Maternal, Newborn and Child Health and Nutrition Practices in Select Districts of Uttar Pradesh

Endline Brief

October 2012

Introduction

The Government of Uttar Pradesh aims to improve the maternal, newborn child health and nutrition (MNCHN) status in the state through implementation of the National Rural Health Mission (NRHM) and other programmes. As per these priorities, the Government of Uttar Pradesh (GOUP) requested the USAID-funded Vistaar Project (2006-2012) led by IntraHealth International to provide technical assistance (TA) in eight districts in the state - Azamgarh, Banda, Bulandshahr, Chitrakoot, Gonda, Kaushambi, Saharanpur and Varanasi districts, encompassing a total rural population of 18.4 million[1].

The goal of the Project was 'taking knowledge to practice' to improve maternal, newborn and child health and nutrition status and the Project worked with the Government of India (GOI), Government of Jharkhand (GOJH) and Government of Uttar Pradesh. Starting in 2007, the Project team facilitated a series of evidence reviews and incorporated the findings into district technical assistance plans. Based on the evidence and GOUP priorities, these plans focused on improving frontline worker performance and strengthening Village Health and Nutrition Days (VHNDs). The Project support focused on Accredited Social Health Activists (ASHAs) within the Department of Health and Family Welfare (DHFW) and *Anganwadi* Workers (AWWs) within the Department of Women and Child Development (DWCD) and on improving collaboration between the departments.

This brief presents data showing improvements in most components of antenatal, delivery and newborn care practices (such as weight monitoring, receipt of iron and folic acid [IFA], and improved breastfeeding practices). It also reveals areas where there has been less progress, such as food consumption by pregnant and lactating women, as well as by infants over six months of age. The brief also describes how key processes including increased interactions with frontline workers, improved counselling and service use at VHNDs contributed to these outcomes.

Technical Intervention Areas

The Project, DHFW and DWCD worked together in these key areas, as per agreed upon district TA plans:

- **Improving home visits and counselling skills:** The Project team worked with district officials to improve ASHAs' and AWWs' interpersonal communication (IPC) skills, through development of an in-service education programme largely built on existing government structures, such as regular monthly meetings of frontline workers. For AWWs, this training also consisted of a two-day standalone training conducted by *Mukhya Sevikas*. In addition, the Project provided technical assistance to the DHFW and DWCD to develop and promote use of job aids including a flipbook, a counselling guidebook with key messages and a set of frequently asked questions to assist ASHAs and AWWs in IPC.
- **Strengthening monitoring and supportive supervision:** The Project worked with the DHFW and DWCD to build the capacity of supervisory cadres, including encouraging them to shift from a punitive supervisory approach to mentoring and providing support and problem-solving assistance to frontline workers to improve their performance. The Project helped to develop and introduce supervisory checklists, which also provided monitoring data. The Project also facilitated the formation of Technical Resource Groups (TRGs) to sustain ASHA support mechanisms.
- **Optimising monthly meetings:** The Project supported DHFW and DWCD officials at district and block levels to better use their regular monthly meetings as opportunities for using data to assess progress and solve problems and for short capacity-building sessions.
- **Strengthening Village Health and Nutrition Days:** The Project supported DHFW and DWCD to expand the quality and coverage of VHNDs. The Project facilitated orientation and increased awareness of the VHND guidelines, improved joint planning, and introduced a VHND checklist for

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monitoring and data collection. In addition, the Project facilitated convergence between DHFW and DWCD and promoted the use of data and joint reviews of VHND achievements during regular meetings.

- **Integrating a focus on equity and gender**: The Project team led gender and equity reviews to inform the intervention efforts, and ensure that information and services reached disadvantaged groups. All systems strengthening efforts incorporated a focus on addressing equity and gender issues.

The scale of the technical assistance is reflected in the Project outputs presented in Box 1.

