

IMPACT OF JANANI SURAKSHA YOJANA ON SELECTED FAMILY HEALTH BEHAVIORS IN RURAL UTTAR PRADESH

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BACKGROUND

In 2005 the National Rural Health Mission (NRHM) introduced the Janani Suraksha Yojana (JSY) with the objective of reducing maternal and neonatal mortality by promoting institutional delivery among poor women. The JSY introduced frontline health workers, called Accredited Social Health Activists (ASHAs), as a link between the government and pregnant women in the community. Introduction of the ASHA, under the government's NRHM, aims at bridging the gap between the provider and the client, thereby motivating women and their families to seek delivery care at a health facility.¹

The key roles of the ASHA are to identify pregnant women, facilitate at least three antenatal check-ups (ANCs), motivate them to seek an institutional delivery, visit the mother and newborn for a postnatal check-up within 7 days of delivery and counsel them on early breastfeeding.²

Further, under the JSY, pregnant women receive an incentive payment of ₹1,400 for an institutional delivery or ₹600 for a home delivery conducted by a skilled birth attendant; while the ASHA receives ₹600 for accompanying the woman to a facility and staying there till the woman is discharged. Apart from this ₹600, some states offer the ASHA additional payment for undertaking other health-related activities. For example, the Uttar Pradesh (UP) government offers the ASHA incentives for 12 specific activities for (for a list of selected activities for which payment is given by the state government, see Box 1). Several intervention programs have highlighted the contribution of frontline health workers in promoting institutional delivery.^{3,4}

The initial evaluation of the JSY scheme, which has been designed to improve the rate of institutional delivery, shows that ASHAs are a valuable source of support during pregnancy and childbirth;

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BOX 1
Incentives for specific activities paid to ASHAs
by the Government of UP

| Activity | Amount (₹) |
|--|------------|
| JSY incentive | 600 |
| 6 PNC visits for low birth weight babies | 100 |
| 3 PNC visits for normal newborns | 50 |
| PNC visit and motivating colostrum feeding | 50 |
| Female - Male sterilization | 150-200 |
| Pulse polio program | 75 |
| Assisting in routine immunization | 150 |
| Full immunization of child <12 months, including Vitamin A | 100 |
| Accompanying a woman or newborn to a facility in case of complications | 200 |
| Maintaining a register and preparing annual village health plans | 500 |
| Attending village meetings | 100 |
| Assisting TB and leprosy patients to seek care | 200-500 |

Source: Department of Health and Family Welfare, GoUP.

for example in rural UP, 76 percent of ASHAs accompanied mothers during delivery to a facility and 62 percent reported having arranged transportation to a facility for delivery. 5 While the evaluation shows some positive impact, the scheme needs closer examination to assess the extent to which it has succeeded in reducing maternal and newborn mortality and morbidity.^{5,6,7,8,9,10,11,12,13} All the studies cited here are descriptive and focus on functioning of the JSY and the increase in institutional delivery; however, none of these studies indicate whether the JSY has helped in reducing maternal and neonatal mortality. However, a recently published article in *The Lancet* indicates that the introduction of the JSY has been associated with a reduction of 3.7 perinatal deaths per 1,000 pregnancies and 2.3 neonatal deaths per 1,000 live births.¹⁴

The JSY is one of the largest incentive programs in the world to improve maternal and child health and its functioning, the process of how it influences target behaviors and the extent to which it succeeds in meeting its aim of reducing maternal and neonatal mortality needs careful examination.

OBJECTIVES

This article briefly explores the extent to which the JSY has succeeded in achieving its goal or promoting positive family health behaviors that have a significant bearing on maternal and neonatal mortality. More specifically, it examines:

- (a) the extent to which the introduction of the JSY and ASHAs have helped in increasing (a) ANC check-ups among pregnant women, (b) institutional delivery, and (c) postnatal care for women and their newborns,
- (b) how other family health behaviors have been influenced by the JSY,
- (c) the quality of services offered and the scope for improvement in the program.

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METHODOLOGY

Data for the study was collected during two formative studies carried out by the Population Council to understand the barriers and facilitating factors for the adoption of eight selected family health behaviors that have a direct bearing on maternal and child health outcomes. The eight family health behaviors selected are:

- (a) Increasing the proportion of deliveries that occur in a health facility and mothers who have access to basic emergency obstetric care (EmOC) services.
- (b) Increasing the proportion of safe deliveries at home (including a skilled birth attendant, clean delivery, birth preparedness and a care-seeking plan in case of complications and/or emergency).
- (c) Increasing the uptake of preventive postnatal care services for newborns and mothers (including clean cord care, immediate breastfeeding and early follow-up of the mother and child).

