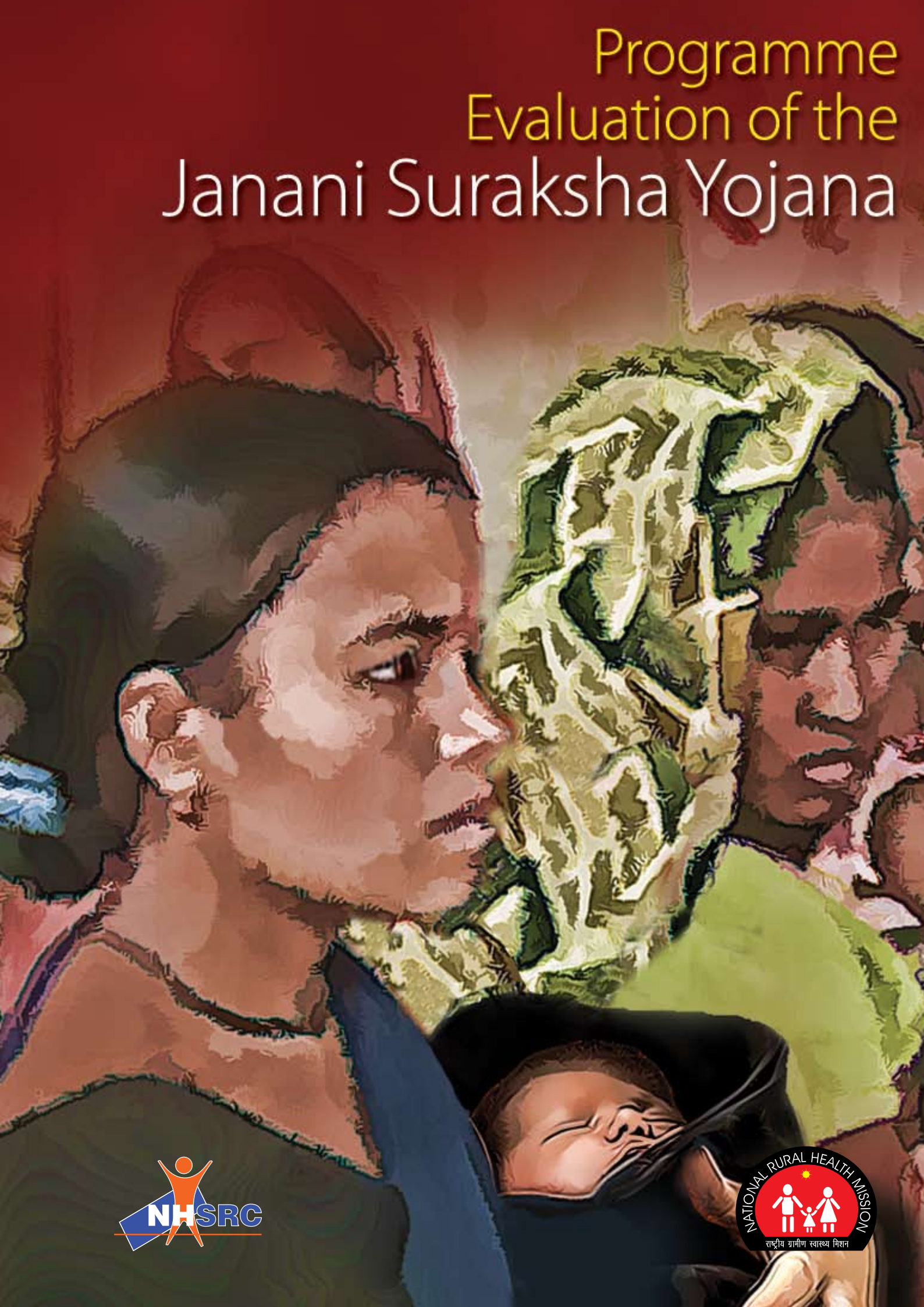
Programme Evaluation of the Janani Suraksha Yojana



Programme Evaluation of the Janani Suraksha Yojana

National Health Systems Resource Centre
Technical Support Institution with National Rural Health Mission
Ministry of Health & Family Welfare
Government of India

Ministry of Health and Family Welfare
Government of India, Nirman Bhawan
New Delhi - 110 011

This report has been synthesised and published on behalf of the National Rural Health Mission by its technical support institution; National Health Systems Resource Centre (NHSRC) located at NIHFW campus, Baba Gangnath Marg, New Delhi-110 067.

ISBN 978-81-908725-7-7

Designed & Printed by: Macro Graphics Pvt. Ltd. www.macrographics.com

P.K. PRADHAN, I.A.S.
Special Secretary &
Mission Director (NRHM)
Tele : 23061451 Fax : 23061975
E-mail : md-nrhm@nic.in

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली - 110108
Government of India
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi - 110108

Message

The right to have a safe pregnancy is a fundamental human right. The Janani Suraksha Yojana (JSY) marks an important step in realizing this right, and forms a cornerstone of the MoHFW's strategy to reducing maternal mortality and morbidity. There is sufficient evidence to show that institutional deliveries are on the rise, and have increased considerably.

The programme evaluation of the JSY implementation in the eight high focus states by the National Health Systems Resource Center is timely. It affords us a valuable opportunity to reflect on the nature of achievement and provides critical learning on the effectiveness of existing strategies for reducing maternal mortality.

The study shows that the JSY has worked as an enabling mechanism and motivated women to opt for institutional deliveries. Over half of the women with previous home deliveries reported opting for an institutional delivery. Also, the study demonstrates that JSY has provided equity in terms of access to institutions for deliveries. This is good and welcome news.

The study however also highlights gaps that need to be vigorously addressed. The findings of the study highlight the importance of planning investments in health facilities whether of infrastructure or of human resource based on need and caseload within a framework of equity.

I hope this report is used by officers at the state level to review their maternal health strategies, improve quality of care and strengthen oversight and supervisory systems. The newly launched Janani Shishu Suraksha Karyakram (JSSK) further complements JSY and together these schemes present an unprecedented opportunity to ensure quality care in public health institutions for pregnant women. I am confident that the States would seize this opportunity and make rapid strides to ensure improved health outcomes for mothers in the country.

New Delhi
25th August, 2011

(P.K. PRADHAN)

Anuradha Gupta, IAS
Joint Secretary
Telefax : 23062157
E-mail : anuradha–gupta@hotmail.com

भारत सरकार
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
निर्माण भवन, नई दिल्ली - 110108
Government of India
Ministry of Health & Family Welfare
Nirman Bhavan, New Delhi - 110108

Message

The two phase evaluation of the Janani Suraksha Yojana conducted by the National Health System Resource Center has captured facility readiness and ability to manage complications of pregnancy and beneficiary perceptions and experiences. What emerges is a picture that has a basis for hope and optimism but also a cause for concerted action.

The findings on the increase in institutional delivery are evidence that Janani Suraksha Yojana has encouraged women to approach public health institutions in search for better obstetric care. Findings on the gaps in infrastructure and human resource distribution have implications for the quality of care which in turn, have consequences in terms of maternal and neonatal mortality and morbidity. Interventions related to the role of the private sector in the provision of obstetric and the effectiveness of transport mechanisms for pregnant women need re-examining.

The implications of this report are therefore that there needs to be much greater focus on establishing protocols and standards for obstetric and newborn services, multi-skilling of service providers, judicious allocation of scarce human resources and overall a higher level of leadership at state and district levels to better plan for pregnancy and delivery services.

The tragedy of maternal deaths encapsulated in the cases that are recorded in the study is a reminder to us that the task of maternal mortality reduction is yet unfinished and that we still have a long path to traverse. This should serve as an impetus for reforms that will ensure universal and equitable access to all women.

(Anuradha Gupta)

Contents

Acknowledgements

We thank the Secretary, Ministry of Health & Family Welfare and the Mission Director, National Rural Health Mission for giving NHSRC the opportunity to undertake the study of the flagship Janani Suraksha Yojana (JSY) and for clearly defining the objectives of the study. We gratefully acknowledge the contributions made by the members of National Evaluation Team (NET) members (Dr. C.S. Pandav, Dr. Aditi Iyer, Dr. Prasanta Tripathy, Dr. Vandana Prasad, Dr. Nerges Mistry and Dr. Abole Gore) in designing the methodology and tools of the study.

We would like to thank the researchers who participated in the qualitative Phase 1 part of the study in 23 districts. (*names overleaf*). We also acknowledge the organizations who partnered with NHSRC for collecting the data for Phase II of the study – State Health Resource Centre, Chhattisgarh (SHRC) in Raigarh and Koriya districts of Chhattisgarh, Norway India Partnership Initiative (NIPI) in Angul, Orissa, VISTAAR in Garwah, Jharkhand and Kaushambhi, UP; OASIS in Nabrangpur, Orissa and Madhepura, Bihar; Public Health Resource Network (PHRN) in Bastar – Chhattisgarh; Social Medical Partnership (SMP) in Dumka, Jharkhand, Madhya Pradesh Vigyan Sabha (MPVS) in Morena, MP, Foundation for research in Community Health (FRCH) in Bageshwar, Uttrakhand and NHSRC team & Community Health Fellows – Mr. Swarup Pal and Mr. Anwar Hussain in Hanumangarh.

We look forward to the continued partnership of NET members and the study teams for further analysis of the data available and for dissemination and dialogue on the findings and recommendations with both policy makers and implementers of this programme. Many of the partners have brought in their own resources both financial and human to do this study and have ably and enthusiastically supported the entire process.

We also thank SG Computer Technology for the entire data entry and analysis. We also place on record our acknowledgements to Ms. Aditi Iyer (IIM, Banglore), Dr. Vandana Prasad (PHRN), Dr. Manmeet Kaur (PGIMER School of Public Health Chandigarh) and Dr. Sarika Chaturvedi (FRCH) for reviewing the report and giving their critical comments.

We also take this occasion to congratulate the NSHRC team who worked on this study - collecting data for the Phase 1 of the study and then helping with training, coordination and data analysis for Phase 2 part of the study. The NHSRC team consisted of Dr. Rajani Ved, Dr. Garima Gupta, Dr. Geetha Rana, Dr. Mithun Som and Dr. Sundararaman. The team undertook the final analysis, interpretation and drafting of the report and recommendations and takes the responsibility for the interpretations and views expressed here in.

Dr. T. Sundararaman
Executive Director, NHSRC

Research Teams for Qualitative Phase 1 of the JSY Evaluation

State	District	Research team
Bihar	**Nalanda**	Dr. Padmanaban, NHSRC Mr. Prasanth K.S., NHSRC Dr. Neha Dumka, NHSRC
	Madhepura	Dr. Neha Dumka, NHSRC Mr. Sudeep Kesh, IIHMR, Delhi Trainee Mr. Chandrapal Thakur, IIHMR, Delhi Trainee Ms. Megha Sharma, IIHMR, Delhi Trainee Dr. Saiz Shamsi, IIHMR, Delhi Trainee
	Samastipur	Dr. Neha Dumka, NHSRC Mr. Sudeep Kesh, IIHMR, Delhi Trainee Mr. Chandrapal Thakur, IIHMR, Delhi Trainee Ms. Megha Sharma, IIHMR, Delhi Trainee Dr. Saiz Shamsi, IIHMR, Delhi Trainee
Chhattisgarh	**Bastar**	Dr. Kamlesh Jain, SHRC, Raipur Mr. Puni Khokho, SHRC, Raipur Mr. Prem Kumar, SHRC, Raipur Mr. Mahendra Gaware, SHRC, Raipur
	Raigarh	Dr. Mithun Som, NHSRC Mr. Prem Kumar, SHRC, Raipur Mr. Sarita, SHRC, Raipur
	Koriya	Dr. Mithun Som, NHSRC Mr. Mahendra Gaware, SHRC, Raipur Mr. Puni Khokho, SHRC, Raipur
Madhya Pradesh	**Barwani**	Dr. Geetha Rana, NHSRC Dr. Bhagwan Waskel, Medical College, Indore Dr. Satish Arushe, Medical College, Indore Ms. Mun Mun, SHSRC, MP Mr. Sant Mahato, Sehat Saathi Dr. Pramod Mahajn, CMHO
	Morena	Dr. Sheetal Bishnoi, SPMU, Rajasthan Staff of DPMU, Morena
	Teekamgarh	Mr. Arun Srivastava, NHSRC Ms. Nazira Abrahaim, Community Health Fellow Mr. Dashrath, Sarthak Mr. Sunil, District Community Mobiliser
Orissa	**Nabrangpur**	Dr. Geetha Rana, NHSRC Mr. Arun Srivastav, NHSRC Dr. Prabhat Kumar Nanda, Retired Physician, DHH Ms. Madhusmita Panda, MCH Co-ordinator Mr. Pervez Alam, HMIS Fellow
	Angul	Dr. Mithun Som, NHSRC Dr. Rajeev Bhatia, IIHMR, Delhi Trainee Dr. Natasha Kaur, IIHMR, Delhi Trainee
Jharkhand	**Lohradaga**	Dr. T. Sundararaman, NHSRC Dr. Geetha Rana, NHSRC Ms. Nivedita, PHRN Ms. Ruth Kerketa, CINI Mr. Deepak Tubid, CINI Mr. Alex Kerketta, PHRN

