2) N	(n=2) N	(n=2) N	(n=2) N	(n=0) N	(n=2) N
Reasons for not immunizing against measles						
FCHV didn't inform	2	0	0	0	0	0
Forgot	0	0	1	0	0	1
No health worker	0	0	1	0	0	0
Lack of time	0	1	0	1	0	0
Can't afford transport to reach health facility	0	1	0	0	0	0
Other	0	0	0	1	0	0
Don't know	0	0	0	0	0	1

**n: number*

Diarrheal diseases are the most commonly found disease among under-five year children in Nepal. In the survey, women with such children were asked if their children had suffered from diarrhoea in the last 2 weeks or not. The incidence of diarrhoea reduced at the endline in all three packages, from 17% to 5% in package 1, from 12% to 3% in package 2 and from 21% to 9% in package 3. Of the children who had suffered from diarrhoea, in package 3 only 29% were treated with both the zinc and oral rehydration solution (ORS), which was much less that at the baseline (47%). In packages 1 and 2, the proportion of children treated with zinc and ORS increased at the endline. In packages 1 and 3, the most common reason for not giving ORS and zinc was mothers' believing that children would recover on their own (60% and 33% respectively), while in package 2 the most common reason was preference for home remedies (63%).

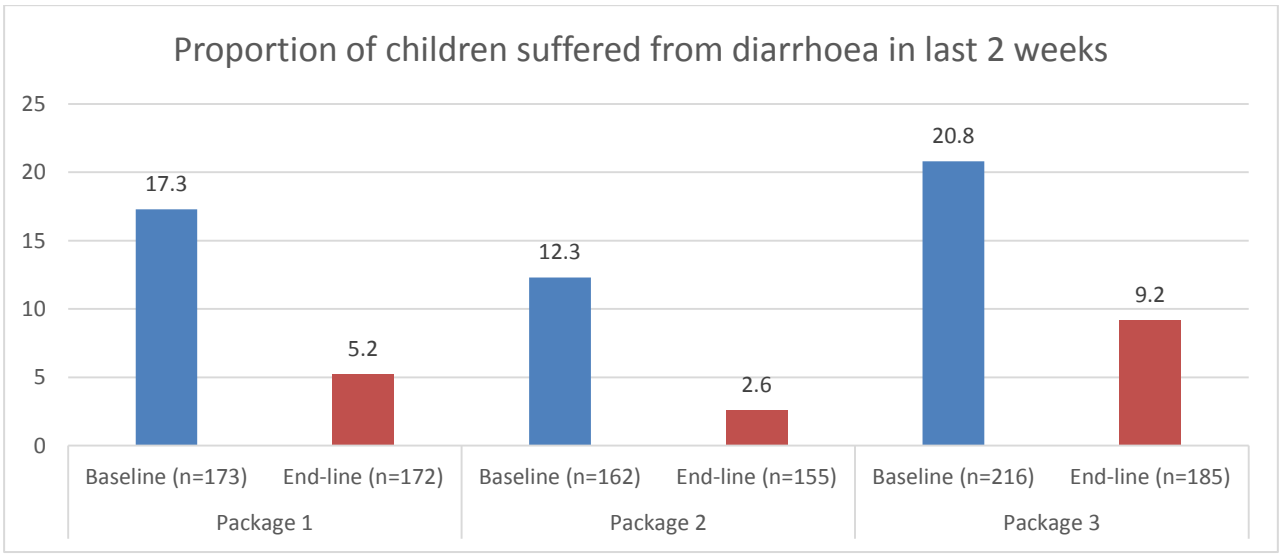


Figure 10.4: Proportion of children under 5 years with diarrhoea

Table 10.4: Proportion of women treating under-five year children with zinc and ORS

	Package 1		Package 2		Package 3	
	Baseline (n=30) %	Endline (n=9) %	Baseline (n=20) %	Endline (n=4) %	Baseline (n=45) %	Endline (n=17) %
Gave ORS	70	55.6	60	75	68.9	64.7
Gave zinc tablets	36.7	44.4	40	50.0	46.7	35.3
Children <5 with diarrhoea treated with zinc and ORS	36.7	44.4	40	50.0	46.7	29.4
	(n=9) %	(n=5) %	(n=8) %	(n=2) %	(n=14) %	(n=12) %
Reason for not giving ORS/zinc to child						
Gave home remedy	55.6	20.0	62.5	50.0	28.6	16.7
Not important	22.2	0.0	12.5	0.0	28.6	25.0
Believed child will recover on their own	11.1	60.0	25.0	0.0	28.6	33.3
Health facility was far	11.1	0.0	0.0	0.0	0.0	0.0
Don't know	0.0	20.0	0.0	50.0	0.0	16.7
No health worker available	0.0	0.0	0.0	0.0	0.0	8.3
Consulted traditional healers	0.0	0.0	0.0	0.0	7.1	0.0
Not given by health worker	0.0	0.0	0.0	0.0	7.1	0.0
	(n=21) %	(n=9) %	(n=12) %	(n=4) %	(n=31) %	(n=17) %
Visited for treatment:						
FCHV	4.8	22.2	33.3	50.0	12.9	0.0
HP/SHP/outreach clinic (ORC)	95.2	22.2	41.6	0.0	87.1	53.0
Private provider	0.0	0.0	25.0	0.0	0.0	0.0
Others	0.0	55.6	0.0	50.0	0.0	47.1

Acute respiratory infections are commonly reported childhood diseases with pneumonia being one of the most common types. The symptoms of pneumonia include coughing with fever and difficult breathing related to chest congestion. The proportion of under-five year children with pneumonia-related symptoms in the two weeks prior to the survey declined in packages 2 and 3, while in package 1 it was nearly stagnant (Figure 10.5).

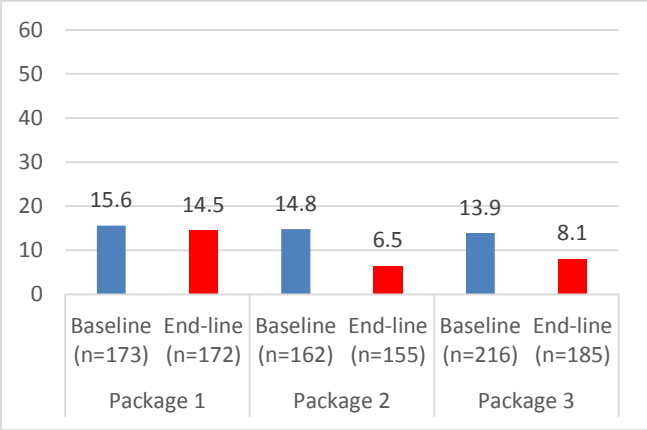


Figure 10.5 (a): Proportion of children under 5 with pneumonia related symptoms

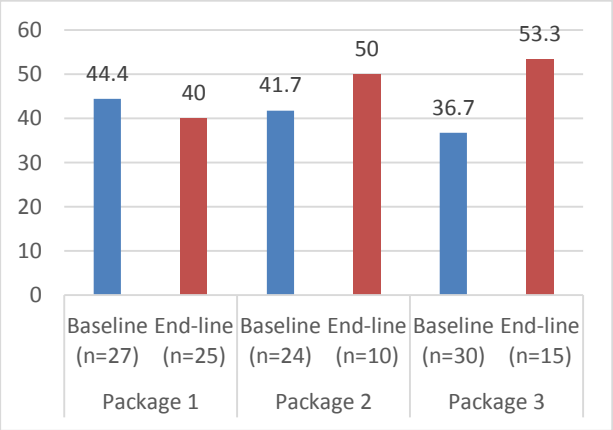


Figure 10.5 (b) Proportion of under 5 children suffering from pneumonia-related symptoms who received antibiotics

CHAPTER ELEVEN

FAMILY SUPPORT AND PERCEPTIONS ON HEALTH CARE SERVICES

This chapter details the perceptions of the MWRA towards free health care services and the support of their family members. The satisfaction levels were also assessed of MWRA who sought services from health facilities and delivery care.

The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 1 and 2 plus demand side strengthening

11.1 Awareness of Free Health Care Services

The Government of Nepal has a free health care policy under which district hospitals, PHCCs, health posts and SHPs should provide outpatient care and selected essential drugs free of charge. Besides, emergency and inpatient care is also supposed to be provided free to selected groups (very poor, poor, destitute, helpless, senior citizens, FCHVs).

Married women of reproductive age were asked if they had heard about the free health care service provided by the government. However, less package 2 and 3 women had heard about the free care service at the endline, dropping from 95% to 92% and 85% to 71% (Figure 11.1). Of the women who had heard of free health care, most reported them being available at health posts across all three packages at the endline. However, the proportion of reporting the health post decreased slightly at the endline in packages 1 and 2. The proportion of women reporting the hospital and sub-health posts increased slightly in all packages (Table 11.1).

Thus, some women are still unaware about the availability of free health care and where it is available — a gap that needs filling to increase the use of health care services.

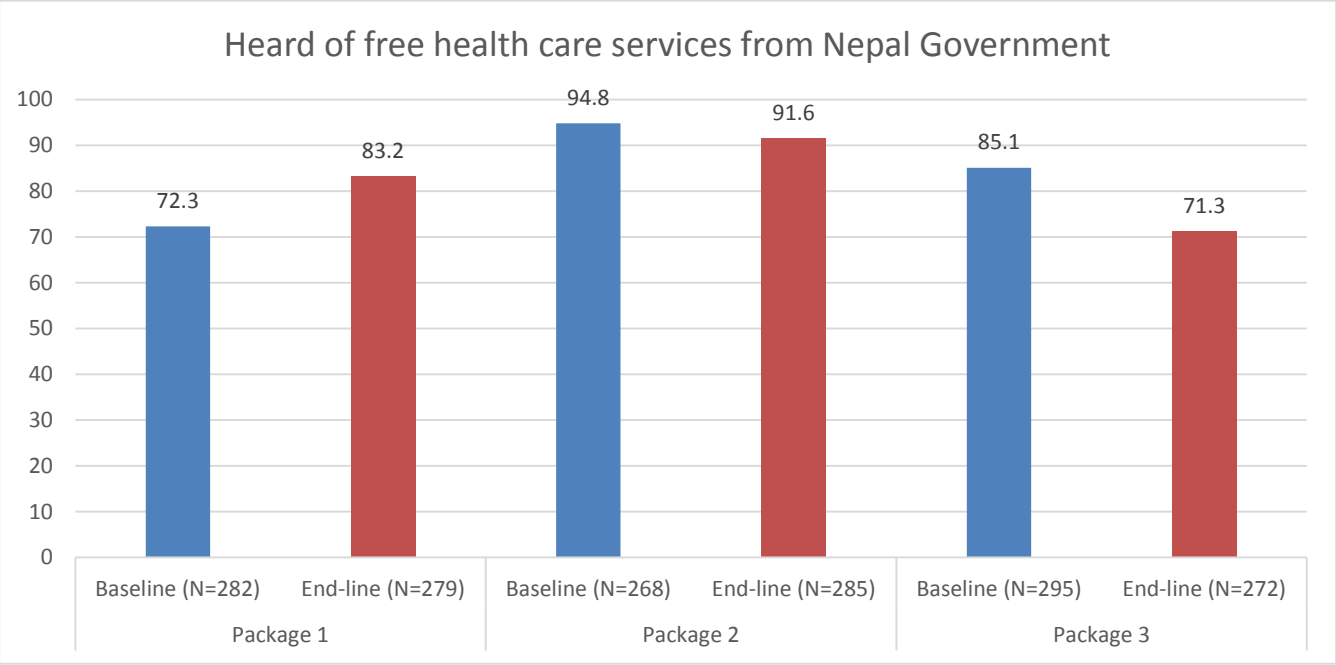


Figure 11.1 Heard of free health care services from Nepal Government

Table 11.1: Awareness of free health care services among married women of reproductive age

