INCREASING INSTITUTIONAL DELIVERY AND ACCESS TO EMERGENCY OBSTETRIC CARE SERVICES IN RURAL UTTAR PRADESH

DEEPTHI S. VARMA, M.E. KHAN AND AVISHEK HAZRA

BACKGROUND

DLHS-3 (2006-07) data reveal that in rural Uttar Pradesh (UP), only about one-fourth of women delivered their last child in an institution.\(^a\) In 2005 the Janani Suraksha Yojana (JSY) was launched as an intervention to address the barriers to institutional delivery, through the introduction of community-based women volunteers called Accredited Social Health Activists (ASHAs). Women in rural areas in low performing states are given cash assistance of ₹1,400 for an institutional delivery and ₹600 for a home delivery conducted by a skilled birth attendant (SBA). ASHAs are given a performance linked fee; they are paid ₹600 for each woman they motivate for ANC and institutional delivery. ASHAs receive an initial training of three weeks in various aspects of maternal and child care. While initial evaluations of the JSY show improved rates of institutional delivery and that ASHAs provide valuable support during pregnancy and childbirth, the scheme needs closer examination to assess how its performance could be enhanced so as to meet the Millennium Development Goals (MDGs) 4 and 5.\(^1,2\)

Promoting safe delivery at home by ensuring the use of SBAs has been another important initiative by the National Rural Health Mission (NRHM) to reduce rates of maternal and neonatal mortality among women who opt to deliver at home.\(^3\) Clean delivery, which involves clean hands, clean

\(^a\) Data from NFHS-1, NFHS-2, NFHS-3 and DLHS-3 presented in this article are based on an analysis, conducted by the Population Council, of currently married women aged 15-34 in rural UP who had given birth in the three years preceding the survey.

Deepthi S. Varma, Program Officer, M.E. Khan, Senior Program Associate and Avishek Hazra, Program Officer, Population Council, Zone 5A, India Habitat Centre, Lodi Road, New Delhi 110003.
perineum, nothing unclean introduced into the vagina, clean delivery surface, clean cord-cutting instrument and clean cord care, is another critical component of safe delivery, especially in home settings in rural India where resources are minimal.\textsuperscript{4} Home delivery kits are an important tool to promote clean and safe deliveries at home settings.\textsuperscript{3,5,6} Birth preparedness, including saving money, arranging transportation and identifying institution where one could rush in case of emergency, is another important component of safe delivery.\textsuperscript{3} Data from the national level surveys, such as NFHS and DLHS, also show that home delivery without an SBA continues to be the dominant practice in rural UP. Key reasons for the continued prevalence of home deliveries assisted by traditional birth attendants (TBAs) are the family’s trust in the ability of TBAs, their desire to follow family customs and rituals regarding birthing and the easy accessibility of TBAs within the community. Moreover, the non-availability of SBAs in every village and the perceived poor quality of services provided by SBAs are also reasons for their poor utilization by women and families.\textsuperscript{6,7,8}

\textbf{Objectives}

In October 2009, the Population Council conducted a formative study in rural UP with the following objectives:

(a) to determine the impact of the JSY scheme on the current status of institutional delivery in rural UP

(b) to explore the reasons for continued preference for home delivery among rural families

(c) to understand the facilitating factors and barriers in delivering in a health facility

(d) to identify programmatic and behavior change communication (BCC) initiatives that could accelerate the adoption of institutional delivery and provide increased access to emergency and obstetric care (EmOC) services.

The project was funded by the Bill and Melinda Gates Foundation.