	Dumka	Dr. Dinesh Jagtap, NHSRC Mr. Deepak Tubid, CINI Mr. Amit Kuma Mishra, CINI Mr. Anoop Vaish, IIHMR, Delhi Trainee
	Garhwa	Dr. Mithun Som, NHSRC Ms. Ruth Kerketa, CINI Mr. Deepak Tubid, CINI Mr. Amit Kuma Mishra, CINI
Rajasthan	**Bharatpur**	Dr. Anuradah Jain, NHSRC Mr. Anoop Vaish, IIHMR, Delhi Trainee Dr. Natasha Kaur, IIHMR, Delhi Trainee Dr. Rachna Nama, IIHMR, Delhi Trainee
	Dungarpur	Dr. Anuradha Jain, NHSRC Ms. Neha Pareekh, SHSRC, Jaipur Ms. Kriti, SHSRC, Jaipur Mr. Prashant Sharma, DPMU, Dungarpur Mr. Dharmesh Sharma, DPMU, Dungarpur
	Hanumangarh	Dr. Anuradha Jain, NHSRC Ms. Neha Pareekh, SHSRC, Jaipur Mr. Mehtab Alam, SHSRC, Jaipur Dr. Manik, Intern with SPMU, Jaipur Ms. Divya, Intern with SPMU, Jaipur Ms. Kanika, Intern with SPMU, Jaipur
Uttar Pradesh	**Kaushambhi**	Dr. T. Sundararaman, NHSRC Mr. Arun Srivastava, NHSRC Mr. Sajid Ishtique, NHSRC Mr. Anshul Yogi, Epidemiologist, DPMU Mr. Manoj Pandey, VISTAAR
	Bijnor	Mr. Sajid Ishtique, NHSRC Ms. Kanchan Srivastava, NSHRC Mr. Arun Srivastava, NHSRC Mr. Man Bahadur, DCM, Bijnor Mr. Devnath, Divisional Programme Manager, NRHM Mr. Rakesh Prakash Singh, DPMU Dr. Ashok Kumar, Additional CMHO
	Sitapur	Mr. Arun Srivastava, NHSRC Mr. Sajid Ishtique, NHSRC Mr. Rizwan Khan, DCM Mr. Dattatrey Gokhle, PFI Ms. Preeti
Uttrakhand	**Bageshwar**	Dr. Geetha Rana, NHSRC Dr. Arya, SHSRC, Dehradun Ms. Reena Chaturvedi, SHSRC, Dehradun Mr. Mayank Joshi, JNU Ms. Geeta
	Pithoragarh	Dr. Garima Gupta, NSHRC Dr. Mithun Som, NHSRC Ms. Nirmala Pathak Mr. Pankaj Kumar
	Dehradun	Dr. Sarika Chaturvedi, FRCH, Pune Dr. Bharat Randive, FRCH, Pune Dr. Rachna Nama, IIHMR, Delhi Trainee

Acronyms

ANM	Auxiliary Nurse Midwife
BEmONC	Basic Emergency Obstetric & Newborn Care
BPHC	Block Primary Health Centre
BPL	Below Poverty Line
BPM	Block Programme Manager
CHC	Community Health Centre
CEmONC	Comprehensive Emergency Obstetric & Newborn Care
CMHO	Chief Medical and Health Officer
CS	Caesarean Section
CSSM	Child Survival and Safe Motherhood
DAM	District Accounts Manager
DH/DHH	District Hospital/ District Headquarters Hospital
DHAP	District Health Action Plan
EmONC	Emergency Obstetric & Newborn Care
FRU	First Referral Unit
GKS	Gaon Kalyan Samiti
HbSAg	Hepatitis A Surface Antigen
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information Systems
HR	Human Resources
ID	Institutional Deliveries
IEC	Information Education Communication
IP	Infection Prevention
IPHS	Indian Public Health Standards

JSY	Janani Suraksha Yojana
LSAS	Life Saving Anesthesia Skills
MO	Medical Officer
MOHFW	Ministry of Health and Family Welfare
MOIC	Medical Officer in Charge
MP	Madhya Pradesh
MRP	Manual Removal of Retained Placenta
MVA	Manual Vacuum Aspiration
OT	Operation Theatre
MTP	Medical Termination of Pregnancy
NSU	Neonatal Stabilization Unit
OBC	Other Backward Castes
PAC	Post Abortion Care
PHC	Primary Health Centre
PNMR	Perinatal Mortality Rate
PPP	Public Private Partnership
RCH	Reproductive and Child Health
SBA	Skilled Birth Attendant
SC	Sub Centre
SNCU	Sick Newborn Care Unit
ST	Scheduled Tribes
VDRL	Venereal Disease Research Laboratory

Executive Summary

The Janani Suraksha Yojana (JSY) is one of the flagship components of the National Rural Health Mission, and the key strategy to enable women to access institutional deliveries and thereby effect reductions in maternal mortality. The scheme was evaluated in the eight high-focus states of Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, and Uttarakhand, which together account for 84.3% and 66% of India's maternal mortality and infant mortality respectively. The objectives of the study were to:

1. Assess the availability and quality of health care provided to the pregnant mothers before, during and after delivery.

2. Assess the capability of different health institutions, their bed occupancy rates and trend in institutional delivery.

3. Quality of services provided by ASHAs and streamlining the cash incentives for effective programme performance.

4. Fund flow mechanism for administering JSY scheme and mechanism adopted for ensuring timely payment to the beneficiaries; and procedure for random verification of beneficiaries.

5. Impact of JSY services on maternal mortality rate and infant mortality rate.

The two phase study using the comparative case study approach was conducted between April 2010 and December 2010. The first phase included a review of secondary data and a rapid appraisal of health facilities in 24 districts, three in each state. In the second phase, a sub set of these districts, one per state was selected randomly and a cross sectional survey of women who had delivered in the past year and were eligible for the JSY was conducted.

In Chhattisgarh the state opted to undertake the Phase 2 survey in all three districts of Phase 1 and in Jharkhand and Orissa, two out of the three were selected. Thus in Phase 2, twelve districts were studied. The focus of Phase 1 was primarily an assessment of facilities, processes and perceptions. In the second phase, 2759 women who had institutional deliveries and 710 women with home deliveries, eligible for JSY entitlement were randomly selected from a household listing of all women in the sampled villages who had delivered a child within the last one year and interviewed. All women who reported complications in these villages were also studied, irrespective of whether they were eligible for JSY. Families that reported a maternal death were also interviewed. Data collection was undertaken between May to October 2010. The study was undertaken by the National Health Systems Resource Center, in response to a directive from the Ministry of Health and Family Welfare. NHSRC undertook the Phase 1 data collection and worked in partnership with a range of partners to complete Phase 2. Data entry, analysis and report writing was done by NHSRC. A National Evaluation Team provided inputs into the design and the draft report.

The study covered facility preparedness for institutional delivery and for managing complications from the point of view of infrastructure, human resources, drugs and equipment, and quality of care. The study also assessed transport mechanisms, fund flows, and payments of the JSY funds to beneficiaries. In addition the study provides valuable data on out off pocket payments incurred by women accessing

institutions and those who had home deliveries. The report uses data from the HMIS to validate data obtained from the facilities, and that obtained from the beneficiary survey. The report juxtaposes the findings of Phase 1 against the findings from beneficiary interviews across the major themes. These are discussed in greater detail in the main text of the report.

Key Findings

In terms of outcomes, the JSY has clearly increased the number of institutional deliveries. This increase documented in other population based surveys is validated by our study findings. Our study shows that over 50% of women who a previous home delivery had opted for an institutional delivery. The study also demonstrates equity in access of women to institutional deliveries, given that the representation of SC/ST and BPL in the sample was higher than the population representation, except in Jharkhand and Chhattisgarh. Despite this increase, the study finds persistent home deliveries, about 40% in most districts studied, ranging from 7.7% to almost 63%. Women who deliver at home are more likely to be SC/ST, belong to the BPL category, and more likely to be non literate or primary school drop outs. The JSY excludes a significant proportion of women by virtue of the criteria, and these women who are excluded are those under 19 years, multiparous, poor women, often with no access to a BPL card, all of whom are at higher risk of maternal and perinatal outcomes, the first two directly and the third as a proximate determinant.

About one third of those who had home deliveries were not able to access institutions on account of not being able to afford transport costs. Poor service quality and high costs in institutions were also reported as deterrents of institutional delivery in another third. About one third had a cultural preference for the home delivery and a lack of awareness about how quality care could reduce risks. At least half of these home deliveries would become institutional deliveries if transport and quality of care improved and another half would also require communication related to risks of pregnancy. Messages on JSY have not reached about 40% of those who deliver at home, and to those whom the message has reached, the financial incentive is much better communicated than the health and safety aspects.

In the second phase districts, the maternal mortality ratio works out to about 492 per 100,000 live births, as is expected from the purposive choice of large poor performing districts within high focus states. The incidence of complications in the study is about 11.9%. The experience of care seeking in the event of pregnancy complications, is that women spend much greater time in a chain of referrals, with all its attendant costs and time delays before they get to the facility that provides them suitable care. The costs of care for complications, especially those requiring hospitalization are inordinately high and are not covered by the public health programme, forcing women and families to choose the private sector care over the public sector. Even assured referral transport is much less available when complications arise than it is for normal delivery.

In the case of women who deliver in institutions, a majority of them are receiving the JSY payment, in contrast to those that deliver at home. Non payments however in some districts are as high as 55%, and delayed payments much beyond the actual time of discharge are common. They are related to irregular fund flows to the districts and local imposition of additional conditionalities such as insistence on a photographs and a 48 hour stay. As a rule, the bearer cheque has been a step forward in both regularity and reliability of payments. Prima facie, leakages at the block and sub-block level do not appear a major problem, except in Bijnor where the figures of home delivery and sub-center delivery are likely inflated. Complaints of mismanagement of funds and non payment were more where there were delayed payments and huge backlogs.

Out of pocket (OOP) payments are high, amounting to Rs. 1028, and including transport, to about Rs. 1400 to Rs. 1600. OOP on home deliveries are also high, with almost 53% paying out of pocket for delivery services. The main out of pocket expenditures in institutional delivery are on drugs, but there are significant expenses on fees and on surgery. In such a circumstance what the JSY has accomplished has been to enable women and families overcome the financial barriers linked with the choice of institutional delivery. However, given the costs of home delivery and the fact that over half of institutional deliveries are paying out more than the JSY amount, the rationale and validity of the JSY as a behavior change induced by a financial incentive requires reexamination.

The increase in institutional delivery is skewed, with only a few facilities taking the load of this substantial increase. Of the 5830 institutions in 21 districts that should have managed the nearly 955,138 of expected deliveries only 852 or roughly 15% actually provided institutional delivery. The load is taken up predominantly by the facilities at the block and higher levels. Sub-centers in every district provide a very small part of the midwifery services. Fewer than 20% of ANMs were able to provide the role of midwifery, and such deliveries account for less than 20% of deliveries in the district. The sub centers, located in underserved areas, where ANMs conduct deliveries on a regular basis, are exceptions rather than the rule. The performance on institutional deliveries in PHCs demonstrate three patterns, the first, which is a pattern seen most frequently in Bihar and Uttar Pradesh, where only two or three PHCs in the entre district provide institutional delivery services The second pattern seen in Madhya Pradesh and Rajasthan, is where about 50 to 70% of PHCs provide institutional delivery services but a low volume, with the block PHC or sometimes one other PHC as well provide the bulk of the care. The third is the pattern of Jharkhand, Uttarakhand, Chhattisgarh and tribal Orissa where there are hardly any PHCs at this level that provide services, and even this at very low case loads.

Thus the huge increase in institutional delivery case loads is largely taken up by the block and higher level facilities. PHCs located at the block level, CHCs, SDH and DH are all providing institutional delivery services. The type of institutional delivery in these facilities ranges from "assured access to a certified nurse or midwife," to "access to a skilled birth attendant", "access to basic or comprehensive emergency obstetric care. The functionality of facilities that were already providing midwifery services has multiplied enormously as a result of NRHM inputs, but the actual number of facilities, that started providing this service is more modest Nevertheless the investments in improving supply side interventions have not necessarily factored in this uneven development.