	Package 1		Package 2		Package 3	
	Baseline (N=204) %	Endline (N=232) %	Baseline (N=254) %	Endline (N=261) %	Baseline (N=251) %	Endline (N=194) %
Awareness of health facilities providing free health care services:						
Health post	89.2	78.0	89.0	87.0	82.5	87.6
Sub-health post	26.5	43.5	44.5	49.0	23.1	28.4
Government hospital	16.2	26.7	28.3	28.7	21.9	39.7
Outreach clinic	5.4	15.5	4.7	4.2	3.6	13.4
PHCC	3.4	3.9	1.6	1.9	2.4	1.5
NGO/clinic	0.0	0.4	0.0	0.4	0.0	0.5
Don't know	0.0	2.6	0.0	0.4	0.0	6.7

The women were also asked whether they had heard of any person from their community getting the free health care services listed in Table 11.2. The higher proportion was the package 2 women of whom 97% knew about free consultations, 88% knew about free delivery services (88%) and 92% knew about free registration. The proportions remained almost the same at the baseline and endline.

Table 11.2: Heard of free health care services used by the community among married women of reproductive age

	Package 1		Package 2		Package 3	
	Baseline (N=282) %	Endline (N=279) %	Baseline (N=268) %	Endline (N=285) %	Baseline (N=295) %	Endline (N=272) %
Types of free health care services						
Free consultation fee	90.8	94.6	96.3	97.2	85.1	82.7
Delivery services free of charge	83.7	83.5	81.7	88.4	84.7	84.9
Free registration fee	73	91	85.1	92.3	68.1	67.3
Some essential drugs free of charge	62.8	82.4	64	71.6	65.8	65.8
Free drugs	40.1	44.4	47	60	51.2	64
Lab services free of charge	1.4	1.4	15.3	1.8	4.1	4.4
X-rays free of charge	0.7	0.4	6.7	1.1	2.4	2.6

11.2 Use of Health Care Services From Nearest Public Facility

Of all married women of reproductive age interviewed, 53% in package 1, 44% in package 2 and 50% in package 3 had used the health care services of the nearest governmental health facility in the past year. The proportion of women visiting their nearest health facility for health care decreased in packages 2 and 3, and stayed about the same in package 1 (Table 11.3). For package 2 the most commonly reported reasons for the visit was family planning service (21%) while in package 1 and 3 it was the treatment of fever.

Table 11.3: Health care services sought by married women of reproductive age

	Package 1		Package 2		Package 3	
	Baseline (N=282) %	Endline (N=279) %	Baseline (N=268) %	Endline (N=285) %	Baseline (N=295) %	Endline (N=272) %
Received health care services from closest government health facility in last year	52.5	53.4	66.4	44.2	56.3	49.6
	(n=148)	(n=149)	(n=178)	(n=126)	(n=166)	(n=135)
Health problem sought care for:						
Fever	18.2	24.8	22.5	19.0	29.5	18.5
Headache	18.9	16.8	10.7	15.1	10.8	8.1
Gastro-intestinal problems	10.8	6.7	11.3	3.2	16.2	11.1
ANC check-up	14.9	10.7	11.8	7.9	10.2	9.6
Family planning related services	6.1	4.7	10.7	20.6	11.4	15.6
Respiratory tract Infection	6.8	0.7	14.0	1.6	3.0	0.0
Skin problems	6.1	0.7	7.3	3.2	6.0	2.2
Delivery services	6.1	11.4	2.2	15.9	6.0	12.6
Injuries/fractures	6.8	2.0	3.4	3.2	1.2	5.2
Immunization	0.0	6.0	0.0	2.4	0.0	3.0
ENT problems	0.0	5.4	0.0	0.0	0.0	3.7
Reproductive health problem	0.0	4.7	0.0	3.2	0.0	7.4
Others	5.6	5.4	6.3	4.8	5.4	3.0

11.3 Clients Satisfaction with Government Health Services

The World Health Organisation (WHO) defines client satisfaction as a core element of quality health care. Married women of reproductive age who had received health care services in the last year and recently delivered women who had institutional deliveries were asked about their satisfaction on the following seven statements:

- Satisfaction with level of skill of health service provider
- Satisfaction with politeness and friendliness of healthcare provider
- Satisfaction with privacy
- Satisfaction with cleanliness of health facility
- Satisfaction with length of time of waiting at the health facility
- Satisfaction on opening time
- Satisfaction with availability of medicines.

The satisfaction was measured on the five point Likert scale (very satisfied, satisfied, neutral, unsatisfied and very unsatisfied). A composite index was created using the seven statements. First, all responses were summed up and all summed scores were trichotomized with the higher values scaled as '*high*' satisfaction, middle observation as '*moderate*' satisfaction and lower values as '*low*' satisfaction.

The proportion expressing a low level of satisfaction declined sharply among women of all packages (Table 11.4). The proportion with a high level of satisfaction increased more than five-fold among package 5 women and considerably increased in the other two packages. These findings show large increases in the satisfaction of community people:

"The behaviour of health staff was not good before, but has improved a lot and is good now. Some staff even used to 'beat up' pregnant women while delivering." MWRA FGD, package 1.

At their FGD male community leaders expressed their satisfaction with the improved supply of health facility workers:

"Previously, it seemed as if the health facility was only a building with people inside, and we doubted if we could get drugs and other services there. But now the facility has got plenty of supplies and is very clean compared to the past." FGD of male community leader, package 3

Table 11.4: Satisfaction towards health care service among married women of reproductive age who sought service from public health facility

Level of satisfaction	Package 1		Package 2		Package 3	
	Baseline (n=139)	Endline (n=133)	Baseline (n=174)	Endline (n=106)	Baseline (n=156)	Endline (n=118)
High	26.6	55.6	11.5	61.3	35.9	39.8
Moderate	32.4	39.8	33.9	30.2	38.5	53.4
Low	41.0	4.5	54.6	8.5	25.6	6.8

The data in Table 11.5 shows the levels of satisfaction of recently delivered women who had sought institutional delivery service in the past year prior. The level of satisfaction of package 2 women had more than doubled while it stayed almost the same for package 3 women. The data trends are however influenced by changes in delivery site between the baseline and endline. In this regard a higher proportion of women delivered at the health facilities at the endline while the proportion of hospital deliveries decreased.

Table 11.5: Satisfaction of delivery care services among recently delivered women who had institutional deliveries in the past year

Level of satisfaction	Package 1		Package 2		Package 3	
	Baseline (n=17)	Endline (n=32)	Baseline (n=20)	Endline (n=21)	Baseline (n=15)	Endline (n=31)
High	52.9	71.9	30.0	71.4	60.0	58.1
Medium	29.4	25.0	30.0	19.0	33.3	35.5
Low	17.6	3.1	40.0	9.5	6.7	6.5

However, at focus group discussions and in-depth interviews, respondents across all packages said they were satisfied with delivery care services at the nearest health facility.

"Health worker behaviour is good and they advised me to take care of myself; like older family members they told me not to carry heavy loads." IDI, RDW with institutional delivery, package 3.

"It is okay. I am satisfied with the services provided by my local health facility at the delivery of my daughter-in-law there last year." FGD, Mothers-in-law, package 2.

"We find recently delivered women and their families content with the delivery service provided by our local health facility…" FGD, male community leader, package 3.

"All problems can be solved if I go there. For instance, sometimes placenta doesn't come out and they can take it out quickly and easily…a lot of things can be done there, such as stopping excessive bleeding…." IDI, RDW, package 2.

Figure 11.2 shows the proportion of institutionally delivered women getting vital services before their discharge. The proportion of women reporting that their blood pressure was checked before discharge was stagnant in package 2, while the proportion declined in packages 1 and 3.

