

# Improving Skilled Birth Attendance in Jharkhand

October 2012

# **Background**

India has made tremendous advances in science, medicine, information technology and other fields, and has experienced unprecedented economic growth over the past decade. However, reducing maternal and newborn deaths remains a challenge for much of the country. In 2005, the Government of India (GOI) introduced the National Rural Health Mission and several major interventions to tackle the problem of maternal mortality. At that time, the maternal mortality ratio (MMR) was 254 per 100,000 live births<sup>1</sup> and the neonatal mortality rate (NMR) was 39 per 1,000 births<sup>2</sup>. The situation in the state of Jharkhand was especially challenging, with an MMR of 312 per 100,000<sup>1</sup> and NMR of 49 per 1,000<sup>2</sup>, which was more than 20 percent higher than the national average. Although India's national MMR has significantly improved, and as of 2012, India is considered by the World Health Organization as on track to meet the Millennium Development Goal 5, low rates of institutional deliveries and births attended by skilled providers regionally are limiting factors for further progress (Table 1).

Table 1: Maternal health in India and Jharkhand

Indicator	Source	Year	India	Jharkhand
% of institutional deliveries	NFHS-3 <sup>2</sup> DLHS-3 <sup>3</sup>	2005-06 2007-08	38.7 47.0	18.3 17.8
% of deliveries attended by a skilled provider	NFHS-3 <sup>2</sup> DLHS-3 <sup>3</sup>	2005-06 2007-08	46.6 52.7	27.8 25.0

The GOI released technical guidelines for skilled attendance at birth<sup>4</sup> and launched a programme to train the existing cadre of Auxiliary Nurse Midwives (ANMs), so that they could become certified Skilled Birth Attendants (SBAs). GOI provided funding to the states to conduct this training, aligned with the national SBA training guidelines<sup>5</sup>. In addition, to address the demand side for delivery services in health facilities, GOI launched *Janani Suraksha Yojana* (JSY), which is a targeted conditional cash transfer scheme providing an incentive payment to both

the mother and the frontline health worker to promote institutional deliveries. The Government of Jharkhand (GOJH) rolled out the JSY programme in 2006.

**Objectives:** GOJH requested the USAID-funded Vistaar Project to support its efforts to improve skilled attendance at birth. The Project's specific objectives were to work with the state Department of Health and Family Welfare (DHFW) to:

- Increase the number of ANMs trained and certified as SBAs
- Increase the number and quality of deliveries and related services provided by the SBAs

#### **Scale of Technical Assistance**

The Project began consultations and planning with state and district officials in 2007 and helped GOJH to implement the SBA training programme in 2008 in a pilot initiative in Deoghar district. Based on the evidence of improved knowledge and practice of SBA skills and increasing institutional deliveries in Deoghar, GOJH decided to scale up the intervention in all 24 districts of the state in 2009, and asked the Project to provide technical assistance in 14 districts (Chatra, Deoghar, Garhwa, Giridih, Godda, Gumla, Hazaribagh, Jamtara, Koderma, Latehar, Pakur, Ramgarh, Sahibganj and Simdega), and UNICEF to provide assistance in the other districts (Table 2).

Table 2: Technical assistance timeline 2007-2012

2007	Consultations and evidence reviews with national- and state-level experts to identify best practices; Intervention design with GOJH			
2008	Deoghar pilot begins  January – Training of trainers  March – SBA training for ANMs begins  April – Project MIS data collection begins  October – State-level officials visited intervention sites in Deoghar  December – Baseline survey conducted			
2009	February – Scale-up in the rest of the state commences			
2012	February – Endline survey conducted			





## **Key Interventions**

The Project's technical assistance interventions were based on a logical framework and informed by a series of expert evidence reviews facilitated by the Project in early 2007. Accordingly, the Project used a holistic performance improvement approach, which included not only supporting high-quality training, but improving post-training follow-up, supportive supervision, motivation, and adequacy of supplies. The joint systems strengthening efforts of the Project and DHFW team are presented in the technical assistance framework (Figure 1).