The private sector accounts for about 12.5% of all institutional deliveries. For "any" complication however, private sector nursing homes (the six RMPs included) provide 60% of care provision. For those complications that require hospitalization 55.2% of patients (of a sample of 250) were treated in private nursing homes and the rest in the government sector. As a first resort for care in complications, the public and private sector are equally sought after. In the first referral there is a significant shift from public to private sector. Then in the second and third referral, a smaller proportion of patients from the private sector get referred back to the public sector at the higher level-medical colleges and district hospitals. Therefore without reducing the overwhelming role of the private sector in providing care, the important role of the public sector as the port of last call should not be forgotten. One major issue of concern is that patients may be exhausting financial resources and wasting precious time before they finally arrive at the district hospital, thus adding to the burden of mortality in the district hospital, which then earns the reputation of being a facility where there is a disproportionate high burden of mortality.

Although the creation of FRUs is slower than expected and the coverage is below the norm, this service is now available in almost all districts in the public sector. Despite this however in many districts the numbers of women that are provided these services are far fewer than can be expected. The district hospitals are also the main stay of treatment for complications, but financing of care in the district hospital does not provide funds for the management of complications and in many districts patients have to take on huge burden of costs.

A few not for profit private hospitals, especially the Mission Hospital seem to be playing a significant role in the provision of such emergency services. In most districts visited, every 24×7 facility and even most designated FRUs are using such Mission Hospitals as the main back up or even as the first choice for emergencies requiring surgical care. Yet many of them are not covered even by JSY, let alone a more comprehensive package, and therefore despite the multi-crore investment in JSY the major proportion of the women who most need help are paying out of pocket at substantial rates to access care at such facilities, and often not actively seeking such care on account of financial barriers.

The increase in institutional delivery has certainly increased access to delivery by an ANM, nurse or doctor attending on the delivery. However this study shows that this has not necessarily meant

increased access to skilled birth assistance because most nurses and ANMs who are actually providing services were not trained in the SBA training. Thus practices like the use of the partogram, active management of third stage of labour, use of injectable antibiotics, oxytocics and the use of magnesium sulfate for hypertension management, neonatal resuscitation, and the identification and basic management of hypothermia and sepsis in the newborn, all of which represent the life saving potential of skilled birth attendance are not being realized.

The study shows that while the establishment of 24×7 PHC has helped to identify the need for a minimum of complement of nurses or ANMs in every PHC where institutional delivery is planned, it has almost completely lost out in the other part of the definition, viz: the provision of Basic Emergency Obstetric and Newborn Care (BEmONC). On the newborn side, the ability to provide institutional care is even more limited. Even the simple bag and mask that should be available even for assisted home delivery was absent in about half the facilities and further resuscitation or sick newborn management was not available. The radiant warmer was present in many facilities, but rarely in use. Training on either BEmONC and facility based newborn care is almost completely absent.

In the provision of services in public health facilities- the lack of skilled human resources is the central and most resistant problem that the system faces. There are shortages of ANMs, nurses, doctors and specialists. Rajasthan has been able to respond to this pressure and has placed adequate nurses and ANMs in position. Orissa has also increased nurses significantly- though many more are needed. In the remaining states the numbers of ANMs and nurses are very low, both from review of secondary data and from the facility survey. However the availability of three nurses in designated 24×7 facilities (usually the block PHC), shows improvement in all the states. In many states, there is an expansion of nursing and ANM education and many more should become available for recruitment, but as of now, it has not yet happened.

One concern is that while states have undertaken contractual appointments of staff nurses and ANMs has taken place, they have not yet taken adequate steps to create permanent posts. Another concern is that the increased nurses and ANMs in the PHC did not match the case loads, and there were mismatches, with redundant staff in one PHC and a scarcity in another. A third major problem is that often nurses and ANMs are being withdrawn from other services, especially the sub-center level outreach services so that they can attend to institutional deliveries in PHCs. This was seen most often in Bihar, but there is some evidence of this in a few other states.

There was more uniformity in the numbers of sanctioned posts of specialists and medical officers, about six to nine in the CHC level, and three to five in a block PHC level. Only few had the full complement of nine. Even when there was a near full strength the critical gynecologist and anesthetist specialists could be missing. This staff strength in PHCs and CHCs when present, in some districts is adequate since the case load is modest, but in others, this is insufficient. This finding was reflected in the private not for profit mission hospitals as well. They were very short on skilled human resources, but with a difference. For an average of 80 beds, there were five doctors (2.9 specialists and two MOs);- much less than the public hospital, but there was an average of 27 nurses for each mission hospital. This translates to a ratio of 1 nurse for 3 beds and 5.4 nurses for 1 doctor. The mission hospitals thus had better nurse: bed ratio than the public sector facilities. Staff at mission hospitals expressed an interest in using partographs and of having their staff included in the government's SBA training programme- but this programme is not extended to private clinics, even not for profit ones which are handling the bulk of the complications in the district.

Even where gynecologists are available they are being deployed for sterilization camps and this conflicts with their availability for emergency obstetric care services. A similar problem exists with ANMs between sub-center functions and attachment in PHCs for institutional delivery. It does appear that just as the programme for pulse polio absorbed about 90 days of the ANMs time; and de facto, substituted the pulse polio vaccination for the routine immunization programme, so can JSY threaten the other components of RCH. A sole gynecologist in a busy district hospital could be needed for surgical interventions on about five to six cases a day; and all likely near death cases. However if she also happens to be the sole laparoscopic surgeon, she would spend nearly

60 days in a year and often much more on performing female sterilizations. That would be 300 C-sections versus 1500 sterilisations- at the least. The JSY is often referred to as undermining population stabilization efforts- but if this is happening that has little to do with JSY and more to do with prioritization of which service to provide in a context of acute shortage of qualified service providers.

Infrastructure in terms of bed capacity is a limiting factor in some districts. In newly carved out districts the number of maternity beds available in the district hospital may be limited. Sometimes even larger district hospitals like in Uttar Pradesh show 150% bed occupancy in the women' s district hospital. At the CHC and block PHCs, most districts have developed adequate bed capacity during the NRHM period or are at the point of doing so. An infrastructure development plan focused on the actual patterns of use could close the remaining gaps in a very short time. Electricity supply, water supply and even the situation in toilets was in line with the level of electrification and drinking water supply levels for the state as a whole. Predictably therefore Bihar and UP had more problems, though UP had better back up systems and functionality. The more peripheral we go, the more the power and water problems, but even the district hospital at Madhepura was facing a huge crisis in getting running water. The private mission hospitals in all these districts had solved these problems admirably and it is worth benchmarking with them to understand how, within the constraints of each district this is being achieved.

In the case of equipment and drugs, the lack of conscious planning to provide for the level of management required for a sick newborn unit, a newborn corner, a skilled birth attendance, or for basic and comprehensive emergency obstetric care is evident. Thus only two district hospitals of eight where this was studied had all the essential drugs and equipment for this level of care. Many facilities had some of the drugs and equipment but few had all. Since all are vital for maternal and newborn survival, anything less than 100% of the essential package is quite clearly sub optimal.

Of eight identified laboratory tests, district hospitals on the whole always were conducting all of them, but facilities below this including the CHCs and block PHCs rarely were codncutign some critical tests such as HIV or VDRL testing.

Few facilities were using standard protocols of care. The advantages of protocols were seldom realized. Misuse of oxytocin was a significant problem in many districts, but thankfully not in all. Irrational choice and use of antibiotics and IV fluids was also a problem. There have been significant advances made in reporting systems, but recording systems have lagged behind. Use of this information for planning and monitoring is also limited.

Systems of cleanliness, hygiene and housekeeping as well as biomedical waste management are under-developed. There is an understanding that cleanliness is a function of strictness, and motivation, often failing to recognize the organization and management processes required in a fair-sized hospital to manage this efficiently. It is only now that biomedical waste management is recognized to be more than common sense and training and systems are being put in place. But this is required for all other elements of cleanliness, hygiene and housekeeping. Staff behavior, security from stray animals, arrangements for privacy, promptness of care on arrival- are all dimensions where there appear to be large gaps in a significant percentage of facilities. There is no clear system in place of identifying these gaps and taking action.

Duration of stay in facilities is a resultant of transport access, comfort levels in the facility and of pressures of work at home. At this point of time only about 14% of the women report staying more than 48 hours. Even by a more liberal criterion of a 24 hour stay, only one thirds of women stay in the facility for at least 24 hours.

Despite all these problems however, subjective satisfaction of the user is very high. The poor want services, and they need services. If they are enabled by JSY to afford these services and if the doors of these facilities have opened up to them, they come. If it is comfortable and there is help at home and a companion with them they stay. The undisputed impact of the JSY is in that it has pressured the public health facility to open its doors wider, and signaled to the women that they can use it. This study does not support a view that the poor are induced to access institution because the cash incentive. The choice is

related to the availability of minimum services and the perceived safety and comfort of institutional delivery plus the opportunity to get away from the pressures of house work.

The reasons behind the uneven developments of these facilities need to be explored further. To some extent these trends are inevitable, and even desirable, and we need to build upon them. It does seem that as roads and transport become more developed, families would choose those facilities where round the clock services are assured, where a team of doctors and nurses are available, and where there is credibility based on a reputation for providing high quality services. Increasingly, the single nurse of single doctor run facility is passé! The availability of C-section may be an additional driver for choices in the upper strata of those who choose public sector and those who go to private sector. Facilitating transport to the higher facility and expanding the capacity of the higher facility which has an FRU level service package, to enable more effective, and better quality care even for normal delivery would then be the most important actions.

The assured referral transport system defined as a cashless, prompt service that is a mobile call away, was the mode of transport used only in 13%. Of the 2759 women who opted for institutional deliveries and were JSY beneficiaries, 5.8% did not need a vehicle as the facility was close and 0.8% had not recorded an answer. The majority, about 53%, opted for a commercial vehicle hired then and there for the trip and another 16% had made their own arrangement with a private vehicle owner. 6% used unsuitable options- cycles, rickshaws, and horse drawn carts. The contribution of private ambulances and a paid government ambulance was less than 1% each. We note however that the government organized and paid for referral transport usage rose to 65% in Nabrangpur and 25% in Angul and Pithordgarh.

On the issue of delays, about 14.3% of women reported a delay of over above one hour (which for access to emergency obstetric care is an unacceptable level), and of these 4.2% had an over two-hour delay. The standard against which we are measuring access to any site of institutional delivery, is reach within 30 minutes. Another 35% reported delays between 30 minutes to one hour. About 50% reached the facility within the norm of 30 minutes. The gradient across districts of the second component of the second delay over one hour is as follows: Bageshwar 32%, Dumka 25%, Garhwa 23%, Morena 16%, Nabrangpur 14%, Bastar 14%, Angul and Raigarh 13%, Koriya 9%, Kaushambhi and Hanumangarh 5%.

One of the issues with transport is that the family is not assured of a drop home facility. Thus families are forced to keep the vehicle waiting and pay the requisite charges, and those who cannot afford to do so, use only a one way service, or hire another vehicle to take them back to the facility. This also creates a pressure for them to leave within 6 hours (pressurizing health providers to use oxytocin for augmentation), often within 3 hours, as the vehicle (if privately arranged) will not wait or because it would cost too much. This has therefore a huge health cost which is not usually counted in the three delays approach. Over 28% of women made this choice. The gradient of those who kept the vehicle waiting was Morena 48%, Garhwa 43%, Bastar 41%, Nabrangpur 35%, Bageshwar 32%, Dumka 30%, Hanumangarh 23%, Madhepura 20%, Angul 19%, Koriya 16%, Raigarh 14% and Kaushambhi 11%.

Regarding payment for transport the ASHA making the transport payment is an exception rather than the rule. Of the out of pocket payments by the users about 42% paid less than Rs. 300 across the 12 districts. Nearly 50% of women in Orissa, Chhattisgarh and Jharkhand appear to the paying over Rs. 300, with nearly one quarter in Bastar and Koriya reporting payments between Rs. 600 and Rs. 1000. At the higher end 7.4% in Bageshwar and 14.5% in Raigarh, 7.4% in Nabrangpur, 6% in Garwah, and about 3% in Dumka, Bastar and Hanumangarh pay over Rs. 1500 for the transport alone!!

Recommendations

1. JSY has enabled and encouraged women to seek institutional delivery services. The challenge is to use this opportunity to achieve a major reduction in maternal and neonatal mortality and use the positive energy of this programme to improve the service delivery of all RCH services.

2. It should be possible for all districts to achieve universal access to quality RCH services in a three to five year period with a level of reliability to

which the government could hold itself legally accountable. This would make the promise of a service guarantee, at least for RCH services, a reality.