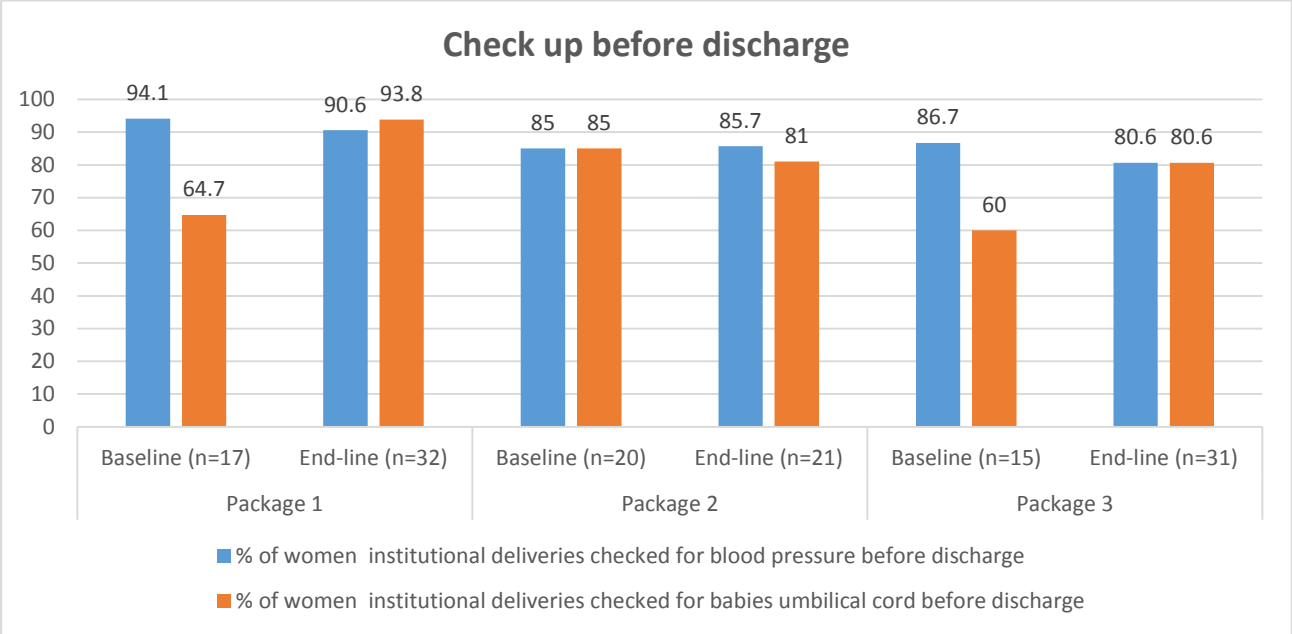


Figure 11.2: Proportion of recently delivered women in health facility who received vital check-ups before the discharge

11.4 Family Support and Involvement in Maternal Health Care

Family engagement in seeking health care services is important to increase service acceptability and use especially related to maternal health. Table 11.6 shows the proportion of women discussing the types of reproductive health topics presented in Table 11.6 with their husbands. There was an increase in the proportion of women from all three packages who discussed delivery care with their husbands. The highest rates of increase were among package 3 women (delivery care, 83% to 92% and ANC, 86% to 92%). The proportion of RDW discussing family planning and safe abortion with their husbands increased the most among package 1 women (47% to 82% and 17% to 71% respectively). The proportion of women discussing reproductive health issues with other relatives increased across all packages (Table 11.6).

Although there have been improvements among the package 3 women who took part in EAP activities such as the husband-wife and mothers-in-law with daughter-in-law interactions, the trends across the three packages are similar on discussing family planning and safe abortions, which is not the result expected.

Based on the qualitative endline data, married women of reproductive age discussed reproductive health matters with their husbands more comfortably than with other family members across all packages.

> "We discuss with our husband the use of family planning methods and decide on this together. I don't say anything about it even to my mothers-in-law as I feel awkward to talk to her about this." FGD, MWRA, package 2.

Male community leaders in package 1 also highlighted that husband-wife relations have changed a lot and nowadays they easily discussion many matters:

> "Husbands and wives used to feel shy to walk together before, but they walk shoulder to shoulder now and the bond seems much closer." FGD, Male community leader, package 1.

Table 11.6: Recently delivered women who discussed with husband and other relatives about reproductive health matters

Discussed with husband on:	Package 1		Package 2		Package 3	
	Baseline (N=60) %	Endline (N=56) %	Baseline (N=48) %	Endline (N=42) %	Baseline (N=71) %	Endline (N=52) %
Delivery care	85.0	87.5	85.4	88.1	83.1	92.3
ANC	81.7	85.7	87.5	88.1	85.9	92.3
Family planning methods and services	46.7	82.1	81.3	73.8	66.2	92.3
PNC	58.3	85.7	56.3	78.6	60.6	88.5
Safe abortion	16.7	71.4	27.1	61.9	40.8	69.2
Discussed with other relatives on:						
Delivery care	61.7	85.7	64.6	88.1	62.0	84.6
ANC	58.3	83.9	52.1	88.1	64.8	82.7
PNC	38.3	80.4	43.8	78.6	46.5	71.2
Family planning methods and services	11.7	60.7	29.2	54.8	23.9	61.5
Safe abortion	6.7	62.5	10.4	47.6	18.3	44.2

Table 11.7 details the socio-cultural practices found in families related to pregnancy care:

- The proportion of married women reporting that families provide special care to pregnant women increased only in package 2 (67% to 86%) while the proportion of such women being allowed to leave productive work to attend ANC services increased the most at package 1 and 3 households.
- There was also an increase in the proportion of recently delivered women in package 2 saying that their families provided special care during pregnancy (81% in baseline to 93% at endline). The highest increase in RDW being allowed to leave their chores for ANC increased substantially in package 1 (from 68% to 91%) and also in package 3 (from 73% to 89%).

Table 11.7: Socio-cultural practices during pregnancy reported by

	Package 1		Package 2		Package 3	
	Baseline %	Endline %	Baseline %	Endline %	Baseline %	Endline %
Married women of reproductive age	**(N=282)**	**(N=279)**	**(N=268)**	**(N=285)**	**(N=295)**	**(N=272)**
Families provide special care (extra rest, nutritious diet, increase food intake) to pregnant women	90.4	82.4	66.8	86.3	84.1	82.0
Families permission for pregnant women to leave their domestic and productive work to attend ANC services	58.9	88.2	72.8	72.3	71.5	77.2
Women who delivered in last 1 year	**(n=60)**	**(n =56)**	**(n=48)**	**(n=42)**	**(n=71)**	**(n=52)**
Families provide special care (extra rest, nutritious diet, increase food intake) to pregnant women (RDW)	91.70	92.90	81.30	92.90	90.10	94.20
Families permission for pregnant women to leave their domestic and productive work to attended ANC services (RDW)	68.30	91.10	83.30	85.70	73.20	88.50

Based on the qualitative endline data, most women and mothers-in-law from all packages recognised pregnancy as a special condition demanding special care, more so, in package 3 where married women expressed close bonding with family members during their pregnancy.

> "My husband and mother-in-law used to advise me not to miss any pregnancy check-ups and to visit the local health facility for this and other health problems. My mother-in-law told me to leave my usual works as to go for pregnancy tests (referring to ANC check-ups)." FGD, MWRA, package 3.

> "Pregnancy is a sensitive and dangerous condition for a woman, so we have to take care of them well for the health of mother and baby…. I looked after my pregnant youngest daughter-in-law a lot last year." FGD, mothers-in-law, package 3.

Besides, qualitative findings from other packages suggest that community perceptions towards pregnant women are vital determinants as pregnant women need better care than at other times.

> "Nutritional foods such as, green vegetables, beans, fish, meat and ghee are given to pregnant women during pregnancy." FGD, MWRA, package 2.

> "My family members supported me a lot during my pregnancy. They helped manage time for ANC check-ups…." FGD, MWRA, package 1.

> "We have to manage time for them as it is appropriate to go for check-ups. In total, it has to be performed four times. Apart from these times, you should go in between if problems arise…." FGD, Mothers-in-law, package 2.

> "My mother-in-law looked after me when I was pregnant by performing activities like fetching nutritional food, supporting in household chores, doing harder works by herself and asking me to do simpler works." FGD, MWRA, package 2.

Besides, the qualitative finding also showed the positive role many mothers-in-law play during pregnancies. Mothers-in-law were said by most of the married women of reproductive age across all packages to be supportive to their daughters-in-law by taking on some of their workloads including washing clothes, looking after children, cleaning, washing dishes to allow their daughters-in-law to visit the health facility for MNH related issues. They also helped by accompanying them or by finding a companion for them to go to the health facility. However, a recently delivered woman in package 1 reported otherwise:

> "My family members were unaware about the antenatal check-ups so they didn't tell me to visit the health facility for a check-up." IDI, RDW, non-institutional delivery, package 1.

The married women of reproductive age were also asked about the carrying out of harmful socio-cultural practices during the post-delivery period. The proportion of women reporting such practices at the endline decreased across all packages (Table 11.8) including bathing within an hour, discarding the colostrum, pre-lacteal feeding and keeping the baby without clothes. There were more improvements between the baseline and the endline among package 2 women and their households with large reductions in bathing babies within an hour of birth (from 63% to 31%), in pre lacteal feeding (from 45% to 28%), on discarding colostrum (from 17% to 11%) and on keeping the baby without clothes (from 44% to 10%).

Although a large decrease was seen, a considerable number of women/households still carry out such practices. The qualitative results show respondents across all packages denying that such practices are still carried out. Most of the married women of reproductive age in all packages were found aware of current newborn care practices such as delayed bathing, keeping babies warm, feeding mothers' first milk, exclusive breastfeeding. They said that they did not allow or do bathing within one hour, prelacteal feeding, discarding mothers' first milk, keeping without clothes, etc. (with a few

exceptions), but admitted the prevalence of such practices in the past. Similarly, the practice of keeping mothers and their babies outside the house was reported as almost non-existent in their villages. However, superstitious practices, such as not allowing mothers to prepare or touch the family's food before her baby's naming ceremony (at about six months), and not allowing recently delivered women to cross rivers were reported to still exist by most women across all packages. In addition, some women said that post-partum women are restricted from consuming foods that are thought to harm infants' health. Spicy, pungent foods were reported to be restricted.

"Family members do not eat foods touched (prepared) by recently delivered women until the *nwaran* (naming ceremony) in our village." FGD, MWRA, package 1.

"Some people say that a recently delivered woman shouldn't cross rivers with a baby as bad spirits may catch them and make them sick. They say that rivers shouldn't be crossed until six months of delivery as it is a sin to do so." FGD, MWRA, package 3.

An important influence to mention here is that the USAID funded Suaahara programme was operating in all packages, and was quoted by local people, especially from packages 1 and 2, during monitoring visits and in qualitative findings as a source of knowledge on food habits in the pregnancy and post-partum periods.

"Suaahara has told us to eat one time more during pregnancy than usual." IDI with RDW, non-institutional delivery, package 1.

"Suaahara has informed us about the importance of eating nutritional foods, such as, green vegetables, vitamins, fruits, fishes, meat. They advise us to eat four times a day and we eat accordingly." FGD, MWRA, package 2

"In some places, the practice of not eating eggs is still present… as it is believed that they might cause seizures/convulsions… But, Suaahara suggests we eat eggs…" FGD, MWRA, package 3.

