



Improving Skilled Birth Attendance in Jharkhand

October 2012

Introduction

Faced with a maternal mortality ratio (312 maternal deaths per 100,000 live births)¹ and neonatal mortality rate (49 deaths per 1,000 live births)² higher than the national average, in 2006, the Government of Jharkhand (GOJH) launched a skilled birth attendant (SBA) training programme for all Auxiliary Nurse Midwives (ANMs) in the state, to improve skilled attendance at birth.

GOJH requested technical assistance in this initiative from the USAID-funded Vistaar Project, which supports the National Rural Health Mission (NRHM) and other major government health and nutrition programmes in the states of Uttar Pradesh and Jharkhand. The Project, led by IntraHealth International began consultations and planning with the state and district officials in 2007, and in 2008 designed and developed an SBA training model for a pilot initiative in the district of Deoghar.

The Project assisted the Department of Health and Family Welfare (DHFV), Jharkhand to ensure high quality and effective training. The team worked to make the training more participatory and add more interactive and hands-on clinical practice, as well as, to improve the training of master trainers. The team also adopted a holistic performance improvement approach, including supportive supervision, training follow-up and continued learning, adequate supplies for SBAs, and motivation. Medical Officers (MOs) were oriented on the concept of supportive supervision and trained to use a supervisory checklist during supervisory visits. The Project advocated with DHFW officials to identify requirements for upgrading facilities and supplies at health sub-centres (HSCs) and/or provided SBA kits to ANMs immediately after completion of the SBA training to ensure availability of essential drugs and supplies and to reduce delays in practising SBA skills. A reward and recognition mechanism was initiated in April 2011 in Deoghar district to identify and reward high-performing SBAs.

Following the programme's success in Deoghar, in 2009 the DHFW decided to scale up the intervention in all 24 districts of the state, with the Project's technical assistance in 14 districts (Chatra, Deoghar, Garhwa, Giridih, Godda, Gumla, Hazaribagh, Jamtara, Koderma, Latehar, Pakur, Ramgarh, Sahibganj and Simdega).

Results from Project Management Information System (October 2009-March 2012)

- A total of 183 master trainers were trained in 14 districts of Jharkhand to build a pool of trainers.
- The district-level master trainers trained 1,482 ANMs in 14 districts.
- Ninety-seven percent of all the 316 ANMs in the pilot district Deoghar were trained as SBAs.
- Over 200 MOs have been trained in supportive supervision in 14 districts.
- From June 2011 to March 2012, a total of 75 SBAs in Deoghar district were awarded certificates of appreciation at monthly meetings.

Endline Evaluation

For Project evaluation, a facility-based baseline survey was conducted in November-December 2008 in Deoghar district. An endline survey was conducted during January-February 2012 in Deoghar and Hazaribagh districts. Of the 13 districts which were part of the scale-up on skilled birth attendance, Hazaribagh district was included in the endline evaluation (along with Deoghar), since the duration of the intervention was the second longest and the number of ANMs trained as SBAs was the second highest (after Deoghar).

HSCs in Hazaribagh cater to a much larger population than Deoghar. Therefore, the one-point endline results from Hazaribagh are not intended for comparison with the baseline or endline results of Deoghar.

The Project team designed the baseline and endline surveys to gather data from: 1) ANMs (to assess their current knowledge, attitude and practices with regard to skilled birth care); 2) MOs (to assess the existing supervisory support mechanism); and 3) HSCs that the ANMs were associated with (to assess the capacity of these facilities to provide quality delivery services and to review the stock and supply position, with specific reference to supplies for delivery care).

For the selection of HSCs, at the first stage, 50 percent of the HSCs from the study districts were randomly selected. At second stage, during baseline, all the HSCs in which posted ANMs had not received SBA training were sampled in the study. During endline, however, the sample included all HSCs with ANMs who had received SBA training. The coverage of respondents for the baseline and endline survey is given in Table 1.

Table 1: Sample sizes for baseline and endline

Respondent	Baseline	Endline	
	Deoghar	Deoghar	Hazaribagh
Mos	8	12	23
ANMs at HSCs	69	91	58
Facility survey of HSCs	69	91	58

The Project selected external research agencies for data collection; ORG Centre for Social Research for baseline and Sigma Research and Consulting for the endline.

Key Findings: Deoghar District

In this section, we compare the Project’s baseline and endline survey self-reported data collected from the respondents in Deoghar district. Asterisks in tables and graphs are used to highlight the statistically significant difference at 5 percent level of significance, between baseline and endline data.