3. The core of this approach would be to recognize that even as of now only 10% of public health facilities are providing 90% of the services and strengthening these to ensure delivery of good quality of the entire package of RCH services- with emphasis on management of complications would be the key.

4. On the other hand there are areas which are still too far and a functional, safe facility closer to home with a referral connections the answer. This would also depressurize some of the FRU level district and equivalent hospitals which would otherwise get overcrowded. These areas would have to be identified and facilities built or strengthened in these areas. The principle should be that every habitation should have a 24×7 facility providing basic emergency obstetric and newborn care within an half hour access time but where this is not possible at least a functional sub-center or a PHC that provides at least skilled birth attendance should be guaranteed.

5. There is a need to ensure that no user fees are charged for pregnancy and newborn care and this should be well advertised, so that it is part of public knowledge. Also there must be a planned elimination of all out of pocket expenditure on account of provider fees (formal or informal), for drugs and supplies, food and transport for the patient and one companion, through appropriate supply side arrangements. Transport should include the drop back home.

6. There should be insistence on JSY money being paid on the first day of delivery- or latest on the second day- and delays beyond this should not be seen as acceptable. Further the fund should be available at the facility- and the woman should not need to make a separate trip to get these funds. Requirement of photo-id etc. are uncalled for- and occurs only because delayed payments are being accepted as the routine. Facility based payment before discharge must be the norm.

7. The single greatest source of delayed payments is delay in fund flow between state and district (we have not examined the national to state fund flows) and measures to ensure a two months reserve amount at the district level should be insisted upon. Thus the state could send in a six month fund requirement to the district, and when the cash in hand drops to less than two months requirement, another four months fund should be sent. (Exact number of months could be decided- but it is the principle that we are elaborating). Delayed payments also correlates with poor accounting and therefore also with leakages and every effort should be made to prevent any such fund flow blocks.

8. Much greater seriousness is needed to paying the BPL woman delivering at home, the Rs. 500 due to her. The HMIS grossly under-estimates the home delivery and most of these go as unreported. (In contrast in BCG immunization, these children appear in the HMIS). The major reason for non- payment of Rs. 500 is a strong almost universally shared view amongst providers that this Rs. 500 is uncalled for and would adversely affect the JSY thrust to promote institutional delivery. In many states even ASHAs hold this view. If the government is serious about this Rs. 500, then internal advocacy and public awareness of this has to be built. There is no evidence that paying the home delivery Rs. 500 would de-motivate others from institutional delivery. This is part of the "cash-as-behavior-modification" understanding that finds no support in this study. On the contrary, the study shows that JSY is ensuring affordability and accessibility to the facility.

9. Supreme Court recommends that Rs. 500 be paid earlier on account of its being part of nutrition entitlement rather than as an institutional delivery device. The reduced payment at time of institutional delivery would be insufficient to cover the out of pocket costs. Moreover given the substantial difficulty in delivering even this onetime payment, breaking this JSY payment up into multiple transactions over small amounts of funds- is almost impossible to manage and places a disproportionately huge burden on ASHA, ANM and of course on the mother and family. If nutrition linked maternity entitlement is

being considered, our recommendation is for a larger sum of money not linked to the JSY. The proposal of the women and child development, may address this issue, but it is as yet unclear if this is being proposed as a conditional cash transfer or a maternity entitlement.

10. A system to check leakages should be put in place. This is one of the terms of reference. Based on our study we recommend a shift of monitoring emphasis from monitoring only the point of data reporting by service providers, to the intermediate levels of data aggregation and block, district and state levels. This could be done as follows: We suggest the following measures:

    a. The HMIS records are used as the basis. Entries of the past three months could be cross checked on the field for truth telling with respect to institutional deliveries and JSY payments.

    b. An internal monitoring team would analyze the data for tell tale signs and discrepancies. It would generate a few key indicators- such as % of beneficiaries to whom JSY payments have been made and facilities reporting unusually high beneficiary payments. It would also check to see if there are errors and mark ups being made in aggregation.

    c. An external team would undertake a periodic monitoring visit, perhaps annually to each district. During such a assessment it would do the following:

        i. Compare the number reported on HMIS with the number on the records at the district headquarters as aggregated from the block reports.

        ii. Visit a sample of two blocks and compare the block reports with the numbers reported on the records in the block headquarters as received and aggregated from the facilities.

        iii. Visit a sample of facilities and check reported and recorded data. It could also visit a number of beneficiaries whose names appear in the registers, in the villages. The last is not essential- and particularly where the delivery is at the district or block level may be difficult to make. Mobile phone checks would have little contribution to make.

    d. If every district is to be visited once a year by a team of two- it would cost approximately Rs. 30,000 per team or Rs. 3 crores for the country, an affordable expenditure for verification of a Rs. 1000 crore expenditure. Also this visit strengthens and validates the whole HMIS system improving cost benefit ratios substantially. Action is taken not for poor performance but for false reporting. This methodology is recommended, since the study finds that the possibilities of false reports are much more at intermediate levels, then at the periphery.

11. With a modest increase in numbers, a major increase in functioning of the current number of FRUs available, and a commensurate effort to make 24×7 PHCs a level of care equivalent to a BEmONC, including newborn stabilization, and not merely the number of nurses and careful choice and location of these facilities (also called level two facilities), the met needs for EmONC and CS which currently is less than 30% could rise to 100%, which is the objective of universal access to emergency obstetric care. Moreover it could do so within a three year period for the number of facilities that need to be so developed are only about 10% of all the facilities in a district.

12. A population of ten lakhs at a birth rate of 30 per 1000 requires about 200 maternity beds- even providing for redundancy and limited occupancy. These should be distributed across 10 to 20 PHCs, depending on geographic access issues with at least 50 beds at the public sector FRU level dedicated to the women with serious complications. This is an easy target to achieve within three years, if not already achieved in most districts. If private sector capacities are roped in, it could possibly already be achieved in most districts- but the recommendation is that the public sector aim to achieve this on its own as well. The objective could be stated as : 200 maternity beds per 10 lakh population distributed across 10 to 20 facilities with

a team of doctors and nurses and at least BEmONC capability, such that there is one such facility within half an hour of every habitation, and every one of these facilities externally certified to have quality of care on parameters specified below. As an interim stage and in particularly difficult areas- access to a single ANM or single doctor –nurse facility which provides some limited access to skilled birth attendance is a flexibility that would be built in.

13. Every one of the facilities should have a quality management system in place within a one to three year period which should be externally certified. Quality processes would include minimum standards of inputs like infrastructure, human resources, electricity, water, number of toilets, equipment and drugs and laboratory services. It would also include protocols of clinical care and review and administrative processes. Inputs like electricity and water could be benchmarked to the nearest mission hospital which almost always has these in place- to demonstrate how this can be achieved within the context of a particular district. Funds would be prioritized for this.

14. Every one of these facilities should also have in place arrangements for diet, security, cleanliness, hygiene, and good housekeeping, bio medical waste management. Every one of these facilities should have standard treatment protocols in place that every service provider is aware of and uses. Institutional death reviews, including of those who were referred or left in a critical condition, C-section reviews and medical and prescription audits done by district management would ensure this. It is not possible or desirable to monitor each of these aspects separately through complex formats by visiting state and district teams. Every hospital should document what it could do on a minimum set of processes which are declared as essential for quality of care, and then record whether it is doing this. This should be accompanied by internal reviews, and external supervision and certification, to ensure that this is adhered to. This in its totality would be a quality management system needs and this needs to be put in place in every state. The state can choose whether it acts as its own accreditor, using qualified auditors for the audit, or whether it adopts the NHSRC-ISO framework, which a standardized, rate contracted version of doing this, or whether it goes for the more input intensive NABH. But eventually all these dimensions of quality of care are to be put in place and certified by an external professionally competent authority.

15. Every one of these facilities should ensure that the providers serving there have the necessary skills and are periodically certified. Since the numbers of those already providing midwifery services are very low, this can be achieved with ease provided the trainers are brought in from outside into the district. The district's own internal wherewithal to generate the training capacity within a short period is limited. The approach would be a mix of the usual training camps and a combination of

    a. Introduction of printed protocols for all levels of maternal and newborn care within six months in all PHCs and sub-centers and CHCs and private hospitals and district hospitals providing maternity care.

    b. Development of skill halls in all districts where one day refreshers can be organized for the service providers providing these services to both test and upgrade skills.

    c. A team of clinical supervisors- who visit the facilities in rotation and ensure on the job training and the adherence to protocols.

16. The problems of number of nurses, doctors and specialists needed for RCH, is linked to the problem of state HR policy and cannot be solved by each district on its own- except to the extent that it prioritizes staff for providing these services. In particular we need caution that a) ANMs are not withdrawn from outreach functions to providing midwifery services in PHCs and CHCs, and b) Gynecologists are prioritized for emergency obstetrics in higher FRUs and sterilization services move to either partnerships or conventional tubectomies by medical officers. Though much has been said about how JSY adversely affects the family planning targets, the focus of such comments is presumably on financially incentivizing deliveries more than sterilizations- an understanding

that reeks of prejudice and has no grounding in evidence or even anecdotal reality. On the other hand the more obvious problems of a sole available gynecologist having to choose between running around numerous sterilization camps or providing obstetric services in the district hospital, or ANMs withdrawn from their usual outreach services where they are the sole access to spacing methods- is seldom mentioned. But the contention of this study is that this is happening and in a big way- and it is not being addressed at all.

17. An HR policy that includes a) strategies of generation of more ANMs and nurses and facilities their easy recruitment into service, b) provides a positive practice environment and c) that includes a number of well tested innovations that lead to retention of skills in remote and rural areas- need to be deployed for the problem of HR for MCH services to be addressed.

18. Adequate financial and human resources and infrastructure and supplies to be ensured on a priority basis to these 15% of facilities which are managing 100% of the increased case load. We need to respect the fact that people make a choice as regards which facility to go to and to ensure that improvement of quality of services is prioritized for those facilities where women are going for delivery. The financing mechanism has to be flexible enough to provide more funds to those facilities which are seeing greater case loads, a larger range of services and which are certified as providing a better quality of care.

19. There is also a need to develop two or three model plans – including the financing package for organizing referral transport services in two or three standardized geographic and social contexts. One must also develop a model where the state is able to afford a comprehensive emergency response system covering all emergencies including obstetric emergency and another model for those states where it would provide transport services for obstetric and newborn care alone. There is a need to note the high differentials between what various women have to pay to travel to the facility. A fixed reimbursement for all would not help those marginalized areas where travel support is most required. Second referrals should mandatorily be covered by the hospital. In all areas where distances or costs are a problem- most clearly evidenced by keeping the vehicle waiting- the drop back home should be mandatory. Free Referral transport cover needs to include transport for antenatal and post natal complications and sick newborns and all under 5 infants.

20. Protocols of care should be printed and liberally available and replaced regularly at every facility. Monthly meetings should review use of this handbook and develop innovative ways to ensure that providers read the book and follow these protocols. Since these are senior professionals, there would be contestation of protocols and technically competent professionals should be available to explain the logic of the protocol to each doubting professional. Mere administrative orders would not be sufficient.

21. Clinical supervision, as distinct from administrative supervision, should be institutionalized. Such supervision merges seamlessly with on the job training and to kick start this, a separate team of supervisors could be brought in- with support from suitable not for profit, professional or management agencies. In the course of a year or two internal capacity for clinical supervision to adhere to clinical protocols can be institutionalized.

22. Proper recording formats at the facility level need to be put in place – case sheets, delivery registers with columns for recording maternal and newborn complications, operation theatre and family planning registers. These would help ensure collection of required and reasonably accurate data reporting in the HMIS. This must be seen as an essential part of supervision.

23. Data from private sector facilities must be included into the HMIS data base. For mission hospitals and others where a large amount of RCH work is done, a separate unit needs to be available, and the data recorded on par with a CHC or DH.

24. Recording and reporting of complications should be increased substantially. Both primary registers in the facilities and the HMIS needs

to be strengthened for the same. The principle of HMIS development should be the ability of those collecting and entering data to be able to analyze district, block and facility level data for these critical indicators and provide feedback and points for action. Any system that cannot do this would not add value in the effort to accelerate child and maternal survival. However the system would also need to meet the standards of interoperability needed for it to communicate to the national web-portals. HMIS would provide information on volume of care and quality of care, and on payments- and this is adequate for all planning and monitoring purposes. Asking for more information, especially all manners of disaggregation becomes a way of undermining the efficiency and use of information- and while appearing to do more, actually compromises what is happening. HMIS must be strengthened by the sort of checks described earlier.