- (d) Increasing the practice of skin-to-skin care (STSC)/Kangaroo Mother Care (KMC) for newborns.
- (e) Increasing the practice of early and exclusive breastfeeding of infants during the first six months of life.
- (f) Increasing the proportion of children (6-23 months) who receive appropriate complementary feeding (solid or semi-solid food).
- (g) Increasing the uptake of postpartum family planning methods, including the Lactational Amenorrhea Method (LAM), to adequately space births.
- (h) Increasing the rate of compliance for recommended schedules of child immunization.

It is expected that the JSY, which is a key strategy to promote health seeking for maternal and neonatal care, will also influence these target behaviors and family health outcomes. Hence, while examining the functioning and performance of the JSY, its impact on these target behaviors has also been assessed and documented in detail in articles 3-8 in this journal.

Pathways model

Before planning the formative study, considerable time was spent reviewing theories of behavior change and developing a pathways communication model to explain the processes that could bring about adoption of the desired family health behaviors. The pathways model is based on a framework developed earlier by the Johns Hopkins University Center for Communication Programs (JHUCCP), which has been modified and adapted to the UP context.¹⁵ The pathways model combines the strengths of both psychological theories and sociological models of behavior change. On the one hand, the pathways model has been used as a guide for the formative study; on the other hand, the model itself has

been validated based on the evidence collected in the formative study and field observations in the context of rural UP. The pathways model has worked well in the field and could be considered an effective tool for developing a behavior change communication (BCC) strategy for northern India.

Study design

The formative study used both quantitative and qualitative approaches to collect data on the barriers and facilitating factors with respect to each of the eight target behaviors. In the quantitative study, a large sample survey was carried out covering 4,754 households spread over 12 districts and 225 villages. Four districts were selected each from Western UP, Central UP and Eastern UP. In addition to different stakeholders in the family (woman, husband, mother-in-law), staff at public health facilities, private village health providers (trained and untrained) and frontline health workers (ASHAs, AWWs, ANMs) serving the sampled villages were also interviewed (Table 1). Panchayat members, including Village Health and Sanitation Committee (VHSC) members in each village, were also interviewed.

| TABLE 1 Sample size: Quantitative and qualitative study | | |
|--|--------------------|-------------------|
| Category of respondents | Quantitative study | Qualitative study |
| Households | 4,754 | -- |
| Women | 4,472 | 74 [®] |
| Husbands | 2,274 | 39 [†] |
| Mothers-in-law | 2,372 | 38 [‡] |
| Staff at PHCs/CHCs | 144 | -- |
| ANMs | 161 | -- |
| ASHAs | 289 | 36 |
| AWWs | 284 | 42 |
| Private practitioners | 316 | 43 |
| Panchayat members | 251 | 14 |
| Dais | -- | 22 |
| Total | 15,317 | 308 |

Note: [®]Includes 36 home deliveries, 38 institutional deliveries.
[†]Includes 21 home deliveries, 18 institutional deliveries.
[‡]Includes 22 home deliveries, 16 institutional deliveries.

The qualitative study was equally comprehensive, and generated vast data to complement the information gathered in the quantitative survey. The qualitative study documented the decision-making process and the role of family dynamics in controlling or facilitating the target behaviors, the role and limitations of frontline health workers in promoting behavior change and the potential role of local private health care providers in promoting family health outcomes. The qualitative study was carried out in three districts of UP, one in each of the three regions. A total of 24 villages and 308 in-depth interviews with different stakeholders corresponding to each category of respondents were covered in the qualitative study.

KEY FINDINGS

Profile of women

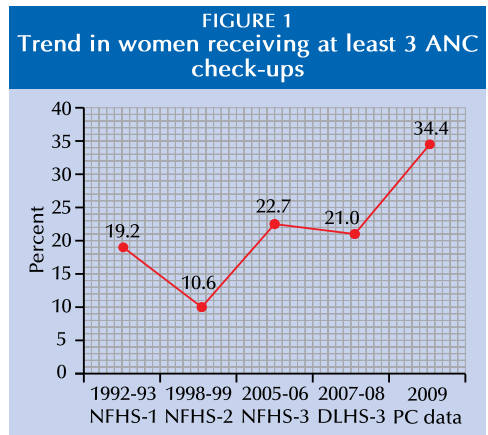
The profile of women interviewed in the formative study is given in Table 2. As the table indicates, 91 percent were Hindus, 35 percent were scheduled castes/tribes, the mean age of women was 25.3 years and 23 percent had started cohabitating before their fifteenth birthday. Almost two-thirds were non-literate and the average of children ever born was 2.9 years.