Figure 1: Skilled Birth Attendance Technical Assistance Framework



#### Improved quality of training

The Project assisted DHFW to improve the quality of training at all levels of the training cascade:

- The Project team worked with DHFW to make the training more participatory and add more interactive hands-on clinical practice (rather than just the classroom lecture approach), which improves trainee engagement and skill development and retention.
- The training followed the cascade approach: training of state-level master trainers selected from practicing specialists (obstetricians, paediatricians, pathologists, senior nursing staff from a tertiary care facility or medical college), who trained district-level trainers (A Grade Nurses, Medical Officers, obstetricians, Lady Medical Officers (MOs), and paediatricians). DHFW officials selected the district trainers on the basis of their interest in conducting SBA training, prior experience as trainers,

and communication skills. In turn, they trained ANMs in skilled birth attendance. Appropriate selection and orientation to build a pool of trainers was vital to ensure the quality of training. The Project team also helped to design a Facilitator's Manual, to promote improved facilitation by the trainers.

- The Project and DHFW team selected training sites based on the adequacy of the delivery caseload, so the trainees would get adequate hands-on experience. The Project also introduced a checklist to ensure readiness of the site before each batch of training.
- The training course in Deoghar was a 42-day programme. In the scale-up districts, the training duration was reduced from 42 days to 21 days to better match the national guidelines. The SBA course used in the scale-up districts in Jharkhand is a 21-day residential course, focused on building skills in the use of the partograph, active management of third stage of labour (AMTSL), postnatal and newborn care, counselling and infection prevention.
- Based on experience from the Deoghar pilot, the Project advocated for an additional five-day core skills training course, prior to the 21-day SBA training, to ensure that the ANMs had the basic clinical skills required for the SBA training. This initiative was accepted and adopted for all 24 districts in Jharkhand.
- The training batch size was also reduced in the scale-up districts to ensure that delivery volumes at the training site provided sufficient opportunity for the participants to practice skills and establish competency in the shorter 21-day course.
- The district teams prioritised the training of ANMs from health sub-centres (HSCs) which were equipped and already conducting deliveries.
- Certification was based on post-test scores as well as demonstration of clinical competency.

#### Strengthened supportive supervision and feedback

In order to improve performance, the Project and DHFW promoted improved supportive supervision by MOs as noted below:

 The Project and DHFW team ensured that the job roles related to skilled birth attendance were clear both to ANMs themselves and to their supervisors. The Project translated the national-level ANM job description into Hindi, and they were distributed by the Civil Surgeons to all ANMs in their districts. This helped ANMs to understand and work according to clear performance expectations, and also guided supervisors to better support the ANMs trained as SBAs.

- The Project worked with DHFW to provide supportive supervision training to MOs, which included improving their knowledge of the national SBA guidelines and essential SBA skills, introducing more supportive approaches, focused on performance improvement and problem-solving, and guiding the MOs in the use of a supervisory checklist for improved interaction with the trained ANMs.
- The team improved post-training support and feedback to the ANMs trained as SBAs through regular supervisory visits from MOs aimed to improve skill retention, feedback and problem-solving.
- The team also introduced periodic posting of the newly trained ANMs at higher-level health facilities (where the district-level trainers are posted) for continued mentoring, review of performance related to skilled birth attendance and problem-solving, as needed. In addition, the team encouraged the use of regular monthly meetings of ANMs for these same performance improvement purposes.

#### Improved availability of regular supplies

The Project team also worked with DHFW to upgrade the HSCs as needed, and to promote prompt provision of the SBA kits containing equipment, drugs and other consumables immediately after the SBA training to reduce delays in practicing their new skills. The Project team also advocated and built skills in an improved system of timely indenting and helped to increase the use of flexi-funds for local purchases, as required.

# Reward and recognition programmes for improved motivation

Recognizing the fact that ANMs have multiple job responsibilities and priorities, the Project team and DHFW collaborated to introduce simple non-financial reward and recognition efforts to motivate the frontline workers and improve their performance. For example, ANMs who had successfully completed the SBA training were awarded certificates. Other recognition activities included issuing an 'SBA of the month' award, and appreciating those ANMs who attended the most births (while adhering to quality standards), at monthly meetings.

In April 2011, the Deoghar Civil Surgeon issued a Government Order to identify high-performing SBAs and defined a list of indicators to assess their performance that included a minimum of five deliveries conducted in a month; use of partograph in 75 percent of cases; use of AMTSL in 100 percent of cases; immediate drying and wrapping of the newborn; and early initiation of breastfeeding in all cases. Under this initiative, the selected SBAs were awarded a certificate of appreciation during the monthly meetings at the PHC, and their photograph accompanied by a brief citation and description of their accomplishments was displayed on the notice board at the health centre for one month.