25. Since maternal mortality cannot be computed often enough and reliably enough at the district level, the system must use the following four indicators to measure progress in this regard- Proportion of births in EmONC enabled facilities, Met Needs for EmONC rate, met need for CS, and still birth rates as proxy indicators. This along with annual maternal death review at DH and FRUS for a start and a medical audit of case management especially CS management in the major hospitals providing these services, at least those handling over 1200 cases a year- would be a good proxy for maternal mortality ratio and perinatal mortality rates and give all the useful information needed to improve the provision of institutional delivery in the spirit and substance of what was intended under JSY. Meanwhile improved compulsory registration of deaths and births should be able to capture maternal and neonatal mortality and still birth rates more completely.

26. For ASHAs, the three way split of the package needs to be communicated better to ASHAs and to the public and even to the administration. And in most situations they would not have to pay for the transport. The ASHA paying for the food of the patients is not to be encouraged and is frankly exploitative. Linking even the Rs. 200 payment to her escorting or making her payment dependent on the staying for 48 hours or suggestions for linking it to birth outcomes are all misconceived.

27. The current JSY package for mothers should be maintained as such. There should however be considerable clarity that this package is just barely covering the costs of seeking care for normal delivery and does not cover the costs of treatment for complications, nor even assure access to such treatment. Costs of treatment for complications are catastrophic and they are most so in the poorest districts. Necessarily therefore, all costs incurred in referral care from a public hospital should be reimbursed to the hospital providing it and the mother herself should be provided service on a cashless basis. There would be concern that this would strengthen the nexus between the public provider and the private commercial market, a phenomenon which was observed in many districts in the course of our study. However there are not for profit hospitals which are less prone to these moral hazards and anyway a package for C-sections linked with a medical audit of C-sections should be provided for. We have not examined the Chiranjeevi model here, but where we came across equivalents this bundling of normal deliveries and C-sections into a normative single rate, which is reported to have worked well in Gujarat is not as effective in other states. For one such packaging tends to push out C-sections and complication to non accredited hospitals, and for another the volume of normal deliveries needed are not available where the public hospital is functional- especially since those under this scheme do not also qualify for JSY and finally there are too few hospitals in the private sector and in such a monopoly situation they are charging very high rates which they are reluctant to give up.

28. The higher financing needed for the woman most at risk and for any and all improvements in quality of care has to come from better resource allocations to transport providers or service providers – whether public or private- and to provide these resources in a manner which is responsive to the widely different needs and costs of care of different patients. Without such a differential financing, expenditure on JSY will continue to burgeon and the commensurate

gains in maternal and neonatal survival or in social protection we expect of this programme would fail to materialize.

In conclusion therefore, the study demonstrates that the JSY has unarguably resulted in an increase in institutional deliveries, and has enabled poor women to access public health facilities. It has also perhaps for the first time, challenged the public health system, forcing the providers and the system to deliver services for safe childbirth. This has been made possible by the commensurate increases in infrastructure and human resource provided through other NRHM inputs. Notwithstanding these successes, much more needs to be done. The study also demonstrates that increases in human resources and infrastructure, while necessary are not sufficient to provide functional, effective or quality services.

Some issues demand immediate attention, such as for instance, the removal of the exclusionary criteria for home and institutional deliveries which limit this entitlement for the most vulnerable women, effectively putting it out of their reach. The second of these is streamlining payments and addressing issues of leakage. The third is ensuring that out of pocket expenses to women are stopped. One way to do this would be public dissemination of recent policy decisions that user fees should not apply to mothers and newborns.

The report proposes several recommendations, and while there are no short cuts to reducing maternal mortality, some of the recommendations can be acted upon immediately and some others need immediate planning and initiation, but may take a longer while to bear fruit. Expanding the base of institutions to provide services through roping in not for profit institutions, skill building for existing staff, use of printed protocols, recording and reporting complications, and clarifying the role of the ASHA in the JSY are all actions that can be undertaken within a short time span. Longer term actions include the development of additional facilities so that met need for EmONC and C-sections is increased, training of skilled birth attendants, enabling facility based newborn care across facilities, developing optimal HR policies, and establishing a pattern of differential financing across facilities.

Finally, the study re-emphasizes that safe motherhood need to be reviewed in a context where care for the antenatal women, post partum mother and newborn need home based care and enabling the ASHA to provide such services is critical to address the mortality and morbidity associated with these periods.

With the JSY, a beginning to address maternal mortality has been made, but is far from sufficient. The pressure built up on the system has to be sustained, and accelerated. Urgent and focused action is needed and if not forthcoming, our goals for reduction of maternal mortality are likely to elude us for a long time.

SECTION-I

Background

1. Introduction

Over the past decade, there have been declines in maternal mortality in India. The Maternal Mortality Ratio (MMR) is currently 212/100,000 live births (SRS-2007–09) and Infant Mortality Rate is currently 50/1000 live births (SRS-2009). However, the rate of decline is not sufficient to achieve its goals of MMR less than 100/100,000 live births and an IMR of less than 30/1000 live births by the end of the XIth Plan Period. India currently has the largest number of child and maternal deaths of any country in the world.

Successive programmes since the 1980s have attempted to address the high MMR and IMR. In 2005, the Government of India launched the National Rural Health Mission (NRHM) whose major objective was to provide accessible, affordable and quality health care to the rural population particularly to the rural population, especially the vulnerable populations. Reduction in MMR to 100/100,000 is one of its goals and the Janani Suraksha Yojana is the key strategy to achieve this reduction.

2. Evolution and Structure

The immediate objective of the Janani Suraksha Yojana is to promote universal access to institutional deliveries by providing a financial package to the pregnant woman. Home deliveries are also eligible for a financial package, but a much smaller one and this differential is meant to promote more institutional deliveries. The rationale is that institutional deliveries would help the pregnant woman access a team of skilled birth attendants more reliably and it would also improve her access to emergency obstetric care and this in turn would lead to reduced maternal and neonatal mortality.

The JSY is also linked to a performance based incentive to the ASHA, for promoting institutional delivery. The incentives to the mother and the ASHA were expected to act as drivers for changes in health seeking behaviour related to ante-natal and post natal care as well. The NRHM, in parallel also provided inputs for facility development and increasing the capacity (Numbers) and capability (Skills) of human resources to provide quality care for the pregnant woman and the newborn.

Although a set of standard guidelines were laid out by the Ministry of Health and Family Welfare, the actual pattern of payments under JSY varies in the country. As per the national guidelines, in the high focus states[1] all pregnant women in rural areas who deliver in a health facility are eligible for a cash transfer of Rs. 1400. The amount is given at or immediately after the delivery and is meant to defray the expenses – both visible (drugs, supplies, transport) and invisible costs (costs of the accompanying attendant, or informal fees/gifts to hospital staff, and costs of food). For women who deliver at home, only those who are below poverty line (BPL) are eligible for a payment of Rs. 500.

The incentive for the ASHA is made up of three components (i) Rs. 200 to motivate the pregnant woman for appropriate health seeking behavior for institutional delivery as well as antenatal care, (ii) Rs. 250 for transport of the pregnant woman to the hospital and (iii) Rs. 150 to be paid if the ASHA actually physically escorts and stays in the facility with the woman. The ASHA receives Rs. 600 if she performs all three functions of motivation, payment

1 States where NRHM inputs were focused: Bihar, Chhattisgarh, Jharkhand, Jammu and Kashmir, Himachal Pradesh, Madhya Pradesh, Orissa, Rajasthan, Uttarakhand, Uttar Pradesh, and the North-Eastern states.

for transport, and escort to the institution, but all are voluntary and she can get paid for one, two or all of the functions.

A discussion of the evolution of the JSY is necessary to understand the design and the implementation mechanisms. The JSY built on two past schemes, the first, a payment of Rs. 700 for referral transport and the second, a provision of a maternal entitlement of Rs. 500 during pregnancy, intended to provide support to improve nutritional status. (National Maternity Benefit Scheme). Both these schemes were expected to be delivered through the Panchayati Raj institutions (PRI). These pre-JSY schemes, financed through the Reproductive Child Health 1 (RCH-1) programme, were perceived as having failed to achieve the objective. Thus when RCH-II was incorporated into NRHM, these schemes were scrapped, but the existing fund was topped by an additional Rs. 200, to create the JSY scheme. To this was added the Rs. 600 package for the ASHA.

One of the main differences between pre-JSY and JSY was the understanding/programme theory of policy makers. Whereas the pre JSY entitlement for pregnant women was both an enabling and empowering instrument to provide for nutrition and transport to institutions that would otherwise be out of reach, in JSY the dominant explanation became one of a cash transfer that hinged on whether the pregnant woman chose to deliver in an institution or not. The underlying rationale for the JSY is that the incentive payment of Rs. 1400 as different from only Rs. 500 for the home delivery would serve as the trigger to change health seeking behavior, from delivering at home to delivering in a health facility. This cash transfer is thus subject to conditionality. The understanding was that of a "conditional cash transfer" as an incentive for inducing a behavior change in which the enabling aspect was secondary.

Regardless of the programme theory/ understanding, the scheme was immediately and dramatically successful. From 200,000 beneficiaries in 2006 the number of beneficiaries rose to over one crore in 2010 and is still rising. In the initial phases of the JSY, the scheme focused only on women delivering in institutions and the not insignificant proportion of home deliveries were excluded. Other conditionalities associated with the scheme in its early phases, were the provision of benefits only to women over 19 years, and those with two children.

A number of modifications to the rules further increased access to this scheme. One of the first changes was triggered by sections of civil society challenging the government in court for withdrawing the Rs. 500 which was part of the maternity nutrition benefit scheme (MNBS). Quickly backtracking one step, provision was made to pay Rs. 500 to BPL pregnant women who delivered at home, though many in the implementation chain perceived this as a needless distraction from the goal of promoting institutional delivery.

The second relaxation was against the conditionality that access to the institutional delivery package was denied to pregnant women with more than two children, or who were younger than 19 years of age. (in the high focus states). An additional condition was that the payment was given for a third order birth only to the woman who underwent sterilisation to limit childbearing. This was a logical measure for those who understood the scheme in terms of incentivising behavior change. By their logic, this scheme would encourage people to have more children and thus promote larger families. But to those who saw the scheme as an empowering and enabling mechanism, the logic was that woman's decision to have a child was not influenced by incentives, but offered them an opportunity to access delivery in the facility with modern health care provision, and that this would increase their access to all health care services including sterilisation. There is already considerable unmet need for sterilisation services, and access is the limiting factor. A trend against the small family norm due to JSY was, in this view, not likely, for women as even poor women made rational choices as regards family size and they needed to be enabled and empowered rather than incentivised or disincentivised.

However, proponents of both views agreed that if the purpose of the scheme was to reduce maternal mortality, then exclusion of those below the age of 19 and those with more than two children made little sense, for a substantial proportion of maternal deaths occur in these categories. However given the preponderance of the view that the JSY was a behaviour change incentive, the relaxation of these rules was limited only to the high focus states and to institutional deliveries.

In home deliveries, by contrast the conditions were made more stringent as the perceived purpose was to disincentivise home deliveries as much as possible. In the majority of the states, the JSY payment for home deliveries is still restricted only to women who were able to demonstrate through a BPL card that they are below poverty line. Since the proportion of non BPL poor and BPL without cards is quite significant it is obvious that many women are not eligible to get this incentive even though they are, in fact, poor. A number of other exclusionary conditions are applied for paying this Rs. 500 for a BPL home delivery. Thus in Orissa - age below 19 years, more than two children, those who were not delivered by a Skilled Birth Attendant and those who had a stillbirth were all declared ineligible for the JSY entitlement. In most other states those who did not have a BPL card, were less than 19 years or who already had two children were excluded. All of these conditions were imposed to help the cause of cash-condition linked behavior change by increasing the differential between home delivery and institutional delivery.

As the programme continued to expand in its reach, a number of major concerns began to emerge. These were reflected initially in the Common Review Mission (CRM) reports, discussions in sections in civil society forums and later in occasional studies and publications. The first major concern was that there was a disconnect between the quality of care theoretically expected of deliveries in "institutions" and what was actually available in terms of clinical and supportive care in the institutions. It became clear that unless such care reached a basic minimum threshold, the number of beneficiaries would increase, but would not be matched by commensurate reductions in maternal and neonatal mortality because the quality of care and the management of complications were not improving in parallel. Though as a general principle, institutional delivery is related to better outcomes, in such a demand driven programme, where supply side improvements are slow, this relationship would break down. The second concern was whether this programme was reaching the poorest and most marginalised. The third set of concerns related to whether there was a high amount of "leakage" of funds.

These concerns were set out in a position paper and discussion note authored by the National Health Systems Resource Center (NHSRC) in January 2010[2] which served as the basis of a multi-stakeholder consultation led by the Secretary, MoHFW. Based on the discussions, while some corrective measures were undertaken to accelerate quality of care improvements, NHSRC was given the mandate to constitute an expert committee and conduct a more systematic in-depth evaluation of the JSY programme. This was the context in which this evaluation was undertaken.