Characteristics of ANMs, MOs and HSCs

ANMs: At baseline, none of the Deoghar ANMs interviewed considered conducting deliveries as amongst their three top job responsibilities. However, at endline, 98 percent listed conducting deliveries as one of their three top job functions, now prioritising skilled birth attendance among their many responsibilities.

Almost two-thirds of the ANMs interviewed in Deoghar at endline were living in the HSC village, where they were posted, as compared to less than one-third at baseline. The proximity of the ANM to her assigned HSC makes it easier for her to be available to conduct deliveries at the HSC and in the community. At baseline and endline, survey respondents indicated the HSCs in Deoghar serve a population of 6,000.

MOs: In Deoghar, 11 MOs (out of 12 interviewed) had received training on supportive supervision within the five years preceding the endline.

HSCs: The capacity of HSCs to provide quality delivery services seems to have improved compared to baseline (Table 2). At endline in Deoghar, nearly 82 percent of HSCs reported conducting deliveries, as compared to about two-thirds at baseline. At endline, the average number of staff posted at the HSCs in Deoghar was 1.4, marginally increasing from 1.3 at baseline.

Table 2: Readiness of HSCs for conducting deliveries in Deoghar

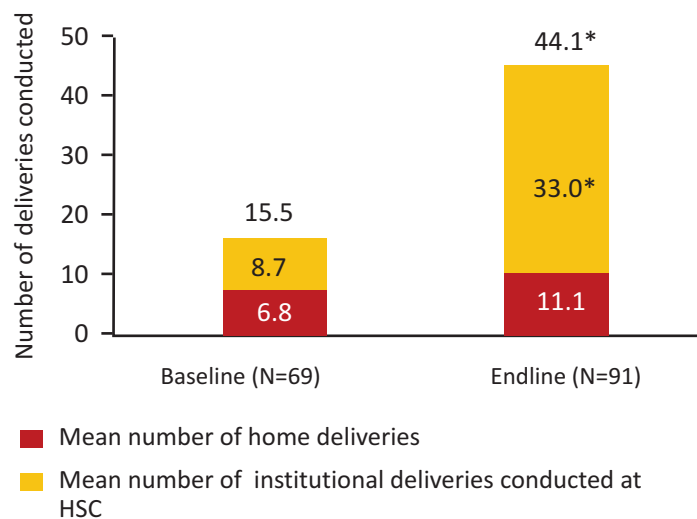
Status of HSCs	Deoghar	
	Baseline	Endline
% of HSCs with functional toilet facility	14.5	35.2*
% of HSCs with labour room	13.0	53.8*
% of HSCs with labour table	NA	79.3
% of HSCs with demarcated place for newborn resuscitation	NA	27.5
% of HSCs with residential quarter for the ANM	14.5	24.2
% of HSCs where deliveries are being conducted	66.7	81.6*
Oxytocin or Misoprostol	8.7	33.0* 70.3*
Magnesium sulphate	5.8	37.4*
Disposable gloves	47.8	85.7*
Number of respondents	69	91

At both baseline and endline, HSCs were appraised for the availability of drugs and other supplies required for quality delivery services. In Deoghar, the availability of drugs increased significantly from baseline to endline. However, many HSCs still did not have all the drugs and supplies required. For example, though the increase in the availability of injection magnesium sulphate (required in the treatment of eclampsia) was statistically significant at endline, only about one-third of the HSCs surveyed were equipped with it.

Increased Number of Deliveries by ANMs

There is a marked increase in the number of births attended by ANMs in Deoghar. ANMs reported conducting an average of 33 deliveries at the HSCs over the six month period preceding the endline survey compared to an average of less than 9 deliveries at baseline. The average number of home deliveries conducted by ANMs, in the six months preceding the endline survey was higher than the baseline (Figure 1).

Figure 1: Mean number of deliveries conducted by ANMs at Deoghar in six months preceding the survey



This indicates the increased availability of skilled birth attendance at the HSC level, and thus, the increased access for rural and poor women to essential maternal and newborn care.

Improved Knowledge and Practices Related to Delivery Care

Knowledge of complications during pregnancy

ANMs were asked to spontaneously name health problems and complications that can occur during pregnancy. At endline, a significantly higher number of ANMs could identify convulsions (50%); pain/burning sensation while passing urine (51%); and abnormal discharge from the vagina (45%) as problems/complications during pregnancy, compared to baseline. The ANMs' knowledge of other problems like abdominal pain (65%), loss of consciousness (30%), severe weakness/fatigue (73%) and blurring of vision (15%) was also higher at endline than baseline when their awareness was quite limited.