\textbf{Methodology}

The formative study was conducted in two phases. First, a survey was conducted covering 4,754 households, 4,472 currently married women aged 15-34 years who had delivered a child in the last three years, 2,274 husbands, 2,372 mothers-in-law, 289 ASHAs, 284 AWWs, 161 ANMs, 316 local private practitioners, 251 panchayat members (including Village Health and Sanitation Committee members) and staff at 144 government health facilities (PHCs and CHCs) from 225 villages in 12 districts spread across the Western, Central and Eastern regions of UP. In the second phase, 308 in-depth interviews were conducted with family-level, health care providers and panchayat members to complement the information gathered in the quantitative survey. The qualitative study was conducted in 24 villages: eight villages each from three districts, one district from each of the three regions. Details of the study design and data collection methods have been discussed in the introduction to this journal.

\textbf{Key Findings}

\textbf{Status}

Among the total women interviewed (N=4,472), 44 percent (N=1,979) had delivered in an institution while the rest (56 percent; N=2,493) had delivered at home. Data on the trend in institutional delivery in rural UP reveal that from 1992-93 (NFHS-1) to 2007-08 (DLHS-3), the percentage of institutional deliveries increased at a very slow pace (Figure 1).

However, the introduction of the JSY has accelerated the adoption of institutional delivery; as the formative study shows, the
rate of institutional delivery jumped to 44 percent by the end of 2009. Interestingly, with the introduction of the JSY the practice of using private facilities has been completely reversed. While the use of private facilities for delivery increased steeply from 1992-93 to 2005-06 (NFHS-1 to NFHS-3), after the introduction of the JSY, the ratio of public:private facilities providing institutional delivery services changed from 37:63 in 2005-06 to 63:37 in 2009 (Figure 1).

**Reasons for institutional delivery**

In the case of women, husbands, and mothers-in-law, the main reason for opting for institutional delivery was their concern regarding the safety of the mother and child (Table 1). For example, a mother-in-law said:

“We get good care in the hospital and both the mother and child will be safe. They follow hygienic practices so there will be no infection….”

Other frequently reported reasons by all stakeholders were that: “It was pre-decided…based on earlier experiences” or it “was advised due to complications”.

For more husbands (22 percent) than women (16 percent) and mothers-in-law (14 percent), the JSY incentive was an important reason for delivery in an institution because it subsidized the cost of the delivery. Indeed, being advised by the ASHA / ANM, their selling of the concept of “safety for the mother and child” and the facilitating role of the ASHA at the time of delivery were significant factors in increasing institutional delivery. As one woman commented:

“We took this decision [to deliver in a facility] because the ASHA told us that we would get ₹1,400 and she said that she would also come along…”

The data also indicate that the place of previous delivery significantly influences the place of the next delivery ($\chi^2$ test, p<0.001). For example, among women with more than one child who had delivered their previous to last child at home, 70 percent had again opted for a home delivery for their last child (Table 2).

A small shift (30 percent) from home to institutional delivery was observed due to the JSY and/or possible maternal complications. Among 24 percent of women who had shifted the place of delivery from institution to home, reasons for doing so

---

**TABLE 1**
Reasons for institutional delivery (percent)

<table>
<thead>
<tr>
<th>Reasons</th>
<th>Women</th>
<th>Mothers-in-law</th>
<th>Husbands</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe for mother</td>
<td>59</td>
<td>62</td>
<td>74</td>
</tr>
<tr>
<td>Safe for child</td>
<td>55</td>
<td>56</td>
<td>73</td>
</tr>
<tr>
<td>Pre-decided</td>
<td>32</td>
<td>24</td>
<td>32</td>
</tr>
<tr>
<td>Advised due to complications</td>
<td>20</td>
<td>17</td>
<td>26</td>
</tr>
<tr>
<td>Advised during ANC</td>
<td>8</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>ASHA motivated</td>
<td>11</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>ASHA accompanied</td>
<td>12</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>JSY incentive</td>
<td>16</td>
<td>14</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,979</strong></td>
<td><strong>1,140</strong></td>
<td><strong>1,045</strong></td>
</tr>
</tbody>
</table>

Note: Percentages may add to more than 100 due to multiple responses

**TABLE 2**
Influence of place of previous to last delivery on place of last delivery, women (percent)

<table>
<thead>
<tr>
<th>Previous to last delivery</th>
<th>Last delivery</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Institution</td>
<td>Home</td>
<td></td>
</tr>
<tr>
<td>Institution</td>
<td>76</td>
<td>24</td>
</tr>
<tr>
<td>Home</td>
<td>30</td>
<td>70</td>
</tr>
</tbody>
</table>

Note: Among women with 2 or more children (N=3,489).
were because labor pain had started at night (27 percent), lack of transportation (25 percent) and cost considerations (34 percent).