3. Objectives of the Evaluation

1. Assess the availability and quality of health care provided to the pregnant mothers before, during and after delivery.
2. Assess the capability of different health institutions, their bed occupancy rates and trend in institutional delivery.
3. Quality of services provided by ASHAs and streamlining the cash incentives for effective programme performance.
4. Procedure for random verification of beneficiaries.
5. Fund flow mechanism for administering JSY scheme and mechanism adopted for ensuring timely payment to the beneficiaries.
6. Impact of JSY services on maternal mortality rate and infant mortality rate.

The study was conducted in eight high-focus states of ***Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh, and Uttarakhand.*** These states that account for 84.3% of maternal mortality and 66% of infant mortality, and it is expected that the findings and consequent action will maximize the impact in these states.

4. Methodology

The study was conducted in two phases, using the comparative case study approach. The first phase was in the form a rapid appraisal based upon analysis of secondary data drawn from records available in the districts and the facilities, supplemented

2 http://nhsrcindia.org/pdf_files/resources_thematic/Reproductive_Child_Health/NHSRC_Contribution/Others/Discussion_paper_on_JSY_Issues_NHSRC.

by visits to a sample of facilities, interviews with service providers, ASHAs and beneficiaries and focus group discussion with communities. The second phase was a cross sectional survey of women who delivered in the past year and were JSY beneficiaries and aimed at studying experiences of pregnancy and delivery.

In the first phase three districts from each of the eight states were chosen. In order to obtain a sufficient comparison between different outcomes and context, the districts were chosen as follows: one of the three best performing districts in terms of institutional deliveries, one of the three least performing districts for institutional deliveries and one of the three with the highest SC/ST population and if two or three districts clustered into only one region, the next district was selected from among the three districts of that category, so as to enable representation. Each of the district studies were written up as an independent case study, which was shared with the state authorities. Not all district case studies went into the same detail on every aspect, partly on account of limitation of time and lack of records and informants.

In each of these districts the following were interviewed the chief medical and health officer of the district, the district programme manager, the block medical officer or block health manager if available, specialists, medical officers, nurses and ANMs working in the health facility, a small sample of beneficiaries being discharged from the facility, and the ASHA who accompanied them. At the First Referral Units (FRU), wherever feasible patients who had undergone C-sections were also interviewed. A few ASHAs and beneficiaries were also interviewed in the community. The medical officers in charge of the facility were administered an individual questionnaire as well as a questionnaire on the facility which was also supplemented by secondary data from facility records and observations in the facilities visited for bed occupancy, cleanliness, infrastructure and human resource available etc. These questionnaires were semi-structured, allowing for collection of quantitative data followed by qualitative explorations.

A list of facilities in the district, their geographical distribution, distances between them, and distribution of case loads were obtained from the office of the Chief Medical Officer.

This list was the basis for selection of facilities to be studied in depth. This included:

- Two CHCs or Block PHCs, one high performing, preferably an FRU and another poor performing CHC but which had more than 10 deliveries in a month.
- Two PHCs at the sector level attached to each of the two selected block PHCs at least one of which was designated a 24×7 PHC and the other was not so designated but was conducting some deliveries per month.
- One sub-centre which recorded the highest number of deliveries in the last one year from all four selected PHCs was chosen. If none of the sub-centres conducted delivery then the sub-centre was chosen randomly. The various personnel available at the SC during the visit were interviewed - ANM, ASHA. The sub-centre village was visited for interviews with beneficiaries who had had either a home or institutional delivery.
- At the district level, the district hospital and one private hospital/nursing home accredited for JSY were visited and the facility questionnaire administered there usually the gynecologist or maternity ward in charge.

Studies of the first phase were completed between January to May 2010 period. After the first phase was completed and the majority of the case studies written up, using the insights from this qualitative phase the second phase of the study was planned. In the second phase a sample of 12 districts were chosen purposively. Two districts were selected from each of the three tribal states of Orissa, Jharkhand and Chhattisgarh – one of which was predominantly tribal and another was largely non-tribal were selected. In Chhattisgarh a third district, Koriya was included, as additional funds became available. The final sample thus consisted of six poor performing, four high performing, one SC and one ST district.

In each district, a list of all villages with population of each was compiled and from this a sample of 30 villages was chosen by population proportionate to size method. In the village every household was visited and those women who had delivered a child in the last one year were listed, to differentiate between those who opted for institutional delivery and those who opted for home delivery,

and to identify women who had complications in pregnancy or the post partum period and those who had died in the 14 to 49 age group and of these those whose deaths were due to pregnancy related causes. The sample of pregnant women *who were eligible for JSY benefits as per prevailing state rules* was randomly drawn from the lists of institutional and home deliveries in each of the 30 villages, for administration of the detailed questionnaire. The questionnaires used for the home delivery and for the institutional delivery were designed so as to capture the experiences of pregnancy and delivery in these two contexts. A total of 300 institutional and home deliveries per district were aimed for but since only those who were eligible for JSY had to be included, the number of women finally was 2759 for institutional deliveries and 710 for home deliveries who were interviewed. It is important to note that institutional deliveries that occurred in private facilities not accredited for JSY and home deliveries which were not BPL or below the age of 19 (or other state specific exclusionary clauses) were identified in the line listing but excluded from the detailed questionnaire. In addition to these two categories all women who reported complications irrespective of whether they were eligible for JSY were listed. Those who were available were interviewed. Further in addition to all the above, all families where a woman had died in the previous year in the sampled village in the 14 to 49 age group were listed and then met again to determine if it was related to pregnancy and if it was so related, then that family was interviewed. The data collection for this phase of the study was undertaken between May to October 2010, five years after the launch of the JSY and NRHM.

The districts selected for the first phase are given in table 1 below.

Structure of the report

This report is divided into eleven sections. First, is this introductory section that describes the JSY scheme, its evolution and the context and objectives of this evaluation.

Then in section II, we discuss the access to institutional delivery. In this section we briefly look at the rate of increase of institutional delivery and the profile of those accessing institutional delivery. We also present a detailed description of the profile of those opting for home delivery and

TABLE 1

State	First phase	Second phase
Bihar	▪ Samastipur - High Performing ▪ Madhepura - Poor Performing ▪ Nalanda - High SC	▪ Madhepura
Chhattisgarh	▪ Raigarh - High Performing ▪ Koriya - Poor Performing ▪ Bastar - High ST	▪ Raigarh ▪ Koriya ▪ Bastar
Jharkhand	▪ Garhwa - High Performing ▪ Dumka - Poor Performing ▪ Lohardaga - High ST	▪ Garhwa ▪ Dumka
Orissa	▪ Angul - High Performing ▪ Nabrangpur - Poor Performing ▪ Mayurbanj - not done	▪ Angul ▪ Nabrangpur
Madhya Pradesh	▪ Morena - High Performing ▪ Tikamgarh - Poor Performing ▪ Barwani - High ST	▪ Morena
Rajasthan	▪ Bharatpur - High Performing ▪ Hanumangarh - Poor Performing ▪ Dungarpur - High ST	▪ Hanumangarh
Uttar Pradesh	▪ Sitapur - High Performing ▪ Bijnor - Poor Performing ▪ Kaushambhi - High SC	▪ Kaushambhi
Uttarakhand	▪ Dehradun - High Performing ▪ Bageshwar - Poor Performing ▪ Pithoragarh - High ST	▪ Bageshwar

record their reasons as well as their experience of home delivery.

In the third section, we discuss the institutional capacities to manage the large increase in institutional deliveries and the distribution of institutional deliveries across the various levels of the public health facilities and the reasons for this pattern. In the fourth section we discuss the fund flow, payment of incentives to service users and the associated problems. We do not discuss the ASHA package or the payment experience of those with complications.

In the fifth section we discuss the likely impact on maternal and perinatal mortality by examining the experience of those with complications and the preparedness of facilities to manage complications which are in a broad sense indicative of the capacity to prevent maternal and perinatal deaths. We also look at the costs of complications and the extent to which the current JSY scheme is able to address this problem. We include the availability of related RCH services which have an impact on maternal mortality- notably safe abortion services, sterilisation services, HIV diagnostic and treatment facilities and management of maternal complications. We include as assessment of how the health management information system currently performs with respect to the recording of delivery services, and the management of complications.

In the sixth section we discuss the preparedness of facilities in terms of infrastructure and human resources and skills to manage these case loads with the minimum desired quality.

In the seventh section we deal with quality of care – both with respect to adherence to standard protocols of care and avoidance of irrational care, as also to patient amenities that go to make the experience of child birth safe, dignified, secure and comfortable.

In the eight section we explore issues related to the referral transport system and in the ninth section we look at the role of the ASHA in the JSY programme, while taking note of the fact that this is more exhaustively dealt with in the companion evaluation study of the ASHA. Then we include a tenth section on the instances of maternal mortality that we looked at in detail.

Finally in the last section we sum up state experiences across these themes and discuss conclusions from the study that would be relevant for those shaping policy and providing support to implementation at the national level.

SECTION-II

Access to Care

1. Social and Demographic Features of Sampled Districts

The socio demographic features of the districts chosen for study were compared using the DLHS-3 (2007–2008) indicators that related to social and demographic features. As all districts except for Dehradun were predominantly rural, rural indicators were used for all districts, except for Dehradun for which the district total indicators were used. What is clear is that the variations between performances in terms of institutional delivery rates do not have any obvious correlation with the broad demographic and social determinants when compared across all these eight states. There is clearly an urban-rural difference but little difference due to other social or development indicators. Some of the poor performing districts have much better socio economic indicators when compared to high performing districts in the same state, as for example between Bijnor and Sitapur in

TABLE 2

District	Urban %	SC %	ST %	BPL %	Literacy %	< 18 Age at marriage %	Electricity %	Drink water %	Institutional delivery-DLHS-III	Three ANCs-DLHS-III	HMIS
Samastipur	4	16	0.3	19.8	60.1	52.7	16.3	15.3	27.6	23.1	61.8
Madhepura	4	13	0.1	27.7	51	55.3	9	10.4	17.1	24.1	35
Nalanda	15	24	0.1	87.2	62.7	46.6	34.3	30.2	39.3	24.6	39.4
Raigarh	13.4	14	35	63.7	70.2	13.8	88.5	15.8	25.2	53	44
Koriya	29.8	8	44	46.9	63.1	28	52.2	22.3	18.1	42	39.5
Bastar	10	3	66	69.6	43.9	18	45.9	19.1	17.9	52.3	54.2
Garhwa	4.1	24	15	31.8	58.5	39.4	24.8	5.9	10.7	20.1	32.5
Dumka	5.34	7	40	31.3	63.5	51.1	13.6	15.8	9.2	27.2	14.4
Lohardaga	12.7	4	56	34.2	65.6	24.4	24	15.1	29.9	29.4	44.5
Angul	13.9	17	12	52	73.9	32.2	37.1	18.9	40.7	60.4	79.4
Nabrangpur	5.8	14	55	50.9	43.3	49.8	10.7	5.8	15.9	72.8	31
Mayurbanj	7	8	57	58.9	64.9	37.3	23.6	18.5	43	66	62.2
Morena	21.6	21.1	8	21.7	70	36.5	47.9	24.5	59.3	12.5	83.4
Tikamgarh	17.7	24.3	4.3	36.3	62.4	39.1	66.3	13.5	51.6	21.9	62.9
Barwani	14.6	6.3	67	57.2	37.7	67.5	79.7	13.2	29.4	21.3	58.3
Bharatpur	19.5	22	2	18.5	66.4	30.8	64.7	16	43.9	8	64.3
Hanumangarh	25.3	26	0.7	16.1	68	29.1	81	77.9	33.8	34.5	52.2
Dungarpur	7.2	4	65	40.5	61.3	31.3	49.1	14.6	46.2	30	61
Sitapur	11.9	32	0.1	31.2	49.1	45.8	14.6	15.8	21.4	15.6	52
Bijnor	24.3	21	0.1	16.8	59.4	8.4	41.1	54.5	36.9	27.5	5.6
Kaushambhi	7	36	0.1	24	48.2	25.5	29.3	17.2	14.3	20	52.1
Dehradun	52.94	14	8	20.9	81.8	5.9	95.9	74.7	54.8	55.8	49.1
Bageshwar	3.13	26	0.8	39.1	80.9	5.9	80.2	50.7	17.1	19.4	33.5
Pithoragarh	12.94	23	4.1	45.3	82.4	11.7	74.8	47.9	24.2	27	45.1

Source: DLHS-III and HMIS 2009-10.