Knowledge of complications during labour

The ANMs interviewed at endline were more aware of complications during labour, vis-à-vis those interviewed at

baseline. A significantly higher proportion of ANMs listed complications like abnormal presentation of the foetus (56%), umbilical cord prolapse (40%), umbilical cord compression (36%), and perineal tear (28%) compared to respondents at baseline. The ANMs interviewed at endline also listed preterm labour (39%), prolonged labour (79%), rupture of membrane (36%), and retention of placenta (43%) as possible complications occurring during delivery.

Knowledge of five cleans during delivery

At both baseline and endline, the ANMs were asked about the five essential clean items required during delivery. Though awareness was quite high at baseline (68%), it was found to have increased further at endline, with 97 percent of ANMs aware of all the five essential cleans at endline.

Knowledge and practice related to use of partograph

The percentage of ANMs who had ever heard of a partograph and were currently using the tool to monitor labour increased significantly from baseline to endline. Seventy-eight percent of ANMs stated that they were using it in most of the deliveries they conducted (Table 3 and Figure 2).

When ANMs were asked about the advantages of using the partograph, 95 percent mentioned that it helped them to correctly assess the woman's condition, while 87 percent stated that it helped them to identify the danger signs in a timely manner. Eighty percent also said that using the partograph aided them in timely referral of complicated cases.

Table 3: Knowledge and practices related to use of partograph (Deoghar District)

Awareness and use of partograph	Baseline	Endline
	% ANMs	
Ever heard of partograph to monitor labour	13.0	98.9*
Ever received any training on the use of partograph	0.0	98.9*
Currently using partograph to monitor labour	1.5	82.4*
Currently using partograph during most (75 percent or more) of the deliveries	NA	78.0
Number of respondents	69	91

Knowledge and practice related to active management of third stage of labour

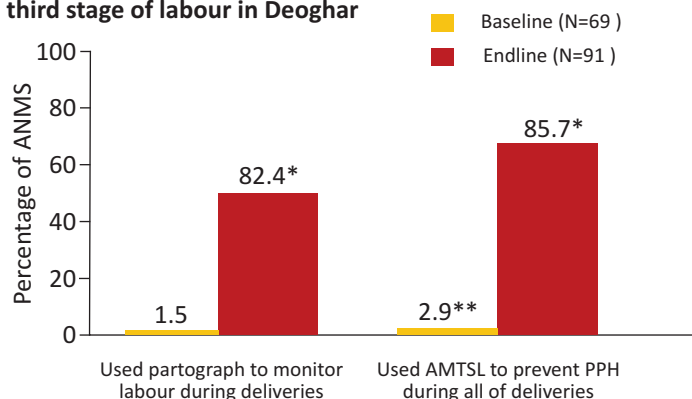
The ANMs' knowledge regarding active management of third stage of labour (AMTSL) significantly increased from baseline (Table 4 and Figure 2).

Table 4: Delivery care knowledge and practices (Deoghar District)

Awareness of AMTSL steps	Baseline	Endline
	% ANMs	
Using oxytocics (Oxytocin/Misoprostol)	39.1	94.5*
Placenta delivered by controlled cord traction	34.8	90.1*
Uterine (fundal) massage	31.9	90.1*
All the three steps involved	2.9	80.2*
Practice of AMTSL steps		
Currently using AMTSL during delivery	NA	95.6
Using AMTSL in all (100 percent) the deliveries	NA	85.7
Number of respondents	69	91

At endline, 80 percent of ANMs interviewed were aware that following all the three steps in AMTSL was important to efficiently and effectively manage the third stage of labour, to prevent prolonged labour, and to reduce the chances of postpartum haemorrhage (PPH). Ninety-six percent of ANMs interviewed at endline reported using AMTSL during deliveries; 86 percent reported using AMTSL in all deliveries they conducted.