Similarly, Suaahara was quoted by local people in the qualitative findings in package 2 as the only source of information on the importance of eating nutritional foods, such as, green vegetables, vitamins, fruits, fishes, and meats:

"Suaahara is the only programme which has informed us on these aspects of nutritional supplements." FGD, MWRA, package 2

Table 11.8: Harmful sociocultural practices after delivery reported by married women of reproductive age

	Package 1		Package 2		Package 3	
	Baseline (N=282) %	Endline (N=279) %	Baseline (N=268) %	Endline (N=285) %	Baseline (N=295) %	Endline (N=272) %
Restriction on preparing food	75.9	64.9	81.3	50.9	62.7	54.0
Certain foods are restricted	63.8	47.7	61.9	27.7	46.8	32.0
Restriction on contact within the family	61.3	50.5	66.0	41.4	50.5	41.5
Physical prohibition (can't cross the river)	61.0	49.8	63.1	34.4	44.1	30.9
Bathing infant within an hour	46.1	43.7	63.1	30.5	53.6	34.6
Pre-lacteal feeds to infant	47.2	35.8	45.1	28.4	34.6	19.9
Keeping baby without clothes	41.8	49.1	44.0	10.2	36.6	15.4
Discard colostrum/first milk	13.5	6.1	16.8	10.5	9.8	10.7
Keeping mother and infant outside of home	11.7	7.9	8.6	6.0	7.5	2.2

Mothers-in-law play a major role related to the use of maternal health care services in Nepal where there is a joint family culture and people tend to follow the traditional practices guided by their elders. The recently delivered women were asked about the level of encouragement from their mothers-in-law on accessing health services and newborn care. There were mixed results (Table 11.9):

- Among the package 3 women (who all took part in the RAMP MNH awareness raising activities) there was a small improvement in mothers-in-law encouraging ANC visits but a decline in encouraging institutional delivery and delayed bathing.
- Among the package 2 women there was a large increase in mothers-in-law encouraging institutional delivery but a decline in the other two indicators'
- Among package 1 women there was an increase in encouragement for institutional delivery and delayed bathing but not for ANC visits.

Table 11.9: Encouragement by mother-in-law for ANC and delivery care

	Package 1		Package 2		Package 3	
	Baseline (n=60) %	Endline (n=56) %	Baseline (n=48) %	Endline (n=42) %	Baseline (n=71) %	Endline (n=52) %
Mother-in-law encouraged 4 ANC visit	17.6	14.6	34.1	19.5	11.2	13.6
Mother-in-law encouraged to deliver at health facility	20.2	25.0	25.3	43.1	24.1	17.1
Mother in law encouraged delayed neonatal bathing (after 24 hours(	23.4	37.2	37.9	32.7	31.0	22.8

**The proportion calculated are made adjusting the clustering effect*

Although the percentage of recently delivered women reporting encouragement by mothers-in-law declined in package 3 for two of the indicators, qualitative findings on the awareness level of mothers-in-law in the communities of this package was found to be good:

> "My daughter-in-law didn't go to the health facility despite me asking her several times. She had experienced pain during her previous pregnancy after taking iron tablet so she didn't agree to visit the health facility again…she said 'I won't go mummy, I will rather die here." Mother-in-law of recently delivered women in package 3

> "I helped my daughter-in-law by relieving her from household works to go for her ANC check-ups… and I encouraged her to visit the health facility without feeling shy." FGD, Mothers-in-law, package 3.

> "We need to bathe newborns only 24 hours after delivery. People used to bathe newborns immediately, but now they are cleaned with a cloth and wrapped in a rag and placed on mother's chest." FGD, Mothers-in-law, package 3.

> "It was different when we delivered babies…I delivered three of my five children while working in the fields; but times have changed, so six months ago I suggested my daughter-in-law to deliver her baby at Sinwa (referring to Limkhim HP)." FGD, Mothers-in-law, package 3.

One of the recently delivered women in package 3 who had an institutional delivery mentioned the encouraging role of her mother in law during her pregnancy:

> "My mother-in-law advised me on the need of going for pregnancy checks in certain months." IDI, RDW, package 3.

CHAPTER TWELVE

CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The 3 packages:	1. District level support only	2. Package 1 plus health facility strengthening	3. Packages 1 and 2 plus demand side strengthening

Conclusions and Limitations

The Remote Areas Maternal and Newborn Health Pilot (RAMP) project looked at a supply side and demand side model for improving access to maternal and newborn health services in a representative district in eastern Nepal. The supply side interventions were implemented in some areas on their own and in other areas alongside the demand side interventions. An evaluation was carried out at the end of the 15 month pilot programme to compare the baseline and endline situation against selected indicators to identify any changes that could have resulted from the interventions.

The evaluation found that some maternal health indicators had improved. Four ANC visits as per the protocol, institutional delivery, SBA attended deliveries and IFA intake, had improved the most among package 3 respondents at the endline (these respondents had participated in the EAP activities that aimed to increase knowledge on MNH). The awareness of this package's participants seems to have also improved more compared to the other packages. Furthermore, when institutional deliveries (one of the key indicators of maternal health) are stratified by the distance of women from their nearest health facility, those residing nearby (within 30 minutes) had a much higher proportion of institutional deliveries (93%) than counterparts from the other two packages (65% in package 1 and 50% [Table 9.11]).

However, other results gave a more mixed picture. It is important to recognise the improvement in some indicators in package 1 (the comparison group), including institutional delivery, family support, awareness on free health care services. These notably improved and in some indicators performance was better than in the intervention (package 2 and 3) groups. This shows the need to further explore other influences on the package 1 areas during the intervention period. Other interventions like the Suaahara project could have influenced the outcome indicator results. However, evaluation findings suggest that RAMP's EAP activities have encouraged participants to have institutional deliveries. However, for the women residing in less accessible parts of remote communities who still lag behind in accessing delivery care services, it is difficult to infer the effectiveness of the activities for all such groups. Besides, practices related to newborn care including breastfeeding within an hour of delivery and delayed neonatal bathing have also improved substantially in package 3.

However, other maternal health service use indicators, including the proportion completing the course of IFA supplements did not show any substantial changes in the EAP implemented areas compared to other packages. Likewise, quantitative indicators related to family support did not show any improvement over the intervention compared to the two non-EAP packages. However, qualitative findings showed otherwise as they indicated increased community knowledge and improved practices among package 3 women. The differences between the qualitative and quantitative data need to be assessed carefully. It is therefore difficult to conclude whether or not the EAP activities related to family support to pregnant women significantly improved the maternal and neonatal health outcomes.

The limitations of the study must be considered while evaluating the results:

- The main limitation is the inadequate sample size to perform a multilevel analysis of the results, which if carried out could have adjusted the effect of confounding factors like other influential programs, geography, distance and other demographic characteristics.
- Besides, one of the clusters in package 2 (from Sablakhu VDC) was not included in the baseline but was in the endline, which could have influenced the package 2 results.

The other RAMP intervention (the supply side intervention in the package 2 and 3 areas) has largely delivered the expected result of improvements from baseline to endline in these areas and lesser or no improvements in the package 1 areas:

- HFOMC training was found to be effective as it was related to improved decision-making processes on MNH related activities.
- The availability of supplies and commodities for MNH service improved at the facilities that took part in the supply side interventions.

Process monitoring at different points of time during the intervention also found that the proposed quality improvement action plans were gradually and effectively implemented at the package 2 and 3 health facilities. It is thus very likely that the improvements in the availability of signal functions are related to the supply side interventions. Staff at the supply side intervention facilities had become more aware about infection prevention during monitoring and at the endline compared to the baseline and compared to package 1 facilities. The major limitation in assessing the health facility results is the poorly maintained HMIS records to compare baseline to endline results.

The evaluation findings suggest that the intervention has had mixed results. The supply side intervention seems to have worked better. However, the sustainability of the supply side improvements needs to be considered. The ownership and initiation on improving MNH services by HFOMCs is a potentially sustainable impact, but the improved availability of supplies and commodities will probably only be sustained if a holistic chain of coordination between health facility, district, regional and central level authorities is maintained for the adequate supply of these commodities as and when needed beyond the project implementation period.

Also, it is probably not justified to evaluate outcome level changes at the household and health facility levels after the short time of only one year of interventions. Other notable limitations were the one month delay in starting the EAP intervention and the earthquakes of April and May 2015 and the associated landslides that negatively impacted project implementation, especially in Angkhop VDC.

Recommendations

1. The project was run considering remoteness as a key barrier to accessing MNH services. At the end of the project, physical access in terms of distance and transport remained the major barriers to accessing these services. This highlights the need for actions beyond those taken by RAMP; for instance, none of the communities in the package 2 and 3 areas had an ambulance, which is a crucial determinant for access to MNH services in remote areas with roads and given that labour pain often starts during night. Such areas need an improved transport network with ambulances where possible; otherwise motorbike-ambulances should be considered. Porters with '*doko*' baskets or stretchers as 'human ambulances' are options for areas without roads, although this should be initiated and managed locally.
2. Another important hindrance to access was the unavailability of an updated list of local pregnant women at local health facilities (although a record was maintained by the EAP social mobilizers). This would help local health workers track the status of pregnant women regarding their regular follow up visits to seek health care services.
3. Furthermore, the establishment of subsidized accommodation near birthing centres for the companions of women coming for delivery would encourage institutional deliveries.
4. More effort is needed to reach the most deprived women target groups with quality ANC services at outreach clinics. Very few women were found using this service. As a matter of fact, ANC visits as per the protocol (4ANC visits) was below par compared to the first visits. Strengthening service delivery, frequency and coverage of such health facility conducted outreach clinics are possible areas for improving access to MNH service.

5. There needed to be more effective coordination between implementers and health facility workers in EAP type interventions to produce synergistic result.
6. Home delivery attended by SBAs should be considered acceptable for remote areas where labour pain could start at night and there are no transport services.

Finally, this evaluation recommends the need for the continuity of RAMP type interventions with the added components discussed above.