Uttar Pradesh or Morena and Tikamgarh in Madhya Pradesh and tribal or high SC/ST districts could be near the high performing districts in institutional delivery rate or near the low performing end.

Among the eight EAG states, Uttarakhand has better social and developmental indicators, and greater equity between districts, including across urban and rural districts. All the study districts had large rural populations with only two districts having significant urban populations, viz, Dehradun (50%) in Uttarakhand and Koriya (30%) in Chhattisgarh. In the case of the study districts, the difference between rural and district total indicators as observed in DLHS-3, was not substantial. We also looked at state level indicators for rural and urban populations. At the state level, however, we found large differences between rural and urban populations for most indicators, particularly for female literacy, access to electricity, water and toilets. Some of the steepest differences between rural and urban indicators were seen in Jharkhand. Rural urban indicators for married women with more than ten years of education were 6.5 % and 42.7%, with the rural values being among the lowest and the urban values higher than for all the EAG states except for Uttarakhand. Rural urban differences for low standard of living in Jharkhand were 88.4% and 18%. Both these values were among the highest and lowest in the EAG states.

The differences in performance between districts in a state are more likely to be related to the effectiveness of the health systems. The effectiveness of health systems is not necessary the same across different programmes and districts which have better institutional delivery rates do not necessarily have better immunization or three ante-natal care rates. Thus the sampled districts are likely to be broadly representative of the JSY programme in the state and take into account background variations in performance, SC/ST proportions and regional differences within the states.

2. JSY Outputs: Increased Institutional Deliveries– Comparisons between HMIS and DLHS-III

HMIS was introduced to facilitate evidence based planning. This includes a continuous flow of good quality information on inputs, outputs and outcome indicators that facilitate monitoring of the objectives of NRHM. The levels of reporting in computerised HMIS are Districts, Blocks, and Facilities. All facilities including Sub-Centre, PHC & CHC report their data to Block in the format prescribed for their facility. The consolidation is done at the block. The consolidated report is sent to the District Programme Management Unit (DPMU). DPMU consolidates all Block data and includes stock details of districts to make the 'District Monthly Consolidated Report', which is then uploaded on National Web Portal. If the State has functional state specific HMIS application, facility-wise data is entered at Block and at the District level. These raw data is then placed in a given context so that it becomes information that can be used for programme monitoring, management, and action.

The most immediate output expected of the JSY is an increase in institutional delivery. This has clearly happened. All data sources available provide evidence to support a major increase in institutional deliveries. If we take DLHS-II (2003) as a baseline and then the change by the time of DLHS-III (2008) and then compare it with the HMIS data for 2009, the trend can be predicted. While 2008 figures are too early to see a JSY impact they do show significant upward trends. Although 2009–10 data is a better time for assessment, the HMIS system itself had not yet stabilised and in some of the states, is error prone and not considered as reliable, especially if there are large urban areas in the district. Since the source of HMIS data is providers who are also monitored and held accountable for this function, there is a tendency to over report. Notwithstanding these limitations, the pattern is clearly a positive trend of increasing institutional deliveries except for Bastar, Dumka, Nabrangpur and Bageshwar where the institutional deliveries have decreased. The increase in the institutional delivery rates is also substantiated by UNICEF's Coverage Evaluation Surveys, 2010. We looked at the baseline using two other sensitive indicators of outreach home delivery by SBA and find that there is not much over-reporting on this indicator in HMIS. We also examine three ANC visits and immunization – using DPT3 coverage to assess whether the improvement in institutional delivery is a purely a JSY driven effect, or a result of supply side improvements in service delivery due to NRHM interventions on the whole. This would include strengthening of facilities, the ASHA programmes, the un-tied funds, the district planning effort, the creation of Rogi Kaliyan Samitis etc. all of which

could also be expected to have a favourable impact on institutional delivery. We find that whereas in HMIS there are similar increases across all states, in comparing DLHS-II to DLHS-III, three ANC increase parallels the increase in institutional delivery rate except in Jharkhand where both are stagnant and in Madhya Pradesh, Uttar Pradesh and Rajasthan where in the sample districts as well as in the state average, institutional delivery increases but three ANCs rates are stagnant or declining. Immunisation rates also plateau in Madhya Pradesh and Uttar Pradesh.

Given the limitation of these secondary sources we also examined this question from our phase II data.

3. Access to Institutional Delivery Services - Findings from the Sample Survey

As discussed in the background section, twelve districts were sampled, three from Chhatisgarh, two from Jharkhand, two from Orissa, and one each from Rajasthan, Uttar Pradesh, Madhya Pradesh, Bihar,

TABLE 3

District	Institutional delivery			Home delivery - SBA			3 ANCs			Immunization - DPT3		
	DLHS-II	DLHS-III	HMIS	DLHS-II	DLHS-III	HMIS	DLHS-II	DLHS-III	HMIS	DLHS-II	DLHS-III	HMIS
Samastipur	11.4	27.6	61.8	4.7	3.1	0	8.8	23.1	58	30.8	62.6	80
Madhepura	8.7	17.1	35	4.8	3.9	1	8.2	24.1	67	47.3	60.2	108
Nalanda	27.3	39.3	39.4	7.5	7	2	14	24.6	59	35.1	65.1	79
Bihar Av.	18.8	27.7	33.9	7.9	4.2	4	16	26.4	45	31	54.4	81
Raigarh	24.3	25.2	44	4	15.4	22	51.2	53	91	75.8	65.3	84
Koriya	9.2	18.1	39.5	8.6	11.4	31	20.4	42	75	64.5	66	107
Bastar	21.3	17.8	54.2	5.8	10.4	23	31.2	51.7	93	52.2	71.1	89
Chhattisgarh Av.	18.1	18.1	38.8	11.3	11.5	20	44.4	51.2	83	67.6	71.4	92
Garhwa	11.3	10.7	32.5	6.1	14	0	10.7	20.1	62	27.9	75.3	103
Dumka	13	9.2	14.4	6	8.1	8	18.6	27.2	61	14.6	60.4	44
Lohardaga	15.9	29.9	44.5	5.9	11.5	6	41.1	29.4	63	54.9	82.6	92
Jharkhand Av.	21.2	17.8	32	7.7	7.2	12	30.7	30.5	62	35.6	62.6	81
Angul	37.1	40.7	79.4	8	11.5	8	51.2	60.4	88	72.6	74.9	106
Nabrangpur	25.1	15.9	31	10.1	3.8	9	33.8	72.8	92	51.1	59.4	118
Mayurbanj	32.4	43	62.2	7.3	4.6	3	48.1	66	93	54.4	73.2	93
Orissa Av.	30.8	44.3	54	14.3	6.6	4	41.7	54.6	89	69.3	74.3	90
Morena	42.8	59.3	83.4	4.8	1.7	0	30.5	12.5	63	50.4	44.7	84
Tikamgarh	19.7	51.6	62.9	7.1	5.9	8	20.6	21.9	91	10.5	23.8	86
Barwani	17.4	29.4	58.3	12.1	5.1	22	31.2	21.3	82	35.9	28.6	99
MP Av.	28.7	47.1	62	11.8	3	5	32.3	34.2	72	43	47.4	84
Bharatpur	31.7	43.9	64.3	7	4.4	14	21.7	8	72	21.2	5.4	98
Hanumangarh	23.5	33.8	52.2	18.8	13.1	4	26.7	34.5	70	53	70.2	85
Dungarpur	23.8	46.2	61	16.8	7.2	9	27	30	77	25.8	91.9	87
Rajasthan Av.	30.3	45.5	63	20	7.2	6	28.8	27.7	66	35	55.6	89
Sitapur	19.5	21.4	52	4.8	3.8	17	23.2	15.6	74	17	23.8	104
Bijnor	28.7	36.9	5.6	4.7	4.2	28	29.5	27.5	88	50.7	41.4	95
Kaushambhi	13.5	14.3	52.1	6.3	7.9	13	5.4	20	83	7.8	23.1	88
Uttar Pradesh Av.	21.4	24.5	24	8.3	5.8	2.6	21.5	21.9	77	36	38.9	96
Dehradun	31.6	54.8	49.1	7.7	7	7	35.5	55.8	66	45.8	75.2	118
Bageshwar	30.4	17.1	33.5	22.3	7.8	30	16.2	19.4	143	72.3	68.7	95
Pithoragarh	21.2	24.2	45.1	8.8	12.9	30	20	27	84	68.3	78.6	98
Uttarakhand Av.	24	30	40	12.4	5.5	14	21.2	32.3	75	56.1	72.2	104

Source: DLHS-III and HMIS 2009-10.

and Uttarakhand. In the sample survey, a total of 22,892 women were listed and of this 43% reported home deliveries. Since the study was focused on an assessment of the JSY, only those women who were "eligible" for the scheme were included in the sample. The interpretation of eligibility of home deliveries for JSY in the states varied and do not seem to have been constructed on a consideration of mortality and morbidity risks. Several conditionalities limited the access of women to the JSY entitlement. While Bihar, Rajasthan and Uttarakhand insisted on a BPL card, Uttar Pradesh, Chhattisgarh and Madhya Pradesh, required in addition, two additional criteria, i.e. that women need to be over 19 years of age, and have had only two live births, excluding younger mothers and those with higher party, both of which categories have higher chances of mortality, morbidity, stillbirths, and perinatal deaths. Orissa imposes a series of conditions and converts what is intended to be an entitlement for women into an instrument that by virtue of its exclusionary criteria is likely to lead to higher mortality and morbidity. Only women over 19, those with BPL cards, those delivered by a Skilled Birth attendant and those who had a live child birth were eligible for the JSY entitlement. Thus only one third of the women in the household listing who were eligible for the JSY incentive could be used to draw our sample from. Given that Orissa had several criteria, the sample from Nabrangpur and Angul was too small (1 and 16 out of 105 and 1027 women respectively) to comment on. In Nabrangpur nearly 43% of the home deliveries were women less than 19 years of age, but were denied the benefits of the JSY. In Morena, MP only five women were eligible and thus are excluded from the discussion on home deliveries in subsequent sections of the report. However in all study districts all women with home deliveries who reported complications were interviewed, and this is included in the appropriate sections.

The proportion of women in the sampled villages who opted for institutional delivery is seen in Table 4. These districts are purposively sampled and are high performing (4), poor performing (6) or high ST population (Bastar), or a high SC population (Kaushambhi). Therefore one needs to be careful not to extrapolate these figures to the state level outcomes. We just use this to state that even within the high focus states, there are very wide variations in performance and there is still a considerable persistence of home delivery. These also explain the context of performance within which we study the effectiveness of JSY scheme. The determination of percentage of achievement in institutional delivery was not part of the objective of this evaluation. A better data source for that is the DLHS-III (2008), UNICEF CES, (2009), or the Annual Health Survey 2010 conducted by the RGI.

Morena, Angul, Kaushambhi and Hanumangarh, show an institutional delivery performance over 75%. In Chhattisgarh: Koriya reports 60%, and Bastar and Raigarh report 48% and 46% respectively; Bageswhar, in Uttarakhand, reports 46%, and Dumka and Garhwa, in Jharkhand and Nabrangpur, all report

TABLE 4
Proportion of institutional deliveries from household listing

District	Home	Institutional deliveries	On the way to institution	NA
All	43.42	54.08	0.27	2.24
Madhepura	62.8	35.2	0.2	1.7
Raigarh	44	46.4	0	9.6
Koriya	39.8	59.8	0.3	0
Bastar	46.2	48	0.2	5.6
Garhwa	55.6	40.7	0.5	3.1
Dumka	60.8	39.1	0.1	0
Morena	7.7	92	0.3	0
Angul	12.80	83.50	0.90	2.80
Nabrangpur	55.40	40.50	0.10	4.10
Hanumangarh	22.6	74.7	0.3	2.5
Kaushambhi	23.2	75.7	0.1	0.9
Bageshwar	46.2	45.9	0.9	6.9

Source: Phase II sample survey .