Registration for ANC and uptake of at least three ANC check-ups

One of the key responsibilities of an ASHA under the JSY is to identify all pregnant women in the community at the earliest, help them to register for ANC and ensure each receives at least three ANC check-ups. Data from 1992-93 to 2009^a show that the proportion of women who received at least three ANC check-ups increased significantly from 19.2 percent in 1992-93 to 34.4 in 2009 (Figure 1). However, it is also

| Variable | Category | Percent |
|------------------------|---------------|--------------|
| Religion | Hindu | 91 |
| | Non-Hindu | 9 |
| Caste | SC/SC | 34 |
| | OBC | 51 |
| | General caste | 15 |
| Age | 15-19 | 7 |
| | 20-24 | 40 |
| | 25-29 | 34 |
| | 30-34 | 19 |
| | Mean | 25.3 |
| | S.D. | 4.3 |
| Education | No education | 56 |
| | Primary | 13 |
| | Secondary | 28 |
| | Higher | 3 |
| Age at cohabitation | <=15 | 23 |
| | 16-17 | 29 |
| | 18-19 | 32 |
| | >=20 | 16 |
| | Mean | 17.2 |
| | S.D. | 2.3 |
| Children ever born | Mean | 2.9 |
| | S.D. | 1.7 |
| Work status | Yes | 7 |
| | No | 83 |
| Exposure to mass media | No exposure | 59 |
| | Any exposure | 41 |
| Total | | 4,472 |

important to note that the vast majority (66 percent) of women are still not receiving the minimum recommended three ANC check-ups.



^aData 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.

TABLE 3
Number of ANC check-ups received according to background characteristics a women (percent)

| Variable | Category | ANC check-up received | | | N |
|---|-------------------|-----------------------|--------|----------|-------|
| | | No ANC | <3 ANC | >= 3 ANC | |
| Religion* | Hindu | 36 | 28 | 36 | 3,738 |
| | Non-Hindu | 48 | 26 | 26 | 834 |
| Caste* | SC/ST | 44 | 28 | 28 | 1,585 |
| | OBC | 35 | 28 | 37 | 1,944 |
| | Others | 35 | 26 | 39 | 943 |
| Standard of Living Index* | Low | 47 | 28 | 26 | 1,663 |
| | Medium | 40 | 29 | 31 | 1,357 |
| | High | 26 | 26 | 47 | 1,452 |
| Age | 15-19 | 29 | 35 | 36 | 245 |
| | 20-24 | 35 | 29 | 37 | 1,761 |
| | 25-29 | 40 | 24 | 36 | 1,539 |
| | 30-34 | 44 | 29 | 27 | 927 |
| Education | No education | 49 | 28 | 24 | 2,604 |
| | Primary or higher | 32 | 29 | 39 | 608 |
| | | 19 | 27 | 54 | 1,260 |
| Exposure to any mass media* | No | 46 | 27 | 27 | 2,584 |
| | Yes | 28 | 28 | 44 | 1,888 |
| Availability of any health facility in village* | No | 59 | 19 | 23 | 309 |
| | Yes | 36 | 28 | 35 | 4,100 |

*Chi square test, $p < 0.001$.

An analysis of woman who received at least three ANC check-ups reveals that these women were by and large Hindu, from general or other backward castes, with at least 6 years of schooling, living in large villages and had been contacted by ASHA (Table 3). In contrast, a larger proportion of women who had not received any ANC check-ups or had received less than three ANC check-ups often were from scheduled castes/tribes, minority religious groups, non-literate, residing in remote villages or hamlets of large villages and had not been contacted by an ASHA. Results from the logistic regression analysis confirm that these parameters are important predictors of receiving at least three ANC check-ups.¹⁶

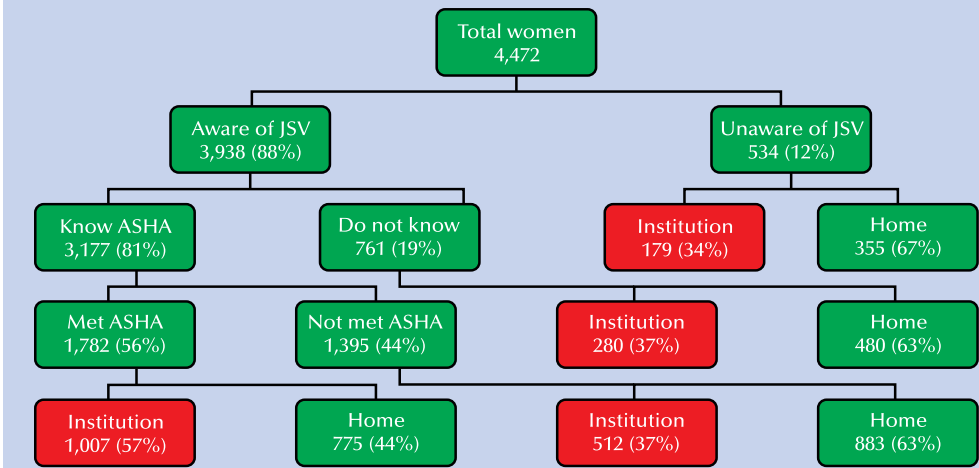
Institutional delivery

Findings show that the introduction of the JSY has helped to increase the rate of institutional delivery significantly. According to the Population Council