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ANNEXES

Annex Table 1: Experience of stock-outs of essential drugs (baseline)

	Package 1		Package 2		Package 3		District hospital		Total	
	Last 12 months	Current	Last 12 months	current	Last 12 months	Current	Last 12 months	current	Last 12 months	current
Oxytocin injection 10 I.U in 1 ml ampule	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**
Magnesium sulphate injection	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**2**
Gentamycin injection	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**5**	**4**
Lignocaine (lidocaine) Inj. 2% ml (HCl) in Vial	0	0	2	0	0	0	0	0	0	0
Paracetamol tab 500 mg	2	0	2	0	0	0	0	0	4	0
Paracetamol Inj. 150 mg/ml	4	4	4	3	5	5	0	0	13	12
Paracetamol syrup 125 mg./ 5ml.	1	0	2	0	2	2	0	0	5	2
Chlorpheniramine Tab 4 mg	1	1	2	1	1	0	1	1	5	3
Pheniramine Inj. 22.75 mg	2	2	3	2	4	4	1	0	10	8
Albendazole (chewable tab 400 mg)	0	0	0	0	0	0	1	0	1	0
Metronidazole Tab 200 mg	0	0	1	0	0	0	1	1	2	1
Metronidazole Tab 400 mg	2	1	2	1	0	0	1	0	5	2
Metronidazole Benzoate Oral Sus 100mg/5ml	1	1	2	2	0	0	1	0	4	3
Metronidazole Benzoate Oral Sus 200mg/5ml	3	3	4	4	2	2	1	1	10	10
Amoxycillin Cap/Tab 500 mg	3	1	3	1	3	3	0	0	9	5
Amoxycillin Cap/Tab 250 mg	0	0	0	0	0	0	1	1	1	1
Amoxycillin disp. tab 125 mg	2	1	2	2	0		1	1	5	4
Amoxycillin disp. tab 250 mg	2	2	1	1	2	2	1	1	6	6
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 100mg+20mg	1	0	1	0	1	1	1	1	4	2
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 400mg+80mg(SS)	1	0	1	0	1	1	0	0	3	1
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 800mg +160mg DS	3	3	3	2	4	4	1	1	11	10
Aluminium hydroxide + mangnesium Hydroxide 250 mg tab	1	1	0	0	2	2	1	1	4	4
Chloramphenicol 1% eye application	1	1	1	1		0	1	1	3	3

	Package 1		Package 2		Package 3		District hospital		Total	
	Last 12 months	Current	Last 12 months	current	Last 12 months	Current	Last 12 months	current	Last 12 months	current
Compound solution of Sodium lactate (Ringer' L) infusion solution	3	3	1	1	4	4	0	0	8	8
Ferrous salt + folic Acid 60+0.4 mg cap/tab	2	1	0	0	0	0	1	0	3	1
Gamma benzene hexachloride 1% lotion	2	1	1	1	3	3	0	0	6	5
Gentamycin 80 mg/2ml injection	2	1	1	1	1	1	1	1	5	4
Hyoscine butylbromide 10 mg cap/tab	2	1	1	0	2	2	1	0	6	3
Oral rehydration solutions (ORS) powder	1	0	1	1	1	0	1	0	4	1
Povidine Iodine 5% solution	0	0	1	1	0	0		0	1	1
Sulfamethoxazole + trimethoprim 100/20mg disp tab	1	1	0	0	1	1	0	0	2	2
Total (N)	**4**	**4**	**4**	**4**	**5**	**5**	**1**	**1**	**14**	**14**

Annex Table 2: Experience of stock-outs of essential drugs (endline)

	Package 1		Package 2		Package 3		District hospital		Total	
	Last 12 months	Current	Last 12 months	Current	Last 12 months	Current	Last 12 months	Current	Last 12 months	Current
Oxytocin injection 10 I.U. in 1ml Ampoule	**0**	2	**1**	1	**0**	4	**0**	**0**	**1**	8
Magnesium sulphate Injection	**0**	2	**0**	2	**1**	3	**0**	**0**	**1**	8
Gentamycin 80 mg/2ml injection	**1**	1	**0**	2	**2**	2	**0**	**0**	**3**	6
Lignocaine (lidocaine) Inj. 2% ml (HCl) in Vial	0	0	0	0	0	0	0	1	0	0
Paracetamol tab 500 mg	0	0	0	0	0	0	0	1	0	0
Paracetamol Inj. 150 mg/ml	4	3	4	5	3	4	0	1	11	12
Paracetamol Syrup 125 mg./ 5ml.	0	0	1	0	1	0	0	1	2	0
Chlorpheniramine Tab 4 mg	0	0	1	1	0	0	0	1	1	1
Pheniramine Inj. 22.75 mg	2	2	3	1	2	2	0	1	7	5
Albendazole (Chewable Tab 400 mg)	0	0	0	0	0	0	0	1	0	0
Metronidazole Tab 200 mg	0	0	0	0	0	0	0	1	0	0
Metronidazole Tab 400 mg	1	1	5	5	2	3	0	0	8	9
Metronidazole Benzoate Oral Sus 100mg/5ml	0	0	1	0	2	0	0	0	3	0
Metronidazole Benzoate Oral Sus 200mg/5ml	3	3	4	5	3	3	0	0	10	11
Amoxycillin Cap/Tab 500 mg	1	1	2	1	2	3	0	0	5	5
Amoxycillin Cap/Tab 250 mg	0	0	1	1	2	1	0	0	3	2
Amoxycillin disp. tab 125 mg	0	0	1	0	1	2	0	0	2	2
Amoxycillin disp. tab 250 mg	2	2	0	1	1	1	0	0	3	4
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 400mg+80mg(SS)	0	0	0	0	0	0	0	0	0	0
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 800mg +160mg DS	4	4	4	5	3	3	0	0	11	12
Aluminium hydroxide + mangnesium Hydroxide 250 mg tab	0	0	0	0	1	0	0	0	1	0
Chloramphenicol 1% eye application	1	1	3	2	2	2	0	0	6	5
Compound solution of Sodium lactate (Ringer' L) infusion solution	0	0	2	1	0	0	0	0	2	1

	Package 1		Package 2		Package 3		District hospital		Total	
	Last 12 months	Current	Last 12 months	Current	Last 12 months	Current	Last 12 months	Current	Last 12 months	Current
Ferrous salt + folic acid 60+0.4 mg cap/tab	0	0	0	0	1	0	0	0	1	0
Gamma benzene hexachloride 1% lotion	0	0	1	1	1	1	0	0	2	2
Gentamycin 80 mg/2ml injection	2	1	1	1	2	3	0	0	5	5
Hyoscine butylbromide 10 mg cap/tab	2	2	1	1	1	2	0	0	4	5
Oral rehydration solutions (ORS) powder	0	0	2	1	0	0	0	0	2	1
Povidine Iodine 5% solution	0	0	0	0	0	0	0	0	0	0
Sulfamethoxazole + trimethoprim 100/20mg disp tab	1	1	0	0	0	0	0	0	1	1
Total (N)	**4**	**4**	**5**	**5**	**5**	**5**	**1**	**1**	**15**	**15**

Annex Table 3: Number of times of stock-outs drugs in last fiscal year (Baseline)

	Package 1	Package 2	Package 3	District Hospital	Total
Oxytocin injection 10 I.U. in 1ml Ampoule	**0**	**1.00**	**0**	**0**	**1**
Total (n)	**0**	**1**	**0**	**0**	**1**
Magnesium sulphate	**1**	**0**	**0**	**0**	**1**
Total (n)	**2**	**0**	**0**	**0**	**2**
Gentamycin injection	**5**				
Total (n)	**2**				
Average Lignocaine Inj. 2% ml (HCL) in vial	0.00	1.00	0.00	0.00	1.00
Total (n)	0	2	0	0	2
Average Paracetamol tab 500 mg	2.00	1.00	0.00	0.00	1.50
Total (n)	2	2	0	0	4
Average Paracetamol Inj 150mg/ml	1.00	1.00	1.00	0.00	1.00
Total (n)	3	4	4	0	11
Average Paracetamol Syrup 125 mg/5ml	1.00	2.00	1.00	0.00	1.50
Total (n)	1	2	1	0	4
Average Chlorpheniramine tab 4 mg	1.00	2.00	0.00	1.00	1.50
Total (n)	1	2	0	1	4
Average Pheniramine Inj. 22.75 mg	1.00	3.67	1.00	1.00	2.00
Total (n)	2	3	2	1	8
Average Albendazole (chewable tab 400mg)	0.00	0.00	0.00	1.00	1.00
Total (n)	0	0	0	1	1
Average Metronidazole Tab 200 mg	0.00	1.00	0.00	1.00	1.00
Total (n)	0	1	0	1	2
Average Metronidazole Tab 400 mg	1.00	1.50	0.00	1.00	1.20
Total (n)	2	2	0	1	5
Average Metronidazole benzoate Oral Sus 100mg/5ml	1.00	1.00	0.00	4.00	1.75
Total (n)	1	2	0	1	4
Average Metronidazole benzoate Oral Sus 200mg/5ml	1.00	1.50	1.00	1.00	1.22
Total (n)	3	4	1	1	9
Average Amoxycillin Cap/Tab 500 mg	1.67	1.00	1.00	0.00	1.29
Total (n)	3	2	2	0	7
Average Amoxycillin Cap/Tab 250 mg	0.00	0.00	0.00	1.00	1.00

	Package 1	Package 2	Package 3	District Hospital	Total
Total (n)	0	0	0	1	1
Average Amoxycillin disp. tab 125 mg	1.00	1.50	0.00	1.00	1.20
Total (n)	2	2	0	1	5
Average Amoxycillin disp. tab 250 mg	1.00	1.00	1.00	1.00	1.00
Total (n)	2	1	1	1	5
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 100mg+20mg	1.00	1.00	1.00	1.00	1.00
Total (n)	1	1	1	1	4
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 400mg+80mg(SS)	1.00	1.00	1.00	0.00	1.00
Total (n)	1	1	1	0	3
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 800mg+1600mg DS	1.00	1.00	1.00	1.00	1.00
Total (n)	3	3	2	1	9
Average Aluminium hydroxide+magnesium Hydroxide 250 mg tab	1.00	0.00	0.00	4.00	2.50
Total (n)	1	0	0	1	2
Average Chloramphenicol 1% eye Applicaps	1.00	1.00	0.00	3.00	1.67
Total (n)	1	1	0	1	3
Average Compound solution of Sodium Lactate (Ringer L) infusion solution	1.00	1.00	1.00	0.00	1.00
Total (n)	3	1	1	0	5
Average Ferrous salt+folic acid	2.50	0.00	0.00	1.00	2.00
Total (n)	2	0	0	1	3
Average Gamma benzene hexachloride 1% lotion	1.00	3.00	2.00	0.00	1.75
Total (n)	2	1	1	0	4
Average Gentamycin 80 mg/2ml injection	2.50	1.00	0.00	2.00	2.00
Total (n)	2	1	0	1	4
Average Hyocine butylbromide 10 mg/cap/tab	1.00	1.00	1.00	1.00	1.00
Total (n)	2	1	1	1	5
Average Oral rehydration solutions (ORS) powder	2.00	1.00	2.00	1.00	1.50
Total (n)	1	1	1	1	4
Average Povidine Iodine 5% solution	0.00	3.00	0.00	0.00	3.00
Total (n)	0	1	0	0	1
Average Sulfamethoxazole+trimethoprin 100/20mg disp.tab	1.00	0.00	0.00	0.00	1.00
Total (n)	1	0	0	0	1

Annex Table 4: Number of times of stock-outs drugs in last fiscal year (Endline)