Figure 2: Use of partograph and active management of third stage of labour in Deoghar



** In the absence of baseline data on use of AMTSL, awareness of AMTSL is used as a proxy.

Improved Knowledge and Practices Related to Postnatal and Newborn care

All the ANMs interviewed at endline were aware that postpartum care needs to be provided within 24 hours of delivery. A significantly higher percentage of ANMs interviewed at endline were aware that postpartum check-ups included examining the mother for PPH (70%), ensuring that the uterus is contracted (36%), measuring the mother's blood pressure (74%), providing breastfeeding advice (81%), checking for any bleeding from the newborn's cord (46%), and keeping the baby warm (88%). The findings from the endline are quite promising, given that none of the ANMs interviewed at baseline were aware of these necessary elements of postpartum examination.

Compared to baseline, the ANMs interviewed during the endline were more apt to list the elements of essential newborn care including prevention and/or management of neonatal hypothermia and hyperthermia, keeping the baby's cord clean, feeding of colostrum, watching out for danger signs and early referrals on noticing any danger sign. Nearly all the ANMs interviewed at baseline and endline were aware that breastfeeding should be initiated by mothers within one hour following birth (Table 5).

Table 5: ANMs' awareness of newborn care (Deoghar District)

Newborn care elements	Baseline	Endline
	% ANMs	
Initiating breastfeeding within 1 hour of birth	97.1	100.0
Keeping the baby warm	88.4	94.5
Prevention and/or management of neonatal hypothermia and hyperthermia	39.1	89.0*
Keeping the baby clean	79.7	83.5
Early and exclusive breastfeeding	60.9	74.7
BCG immunisation	69.6	73.6
Cleaning of air passage	68.1	70.3
Colostrum feeding	49.3	68.1*
Care of the preterm and/or low birth weight newborn	37.7	49.5
Keeping the cord clean	17.4	39.6*
Breastfeeding on demand	36.2	38.5
Contacting higher referral facility immediately on seeing any danger sign	11.6	36.3*
Watching out for any danger signs	10.1	33.0*
Number of respondents	69	91



Improved Supportive Supervision and Monitoring

Strengthening systems to improve supervision was a critical intervention to support ANMs to put their training into practice.

An essential prerequisite for performance improvement is role clarity and defined performance expectations. The Project team assisted the DHFW in translating the national-level ANM job description into the local language, Hindi, and distributing the documents to all ANMs. Nearly all the ANMs posted at HSCs of Deoghar reported having a copy of the job description, compared to only 32 percent at baseline.

All the 12 MOs interviewed in Deoghar at endline reported making regular supervisory visits to the HSCs, and 10 of them reported conducting block-level review meetings with the ANMs in their area during the month preceding endline data collection. The reasons cited by the MOs for their last visit to the HSCs in Deoghar included problem-solving (9 MOs), review of delivery-related activities (9 MOs) and motivating ANMs (7 MOs). Frequently cited activities conducted during these visits included review of delivery records, log books and completed partographs; enquiring about AMTSL practices, breastfeeding within one hour of delivery, counselling for immunisation and family planning; providing feedback to ANMs on their performance; and checking stocks for essential drugs and supplies. At endline, almost all the ANMs reported that the MOs encouraged them to use the partograph while conducting deliveries compared to less than 2 percent at baseline.

Key Findings: Hazaribagh District

Findings from Hazaribagh district reveal that the improvements in knowledge and practices of ANMs were not isolated to Deoghar, the pilot district, with the same trends being reported from the scale-up districts. As in Deoghar, there was an improved understanding and prioritisation of SBA roles and responsibilities. Nearly all ANMs (98%) posted at HSCs in Hazaribagh reported having a copy of the job description and 74 percent of ANMs listed conducting deliveries as one of their three top job functions.

Characteristics of ANMs, MOs and HSCs

Almost three-fourths of the ANMs interviewed in Hazaribagh reported to be living in the HSC village of posting during endline (Table 6). The average population covered by HSCs in Hazaribagh was more than double (over 12,000) that of Deoghar. In Hazaribagh, 12 out of 23 MOs had reportedly attended the training on supportive supervision. At endline, 81 percent of HSCs in Hazaribagh reported conducting deliveries. The average number of staff posted at the HSCs was 1.8.

The common danger signs to look for in newborns, as mentioned by ANMs interviewed at baseline and endline included difficulty in breathing, high fever, difficulty in sucking, bleeding from the cord, jaundice, cyanosis (bluish discoloration of the skin), sepsis/infection, and failure to pass urine. The percentage of ANMs mentioning any of the danger signs increased from baseline to endline.

The percentage of ANMs who reported initiation of breastfeeding by the mother within one hour after delivery and drying and wrapping all newborns immediately after birth significantly increased from baseline to endline (Figure 3).