formative study, 44 percent of women had delivered in an institution. Corresponding figures reported in NFHS-1 (1992-93), NFHS-2 (1998-99), NFHS-3 (2005-06) and DLHS-3 (2007-08) were 7, 11, 17 and 23, respectively. The study also shows that after the introduction of the JSY, the share of institutional deliveries in private hospitals declined from 63 percent in 1998-99 to 37 percent in 2009. Reciprocally, the share of institutional deliveries at public facilities increased from 37 percent to 63 percent due to the JSY incentive.¹⁶ While it is encouraging to see an increase in the utilization of public facilities, it also raises a serious concern whether public facilities are ready to take on the increasing workload. According to the DLHS-3 facility survey,¹⁷ the readiness of public health facilities is far from satisfactory. More than half the PHCs have less than four beds or a functional operation theater (OT). Very few PHCs (12 percent) including 24x7 facilities have an electricity connection and even fewer are equipped to provide EmOC. As a result, the few facilities, including CHCs and district hospitals, that have the required infrastructure are becoming overcrowded and as a result quality of services are compromised.¹⁸

An analysis of women's awareness of the JSY and its benefits, women who know or have met the ASHA, and the impact of JSY on promoting institutional delivery shows that most women (88 percent) were aware of the JSY and the incentive it offers for institutional delivery. However, of the 4,472 women interviewed, only 3,177 (71 percent) knew the ASHA of their village. An even smaller number (1,782; 40 percent) were contacted by the ASHA during their last pregnancy while the majority (60 percent) were not contacted by the ASHA. Further analysis shows that contact between the ASHA and the pregnant woman/ her family members and the ASHA's counseling efforts, and not just awareness of the JSY or knowing the

FIGURE 2
Awareness of JSY and contact with ASHA



ASHA, that motivates women to opt for institutional delivery (Figure 2).

The analysis shows a significantly larger proportion (57 percent) of women who were contacted by the ASHA during their last pregnancy delivered at a health facility as compared to those who were not contacted by the ASHA (37 percent) or those who were not aware of the JSY (34 percent). Logistic regression analysis taking institutional delivery as the dependent variable shows that women’s background characteristics like religion, caste and education, and program variables like number of ANCs received and contact with the ASHA are the strong predictors for institutional delivery.¹⁶ These findings are similar to the predictors of receiving at least three ANC check-ups as discussed earlier. Women who have least benefited from the JSY are poor, from scheduled caste/tribe families, belonging to minority religious groups, non-literate and residing in remote villages. During the qualitative study this issue was further explored. In-depth interviews reveal that the ASHA selects those women to motivate for ANC and institutional delivery whom she is reasonably sure will go for institutional

delivery as she gets paid only if the woman delivers in an institution. If the ASHA feels that a segment of women may not opt for institutional delivery because they are not educated, the village is remote or for other reasons such as the practice of purdah or religion, she does not want to “invest” her time in them for registration of ANC or persuading them to undergo at least three ANC check-ups.

Another factor for low contact between the ASHA and pregnant women is the social distance, measured in terms of caste, class, religion and education of the ASHA and the beneficiaries. Quantitative and qualitative data show that the majority of ASHAs (74 percent) belong to general caste or other backward caste families, and often are relatives of village leaders and hence hesitate to visit scheduled caste/tribe women. In some cases, the perceived hostility towards or non-acceptance of ASHAs by Muslim families also deprives Muslim families from receiving advice from the ASHA. In rural areas, particularly in larger villages, population segments are concentrated in different parts of the village – a Muslim mohallah or remote hamlets (often located 0.5-1 km from the

main village) inhabited by scheduled caste/tribe families. It is difficult for ASHAs to visit these hamlets because of both the physical and social distance. To some extent, smaller villages where ASHAs do not reside that are required to be covered by the ASHA living in a nearby village, are not covered by the ASHA. The above two factors together are a strong barrier hindering a large segment of the population from receiving advice from the ASHA on ANC or institutional delivery.