	Package 1	Package 2	Package 3	District Hospital	Total
Oxytocin injection 10 I.U. in 1ml Ampoule	**0**	**1**	**0**	**0**	**1**
Total (n)	**0**	**1**	**0**	**0**	**1**
Magnesium sulphate	**0**	**0**	**3**	**0**	**3**
Total (n)	**0**	**0**	**1**	**0**	**1**
Gentamycin injection	**2**	**0**	**1**	**0**	**1.33**
Total (n)	**1**	**0**	**2**	**0**	**3**
Average Lignocaine Inj. 2% ml (HCL) in vial	0	0	0	0	0
Total (n)	0	2	0	0	0
Average Paracetamol tab 500 mg	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Paracetamol Inj 150mg/ml	1	1	1	0	1
Total (n)	3	4	3	0	10
Average Paracetamol Syrup 125 mg/5ml	0	4	1	0	2.5
Total (n)	0	1	1	0	2
Average Chlorpheniramine tab 4 mg	0	2	0	0	2
Total (n)	0	1	0	0	1
Average Pheniramine Inj. 22.75 mg	1	1	1	0	1
Total (n)	1	1	2	0	4
Average Albendazole (chewable tab 400mg)	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Metronidazole Tab 200 mg	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Metronidazole Tab 400 mg	1	1	1	0	1
Total (n)	1	4	2	0	7
Average Metronidazole benzoate Oral Sus 100mg/5ml	0	1	1.5	0	1.33
Total (n)	0	1	2	0	3
Average Metronidazole benzoate Oral Sus 200mg/5ml	1	1	1	0	1
Total (n)	2	4	3	0	9
Average Amoxycillin Cap/Tab 500 mg	1	1	1	0	1
Total (n)	1	2	2	0	5
Average Amoxycillin Cap/Tab 250 mg	0	1	1.5	0	1.33
Total (n)	0	1	2	0	3

	Package 1	Package 2	Package 3	District Hospital	Total
Average Amoxycillin disp. tab 125 mg	0	0	1	0	1
Total (n)	0	0	1	0	1
Average Amoxycillin disp. tab 250 mg	1	0	1	0	1
Total (n)	2	0	1	0	3
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 100mg+20mg	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 400mg+80mg(SS)	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 800mg+1600mg DS	25	1	1	0	9.73
Total (n)	4	4	3	0	11
Average Aluminium hydroxide+magnesium Hydroxide 250 mg tab	0	0	1	0	1
Total (n)	0	0	1	0	1
Average Chloramphenicol 1% eye Applicaps	1	1.33	1	0	1.17
Total (n)	1	3	2	0	6
Average Compound solution of Sodium Lactate (Ringer L) infusion solution	0	1	0	0	1
Total (n)	0	1	0	0	1
Average Ferrous salt+folic acid	0	0	1	0	1
Total (n)	0	0	1	0	1
Average Gamma benzene hexachloride 1% lotion	0	1	2	0	1.5
Total (n)	0	1	1	0	2
Average Hyocine butylbromide 10 mg/cap/tab	1	1	1	0	1
Total (n)	1	1	1	0	3
Average Oral rehydration solutions (ORS) powder	0	1	0	0	1
Total (n)	0	2	0	0	2
Average Povidine Iodine 5% solution	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Sulfamethoxazole+trimethoprin 100/20mg disp.tab	1	0	0	0	1
Total (n)	1	0	0	0	1

Annex Table 5: Number of days that drugs were stocked-out (Baseline)

	Package 1	Package 2	Package 3	District Hospital	Total
Oxytocin injection 10 I.U in 1 ml ampule	**0**	**36**	**0**	**0**	**36**
Total (n)	**0**	**1**	**0**	**0**	**1**
Magnesium sulphate injection	**212.50**	**0**	**0**	**0**	**212.50**
Total (n)	**2**	**0**	**0**	**0**	**2**
Average Lignocaine Inj. 2% ml (HCL) in vial	0.00	24.00	0.00	0.00	24.00
Total (n)	0	2	0	0	2
Average Paracetamol tab 500 mg	10.00	192.50	0.00	0.00	101.25
Total (n)	2	2	0	0	4
Average Paracetamol Inj 150mg/ml	365.00	296.25	365.00	0.00	340.00
Total (n)	3	4	4	0	11
Average Paracetamol Syrup 125 mg/5ml	3.00	23.00	5.00	0.00	13.50
Total (n)	1	2	1	0	4
Average Chlorpheniramine tab 4 mg	4.00	55.00	0.00	120.00	58.50
Total (n)	1	2	0	1	4
Average Pheniramine Inj. 22.75 mg	365.00	253.33	365.00	90.00	288.75
Total (n)	2	3	2	1	8
Average Albendazole (chewable tab 400mg)	0.00	0.00	0.00	20.00	20.00
Total (n)	0	0	0	1	1
Average Metronidazole Tab 200 mg	0.00	8.00	0.00	15.00	11.50
Total (n)	0	1	0	1	2
Average Metronidazole Tab 400 mg	187.50	55.50	0.00	19.00	101.00
Total (n)	2	2	0	1	5
Average Metronidazole benzoate Oral Sus 100mg/5ml	5.00	190.00	0.00	33.00	104.50
Total (n)	1	2	0	1	4
Average Metronidazole benzoate Oral Sus 200mg/5ml	365.00	291.25	365.00	365.00	332.22
Total (n)	3	4	1	1	9
Average Amoxycillin Cap/Tab 500 mg	130.33	38.50	197.50	0.00	123.29
Total (n)	3	2	2	0	7
Average Amoxycillin Cap/Tab 250 mg	0.00	0.00	0.00	120.00	120.00
Total (n)	0	0	0	1	1
Average Amoxycillin disp. tab 125 mg	186.00	212.50	0.00	365.00	232.40

	Package 1	Package 2	Package 3	District Hospital	Total
Total (n)	2	2	0	1	5
Average Amoxycillin disp. tab 250 mg	365.00	365.00	365.00	365.00	365.00
Total (n)	2	1	1	1	5
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 100mg+20mg	5.00	30.00	365.00	95.00	123.75
Total (n)	1	1	1	1	4
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 400mg+80mg(SS)	5.00	15.00	365.00	0.00	128.33
Total (n)	1	1	1	0	3
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 800mg+1600mg DS	365.00	365.00	365.00	365.00	365.00
Total (n)	3	3	2	1	9
Average Aluminium hydroxide+magnesium Hydroxide 250 mg tab	365.00	0.00	0.00	110.00	237.50
Total (n)	1	0	0	1	2
Average Chloramphenicol 1% eye Applicaps	365.00	90.00	0.00	90.00	181.67
Total (n)	1	1	0	1	3
Average Compound solution of Sodium Lactate (Ringer L) infusion solution	365.00	365.00	365.00	0.00	365.00
Total (n)	3	1	1	0	5
Average Ferrous salt+folic acid	22.00	0.00	0.00	30.00	24.67
Total (n)	2	0	0	1	3
Average Gamma benzene hexachloride 1% lotion	197.50	62.00	0.00	0.00	152.33
Total (n)	2	1	0	0	3
Average Gentamycin 80 mg/2ml injection	27.50	365.00	0.00	60.00	120.00
Total (n)	2	1	0	1	4
Average Hyocine butylbromide 10 mg/cap/tab	185.00	15.00	28.00	20.00	86.60
Total (n)	2	1	1	1	5
Average Oral rehydration solutions (ORS) powder	9.00	7.00	60.00	10.00	21.50
Total (n)	1	1	1	1	4
Average Povidine Iodine 5% solution	0.00	55.00	0.00	0.00	55.00
Total (n)	0	1	0	0	1
Average Sulfamethoxazole+trimethoprin 100/20mg disp.tab	365.00	0.00	0.00	0.00	365.00
Total (n)	1	0	0	0	1

Annex Table 6: Number of days that drugs were stocked-out (Endline)

	Package 1	Package 2	Package 3	District Hospital	Total
Oxytocin injection 10 I.U in 1 ml ampule	**0**	**15**	**0**	**0**	**15**
Total (n)	**0**	**1**	**0**	**0**	**1**
Magnesium sulphate injection	**0**	**0**	**30**	**0**	**30**
Total (n)	**0**	**0**	**1**	**0**	**1**
Gentamycin 80 mg/2ml injection	**32**	**0**	**15**	**0**	**23.5**
Total (n)	**1**	**0**	**1**	**0**	**2**
Average Lignocaine Inj. 2% ml (HCL) in vial	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Paracetamol tab 500 mg	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Paracetamol Inj 150mg/ml	365	365	365	0	365
Total (n)	3	4	3	0	10
Average Paracetamol Syrup 125 mg/5ml	0	15	15	0	15
Total (n)	0	1	1	0	2
Average Chlorpheniramine tab 4 mg	0	22	0	0	22
Total (n)	0	1	0	0	1
Average Pheniramine Inj. 22.75 mg	365	365	365	0	365.00
Total (n)	1	1	2	0	4
Average Albendazole (chewable tab 400mg)	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Metronidazole Tab 200 mg	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Metronidazole Tab 400 mg	365	254.25	365	0	301.71
Total (n)	1	4	2	0	7
Average Metronidazole benzoate Oral Sus 100mg/5ml	0	50	36	0	40.67
Total (n)	0	1	2	0	3
Average Metronidazole benzoate Oral Sus 200mg/5ml	365	365	365	0	365
Total (n)	2	4	3	0	9
Average Amoxycillin Cap/Tab 500 mg	365	198	365	0	298.2
Total (n)	1	2	2	0	5
Average Amoxycillin Cap/Tab 250 mg	0	73	270	0	171.5

	Package 1	Package 2	Package 3	District Hospital	Total
Total (n)	0	1	1	0	2
Average Amoxycillin disp. tab 125 mg	0	0	90	0	90
Total (n)	0	0	1	0	1
Average Amoxycillin disp. tab 250 mg	365	0	90	0	273.33
Total (n)	2	0	1	0	3
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 100mg+20mg	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 400mg+80mg(SS)	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Sulfamethoxazole+Trimethoprim (cotrim) tab 800mg+1600mg DS	190	365	365	0	301.36
Total (n)	4	4	3	0	11
Average Aluminium hydroxide+magnesium Hydroxide 250 mg tab	0	0	10	0	10
Total (n)	0	0	1	0	1
Average Chloramphenicol 1% eye Applicaps	365	186.67	365	0	258
Total (n)	1	3	1	0	5
Average Compound solution of Sodium Lactate (Ringer L) infusion solution	0	35	0	0	35
Total (n)	0	1	0	0	1
Average Ferrous salt+folic acid	0	0	16	0	16
Total (n)	0	0	1	0	1
Average Gamma benzene hexachloride 1% lotion	0	365	30	0	197.5
Total (n)	0	1	1	0	2
Average Hyocine butylbromide 10 mg/cap/tab	32	60	180	0	90.67
Total (n)	1	1	1	0	3
Average Oral rehydration solutions (ORS) powder	0	18	0	0	18
Total (n)	0	2	0	0	2
Average Povidine Iodine 5% solution	0	0	0	0	0
Total (n)	0	0	0	0	0
Average Sulfamethoxazole+trimethoprin 100/20mg disp.tab	365	0	0	0	365
Total (n)	1	0	0	0	1