Box 1: Outputs from Project Management Information System
(July 2009-March 2012)

- 461 Block Facilitators trained for facilitating ASHA monthly meetings
- 196 Block Facilitators trained for facilitating ANM monthly meetings
- 8,071 ASHAs (80% coverage) trained in IPC skills to improve home visits for newborn care
- 1,889 ANMs and LHVs trained in supportive supervision (99% coverage)
- 409 *Mukhya Sevikas* (92% coverage) trained in IPC skills to train and support AWWs in the field
- 15,415 AWWs (98% coverage) trained in IPC skills to improve home isits for nutrition and newborn care
- 419 *Mukhya Sevikas* (95% coverage) trained in supportive supervision
- 41 TRG members trained on design and development of capacity-building sessions for ASHAs and on facilitation skills

Endline Evaluation

For evaluation, the Project contracted external agencies to conduct a baseline household survey in December 2008-February 2009 and an endline survey from January to March 2012. The selected external agencies were: GfK MODE Private Limited for baseline and CREATE for endline. The objective of the endline survey was to assess changes in antenatal, delivery, postnatal, newborn and infant care knowledge and practices.

The baseline and endline surveys targeted 500 currently pregnant women, 500 recently delivered women with 0-5 month old infants, 500 women with 6-11 month old infants and 320 household decision-makers from rural and urban areas in every district using a multi-stage cluster sampling technique. Household decision-makers included mothers-in-law, fathers-in-law, parents, and husbands.

The Project was designed to support government priorities and programmes, particularly NRHM, and most interventions and technical support were aimed at rural areas. Therefore, although the sample included urban areas, this brief highlights the analysis and findings from rural samples only. The rural sample sizes for the eight districts for the baseline and endline surveys are given in Table 1.

Table 1: Rural sample sizes for baseline and endline surveys

Survey	Currently pregnant women	Recently delivered women			Household decision-makers
		With infant aged 0-5 months	With infant aged 6-11 months	All	
Baseline	3,369	3,790	3,188	6,978	2,044
Endline	3,072	3,077	3,077	6,154	1,920

Key Findings

The key findings from the endline and baseline survey are presented in sections on: characteristics of the survey respondents; improved MNCHN practices; increased interactions with frontline workers; improved counselling by frontline workers; and service use at VHNDs. Asterisks (*) in the tables and graphs highlight when there is a statistically significant difference, at five percent level of significance, between baseline and endline data.

Characteristics of Survey Respondents

Background characteristics among pregnant and recently delivered women were similar. Over 80 percent were from scheduled castes/tribes (32%) or other backward castes (51%).The predominant religion was Hindu at 85 percent, with the remainder being Muslims and other households. These characteristics did not change from baseline to endline.

The proportion of women belonging to higher standard of living households was 26 percent at baseline and 41 percent at endline among recently delivered women, and 30 and 42 percent at baseline and endline respectively among women who were pregnant at the time of the survey. The proportion of women from low standard of living categories was less in both types of respondents compared to the baseline.

Literacy levels and participation in formal education among women were higher among endline respondents. The proportion of women who had received five or more years of schooling increased from 38 to 46 percent among recently

delivered women and 41 to 50 percent among currently pregnant women. Forty-six percent of pregnant women and 49 percent of recently delivered women were illiterate or had no formal schooling at endline.

Improved MNCHN Practices

The endline survey revealed a number of improvements in MNCHN practices, including in antenatal care (ANC), delivery care, maternal nutrition and newborn care.

Antenatal care: Pregnant women reported receiving more antenatal care services at endline than three years earlier suggesting that systems for providing ANC services and ensuring women are accessing ANC have improved. Women who received three or more ANC visits increased to 89 percent at endline compared to 48 percent at baseline (Table 2).