The key reason for not opting for a facility delivery was the perception that the delivery was normal and hence it was not necessary to go to a facility. Among women who delivered at home, only 5 percent reported that the ANM/LHV was present at the time of delivery. The persons present during home delivery most frequently reported by women were mothers-in-law (64 percent), other elder family members (55 percent), untrained TBA/dai (42 percent) and friends/neighbors (39 percent). Two percent of women reported the presence of the ASHA, along with the woman’s family members, during delivery.

**Barriers**

**Perception of normality, cost and transportation**

Key reasons for not delivering in a health facility, as reported by women, were the perception that the delivery was normal and hence it was not necessary to go to a facility (66 percent), elders’ (mothers-in-law and husbands) decision (35 percent), poverty leading to non-availability of ready cash to meet immediate expenses/institutional delivery costs too much (33 percent), start of labor pain at night (22 percent) and non-availability of transportation (20 percent). A similar pattern of responses was observed among mothers-in-law and husbands. However, husbands more frequently reported reasons such as convenience of home (69 percent), cost considerations (30 percent) and faith in the dai’s delivery skills (19 percent) for home delivery. For example, a husband observed:

“Home delivery is better…. ₹2,000 will be needed immediately for hospital delivery…. 4-5 people will be troubled ….to accompany the woman … we have to find a vehicle… money has to be given to the doctor, nurse, everybody, and there will be loss of work, so ₹1,400 is of no use…₹600 is required for the vehicle. My wife’s previous delivery was also at home…. if there is any problem then we will go to a facility.”

“…our baby was delivered easily….then why should we go to a hospital? Had there been any problem we would have taken our daughter-in-law to the hospital… when there are no problems it is good to deliver at home itself.”

In-depth interviews show that the average cost of a home delivery is about ₹500 in cash, in addition to 1-2 kg of food-grains and sometimes a new sari which are given to the TBA. The readiness of TBAs to accept payment in kind, in the form of food grains and other gifts, makes delivery at home a more attractive option that going to an institution for delivery.

**Lack of delivery preparedness**

Delivery preparedness in general was poor; only 50 percent of women who delivered in an institution (N=1,979) reported some delivery preparedness; primarily keeping ready clean cloth for use during delivery, cleaning the room where the delivery would be conducted or keeping a new blade for cord cutting. Few women reported making critical preparations such as arranging transportation, identifying an institution for delivery in case of an emergency and saving money (Figure 2). Women who delivered at home reported far less delivery preparedness for all indicators as compared to those who delivered in a facility.

**Lack of awareness/advice in availing SBA**

Among women who delivered at home only 6 percent reported having availed the services of an SBA; this finding indicates that either families are unaware of SBAs and the benefits of availing the services of an SBA during home delivery, or SBAs are unavailable in and around
the community. Presently, the key reason is the non-availability of SBAs. The fact that only 1 percent of all home-delivered women were advised about the benefits of using an SBA for home delivery shows the lack of interest on the part of ASHAs to promote the services of SBAs. ASHAs generally promote those components of the JSY for which they receive performance-based payment and do not focus on other important components of maternal and child health, such as providing information of SBA-assisted home deliveries, for which they do not get any payment.