Figure 3: Provision of newborn care services in Deoghar

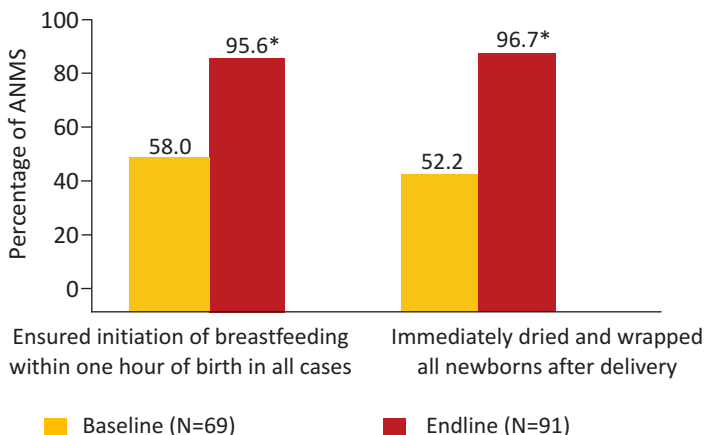


Table 6: Readiness of HSCs for conducting deliveries (Hazaribagh District)

Status of HSCs	Endline
% of HSCs with functional toilet facility	31.0
% of HSCs with labour room	62.1
% of HSCs with labour table	80.0
% of HSCs with demarcated place for newborn resuscitation	17.2
% of HSCs with residential quarter for the ANM	25.9
% of HSCs where deliveries are being conducted	80.6
Number of respondents	58



Increased Number of Deliveries by ANMs

During the six months preceding the endline survey, ANMs in Hazaribagh reported conducting an average of 67 institutional deliveries and 15 home deliveries.

Improved Knowledge and Practices Related to Delivery Care

Knowledge of complications during pregnancy

At endline, about three-fourths of the ANMs could identify health problems and complications that can occur during pregnancy, such as loss of consciousness, swelling of the limbs, severe weakness/fatigue and absence of foetal movements.

Knowledge of complications during labour

Regarding the ANMs' knowledge about the possible complications that can arise during labour, about three-fourths of the respondents listed prolonged labour, abnormal presentation, postpartum haemorrhage and retention of placenta as possible complications. Other complications listed by the respondents included preterm labour, rupture of membranes, umbilical cord prolapse/compression, foetal distress, and perineal tear.

Knowledge of five cleans during delivery

About 85 percent of respondents were aware of all the five cleans to be followed for safe deliveries. While 100 percent of the ANMs interviewed were aware of the importance of a clean delivery surface, clean hands and a clean blade for safe deliveries, over 90 percent were also aware of keeping the cord clean and using clean thread to tie the cord.

Knowledge and practice related to use of partograph

All the ANMs interviewed in Hazaribagh had heard of the partograph, with 98 percent having received training on its use. Eighty-six percent reported that they used the partograph to monitor labour, with over three-fourths of ANMs stating that they were using it in most (75% or more) of the deliveries that they conducted. Almost 95 percent of the ANMs also mentioned that their supervisors, the MOs, encouraged them to use the partograph while conducting deliveries.

Knowledge and practice related to active management of third stage of labour

Regarding AMTSL, almost all the ANMs were aware of the use of Oxytocin or Misoprostol, the importance of delivering the placenta by controlled cord traction, and uterine (fundal) massage. Ninety-three percent were also aware that it was important to follow all the three steps for effective AMTSL (Table 7).

Table 7: ANMs' awareness of AMTSL (Hazaribagh District)

Awareness of AMTSL steps	Response
	% ANMs
Using Oxytocin/Misoprostol	98.3
Placenta delivered by controlled cord traction	94.8
Uterine (fundal) massage	98.3
All the three steps involved	93.1
Number of respondents	58

All respondents were aware that AMTSL prevented PPH (100%) and decreased the duration of the third stage of labour (68%). About 95 percent of ANMs interviewed reported using AMTSL during delivery, and they were using it in all the deliveries that they conducted.

Improved Knowledge and Practices Related to Postnatal and Newborn Care

Ninety-three percent of the ANMs in Hazaribagh were aware that the first post-delivery check-up should be provided to newborns and their mothers within 24 hours after delivery. The ANMs could name the elements of a postpartum check-up, including examining the mother for PPH (86%), ensuring that the uterus is contracted (48%), measuring the mother's blood pressure (60%), providing breastfeeding advice and initiation (81%), checking for any bleeding from the newborn's cord (64%), and keeping the baby warm (76%).