Table 2. Antenatal care services received by recently delivered women

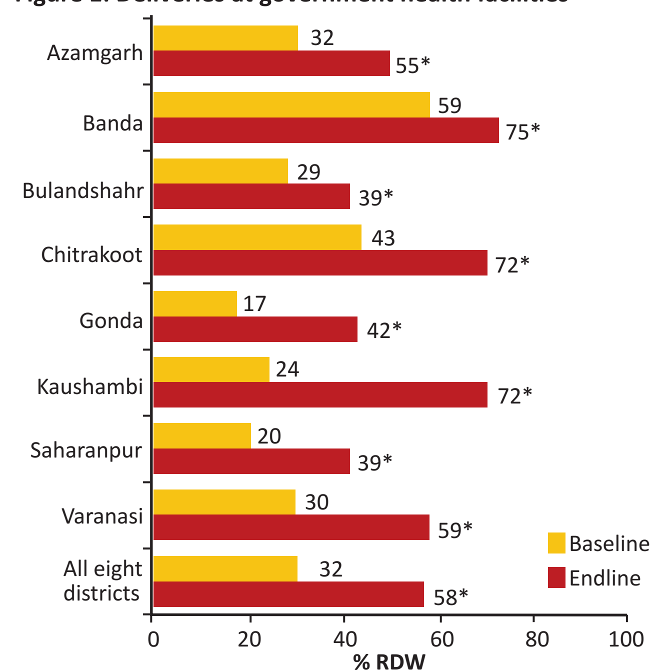
ANC	% RDW	
	Baseline	Endline
Services received		
Received 1 tetanus injection	85.0	93.5*
Received 3 or more ANC visits	47.7	88.7*
Received 100 or more IFA tablets/3 bottles of syrup	17.6	37.8*
Consumed 100+IFA tablets/3 bottles of syrup	8.7	14.8*
Received deworming medication	0.9	2.5*
Received full ANC[(1)]	**6.0**	**14.2***
Tests/check-ups received		
Abdominal examination	49.1	52.3*
Weight monitoring	22.0	51.6*
Blood pressure measurement	28.3	35.5*
Blood test	26.4	32.7*
Urine test	31.9	31.9
All five tests/check-ups	**9.8**	**17.0***
Advice received		
Nutrition advice	49.4	81.4*
Advice for institutional delivery	42.5	79.8*
Advice on delivery date	25.3	33.4*
All three advices	**15.1**	**29.2***
Number of recently delivered women with infants 0-11 months	6,978	6,154

(1) Full ANC: At least three visits for antenatal care, one TT injection received and 100 IFA tablets or adequate amount of syrup consumed (same definition used in DLHS-3[2])

The data also indicate that pregnant women were getting more complete ANC services with significantly more women reporting receiving weight monitoring, abdominal examinations, blood pressure measurement and blood tests compared to baseline. Similarly, counselling has improved and significantly, more pregnant women are receiving nutrition advice (81% at endline compared to 49% at baseline) and advice to have an institutional delivery (80% at endline compared to 43% at baseline). Notably 38 percent of recently delivered women reported that they had received 100 IFA tablets during pregnancy compared to 18 percent at baseline although the reported increase in consumption of IFA was less (Table 2).

Place of Delivery: More women were delivering at health facilities. This is likely a result of the *Janani Suraksha Yojana* (JSY). However, the improved IPC skills of frontline workers are a contributing factor for motivation to have an institutional delivery and awareness of the JSY scheme. Institutional deliveries at government and private facilities increased from 49 to 73 percent overall. At government facilities, it increased from 32 to 58 percent. Institutional births in government facilities increased across all eight Project-supported districts, but were most pronounced in Kaushambi district, which increased from 24 percent of women delivering in a government facility at baseline to 72 percent at endline (Figure 1).

Figure 1: Deliveries at government health facilities



Nearly 90 percent of those who delivered in a government facility also received JSY benefits.

The largest reported increase in proportion of deliveries at government facilities was among the low standard of living category (100% increase). The relative proportion of Muslim women going for an institutional delivery (24% at baseline, 41% at endline) continues to be lower than their Hindu counterparts (33% at baseline, 61% at endline).

Maternal nutrition: The endline shows that nutrition and anaemia related knowledge among pregnant and recently delivered women has improved. Awareness of anaemia among recently delivered women was high at baseline (78%) and further increased at endline (91%). More women also knew the causes of anaemia and how to prevent it (such as by increasing consumption of green leafy vegetables) than at baseline. This suggests that nutritional counselling is reaching beneficiaries. As noted earlier, receipt and consumption levels of IFA also increased (Table 2). However, consumption of foods that can prevent anaemia did not show any significant gains.

GOI health sector guidelines recommend that all women eat an additional meal during pregnancy and lactation. While more women reported receiving nutrition advice during pregnancy (from 49% at baseline to 81% at endline), only 16 percent of currently pregnant women reported consuming an extra meal each day at endline, up from six percent at baseline. More modest upward trends were reported by recently delivered women during pregnancy. On the other hand, there was a small reduction in the proportion of women who had one extra meal during lactation (Table 3). This is a concerning trend and may reveal the difficulty of changing dietary practices which have deep social and cultural influence and significance.