Quality of care

Poor quality of client-provider interaction and the lack of basic services like electricity in health facilities were identified as barriers to institutional delivery. One woman said:

“When I reached the labor room the nurse told me to get on to the bed and lie down. When I was slow she said, ‘Did you come to deliver a baby or to do a drama? If you don’t climb up I will beat you’. Another nurse who was standing nearby hit me on my leg and told me to climb up quickly…”

Bad behavior of the staff was mentioned more often by women who delivered at home than those who delivered in a health facility. However, 80 percent of women who delivered in a health facility generally overlooked these limitations. Their key priority was to have a safe delivery; they were satisfied following the delivery and were ready to recommend institutional delivery to others.

Lack of privacy in health facilities

During in-depth interviews, lack of privacy was identified as a barrier to institutional delivery. For example, a woman said:

“…there is no ‘purdah’ [curtain] at the PHC. They remove our clothes in front of everyone; hence delivery at home is better.”

Among the women who delivered in a facility, 37 percent were assisted by a doctor and 61 percent by an ANM/PHN. However, in response to an opinion question, 65 percent of all women reported that the presence of a male doctor would not discourage them from availing an institutional delivery, if necessity demands; however, 35 percent of women noted that it would be unacceptable and they would not allow a male doctor to assist the delivery.

Frequent referrals to FRUs

Due to the lack of provider skills and basic EmOC facilities at PHCs, most women delivering their first child or with any complication were referred to first referral units (FRUs) or the district hospital, leading to a further delay in receiving services. Although from the medical point of view, referring such cases is the correct practice, it is not appreciated by women or even some ASHAs. As an ASHA reported:

“In case of any problem we take women to the PHC but the nurse at the PHC sends her to the district hospital. Women do not want to go to the district hospital as they are scared that they will be operated there. …”
Only 50 percent of the PHCs surveyed (N=90) had at least one staff member trained in EmOC but only 8 percent had access to an anesthetist. Further, only 17 percent of PHCs were equipped with basic EmOC facilities. EmOC facilities were relatively better in the West (32 percent) as compared to the Central and Eastern regions (10 percent each). Of the CHCs surveyed, 41 percent were equipped with basic EmOC facilities and only 17 percent were equipped with comprehensive EmOC services. This indicates that serious cases must be rushed to the district hospital.

### Facilitating Factors

A logistic regression analysis was conducted to identify the determinants and facilitating factors for institutional delivery and the results are presented in Table 3. The key facilitating factors that were identified are discussed below.

#### JSY

The JSY is the most important factor that has increased the rate of institutional delivery in UP. Indeed, among women who delivered in a public facility, 74 percent reported that the JSY incentive was helpful as it subsidized their out-of-pocket expenses, which were estimated to be ₹1,897 in Western UP, ₹1,180 in the Eastern region and ₹1,144 in Central UP.

Further, the incentive given to ASHAs to promote at least three ANC check-ups has helped to increase ANC and contact between pregnant women and ANMs. This, in turn, has promoted institutional delivery. The logistic regression analysis shows that women who received at least three ANC check-ups were two and half times more likely (OR=2.61, p<0.001) to opt for an institutional delivery as compared to those who had received no ANC check-ups.

#### Background characteristics

Women belonging to general castes were more likely (OR=1.49, p<0.001) than others to deliver in an institution. Women who had a primary education were one and half times more likely to have an institutional delivery (OR=1.68, p<0.001) than those with no education. As compared to women with no education, those who had received a secondary education were three and half times (OR=3.49, p<0.001) more likely to opt for institutional delivery.