#### Use of monitoring data for improved programming

The Project promoted the use of data and helped DHFW to consolidate, analyse and share data derived from supervisory checklists at the quarterly district DHFW review meeting. This sharing of data contributed to evidence-based decision-making and problem-solving. For example, in districts with low caseloads or no District Hospital, state-level training managers decided to conduct training at private hospitals like the Bokaro General Hospital and district officials released funds to improve the labour room at training sites. At the state level, DHFW leaders agreed to commit the GOI funds they received for two training of trainers a year to ensure that a pool of ten SBA trainers per district was maintained, regardless of promotions, transfers and retirement.

## **Monitoring and Evaluation**

For Project evaluation, an external contracted agency conducted a facility-based baseline survey in December 2008 and an endline survey in February 2012, in Deoghar district.

Additionally, the endline survey included a cross-sectional study in the district of Hazaribagh to capture progress in a scale-up district, where the intervention started later than in Deoghar and used a slightly different training model. The Project team selected Hazaribagh since the duration of the intervention was the second longest and number of ANMs trained as SBAs was the second highest (after Deoghar) among all Project-assisted districts.

The baseline survey was conducted with ANMs, who were not yet trained as SBAs, while the endline survey was conducted with: 1) ANMs trained as SBAs (to assess their knowledge, attitude and practices with regard to skilled birth care),

2) MOs (to assess the supervisory support mechanism), and

3) HSCs where the trained SBAs worked (to assess the capacity of these facilities to provide quality delivery services and to review the stock and supply status, with specific reference to supplies needed for delivery care). Though the SBA trainings and the endline survey covered ANMs at all levels (including community health centres [CHCs] and primary health centres [PHCs]), this report focuses on analysis of data collected from ANMs posted at HSCs, as the emphasis of the SBA programme is to improve skilled birth attendance at lower-level facilities.

In Deoghar, the baseline survey included 69 HSCs and 8 MOs and the endline survey included 91 HSCs and 12 MOs. In Hazaribagh, 58 HSCs and 23 MOs were included in the endline survey. The Project also established a Management Information System (MIS) to capture process-level data during April 2008 - June 2012 in all 14 supported districts.

In addition, the Project contracted an external research agency and expert consultant to conduct a qualitative study in Hazaribagh and Deoghar districts to validate successful trends indicated from Project MIS data and to better understand the factors underlying its success. During September-October 2011, in total, they conducted 22 key informant interviews with key officials from DHFW, six in-depth interviews and four focus group discussions with ANMs trained as SBAs, and eight field-level observations of health facilities (CHCs, PHCs and HSCs).

# **Results from Deoghar District**

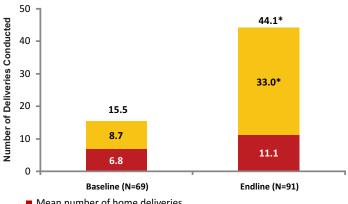
#### Improvement in the performance of ANMs

The joint efforts of the Project and DHFW in Jharkhand have produced impressive outcomes, including an increase in the number of births with a skilled attendant at lower-level facilities (i.e., HSCs) and improved quality of care. The Project MIS and surveys both indicate that this package of interventions led to improved performance of ANMs in conducting deliveries. Some of the higher-level outcome results from the baseline and endline survey are presented below. Asterisks are used to highlight the statistically significant difference at 5% level of significance between baseline and endline data.

In Deoghar, there was a marked increase in the reported number of births attended by ANMs at the HSC level. The mean number of deliveries conducted by ANMs at HSCs over a period of six months preceding the endline survey was reported to be 33, which is significantly higher than the mean

of less than 9 deliveries conducted by ANMs at HSCs at baseline. Home deliveries conducted by the ANMs also increased from 7 to 11 (Figure 2).

Figure 2: Mean number of deliveries conducted by ANMs in Deoghar, in the six months preceding survey



■ Mean number of home deliveries

Mean number of institutional deliveries conducted at HSC

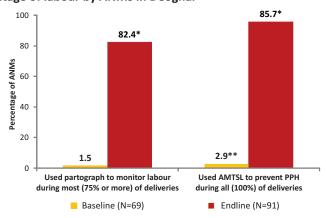
...I fill the partograph for every woman who comes to me with labour pains, except for those who come at a very advanced stage.