Table 3: Consumption of an extra meal during pregnancy and lactation period

Consumption of extra meal	Baseline	Endline
Consumption of meal during pregnancy period by CPW	% CPW	
Less than before	34.7	37.9*
Same as before	59.2	46.3*
Had extra meal	6.1	15.8*
Number of currently pregnant women	3,369	3,072
Consumption of meal during pregnancy period by RDW	% RDW	
Less than before	34.4	34.5
Same as before	49.2	44.3*
Had extra meal	16.4	21.2*
Number of recently delivered women with infants 0-11 months	6,978	6,154
Consumption of meal during lactation period by RDW	% RDW	
Less than before	7.9	12.7*
Same as before	70.4	68.7*
Had extra meal	21.7	18.6*
Number of recently delivered women with infants 0-11 months	6,978	6,154

The endline also showed that three out of four household decision-makers believed that women should eat after men or elderly members of the household, which may mean less food is available for women to consume. This negative trend could also possibly be related to the increasing cost of food during this intervention period, or due to increasing workload and outside work for women, resulting in time restrictions for food preparation and consumption.

Newborn care: There have been improvements in several newborn care practices. Women with infants 0 to 5 months were more likely to initiate early breastfeeding within one hour of birth at endline (from 14% to 28%) and colostrum feeding increased from 58 to 78 percent. Early breastfeeding initiation rates were highest among women who delivered in a government health facility (37%). The practice of not giving pre-lacteal feeds improved from 31 to 48 percent. The proportion of newborns who were weighed or were not bathed for at least three days also increased from the baseline (Table 4).

Table 4: Newborn care practices reported by recently delivered women

Newborn care practices	% RDW	
	Baseline	Endline
Initiated breastfeeding within one hour of birth	14.1	27.5*
Newborns given colostrum	58.1	78.1*
No pre-lacteal feed given to the newborn	30.7	48.8*
Newborns weighed at birth	21.1	48.3*
Newborns' bathing delayed by at least three days	28.0	50.3*
Nothing applied after cutting the cord and before it fell off	NA[3]	35.1
Number of recently delivered women with infants 0-5 months	3,790	3,077

The improvement in newborn care practices were generally similar by caste and socioeconomic status indicating that messages and services are also reaching the poor and most vulnerable. Acceptance levels of these newborn care practices tended to be higher among Hindu women compared to Muslim women, but each segment showed gains.

Care-seeking behaviour among recently delivered women with newborns experiencing health problems within the first month has improved with newborn referrals higher at endline (87%) compared to baseline (77%).

Infant feeding: Infant feeding guidelines call for immediate and exclusive breastfeeding for the first six months, followed by the introduction of age-appropriate complementary foods and continued breastfeeding for up to 24 months. While breastfeeding practices improved in the immediate period after birth, adherence to exclusive breastfeeding for the first six months was only nine percent at endline (Table 5).

Table 5: Infant feeding practices reported by recently delivered women

Infant feeding practices	% RDW	
	Baseline	Endline
Infants aged 6-11 months exclusively breastfed for at least up to six months	NA[3]	9.1
Infants aged 6-11 months currently breastfed and received solid or semi-solid food in the 24 hours preceding the survey	80.9	81.5
Infants aged 6-11 months currently breastfed and received food from 3 or more major food groups in the 24 hours preceding the survey	32.3	24.0*
Infants aged 6-11 months currently breastfed and received semi-solid and/or solid foods in the 24 hours preceding the survey and had two servings per day	47.9	24.9*
Number of recently delivered women with infants 6-11 months	3,188	3,077

Despite increased counselling on the topic, complementary feeding practices have either remained unchanged or decreased over the period (Table 5). Only 25 percent of children who had received complementary food the previous day had two servings, well below the 48 percent rate at baseline. Likewise only 24 percent received food from three or more major food groups, also a decline from 32 percent at baseline. The data suggest many infants are not getting diverse complementary foods (from three or more food groups) and are not getting at least two servings a day. As with maternal food consumption, this may be due to the difficulty of changing dietary practices, the increasing cost of food during this time period or increasing workloads and time restrictions on women (since complementary feeding of an infant is very time-consuming).