The ANMs were able to list the key elements of newborn care, such as keeping the baby warm (93%), early and exclusive breastfeeding (88%), prevention/management of neonatal hypothermia/hyperthermia (81%) and BCG immunisation (79%). Nearly all (98%) the ANMs interviewed were aware that breastfeeding should be initiated by mothers within one hour following delivery (Table 8).

Table 8: ANMs' awareness of newborn care (Hazaribagh District)

Newborn care elements	Response
	% ANMs
Initiating breastfeeding within 1 hour of birth	98.3
Keeping the baby warm	93.1
Prevention and/or management of neonatal hypothermia and hyperthermia	81.0
Keeping the baby clean	87.9
Early and exclusive breastfeeding	87.9
BCG immunisation	79.3
Cleaning of air passage	56.9
Colostrum feeding	60.3
Care of the preterm and/or low birth weight newborn	75.9
Keeping the cord clean	48.3
Breastfeeding on demand	36.2
Contacting higher referral facility immediately on seeing any danger sign	34.5
Watching out for any danger signs	27.6
Number of respondents	58

When asked about the common danger signs during the neonatal period (i.e., within four weeks after birth), the respondents mentioned difficulty in breathing (83%), high fever (69%), difficulty in suckling (81%), bleeding from the cord (33%), jaundice (90%), cyanosis (bluish discoloration of the skin, 53%), sepsis/infection (43%), failure to pass urine (31%), and failure to pass stool (22%).

The percentage of ANMs who reported that mothers initiated breastfeeding within one hour after delivery was 93 percent and 90 percent of ANMs reported drying and wrapping all newborns immediately after birth.

Improved Supportive Supervision and Monitoring

Like Deoghar, efforts to strengthen supportive supervision were evident in Hazaribagh. All of the 23 MOs interviewed in Hazaribagh reported visiting their assigned HSCs during the month preceding data collection, with 15 of them also reporting that they conducted block-level review meetings with the ANMs in their area. Eighteen MOs had made routine visits to the HSCs, while an equal number had visited for problem-solving. Fifteen reviewed delivery-related activities, while 12 visited the HSCs for motivating SBAs.



Vision

IntraHealth International believes in a world where all people have the best possible opportunity for health and well-being. We aspire to achieve this vision by being a global champion for health workers.

Mission

IntraHealth empowers health workers to better serve communities in need around the world. We foster local solutions to health care challenges by improving health worker performance, strengthening health systems, harnessing technology, and leveraging partnerships.

For more information, visit www.intrahealth.org

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

Conclusions

The baseline and endline survey data indicate that the Project's inputs have contributed to improved ANM performance and increased skilled birth attendance at the HSC level. Not only has the number of births attended by ANMs trained as SBAs increased, but the quality of care has also improved. In addition, SBA services are now more available at lower level facilities enabling more women to benefit from this life-saving service. Other highlights from the evaluation include:

- ANMs now prioritise skilled birth attendance among their many responsibilities, regarding it as one of their top job priorities. With almost all ANMs having a copy of their job descriptions, they now have a clear understanding of delivery-related tasks that they are expected to perform.
- ANMs are more aware of critical delivery care tasks and more ANMs are using the partograph and practising AMTSL.
- ANMs have a good knowledge of critical maternal and newborn care, including the possible health problems and complications that can occur during pregnancy, delivery and postnatal period. Almost all ANMs interviewed at endline were also practising critical newborn care, (i.e., immediately drying and wrapping all newborns and initiating breastfeeding within 24 hours after delivery).
- ANMs receive regular performance feedback and support from their supervisors, reinforcing knowledge and skills acquired during the SBA training.
- Supply of drugs and essential equipment for skilled birth attendance has improved since the baseline. The government health infrastructure (i.e., HSC buildings, residential facilities for ANMs, labour rooms, and toilets) has also shown marked improvement over the intervention period.

The Project's collaboration with GOJH has resulted in significant improvements in the number of births with a skilled attendant and the quality of services at lower levels of the health system in Jharkhand.

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

¹ Sample Registration System (SRS), 2009. Special bulletin on maternal mortality in India 2004-06. Office of Registrar General, India.

² International Institute for Population Sciences (IIPS) and Macro International, 2007. National Family Health Survey (NFHS-3), 2005-06: India: Volume I. Mumbai: IIPS.