> SBA-trained ANM In-depth Interview, Qualitative Study



Both knowledge and practice of the partograph improved, with 78 percent ANMs reporting using the partograph tool to monitor labour in over 75 percent of the deliveries that they conducted. At endline, the knowledge regarding AMTSL was double the level at baseline. Over 90 percent of the ANMs interviewed at endline were aware of the use of Oxytocin/Misoprostol as the most important step of AMTSL to prevent postpartum haemorrhage (PPH). More significantly, 86 percent of ANMs interviewed at endline reported using AMTSL in all the deliveries that they conducted (Figure 3).

Figure 3: Use of partograph and active management of third stage of labour by ANMs in Deoghar



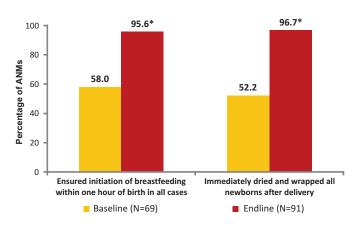
<sup>\*\*</sup> In the absence of baseline data on use of AMTSL, awareness of AMTSL at baseline is used as proxy.

The endline data reveals that ANMs are now more aware of the complications that may occur during pregnancy, labour, and the postnatal period than at baseline. All of the ANMs (100%) interviewed at endline were aware that postpartum care needs to be provided within 24 hours of delivery and a significantly higher percentage of ANMs interviewed at endline were aware of what should be included in postpartum check-ups compared to baseline.

The percentage of ANMs interviewed at endline who 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%) improved. The findings from the endline are quite promising, given that none of the ANMs interviewed at baseline were aware that keeping the baby warm, checking for bleeding from the cord and examining the uterus for its state of contraction were necessary elements of postpartum examination. In addition, the trained ANMs have increased skills and knowledge in newborn care.

A higher percentage of ANMs could list the elements of essential newborn care, including prevention and/or management of neonatal hypothermia and hyperthermia (39% at baseline to 89% at endlline), keeping the baby's cord clean (17% to 40%), early and exclusive breastfeeding (61% to 75%), colostrum feeding (49% to 68%) and cleaning of air passage (68% to 70%). ANMs reported that more mothers initiated breast-feeding within one hour and more newborns were dried and wrapped appropriately to reduce hypothermia (Figure 4).

Figure 4: Provision of newborn care services in Deoghar



#### **Results by Intervention Area**

Key results from the Project MIS (from 14 districts), qualitative, baseline and endline surveys related to the technical assistance efforts are presented below.

#### **Training**

As per the Project MIS, a total of 183 master trainers were trained as of March 2012 in 14 districts of Jharkhand, and they form a pool of district-level master trainers. These master trainers trained 1,482 ANMs as of March 2012 in the 14 districts, constituting 44 percent of the total number of ANMs in these districts. Ninety-seven percent of the 316 ANMs in Deoghar have been trained as SBAs, since the programme began earlier in this district.

#### Supportive supervision and feedback

Supportive supervision starts with a shared understanding of job expectations between the supervisor and supervisee. Related to this, nearly all (99%) ANMs posted at HSCs in Deoghar reported that they had a copy of their job description, compared to only 32 percent at the baseline. At endline, 98 percent of the ANMs interviewed considered conducting deliveries as one of their three top job

#### **Qualitative Study Quotes**

"...during (the) SBA training I got a chance to conduct more than ten deliveries on my own, and SBA-trained staff nurses were there to guide me. I have gained enough confidence to conduct deliveries."

#### SBA-trained ANM, In-depth Interview

"The training was totally different than the earlier trainings we attended. Everyone... (was) given a chance to speak, express views, share experiences and participate in role play...with lots of hands-on practice."

#### SBA-trained ANM, In-depth Interview

"The SBA training strategy, its curriculum developed with technical support provided by the Vistaar Project, are excellent. I can say with full confidence that this training model is much more effective, doable, time and cost-effective, and can be replicated in all the districts of the state."

#### Civil Surgeon, Key Informant Interview

"ANMs are able to handle cases now...the case load has increased but as the ANMs are trained and the facility is equipped now, the community has started visiting the sub-centres/PHCs."