Annex Table 7: Health facilities' experiences of stock-outs of supplies and essential drugs (Baseline)

	Package 1				Package 2				Package 3					District Hospital
	Masing HP	Lingtep SHP	Thumbedin SHP	Sinam HP	Sablakhu HP	Limbudin SHP	Nesung HP	Sobuwa SHP	Thinglabu HP	Santhakra SHP	Tapethok SHP	Siwa HP (Ilaka)	Khejenim HP	
Lignocaine (lidocaine) Inj. 2% ml (HCl) in Vial					1			1						
Paracetamol tab 500 mg			1	1	1	1								
Paracetamol Inj. 150 mg/ml	1	1	1	1	1	1	1	1	1	1	1	1	1	
Paracetamol Syrup 125 mg./ 5ml.			1			1		1			1	1		
Chlorpheniramine Tab 4 mg	1				1	1				1				1
Pheniramine Inj. 22.75 mg	1	1			1	1		1		1	1	1	1	1
Albendazole (Chewable Tab 400 mg)														1
Metronidazole Tab 200 mg						1								1
Metronidazole Tab 400 mg		1		1	1	1								1
Metronidazole Benzoate Oral Sus 100mg/5ml			1		1			1						1
Metronidazole Benzoate Oral Sus 200mg/5ml		1	1	1	1	1	1	1			1		1	1
Amoxycillin Cap/Tab 500 mg		1	1	1	1	1		1	1			1	1	
Amoxycillin Cap/Tab 250 mg														1
Amoxycillin disp. tab 125 mg	1			1	1		1							1
Amoxycillin disp. tab 250 mg	1			1			1		1		1			1
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 100mg+20mg			1					1	1					1
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 400mg+80mg(SS)			1					1		1				
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 800mg +160mg DS	1	1		1	1	1	1			1	1	1	1	1
Aluminium hydroxide + mangnesium Hydroxide 250	1										1		1	1

	Package 1				Package 2				Package 3					District Hospital
	Masing HP	Lingtep SHP	Thumbedin SHP	Sinam HP	Sablakhu HP	Limbudin SHP	Nesung HP	Sobuwa SHP	Thinglabu HP	Santhakra SHP	Tapethok SHP	Siwa HP (Ilaka)	Khejenim HP	
mg tab														
Chloramphenicol 1% eye application		1				1								1
Compound solution of Sodium lactate (Ringer' L) infusion solution	1		1	1				1	1	1	1		1	
Ferrous salt + folic Acid 60+0.4 mg cap/tab	1			1										1
Gamma benzene hexachloride 1% lotion	1	1				1			1		1		1	
Gentamycin 80 mg/2ml injection	1			1			1						1	1
Hyoscine butylbromide 10 mg cap/tab	1		1			1						1	1	1
Oral rehydration solutions (ORS) powder				1		1			1					1
Povidine Iodine 5% solution						1								
Sulfamethoxazole + trimethoprim 100/20mg disp tab	1										1			

Note: 1 stands for stock out.

Annex Table 8: Health facilities' experiences of stock-outs of supplies and essential drugs (Endline)

	Package 1				Package 2					Package 3					District Hospital
	Masing HP	Lingtep SHP	Thumbedin SHP	Sinam HP	Sablakhu HP	Limbudin SHP	Nesung HP	Sobuwa SHP	Ankhop SHP	Thinglabu HP	Santhakra HP	Tapethok SHP	Siwa HP (Ilaka)	Khejenim HP	
Lignocaine (lidocaine) Inj. 2% ml (HCl) in Vial															
Paracetamol tab 500 mg															
Paracetamol Inj. 150 mg/ml	1	1	1	1		1	1	1	1	1	1		1		
Paracetamol Syrup 125 mg./ 5ml.								1			1				
Chlorpheniramine Tab 4 mg								1							
Pheniramine Inj. 22.75 mg		1		1		1		1	1		1			1	
Albendazole (Chewable Tab 400 mg)															
Metronidazole Tab 200 mg															
Metronidazole Tab 400 mg		1			1	1	1	1	1		1		1		
Metronidazole Benzoate Oral Sus 100mg/5ml					1						1	1			
Metronidazole Benzoate Oral Sus 200mg/5ml	1	1		1		1	1	1	1	1	1		1		
Amoxycillin Cap/Tab 500 mg		1						1	1		1			1	
Amoxycillin Cap/Tab 250 mg						1					1			1	
Amoxycillin disp. tab 125 mg									1			1			
Amoxycillin disp. tab 250 mg		1	1									1			
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 100mg+20mg															
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 400mg+80mg(SS)	1	1	1	1		1	1	1	1	1	1		1		
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 800mg +160mg DS											1				
Aluminium hydroxide + mangnesium Hydroxide 250 mg tab		1				1		1	1		1		1		
Chloramphenicol 1% eye application						1			1						
Compound solution of Sodium lactate (Ringer' L) infusion solution														1	

	Package 1				Package 2					Package 3					District Hospital
	Masing HP	Lingtep SHP	Thumbedin SHP	Sinam HP	Sablakhu HP	Limbudin SHP	Nesung HP	Sobuwa SHP	Ankhop SHP	Thinglabu HP	Santhakra HP	Tapethok SHP	Siwa HP (Ilaka)	Khejenim HP	
Ferrous salt + folic Acid 60+0.4 mg cap/tab								1			1				
Gamma benzene hexachloride 1% lotion		1		1		1					1	1			
Gentamycin 80 mg/2ml injection		1		1		1								1	
Hyoscine butylbromide 10 mg cap/tab					1	1									
Oral rehydration solutions (ORS) powder															
Povidine Iodine 5% solution		1													
Sulfamethoxazole + trimethoprim 100/20mg disp tab															

Note: 1 stands for stock out.

Annex Table 9: Stock-outs of essential drugs (baseline

	Package 1	Package 2	Package 3	District Hospital	Total
Lignocaine (lidocaine) Inj. 2% ml (HCl) in Vial	0	0	0	0	0
Paracetamol tab 500 mg	0	0	0	0	0
Paracetamol Inj. 150 mg/ml	4	3	5	0	12
Paracetamol Syrup 125 mg./ 5ml.	0	0	2	0	2
Chlorpheniramine Tab 4 mg	1	1	0	1	3
Pheniramine Inj. 22.75 mg	2	2	4	0	8
Albendazole (Chewable Tab 400 mg)	0	0	0	0	0
Metronidazole Tab 200 mg	0	0	0	1	1
Metronidazole Tab 400 mg	1	1	0	0	2
Metronidazole Benzoate Oral Sus 100mg/5ml	1	2	0	0	3
Metronidazole Benzoate Oral Sus 200mg/5ml	3	4	2	1	10
Amoxycillin Cap/Tab 500 mg	1	1	3	0	5
Amoxycillin Cap/Tab 250 mg	0	0	0	1	1
Amoxycillin disp. tab 125 mg	1	2		1	4
Amoxycillin disp. tab 250 mg	2	1	2	1	6
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 100mg+20mg	0	0	1	1	2
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 400mg+80mg(SS)	0	0	1	0	1
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 800mg +160mg DS	3	2	4	1	10
Aluminium hydroxide + mangnesium Hydroxide 250 mg tab	1	0	2	1	4
Chloramphenicol 1% eye applicap	1	1	0	1	3
Compound solution of Sodium lactate (Ringer' L) infusion solution	3	1	4	0	8
Ferrous salt + folic Acid 60+0.4 mg cap/tab	1	0	0	0	1
Gamma benzene hexachloride 1% lotion	1	1	3	0	5
Gentamycin 80 mg/2ml injection	1	1	1	1	4
Hyoscine butylbromide 10 mg cap/tab	1	0	2	0	3
Oral rehydration solutions (ORS) powder	0	1	0	0	1
Povidine Iodine 5% solution	0	1	0	0	1
Sulfamethoxazole + trimethoprim 100/20mg disp tab	1	0	1	0	2
Total (N)	**4**	**4**	**5**	**1**	**14**

Annex Table 10: Stock-out of essential drugs (endline)

	Package 1	Package 2	Package 3	District Hospital	Total
Oxytocin injection 10 I.U. in 1ml Ampoule	2	1	4	1	8
Magnesium sulphate Injection	2	2	3	1	8
Gentamycin 80 mg/2ml injection	1	2	2	1	6
Lignocaine (lidocaine) Inj. 2% ml (HCl) in Vial	0	0	0	0	0
Paracetamol tab 500 mg	0	0	0	0	0
Paracetamol Inj. 150 mg/ml	3	5	4	0	12
Paracetamol Syrup 125 mg./ 5ml.	0	0	0	0	0
Chlorpheniramine Tab 4 mg	0	1	0	0	1
Pheniramine Inj. 22.75 mg	2	1	2	0	5
Albendazole (Chewable Tab 400 mg)	0	0	0	0	0
Metronidazole Tab 200 mg	0	0	0	0	0
Metronidazole Tab 400 mg	1	5	3	0	9
Metronidazole Benzoate Oral Sus 100mg/5ml	0	0	0	0	0
Metronidazole Benzoate Oral Sus 200mg/5ml	3	5	3	0	11
Amoxycillin Cap/Tab 500 mg	1	1	3	0	5
Amoxycillin Cap/Tab 250 mg	0	1	1	0	2
Amoxycillin disp. tab 125 mg	0	0	2	0	2
Amoxycillin disp. tab 250 mg	2	1	1	0	4
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 400mg+80mg(SS)	0	0	0	0	0
Sulfamethoxazole+ Trimethoprim (cotrim) Tab 800mg +160mg DS	4	5	3	0	12
Aluminium hydroxide + mangnesium Hydroxide 250 mg tab	0	0	0	0	0
Chloramphenicol 1% eye application	1	2	2	0	5
Compound solution of Sodium lactate (Ringer' L) infusion solution	0	1	0	0	1
Ferrous salt + folic Acid 60+0.4 mg cap/tab	0	0	0	0	0
Gamma benzene hexachloride 1% lotion	0	1	1	0	2
Gentamycin 80 mg/2ml injection	1	1	3	0	5