---

**Table 3: Results from the logistic regression analysis on institutional delivery**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Odds Ratio</td>
<td>Odds Ratio</td>
</tr>
<tr>
<td>Religion</td>
<td>Hindu* Non-Hindu</td>
<td>0.76*</td>
<td>0.78*</td>
</tr>
<tr>
<td>Caste</td>
<td>SC/ST* OBC General caste</td>
<td>1.13 1.49**</td>
<td>1.02 1.43**</td>
</tr>
<tr>
<td>Standard of Living Index</td>
<td>Low* Medium High</td>
<td>1.03 1.28**</td>
<td>0.94 0.99</td>
</tr>
<tr>
<td>Education of women</td>
<td>No education* Primary Secondary Higher</td>
<td>1.11 1.68** 3.49**</td>
<td>0.98 1.36** 2.29**</td>
</tr>
<tr>
<td>Number of ANC check-ups</td>
<td>No* &lt;3 ANC check-ups ≥3 ANC check-ups</td>
<td>1.74** 2.61**</td>
<td>1.51** 1.97**</td>
</tr>
<tr>
<td>Contact with ASHA during last pregnancy</td>
<td>No* Yes</td>
<td>2.39**</td>
<td>2.94**</td>
</tr>
<tr>
<td>Exposure to mass media</td>
<td>No* Yes</td>
<td>1.10</td>
<td>0.98</td>
</tr>
<tr>
<td>Distance to nearest BPHC/24x7 PHC/CHC</td>
<td>&gt;8 km* 4-8 km Up to 3 km</td>
<td>0.94 1.22*</td>
<td>0.94 1.16</td>
</tr>
<tr>
<td>Social Capital Index</td>
<td>Lower* Higher</td>
<td>1.20*</td>
<td>1.18*</td>
</tr>
<tr>
<td>Place of delivery of the previous to last child</td>
<td>Home* Institution</td>
<td>--</td>
<td>6.94**</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>4,472</strong></td>
<td><strong>3,490</strong></td>
</tr>
</tbody>
</table>

Note: Dependent variable: Institutional delivery (Yes=1, No=0); * Reference category; ** p < 0.001; p < 0.001.

Model 1 includes all women and model 2 includes women of 2 or higher parity.
Contact with the ASHA

Women who were contacted by the ASHA during their last pregnancy were about two times more likely (OR=2.39, p<0.001) to deliver in a health facility than others. Women who were not contacted by the ASHA were generally located in distant hamlets and small remote villages where the ASHA does not reside; women from these villages are predominantly from scheduled castes or other backward castes.

Distance from the facility

Women who live within a radius of 3 km from the Block PHC/ 24*7 PHC/CHC were more likely to seek (OR=1.22, p<0.05) an institutional delivery than those living 8km or more from the facility.

Place of last delivery

Among women of two or higher parity, those who had delivered their last previous to last child in an institution were seven times more likely (OR=6.94, p<0.001) than those who had delivered their previous to last child at home to opt for an institutional delivery for their index child as well.

Implications For The BCC Strategy

Audience segmentation

At the macro level, the major audience segmentation could be families living in small or remote villages/ isolated hamlets that are generally inhabited by poor and less educated persons; these audiences can be reached mainly by IPC supported by radio, including community radio, messaging. The use of mid media such as wall paintings, posters and leaflets may also be effective. However, the reach of TV in rural settings is limited because of the lack of electricity and poverty.

At the micro level segmentation of families by place of previous delivery would be an effective strategy. The study shows that families follow past practices for delivery: women whose previous delivery was at home have a high probability of delivering at home again and hence need focused attention and encouragement to motivate them to shift from home to the institution for their next delivery.

ANC visits offer a window for advice and counseling

The JSY has contributed to a significant increase in the percentage of pregnant women receiving three or more ANC check-ups and more frequent contact with the ASHA during pregnancy. The ANM and ASHA enjoy the trust of the community in health matters. Increasing ANC visits offers a window of opportunity to advise women on multiple target behaviors, including institutional delivery. To make counseling effective, health providers need support in terms of improving their communication skills and the provision of counseling aids.

Communication content

An important focus of messages should be increasing the perception of risk associated with home delivery among all stakeholders. For women who do not want to deliver in an institution, it is important to convince them about the benefits of availing the services of a SBA to conduct the delivery at home. Delivery preparedness is an important component that needs to be emphasized by the ASHA. As husbands and mother-in-laws are often the final decision-makers on the place of delivery, focused audience-specific messages should be designed and disseminated through different media channels.

REFERENCES