Increased Interactions with Frontline Workers

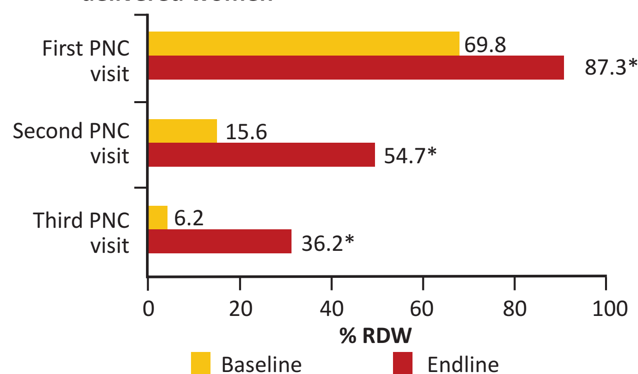
The improvements in maternal and newborn health practices have come about in part because of increased interactions with frontline workers who provide pregnant women and mothers with advice and counselling during home visits and VHNDs. The baseline and endline surveys show that interactions with frontline workers have increased throughout the antenatal, postnatal and newborn care periods. Furthermore, ASHAs and AWWs have been effective in reaching women from disadvantaged groups.

Antenatal care visits: As noted in Table 2, 89 percent of women received three or more ANC visits ups from 48 percent at baseline. More women are now receiving ANC services through home visits. At endline, 82 percent of women received ANC services through a provider at home compared to just 39 percent at baseline. The largest relative gain among women who had three or more ANC contacts was among the low standard of living category from 36 percent at baseline to 84 percent at endline.

Eighty-four percent of recently delivered women had met with an ASHA during their pregnancy at endline and 68 percent had met with an AWW. While at baseline, pregnant women had on an average two contacts with either an ASHA or AWW or both, at the endline they had on average 4.4 contacts with ASHAs and 3.1 contacts with AWWs.

Postnatal care visits: As part of counselling, ASHAs and AWWs recommend postnatal care (PNC) visits. At endline, more women reported receiving a PNC visit following delivery (87%) and were significantly more likely to receive second and third PNC visits. At baseline, only 16 percent of recently delivered women had a second PNC visit compared to 55 percent at endline. Over 36 percent of recently delivered women had a third PNC visit compared to only six percent at baseline (Figure 2). Women who delivered at a facility were most likely to receive at least three PNC check-ups/visits.

Figure 2: Postnatal care visits[#] reported by recently delivered women

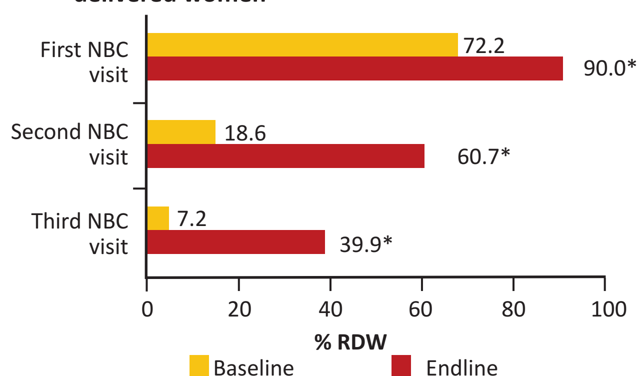


 # by any provider (e.g. Medical Officer, Lady Health Visitor, ANM, ASHA or AWW)

Newborn care visits: Frontline workers also promote newborn care visits. Nine in ten newborns had at least one newborn care visit compared to 72 percent at baseline. Further, 61 percent received a second visit compared to just 19 percent at baseline. The incidence of third visits also improved, highlighting that frontline workers are paying increasing attention to supporting the health of newborns (Figure 3).

Women who delivered in a health facility were much more likely to receive newborn care visits from any provider compared to those who delivered at home.