District-level SBA trainer, Key Informant Interview

responsibilities, compared to none at baseline, which shows an increase in their understanding of the expectation for them to serve as an SBA.

As per the Project MIS, supportive supervision training was provided to 200 MOs (out of 545) in 14 districts of Jharkhand. All the MOs interviewed in Deoghar at endline reported that they made supervisory visits to the HSCs, and a majority reported conducting review meetings with ANMs at PHCs during the month preceding the endline. The reasons cited by the MOs for undertaking the last visit to the HSCs in Deoghar included problem-solving and review of delivery-related performance.

Per the Project's qualitative study, government officials at all levels opined that monitoring by MOs is a key intervention introduced by the Project. At the "lowest end", it supports trained ANMs and ensures problem-solving, handholding and availability of supplies at the facility and above all, motivates good performance and supports poor performers. At the other end, it generates MIS data which gives clear information about the results of the SBA training intervention.

"I am happy that after the SBA training somebody from the Medical Department visits our facility, encourages us for the good work we are doing, and helps solve our problems. Earlier we used to feel alone and neglected."

SBA-trained ANM In-depth Interview, Qualitative Study

#### Readiness of HSCs for conducting deliveries

The endline survey indicates that the capacity of HSCs to provide quality delivery services improved compared to baseline, as the health infrastructure (i.e, sub-centre buildings, residential facilities for ANMs, labour rooms, resuscitation room, and toilets) has also shown marked improvement. In Deoghar, 82 percent of HSCs reported conducting deliveries in the endline survey, as compared to about two-thirds at baseline (Table 3).

Table 3: Readiness of HSCs for conducting deliveries in Deoghar

Status of HSCs	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 <sup>#</sup>	79.3
% of HSCs with demarcated place for newborn resuscitation	NA <sup>#</sup>	27.5
% of HSCs with residential quarter for the ANM	14.5	24.2
Average number of staff posted at HSCs	1.3	1.4
% of HSCs where deliveries are being conducted	66.7	81.6*
Number of respondents	69	91

<sup>&</sup>lt;sup>#</sup>Data was not collected during the baseline

At baseline and endline, HSCs were appraised for the availability of drugs and other supplies. The survey assessed the availability of essential obstetric drugs including magnesium sulphate, misoprostol, oxytocin, reagents for pathological tests, and other supplies like safe delivery kits, partographs, weighing scales, blood pressure instruments and ambu bags for neonatal resuscitation. In Deoghar, the availability of drugs increased from baseline to endline, although it was still not ideal and needs further attention. For example, among HSCs in Deoghar, although the availability of injectable magnesium sulphate (required in the treatment of eclampsia) increased from baseline (6%), but only 37 percent of the HSCs surveyed were equipped with the drug at endline.

#### Reward and recognition of good performance

Reward and recognition programmes included distribution of certificates at regular meetings. From June 2011 to March 2012, a total of 75 SBAs in Deoghar were awarded certificates of appreciation at monthly meetings.

"It (reward and recognition) is a good scheme for motivation of trained SBAs and promotes a spirit of positive competition among trained SBAs, for better performance on sustainable basis."

> Medical Officer Key Informant Interview, Qualitative Study

# **Results from Hazaribagh District**

Findings from the scale-up district of Hazaribagh suggest that the scope of improvements in knowledge and practices of ANMs was not isolated to the initial pilot district. In Hazaribagh, nearly all the trained ANMs (98%) reported having a copy of their job description and 74 percent listed conducting deliveries as one of their three top job functions. All the MOs interviewed in Hazaribagh at endline reported that they made regular supervisory visits to the HSCs, and a majority reported conducting review meetings with ANMs at PHCs during the month preceding the endline.

Similarly, 80 percent of HSCs in Hazaribagh also reported conducting deliveries. The endline survey findings from Hazaribagh indicate that 80 percent of HSCs had a labour table, 62 percent had a labour room, and 32 percent had a functional toilet. However, a significant number of HSCs still do not have requisite drugs and supplies. For example, among HSCs in Hazaribagh, injectable magnesium sulphate (required in the treatment of eclampsia) was available only in 55 percent of HSCs at endline.

All the ANMs interviewed in Hazaribagh had heard of the partograph, with 98 percent having received training on its use. Eighty-six percent were currently using the partograph to monitor labour, with over three-fourths of ANMs stating that they were using it in most (75 percent or more) of the deliveries that they conducted.