Provision of JSY incentive

The formative study shows that among women who had delivered in a public facility, around 79 percent had received the full incentive money of ₹1,400, about 18 percent did not receive any incentive money and 4 percent received less than the recommended amount (₹250-750). With regard to payment of incentives, no difference was observed in terms of religion, contact with the ASHA, village size or distance from the PHC/CHC. Interestingly, a relatively larger proportion of disadvantaged groups like scheduled castes/tribes (82 percent), young women aged 15-19 years (85 percent) and non-literates (81 percent) received their full incentive money as compared to women from other castes (76 percent), women aged 20-29 (77 percent) and better educated women (74 percent). This is an unexpected result and needs further investigation. The qualitative study, however, indicates that many well-to-do families were not attracted by the incentive money, because they feared that people would say that they had opted for an institutional delivery only because of greed. In fact some families from eastern UP continued to have a home delivery only for this reason. In case of western UP well-to-do families went to a private clinic for delivery.

According to the NRHM guidelines,¹ in addition to the monetary incentives, all pregnant women are expected to receive a

number of non-incentivized services from the ASHA. These services include help in ANC registration, receiving advice on ANC and delivery preparedness, arrangement of transportation to go to a facility for delivery, accompanied to the health facility at the time of delivery, and receiving a home visit by the ASHA after delivery for post-natal check-ups. Of these five non-monetary incentives that women are expected to receive, only a few were actually offered by the ASHA; indeed, these services are primarily offered to women whom the ASHA is reasonable sure will deliver in a public facility (Table 4).

| Incentive | Public facility | Private facility | Home delivery |
|--|-----------------|------------------|---------------|
| Helped in ANC check-up / registration | 43 | 18 | 19 |
| Advised during ANC | 66 | 26 | 31 |
| Arranged transportation for delivery | 8 | NA | NA |
| Accompanied to facility for delivery | 60 | 7 | NA |
| Home visit for PNC | 17 | NA | 6 |
| Did not receive any non-incentivized service | 20 | 48 | 61 |
| Total | 1,250 | 730 | 2,492 |

It is evident from Table 4 that among women who delivered in a public facility, only 20 percent did not receive any non-incentivized services while the corresponding percentages for women delivering in private clinics and at home were 48 and 61 percent, respectively. Table 4 also provides an analysis of the individual non-incentivized services that women received for their last delivery. Among women who delivered in a public facility (in which case women and ASHAs receive an incentive), less than half (43 percent) received help in ANC registration, and in around two-thirds of cases the ASHA accompanied the woman to the facility. However, in only 8 percent of cases did the ASHA help in arranging transportation

and less than one-fifth of women were visited by the ASHA after delivery for postnatal care. In case of home deliveries, all non-incentivized services of the JSY were less than half of those who delivered at an institution.

One reason for the poor rate of postnatal care is that ASHAs get paid a very small fee (₹ 50 for three visits) for this service. In many cases, this fee has not been paid as this is a state-introduced special fee and a system of verification has not been established. The relatively low importance given to postnatal care is reflected in the ASHAs' responses when they were asked to list their roles. The most frequently mentioned roles included facilitating ANC registration and - ANC check-ups (51 percent), motivating and educating women and their families for institutional delivery (80 percent), accompanying women to a facility for delivery (53 percent), promoting full immunization (69 percent), promoting early breastfeeding (26 percent) and sterilization (63 percent for male/female sterilization). Each of these activities is an incentivized activity or leads to institutional delivery, such as three ANC check-ups, which is found to be a strong positive predictor of institutional delivery. Other activities like providing postnatal care, promoting exclusive breastfeeding, timely introduction of appropriate complementary feeding and postpartum contraception for spacing are non-incentivized services and were mentioned by few ASHAs as their role.

Considerations for preferring institutional delivery

Probing regarding the preference for institutional delivery shows that the prime consideration as reported by women, their husbands and mothers-in-law was the safety of the mother (59-74 percent) and child (55-73 percent). It appears that the ASHA's counseling efforts have succeeded in convincing women and their families of the health benefits of institutional

delivery over home delivery. Many women mentioned that they were advised by the ASHA or ANM about institutional delivery during ANC. If this effort is sustained over the next 4-5 years, it is possible that institutional delivery could become a community norm. However, it should be emphasized that a majority (56 percent) of women are still delivering at home and extra efforts would be required to diffuse this practice among the disadvantaged groups.

Indeed, the JSY incentive is also a motivational factor for institutional delivery and was mentioned by 16 percent of women and 22 percent of husbands. However, our analysis shows that most families who opted for an institutional delivery spent an average of ₹1,179 (on different items like transportation, medicine) in Eastern UP, ₹1,144 in Central UP and ₹1,897 in Western UP. Thus, the motivation for institutional delivery is not to earn money but rather to receive better and safe delivery services at a facility with no out-of-pocket cost (e.g. Eastern and Central regions) and at a heavily subsidized (76 percent) cost in the Western region. In the absence of the JSY incentive, all expenses would have to be borne by the family and in such cases some families would continue with home delivery.