Figure 3: Newborn care visits# reported by recently delivered women



 # by any provider (e.g. Medical Officer, Lady Health Visitor,ANM, ASHA or AWW)

Improved Counselling by Frontline Workers

Improved counselling: Increased interactions with ASHAs and AWWs appear to be increasing women's knowledge about recommended pregnancy and newborn care practices as evidenced by their recall of counselling messages. During endline, recently delivered women recalled receiving multiple messages related to ANC and birth preparedness. Recall rates were high for most core messages, especially around taking two doses of tetanus toxoid (TT) (74%) and consumption of nutritious foods during pregnancy (58%), the importance of identifying a place of delivery (64%), and information on JSY (68%) as part of birth planning.

The recall of newborn care messages from ASHAs about initiating breastfeeding rose to 31 percent from 8 percent at baseline. Nearly 30 percent of women recalled receiving counselling from ASHAs about exclusive breastfeeding and 10 percent received this advice from AWWs (Table 6).

Table 6. Recall of counselling messages on newborn care received during pregnancy

Newborn care messages	% RDW counselled by ASHA		% RDW counselled by AWW	
	Baseline	Endline	Baseline	Endline
Initiation of breastfeeding within one hour of birth	8.0	31.3*	2.3	10.3*
Benefits of colostrum feeding	NA[3]	27.0	NA[3]	9.6
Exclusive breastfeeding up to 6 months	9.6	29.4*	3.1	10.5*
Drying and wrapping of newborn immediately after birth	5.4	17.4*	1.6	5.1*
Getting the newborn weighed	2.9	17.3*	1.2	5.9*
Getting newborn immunised (OPV-0 dose and BCG)	12.1	29.7*	5.2	9.1*
Cord care	4.1	8.0*	1.5	2.3*
Not bathing newborn for 7 days	NA[3]	13.2	NA[3]	4.0
Number of recently delivered women with infants 0-11 months	6,978	6,154	6,978	6,154

In interactions with any frontline worker in the one month period after giving birth, half or more of mothers remembered messages on the importance of immunisations, exclusive breastfeeding, keeping the newborn warm and maternal nutrition, much higher than at baseline. Over one-third were

counselled about referral facilities in the event of complications compared to just six percent at baseline. Twenty-eight percent were counselled about the proper timing for initiating complementary feeding (Table 7).

Table 7: Recall of counselling messages on newborn care after delivery

Newborn care messages	% RDW	
	Baseline	Endline
Immunisation	50.8	64.3*
Exclusive breastfeeding	29.1	60.3*
Keeping the baby warm	10.7	54.8*
Maternal nutrition	17.7	49.1*
Weighing newborn	4.4	40.7*
Referral facility (mother/newborn)	5.7	35.4*
Initiating complementary feeding around seven months	NA[3]	27.6
Cord care	8.4	17.9*
High risk symptoms/Danger signs in newborn	6.4	16.5*
Number of recently delivered women with infants 0-11 months	6,978	6,154

The impact of counselling by ASHAs is noteworthy as further analysis of data shows that women who received an ASHA visit during pregnancy and/or postnatal period were more likely to adopt recommended newborn care practices compared to those who did not receive home visits.

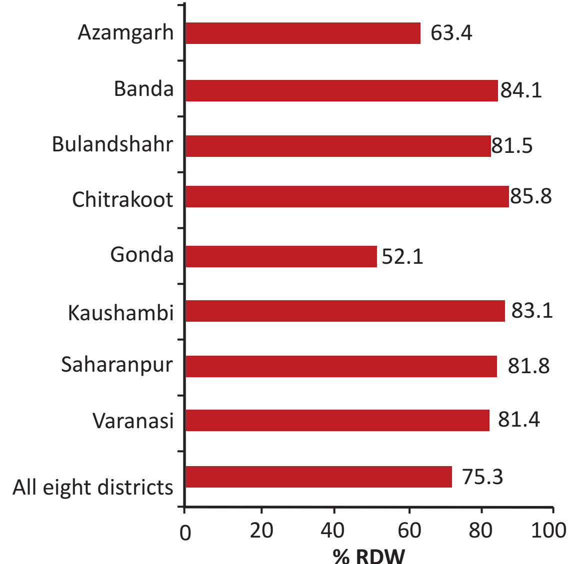
Service Use at Village Health and Nutrition Days

The improvements in ANC and newborn care may also be due, at least in part, to increased use and quality of VHND services. NRHM promotes VHNDs as an essential platform for primary health care intervention and issued guidelines for VHNDs in 2008. At baseline, VHNDs were not happening regularly, as evidenced by very low levels of awareness and participation in VHNDs among providers.