Almost all the ANMs were aware of the use of oxytocin/misoprostol (98%); the importance of delivering the placenta by controlled cord traction (95%); and uterine (fundal) massage (93%). Ninety-three percent were also aware that it was important to follow all the three steps to efficiently and effectively manage the third stage of labour. The ANMs also had a high level of knowledge about the possible complications that can arise during labour, such as prolonged labour, abnormal presentation, PPH, and retention of placenta.

Ninety-three percent of the ANMs were aware that the first post-delivery checkup should be provided to newborns and their mothers within 24 hours post-delivery. The ANMs were able to list the essential elements of newborn care such as keeping the baby warm (93%), early and exclusive breastfeeding (88%), prevention and management of hypothermia/hyperthermia (81%), BCG immunisation (79%), keeping the cord clean (60%) and cleaning the air passage (57%). Most ANMs also reported improvements in their actual practice of newborn care, including initiation of breastfeeding by the mother within one hour after delivery (93%) and drying and wrapping all newborns immediately after birth (90%).

## **Costing**

The Project conducted a simple cost analysis of the SBA intervention in Deoghar. It showed that expenses associated with carrying out trainings and other operational expenses such as checklists and transport allowances amounted to 24 percent of the total identified costs for replicating SBA training quality and follow-up support. The other 76 percent is made up of the costs of staff time spent on training and supervisory activities. These staff costs do not represent additional costs to the government, since these staff salaries are already included in existing government expenditures. Even for other operational costs such as transport allowance for supervisors to regularly visit HSCs, the government already has the funds for covering these through the provision of using 2 percent of its JSY funding for supervision expenses. Technical assistance from the Project was a temporary input, to help strengthen and improve the government system.

A key insight from this analysis is that by utilising existing resources in a more efficient manner, GOJH was able to develop a cadre of high-performing SBAs.

# **Challenges and Lessons Learned**

This collaborative intervention has led to an important increase in number of births with a skilled attendant and improved quality of services at lower levels of the health system. However, some challenges remain:

 There is a limited number of training sites with adequate delivery caseload for clinical practicum, which means batch sizes sometimes have to be very small, limited to two to four ANMs per SBA training. This means it often takes significant time to complete the training of all ANMs in each district.



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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

- Ensuring an adequate number of quality supervisory visits by MOs is challenging since they find it difficult to prioritise supervision of SBAs among other competing responsibilities. Additionally, there are a significant number of vacancies in the MO cadre.
- Inadequate infrastructure and supplies at HSCs limits the ability of these sites to provide high-quality institutional deliveries.

Major lessons learned from this intervention are listed below:

- Close collaboration between the Project and DHFW, with a focus on improving priority government programmes, platforms and systems, contributed to these results.
- Ensuring the quality of training by focusing on key issues such as quality of trainers, training site readiness, and hands-on practical training using participatory methodologies, leads to improved transfer of knowledge and skills in the trainees. Key tools can help improve the training sessions, such as a Facilitator's Manual that emphasizes the use of participatory methods and a training site readiness checklist.
- Supporting the ANMs trained as SBAs, through rotational postings for mentoring, regular provision of performance feedback, supportive supervision, and recognition of good performance are key to increasing productivity with quality. Tools such as a

- supervisory checklist and training for supervisors can improve the frequency and quality of supervision.
- Regular monthly meetings of ANMs can provide a good platform for retention of new knowledge and skills, problem-solving, quality assurance, and motivation.
- Establishing a system of regular and timely supply indenting leads to an improved supply of drugs and consumables, which are necessary to ensure the regular delivery of SBA services.
- An increased awareness and willingness to use locally available flexi-funds can improve the HSC supply situation.
- Regular review of programme performance, using data compiled from supervisory visits, ensures evidence-based decision-making, continued supervisory support and feedback to individual ANMs.

#### **Conclusions**

The Project's collaboration with GOJH has resulted in significant improvements in the supply side of the effort to improve maternal and newborn care, which is an important complement to GOI's demand creation efforts for institutional deliveries through JSY. Additionally, these efforts have successfully increased the number of SBA-attended births at HSCs which are located closer to the communities. These findings show simple, proven and low cost interventions that the government system can scale up to improve SBA performance.

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

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