Contribution of JSY in adoption of other healthy behaviors

The thrust of the JSY is to increase institutional delivery, as this single action may promote various other behaviors as well, for example, delivery by a skilled birth attendant, timely referral to higher institutions in case of complications, early breastfeeding, postnatal care within 7 days of delivery, exclusive breastfeeding and the adoption of postpartum contraception. The formative study attempted to examine what is actually happening on the ground and the mechanisms being adopted to promote target behaviors.

Table 5 gives the status of selected target behaviors that have a direct bearing on maternal and child health by place of delivery. Findings clearly indicate that institutional delivery helps in promoting other healthy practices. For example, early breastfeeding (initiation within one hour of birth) was reported by 29 percent of women who delivered in a public facility as compared to 19 percent who delivered at home. Similar improvements could be seen in all the listed target behaviors except for appropriate complementary feeding and postpartum contraception.

TABLE 5
Selected health practices by place of delivery (percent)

| Indicators | Public facility | Private facility | Home delivery | All cases | Total N |
|-----------------------------------|-----------------|------------------|---------------|-----------|---------|
| Received PNC* | 17 | 37 | 6 | 14 | 4,472 |
| Cord care* | 27 | 18 | 14 | 19 | 4,472 |
| Delayed bathing newborn by a day* | 55 | 41 | 18 | 32 | 4,472 |
| Early BF* | 29 | 16 | 15 | 19 | 4,472 |
| Colostrum feeding* | 81 | 75 | 59 | 68 | 4,472 |
| Exclusive breastfeeding* | 29 | 24 | 21 | 24 | 2,386 |
| Complimentary feeding* | 24 | 25 | 24 | 24 | 2,386 |
| Postpartum contraception* | 24 | 39 | 27 | 28 | 4,045 |
| Full immunization* | 58 | 54 | 45 | 50 | 1,500 |

*Chi square test, $p < 0.001$.

Two other important observations can be made from the data in Table 5. First, except in the case of postpartum care, the performance of all the target behaviors is better if the delivery is conducted in a public facility as compared to a private facility. Further analysis also reveals that postpartum care is generally better in case of delivery in a private clinic because a larger proportion (38 percent) of the cases were complicated cases, as compared to

delivery in public facilities (20 percent), and the women were asked to come back for examination. Further, if the use of only modern contraceptive methods is considered then no difference in the level of contraceptive use is observed among women who delivered in a private or a public facility. Second, there is great scope to improve certain practices if the staff at health facilities are oriented and supervised to encourage women to adopt healthy behaviors. For example, early breastfeeding and colostrum feeding by women could be increased substantially. Institutional delivery provides a window of opportunity to educate and counsel women on various family health behaviors during their stay at the facility and before discharge, and should be fully exploited.

Using both quantitative and qualitative data, an attempt was made to understand why institutional delivery contributes to increase in the adoption of several target behaviors as observed above. The logistic regression analysis, taking each target behavior as a dependent variable, reveals that receiving three ANCs is a critical path for changing other family health behaviors. Discussions with ASHAs, ANMs and women revealed that even though the quality of ANC services was generally varied, the ANM had advised all women about institutional delivery, which was subsequently reinforced by advice from the ASHA. As a practice once the ASHA identifies a pregnant woman and feels that she is a potential candidate for delivery in a public institution, she meets the woman several times, counsels her about the advantages of institutional delivery, registers her for ANC and ensures that the woman receives at least three ANC check-ups. Formative study data also reveal that of the 2,784 women^b who received any ANC

^bAmong women who had received any ANC check-up, in only 39 percent of cases was a blood test done, in 53 percent cases urine was examined, in 44 percent cases blood pressure was measured and around 63 percent of cases was weight taken. Abdominal examination was done in the majority of case (74 percent). Less than one-third of women had received all the services.

check-up, two-thirds of the ANC check-ups were done at PHCs, CHC, district hospitals and private clinics and few at the sub-center (12 percent) and still fewer at the anganwadi center (5 percent). In addition, 12 percent had received ANC check-ups at home. Among those who received three or more ANC check-ups, most received these at PHCs or higher order facilities. During this process, women also become acquainted with providers at facilities and facilities' environment (public or private) does not remain a strange place; this helps them overcome the fear of delivering in an unknown place assisted by strangers. In the qualitative study, this issue of delivering in an unknown place assisted by a stranger was observed as an important barrier to institutional delivery. Thus three ANC check-ups, it appears, is a proxy variable for contact with providers. The counseling and advice women receive during these ANC check-ups, and the process of getting acquainted with the facility and its providers, reduces women's fear regarding institutional delivery. These observations are supported by the data in Table 6, which show a strong association between number of ANC contacts with health providers and the adoption of target behaviors.