	Package 1	Package 2	Package 3	District Hospital	Total
Hyoscine butylbromide 10 mg cap/tab	2	1	2	0	5
Oral rehydration solutions (ORS) powder	0	1	0	0	1
Povidine Iodine 5% solution	0	0	0	0	0
Sulfamethoxazole + trimethoprim 100/20mg disp tab	1	0	0	0	1
Total	4	5	5	1	15

Annex Table 11: Drugs most likely to be stored past expiry date at time of monitoring visit (baseline)

	Package 1	Package 2	Package 3	District hospital	Total
Expired stock Lignocaine (lidocaine) Inj. 2% ml (HCl) in Vial	0	1	0	0	1
Expired stock Paracetamol tab 500 mg	0	0	0	0	0
Expired stock Paracetamol Inj. 150 mg/ml	0	0	0	0	0
Expired stock Paracetamol Syrup 125 mg./ 5ml.	0	1	0	0	1
Expired stock Chlorpheniramine Tab 4 mg	0	0	0	0	0
Expired stock Pheniramine Inj. 22.75 mg	0	0	0	0	0
Expired stock Albendazole (Chewable Tab 400 mg)	0	0	0	0	0
Expired stock Metronidazole Tab 200 mg	0	0	0	0	0
Expired stock Metronidazole Tab 400 mg	0	0	0	0	0
Expired stock Metronidazole Benzoate Oral Sus 100mg/5ml	0	0	0	0	0
Expired stock Metronidazole Benzoate Oral Sus 200mg/5ml	0	0	0	0	0
Expired stock Amoxycillin Cap/Tab 500 mg	0	1	0	0	1
Expired stock Amoxycillin Cap/Tab 250 mg	0	0	0	0	0
Expired stock Amoxycillin disp. tab 125 mg	0	0	0	0	0
Expired stock Amoxycillin disp. tab 250 mg	0	0	0	0	0
Expired stock Sulfamethoxazole+ Trimethoprim (cotrim) Tab 100mg+20mg	0	0	0	0	0
Expired stock Sulfamethoxazole+ Trimethoprim (cotrim) Tab 400mg+80mg(SS)	0	0	0	0	0
Expired stock Sulfamethoxazole+ Trimethoprim (cotrim) Tab 800mg +160mg DS	0	0	0	0	0
Expired stock Aluminium hydroxide + mangnesium Hydroxide 250 mg tab	0	0	0	0	0
Expired stock Chloramphenicol 1% eye application	0	0	0	0	0
Expired stock Compound solution of Sodium lactate (Ringer' L) infusion solution	0	0	0	0	0
Expired stock Ferrous salt + folic Acid 60+0.4 mg cap/tab	0	0	0	0	0
Expired stock Gamma benzene hexachloride 1% lotion	0	0	0	0	0
Expired stock Gentamycin 80 mg/2ml injection	0	0	0	0	0
Expired stock Hyoscine butylbromide 10 mg cap/tab	0	0	0	0	0
Expired stock Oral rehydration solutions (ORS) powder	0	0	1	0	1
Expired stock Povidine Iodine 5% solution	0	0	0	0	0
Expired stock Sulfamethoxazole + trimethoprim 100/20mg disp tab	0	0	0	0	0
Total (N)	**4**	**4**	**5**	**1**	**14**

Annex Table 12: Drugs most likely to be stored past expiry date at time of monitoring visit (endline)

	Package 1	Package 2	Package 3	District Hospital	Total
Expired stock Lignocaine (lidocaine) Inj. 2% ml (HCl) in Vial	0	0	0	0	0
Expired stock Paracetamol tab 500 mg	0	0	0	0	0
Expired stock Paracetamol Inj. 150 mg/ml	0	0	0	0	0
Expired stock Paracetamol Syrup 125 mg./ 5ml.	0	0	0	0	0
Expired stock Chlorpheniramine Tab 4 mg	0	0	0	0	0
Expired stock Pheniramine Inj. 22.75 mg	0	1	0	0	1
Expired stock Albendazole (Chewable Tab 400 mg)	0	0	0	0	0
Expired stock Metronidazole Tab 200 mg	0	0	0	0	0
Expired stock Metronidazole Tab 400 mg	0	0	0	0	0
Expired stock Metronidazole Benzoate Oral Sus 100mg/5ml	0	0	0	1	1
Expired stock Metronidazole Benzoate Oral Sus 200mg/5ml	0	0	0	0	0
Expired stock Amoxycillin Cap/Tab 500 mg	0	0	0	0	0
Expired stock Amoxycillin Cap/Tab 250 mg	0	0	0	0	0
Expired stock Amoxycillin disp. tab 125 mg	0	0	0	0	0
Expired stock Amoxycillin disp. tab 250 mg	0	0	0	0	0
Expired stock Sulfamethoxazole+ Trimethoprim (cotrim) Tab 100mg+20mg	0	0	0	0	0
Expired stock Sulfamethoxazole+ Trimethoprim (cotrim) Tab 400mg+80mg(SS)	0	0	0	0	0
Expired stock Sulfamethoxazole+ Trimethoprim (cotrim) Tab 800mg +160mg DS	0	0	0	0	0
Expired stock Aluminium hydroxide + mangnesium Hydroxide 250 mg tab	0	0	0	0	0
Expired stock Chloramphenicol 1% eye application	0	0	0	0	0
Expired stock Compound solution of Sodium lactate (Ringer' L) infusion solution	0	0	0	0	0
Expired stock Ferrous salt + folic Acid 60+0.4 mg cap/tab	0	0	0	0	0
Expired stock Gamma benzene hexachloride 1% lotion	0	0	0	0	0
Expired stock Gentamycin 80 mg/2ml injection	1	0	1	0	2
Expired stock Hyoscine butylbromide 10 mg cap/tab	0	0	0	0	0
Expired stock Oral rehydration solutions (ORS) powder	0	0	0	0	0
Expired stock Povidine Iodine 5% solution	0	0	0	0	0
Expired stock Sulfamethoxazole + trimethoprim 100/20mg disp tab	0	0	0	0	0
Total (N)	**4**	**5**	**5**	**1**	**15**

Annex Table 13: SBA attended delivery by selected background characteristics

Characteristics	Package 1		Package 2		Package 3	
	Deliveries conducted by SBA	Total (N)	Deliveries conducted by SBA	Total (N)	Deliveries conducted by SBA	Total (N)
Women's education						
Illiterate	50.0	8	33.3	3	66.7	9
Literate	58.3	48	51.3	39	55.8	43
Caste/ethnicity						
Ethnic group	60.5	38	53.8	26	54.5	44
Brahmans and Chhetris	50.0	12	54.5	11	100.0	3
Dalits	50.0	6	20.0	5	60.0	5
Distance/time to reach nearest government health facility						
Within 30 minutes	64.7	17	50.0	2	85.7	14
30-60 minutes	56.7	30	65.0	20	50.0	18
More than 1 hour	44.4	9	35.0	20	45.0	20
Total (N)	**57.1**	**56**	**50.0**	**42**	**57.7**	**52**

Annex Table 14: ANC visit and ANC visit per protocol by selected background characteristics

Characteristics	Package 1			Package 2			Package 3		
	Received ANC check-up during last pregnancy	Four ANC visits as per protocol	Total (N)	Received ANC check-up during last pregnancy	Four ANC visits as per protocol	Total (N)	Received ANC check-up during last pregnancy	Four ANC visits as per protocol	Total (N)
Women's education									
Illiterate	62.5	37.5	8	100	33.3	3	100	44.4	9
Literate	95.8	54.2	48	100	46.2	39	95.3	46.5	43
Caste/ethnicity									
Ethnic group	92.1	44.7	38	100	30.8	26	95.5	43.2	44
Brahmans & Chhetris	91.7	83.3	12	100	72.7	11	100	66.7	3
Dalits	83.3	33.3	6	100	60	5	100	60	5
Distance/time to reach nearest government health facility									
Within 30 minutes	100	88.2	17	100		2	100	42.9	14
30-60 minutes	93.3	36.7	30	100	40	20	94.4	44.4	18
More than 1 hour	66.7	33.3	9	100	55	20	95	50	20
Total (N)	**91.1**	**51.8**	**56**	**100**	**45.2**	**42**	**96.2**	**46.2**	**52**

Annex Table 15: Aware of free health care service by selected background characteristics

Characteristics	Package 1		Package 2		Package 3	
	Heard about the free health care services	Total (N)	Heard about the free health care services	Total (N)	Heard about the free health care services	Total (N)
Women's education						
Illiterate	63.9	61	85.7	35	52.1	71
Literate	88.5	218	92.4	250	78.1	201
Caste/ethnicity						
Ethnic group	78.1	169	91.2	216	70.6	248
Brahmans and Chhetris	90.5	63	92.0	50	73.3	15
Dalits	91.5	47	94.7	19	88.9	9
Distance/time to reach nearest government health facility						
Within 30 minutes	89.6	96	92.5	53	78.6	70
30-60 minutes	84.2	133	90.7	140	67.9	109
More than 1 hour	68.0	50	92.3	91	68.9	90
Total (N)	**83.2**	**279**	**91.5**	**284**	**71.0**	**269**

Annex Table 16: IFA compliance by selected background characteristics

Characteristics	Package 1			Package 2			Package 3		
	No intake/ incomplete intake	Complete intake	Total (N)	No intake/ incomplete intake	Complete intake	Total (N)	No intake/ Incomplete intake	Complete intake	Total (N)
Women's education									
Illiterate	95.1	4.9	61	97.1	2.9	35	95.8	4.2	71
Literate	89.4	10.6	218	90.0	10.0	250	91.5	8.5	201
Caste/ethnicity									
Ethnic group	90.5	9.5	169	93.5	6.5	216	93.5	6.5	248
Brahmans and Chhetris	88.9	11.1	63	82.0	18.0	50	93.3	6.7	15
Dalits	93.6	6.4	47	84.2	15.8	19	66.7	33.3	9
Distance/time to reach nearest government health facility									
Within 30 minutes	88.5	11.5	96	96.2	3.8	53	88.6	11.4	70
30-60 minutes	89.5	10.5	133	92.1	7.9	140	93.6	6.4	109
More than 1 hour	98.0	2.0	50	85.7	14.3	91	94.4	5.6	90
Total (N)	**90.7**	**9.3**	**279**	**90.8**	**9.2**	**284**	**92.6**	**7.4**	**269**