At baseline, the number of AWWs reporting that three or more VHNDs had occurred in their village in the previous three months was 46 percent, which increased to 89 percent at endline. Sixty-four percent of ASHAs were unaware of any VHND in their village happening in the previous three months at baseline.

The endline survey revealed high levels of participation in VHNDs by recently delivered women, with an average of over 75 percent of women attending a VHND during pregnancy. In addition, women from all socio-economic segments were equally likely to attend VHNDs. Muslim women were somewhat less likely to attend VHNDs than Hindu women (64% Muslim compared to 77% recently delivered Hindu women). In Gonda and Azamgarh, participation levels were somewhat less (Figure 4).

Figure 4: VHND participation among recently delivered women at endline



The endline data showed that recently delivered women reported receiving many services from VHNDs including TT immunisation (98%), IFA tablets (79%) and weight monitoring (51%). As VHNDs are also an outlet for providing health information and counselling, it is encouraging to note that nearly 47 percent of recently delivered women participated in group discussions on health care issues (Table 8).

Table 8: Utilisation of VHND services during pregnancy by recently delivered women

Services availed	% RDW
	Endline
Received TT injections	98.2
Received IFA tablets	78.7
Weighed	51.2
Blood pressure measured	20.5
Abdominal check-up done	26.3
Participated in group meetings/discussion on health issues	47.2
Number of recently delivered women with infants 0-11 months who participated in VHNDs during pregnancy	4,717

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The Purpose of the Vistaar Project

To assist the Government of India and the State Governments of Uttar Pradesh and Jharkhand in taking knowledge to practice for improved maternal, newborn, and child health and nutritional status

One of the key services provided during VHNDs is the provision of supplementary nutrition. Nearly 35 percent of currently pregnant women received take-home ration compared to just 18 percent at baseline. Among recently delivered women, 42 percent reported receiving supplementary nutrition at endline in the two months preceding the survey. All districts have improved access to supplementary nutrition over the evaluation period.

Conclusions

The Project collaborated closely with the DHFW and DWCD in Uttar Pradesh to improve access to MNCHN services and knowledge and practices among the community, building on GOUP priorities and existing programmes. The endline survey shows increases in many areas, including ANC services, receipt and recall of counselling messages, increases in institutional delivery, and improvements in newborn care practices, including early breastfeeding. The interventions of the GOUP and the Project have likely contributed to these improvements. These interventions included:

- Building counselling and communication skills for frontline workers (ASHAs and AWWs), including introducing and increasing use of job aids
- Strengthening supervision and monitoring systems
- Strengthening VHNDs, especially through improved planning, monitoring and supportive supervision
- Optimising monthly meetings for inter-departmental convergence, frontline worker support and use of data for improved programming

It is notable that the improvements occurred at scale (the Project worked in eight districts with a total population of 18.4 million) and the results were consistent across socio-economic levels, indicating success in reaching disadvantaged groups. The results of this collaborative effort show the importance of working closely with government officials, supporting government priorities, and building on existing platforms and systems to achieve improvements at the population level. The data show that there are still significant challenges, such as improving food consumption for mothers and infants. However, the findings also show that there are a number of simple systems-level changes and capacity-building efforts which can improve maternal and newborn services and practices, which should be scaled up in more districts of Uttar Pradesh and beyond.

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IntraHealth International, Inc. is the lead agency for the Vistaar Project.
For more information on the Vistaar Project, see: www.intrahealth.org/vistaar

Technical assistance partners:

[1]Provisional Population Tables, Census of India 2011

[2]International Institute for Population Sciences (IIPS), 2010. District Level Household and Facility Survey (DLHS-3), 2007-08: India

[3]This data was not collected during baseline.

Disclaimer: This brief is made possible by the generous support of the American people through the United States Agency for International Development (USAID). The contents are the responsibility of IntraHealth International and do not necessarily reflect the views of USAID or the United States Government.