It is important to note that to influence different target behaviors the number of

ANC contacts with providers required as well as the timing of the contacts could vary substantially. For example, exclusive breastfeeding, appropriate complementary feeding and postpartum contraception are not influenced by increasing the number of contacts during pregnancy or in the immediate post-delivery period. In the case of exclusive breastfeeding, a visit by a provider in the fourth or fifth month after delivery would be useful as around this time families tend to initiate feeding animal milk and other liquids to the child. Similarly, a visit in the fifth and sixth month would be useful to reinforce messages on appropriate complementary feeding and adopting modern contraceptive methods for spacing and avoiding unwanted pregnancy. These issues require further investigation.

Missed opportunities and the need for improvements

While the formative study shows many encouraging findings, it also reveals several systemic limitations that need to be addressed if the full benefit of the JSY and the Millennium Development Goals 4 and 5 are to be achieved at the earliest.

The main concern is the lack of infrastructure at the facility level, which has a direct bearing on the quality of

TABLE 6
Number of contacts with health care providers as reported by women and practice of family health behaviors (percent)

| Indicators | Number of contacts | | | | | | | Total N |
|-----------------------------------|--------------------|----|----|----|----|----|-----------|---------|
| | 0 | 1 | 2 | 3 | 4 | 5 | All cases | |
| Institutional delivery* | 20 | 45 | 42 | 54 | 65 | 67 | 44 | 4,472 |
| Home delivery with an SBA* | 3 | 3 | 6 | 4 | 3 | 7 | 7 | 2,492 |
| Received PNC* | 5 | 8 | 13 | 19 | 26 | 38 | 14 | 4,472 |
| Cord care* | 16 | 22 | 15 | 20 | 21 | 25 | 19 | 4,472 |
| Delayed bathing newborn by a day* | 23 | 35 | 29 | 35 | 40 | 44 | 32 | 4,472 |
| Early BF* | 13 | 15 | 17 | 22 | 26 | 28 | 19 | 4,472 |
| Colostrum feeding* | 55 | 67 | 66 | 75 | 79 | 81 | 68 | 4,472 |
| Exclusive breastfeeding* | 26 | 20 | 22 | 26 | 24 | 22 | 24 | 2,386 |
| Complimentary feeding | 24 | 20 | 24 | 27 | 25 | 24 | 24 | 2,386 |
| Postpartum contraception* | 38 | 34 | 44 | 41 | 50 | 46 | 41 | 4,045 |
| Full immunization* | 31 | 43 | 53 | 61 | 70 | 68 | 50 | 1,500 |

*Chi square test, p<0.001.

services. For example, due to the of lack of infrastructure, particularly electricity, beds and other essential amenities, the majority (59 percent) of women who deliver in a public facility are discharged within 12 hours of delivery. According to the formative study 14 percent of women were discharged directly from the delivery table, 31 percent within 1-6 hours, another 12 percent within 7-12 hours and 17 percent within 24 hours. Further analysis shows that in two-thirds of the cases it was the health providers (doctors, nurses) who asked the women to go back home whereas in less than one-third of the cases women or their family members asked for discharge, mainly because of family concerns, such as children being left behind at home, and because there was no place at the facility for them to stay. Probing with health providers indicates that in the absence of electricity (even in some of 24x7 facilities) and other essential services, it is difficult for both women and health providers to stay at the clinic. Most women and newborns were not examined and women /family members were not advised about postnatal care or other precautions like newborn thermal care, or post- delivery danger signs for mothers and newborns. n the absence of any follow-up check-up mechanisms of these women (only 14 percent were visited by the ASHA during the postpartum period), it is difficult to assess the impact of the JSY on neonatal mortality or postpartum complications/ maternal death. To get the benefits of institutional delivery, essential services at health facilities need to be improved so that every women and newborn can be kept under observation for at least for 24 hours after delivery, if 48 hours is not possible.

The formative study also shows that even in case of institutional deliveries only 24 percent of newborns were breastfed within one hour. Around 50 percent were given pre-lacteal feeds in the facility itself. These behaviors could be easily improved

by reorienting the PHC/CHC staff on the importance of early breastfeeding and providing supportive supervision to ensure that this practice is seriously implemented.¹⁹ Studies show that early breastfeeding and pre-lacteal feeding are competing behaviors; with the increase in early breastfeeding pre-lacteal feeding will automatically decline.

During field work we did not have an opportunity to observe a delivery at a PHC. However, in both the quantitative survey and in-depth interviews with women who had recently delivered in a PHC several questions were asked to assess the quality of client-provider interaction and the procedures after reaching at the facilities. While the majority of women (83 percent) were satisfied with the services they received, 17 percent were not inclined to recommend delivery at the PHC to other women. Women's responses to other questions also show that there is a lot of scope for improving the quality of services provided. The present level of satisfaction should be taken with caution as women from villages do not have a clear perception of what constitutes good quality of care and whether hygienic practices and correct procedures were followed. For women, it was good enough that the purpose for which they had come to the facility (safe delivery) had been achieved.

Table 7 shows that at least in 25 percent of cases the woman's first examination after reaching at the facility was considerably delayed; oxytocin was used indiscriminately (in 79 percent of cases) to increase labor pain, and in 57 percent of cases heavy pressure was applied on the abdomen to hasten the delivery. Only around two-thirds of women were shifted to a proper ward after delivery, and of them 15 percent were not provided a proper bed to lie on post-delivery. Qualitative data however, show that there were a number of other limitations that the survey could not capture. For example, bad behavior of PHC

| TABLE 7 Indicators of quality of care at the facility as reported by women | |
|---|--------------|
| Indicators | Percentage |
| After arrival at facility women first examined after: | |
| Immediately | 75 |
| 1-2 hours | 21 |
| 3 or more hours | 2 |
| Reached at night but examined in morning | 1 |
| Received injection to increase labor pain | 79 |
| Person who assisted the delivery | |
| Doctor | 23 |
| ANM/LHV/PHN/nurse | 75 |
| ASHA and others | 2 |
| Reported strong pressure applied on abdomen | 56 |
| Reported vaginal massage to hasten delivery | 25 |
| After delivery, woman was shifted to: | |
| Ward/room | 77 |
| Verandah/corridor | 6 |
| Home | 17 |
| After delivery women lay on: | |
| Cot with mattress | 85 |
| Cot without mattress | 9 |
| Floor with mattress/without mattress | 6 |
| Reported providers were kind and supportive | 87 |
| Felt satisfied with their stay at facility | 83 |
| Would recommend other women to deliver at a facility | 83 |
| Total | 1,250 |

Note: Based on 1,250 women who delivered at a public health facility.

staff, being scolded during the delivery process, lack of privacy, not being provided a bed even though it was available and shifting women to the floor of the veranda or ward to save the bed from getting dirty and asking women and their family to purchase all the items required for delivery, even a blade to cut the cord were frequently mentioned issues.

Conclusion

Results of the formative study clearly indicate that the JSY monetary incentives and non-incentivized services and counseling by the ASHA have increased client-provider contact, the percentage of women receiving three ANC check-ups

and seeking institutional delivery. These practices provide windows of opportunity for providing counseling and advice which, in turn, trigger the adoption of several other healthy behaviors that have a direct bearing on maternal and child health. The adoption of clusters of healthy behaviors due to increased contact and counseling is encouraging. However, systematic efforts are required to improve the content of counseling, to provide integrated information to influence multiple health behaviors and to reinforce messages through multiple contacts between healthcare providers and beneficiaries from the ANC period to the postpartum period.²⁰ To get the maximum benefit from the JSY, a number of systematic changes are necessary. Improvements in infrastructure and essential facilities at health institutions are critical to ensure that women stay at the clinic for at least 24 hours and get postnatal care. Improvements in staff behavior, availability of skilled staff to manage basic EmOC and supply of essential drugs and equipment are also needed to improve the quality of services. Providing JSY incentives and improving quality of care would yield the best results.

Given the cultural context of UP, it is difficult to expect that women to come to a facility within seven days of delivery for a check-up. Postnatal care should be provided at home by the ASHA and to ensure that these services are provided, a fee should be paid to the ASHA. However, the formative study shows that ASHAs themselves lack the knowledge and skills to recognize post-delivery danger signs for mothers and newborns and the immediate care that needs to be taken. Hence ASHAs need focused orientation and close supportive supervision by ANMs (trained staff of NGOs) so that they get practical experience to make them effective providers of postnatal care services. And indeed to make postnatal home visits, ASHAs should be compensated for their

time. The present fee of Rs 50 paid by the UP government for three postnatal visits is too little to motivate ASHA to make the visits.

Further, as discussed in this issue, the existing public facilities cannot take the increased load of institutional deliveries and hence a share of 50 : 50 for institutional deliveries between public and private facilities should be adopted.¹⁸ For this it is important that the JSY incentive should also be offered for delivery in accredited private health clinics.

Finally, apart from a recent paper 13 which shows some reduction in the numbers of perinatal and neonatal deaths, none of the studies so far have been able to demonstrate that the JSY has been able to reduce maternal or neonatal mortality. More rigorous studies are required to document the impact one of the largest incentive programs in world (JSY) on maternal and neonatal deaths.

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