FIGURE 1
Total deliveries – Household listing from phase II sample survey

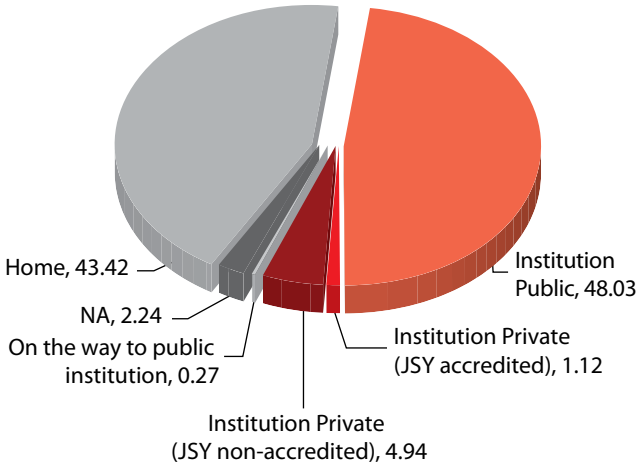
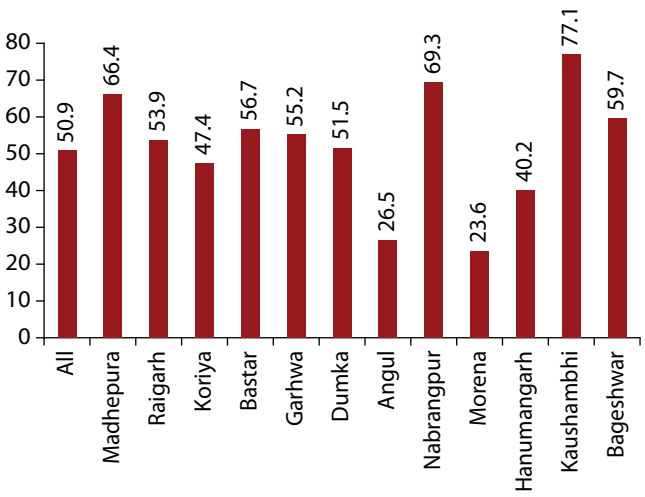


FIGURE 2
Proportion of women with parity >1 who had delivery at home during previous pregnancy and opted for Institutional delivery for their recent pregnancy as reported in phase II sample survey



40%. The lowest rates are reported from Madhepura in Bihar with about 35%.

In Angul only 12.80% were home deliveries, whereas in the other district of Orissa, Nabrangpur 55.4% were home deliveries. Morena in Madhya Pradesh had the least reported (7.7%) home deliveries while Hanumangarh and Kaushambhi had about 23% home deliveries. In the two districts of Jharkhand the performance is about the same about 55.6% in Garhwa and 60.8% in Dumka. In Chhattisgarh, also the performance is very similar across the three districts and home deliveries accounted for about 40% in Koriya, 44% in Raigarh and 46% in Bastar. Madhepura in Bihar does poorest with about 63% reported home deliveries.

Increasing trend in institutional delivery

Data on place of delivery in the immediate previous pregnancy enables us to understand whether there is an increase in institutional delivery. All women who had more than one pregnancy were asked where they had delivered their previous and the index child. In the case of women who delivered in institutions, this reflects substantial increases. Of the 1,777 women who have had an institutional delivery in the index pregnancy and have more than one child, about 50.9% had a home delivery for their previous child birth. About 7% did not answer. The increase was maximal in Kaushambhi where 77% had had a home delivery earlier. The lowest increases were reported from Morena (23.6%) and in Angul (26.5%) of the women had delivered at home in the previous pregnancy. These are the two best performing districts in the sample and they seem to have had much better baselines in institutional delivery. About 40% from Hanumangarh also reported having a home delivery earlier. In the three districts of Chhattisgarh there was a major shift from home to institutional delivery in this period. The percentage of women who had a home delivery for the previous pregnancy was 47.4% in Koriya, 53.9% in Raigarh and 56.7% in Bastar. In Jharkhand and Uttarakhand also there was a similar shift. Though Madhepura had a poor performance on institution delivery, amongst these 12 district, this still represents the highest change- 66.4%. In three of these districts- Hanumangarh, Kaushambhi and Raigarh there is also a shift of over 10% from private institutions to public institutions

We also note that there is some movement in the reverse direction as well. Of the women who have had home delivery, the pattern for previous delivery shows that in all districts except Raigarh and Bageshwar, a little over 10% reported an institutional delivery in the past pregnancy.

4. Equity in Access

Caste

Equity of access in terms of caste shows variations. In Jharkhand and Chhattisgarh, the proportion of SC/ST women delivering in institutions are lower than the proportionate representation in the household listing and there is prima facie a problem

that ST women are facing in access to institutional delivery. Thus in Garhwa 32% of institutional deliveries belonged to this SC or ST category and the line list had 39% of households from SC/ST. In Dumka only 20% of Institutional deliveries were SC/ST against a population representation of 37% in the line list while in Bastar 68% of the women in the household listing, belonged to ST/SC but only 63% had institutional deliveries, In Koriya, 50% of institutional deliveries was SC/ST, versus 56% in the household listing. However it could be that though equity has not been achieved, there is improvement. In all the other districts, especially the high SC districts of Kaushambhi, Hanumangarh, Madhepura, Morena, and in the tribal district of Nabrangpur, the proportion of these women in institutional deliveries is the same or higher– implying equity in access to these services.

Across all districts except Garhwa, there appears to be a much higher representation of SC/ST women reporting home deliveries in comparison to that reported in the house hold listing, indicating that women from these communities continue to deliver at home.

Economic profile

Across the districts 50.4% of women who went in for institutional delivery described themselves as BPL women and of these 67% had a BPL card and another 15% had actually applied for it. 78.5% of them said that they had a monthly family income of less than Rs. 3000 and another 13% stated their monthly income to be in the 3000 to 5000 range. Only 7% reported a monthly income of over Rs. 5000.

The share of BPL women in institutional delivery is about 60% or greater in all three districts of Chhattisgarh, 75% in Madhepura, and 65% in Nabrangpur. In other districts, more than 40% of all women who had institutional delivery reported belonging to the BPL category, expect for Morena (35%), Bageshwar and Hanumangarh (37%). This indicates that poor women are aware of their entitlements and are accessing institutional delivery. A substantial majority of the women were either daily wage labourers or involved in agriculture related work on their own land. In the case of institutional deliveries, while income levels of about 80% women accessing institutional deliveries was below Rs. 3000 in most districts. In Bageshwar, it appears that a little over half (53%) women belonged to the less than Rs. 3000 per month category and only 18% belonged to families with stated income over Rs. 10,000.

For home deliveries, over 90% women reported being BPL and had BPL cards as well. This is not surprising since being BPL was a criteria for JSY and inclusion in the sample. A substantial majority, over 80% of all home deliveries were women whose monthly family income was less than Rs. 3000.

TABLE 5
Caste profile

District	Household listing					Institutional delivery				
	SC	ST	OBC	Others	NA	SC	ST	OBC	Others	NA
All	22.37	15.39	47.29	13.97	0.98	23.8	19.1	42.9	12.6	1.5
Madhepura	22.4	1.9	65.3	8.60	1.9	20.3	3.2	65.2	5	6.3
Raigarh	15.3	42	38.4	4.20	0	12.2	32.1	47	3.6	5.1
Koriya	10	45.8	38.2	6.00	0	11	39.4	37.7	7.6	4.2
Bastar	6.1	61.9	27	2.80	2.1	8.5	53.7	34.1	2.7	1.1
Garhwa	29	10.1	53.3	7.30	0.2	25.7	6.3	57.3	10.7	0
Dumka	3.7	33.3	50.6	12.50	0.00	4.7	14.7	69.4	11.2	0
Angul	17.5	9	46.6	24.60	2.3	21.4	10.4	45.8	21.1	1.3
Nabrangpur	9.80	67.40	14.30	8.20	0.30	11.1	65	14.8	9.1	0
Morena	21.5	0.7	46.6	31.20	0	26.1	0.6	50	21.7	1.6
Hanumangarh	29.9	1.1	57.5	9.50	1.8	44.8	0.7	48.6	5.5	0.3
Kaushambhi	43	0.1	41.4	15.20	0.3	49.6	0	41.5	8.8	0
Bageshwar	27.9	0.7	2.9	68.50	0.1	41	0	0	59	0

Source: Phase II sample survey.

TABLE 6
Economic profile of the women who went had institution delivery

District	Average Monthly income				Classified as BPL			BPL Card Holders				
	Upto 3000 pm	Rs. 3001–5000	>Rs. 5000	NA	Yes	No	NA	Base - classified as BPL	Yes	Filed an application, yet to receive	No application not filed	NA
All	78.5	13.2	7.1	1.3	50.4	48.7	0.9	1391	67	15.2	12	5.8
Madhepura	87.3	8.9	1.3	2.5	75.3	22.8	1.9	119	75.6	11.8	1.7	10.9
Raigarh	74	12.2	11.7	2	58.7	41.3	0	115	56.5	11.3	17.4	14.8
Koriya	76.3	11.4	10.2	2.1	67.4	32.6	0	159	71.1	7.5	11.9	9.4
Bastar	87.8	6.9	3.7	1.6	68.1	31.4	0.5	128	84.4	3.9	6.3	5.5
Garhwa	76.7	18	4.9	0.5	48.1	51.9	0	99	60.6	35.4	4	0
Dumka	83.6	10	4.7	1.8	47.1	52.4	0.6	80	40	23.8	33.8	2.5
Angul	63.8	24.4	11.7	0	41.1	58.5	0.3	123	71.5	5.7	15.4	7.3
Nabrangpur	93.6	5.4	1	0	65	35	0	193	56	40.4	3.6	0
Morena	88.7	5.7	3.5	2.2	34.9	59.4	5.7	111	55.9	8.1	21.6	14.4
Hanumangarh	69.3	21.4	9	0.3	36.6	63.4	0	106	85.8	9.4	4.7	0
Kaushambhi	78.6	17.6	2.5	1.4	40.5	59.5	0	115	64.3	6.1	27.8	1.7
Bageshwar	53	11.1	32.4	3.4	36.8	63.2	0	43	95.3	4.7	0	0

Source: Phase II sample survey.

Thus though JSY beneficiaries which are largely public sector deliveries have an equal or higher representation of the poor than the percentage in the general population, a substantial number of the poorest are still unable or unwilling to access institutional delivery.

Age

Less than one per cent of women who delivered in institutions in all districts reported age less than 18 years at time of the index delivery. Women in the age range 18–21 years were the lowest (15%) in Raigarh, and the highest (41%) in Garhwa. Koriya, Kaushambhi and Morena all had about 25% women in this age group, with Hanumangarh and Nabrangpur reporting over 30% of women in this group. Across the districts between 60% and 80% who delivered in institutions were older than 21 years except for Garhwa. In Garhwa, Jharkhand 62% of the women reported that they were married at the age of less than 18 years.

TABLE 7
Age profile of the women who had institutional delivery

District	Age of women					Age of marriage				
	<18	18–21	22–25	>25	NA	<15 yrs	15–17	18–21	>21	NA
All	0.3	26.1	40.6	31.6	1.5	4.3	24.1	61.8	7.1	2.6
Madhepura	0	20.9	41.1	35.4	2.5	7	24.7	50.6	7.6	10
Raigarh	0	14.8	52.6	31.1	1.5	0	9.7	75.5	12.2	2.6
Koriya	0	24.6	46.2	27.5	1.7	4.2	13.1	73.7	6.8	2.1
Bastar	0	18.6	45.2	34	2.1	1.6	8	77.1	12.3	1.1
Garhwa	0.5	41.3	28.2	29.6	0.5	12.1	50	35.9	2	0
Dumka	0	30	36.5	30.6	2.9	3.5	14.1	73.5	6.5	2.4
Angul	0.3	22.7	46.2	30.1	0.7	0.7	20.4	65.2	13	0.7
Nabrangpur	0.3	32.3	36.4	30.6	0.3	1	27.6	64	6.8	0.7
Morena	0.6	24.5	41.2	30.5	3.1	5	33.6	49.4	1.5	10.4
Hanumangarh	0.3	31.4	43.4	24.1	0.7	10	23.1	62.8	3.8	0.3
Kaushambhi	0.7	25.7	29.6	43	1.1	4.6	36.6	56	2.8	0
Bageshwar	0	19.7	42.7	35.9	1.7	0.9	12	65.8	19.7	1.7

In most of the remaining districts, between 20% and 41% of women were married before the age of 18. The exceptions were the three districts of Chhattisgarh, Dumka in Jharkhand, and Bageshwar in Uttarakhand where less than 15% were married below the age of 18. Thus it is likely that even though many marriages take place before 18 years among women, delay in first childbirth is an increasing phenomenon in all the districts.

Regarding age of those who delivered at home, only those who were 19 years or older were included in our sample. A higher proportion of women who had home deliveries reported being married at ages younger than 15 years. Comparable figures for women older than 25 years having home deliveries are far lower except in Morena and Madhepura. It appears that younger women are more likely to deliver at home, an issue of concern given the poor maternal and perinatal outcomes associated with this age group. This is not due to exclusion in the facility, since they qualify for the JSY grant if they had opted for institutional delivery, but were not eligible even for Rs. 500 if they delivered at home. There has been a discussion whether it is appropriate to disqualify girls who are under 19 years from JSY benefits as a way of promoting a behavior change towards later marriage, but no attempt to relax the criteria. What is clear is that behavioural and social circumstances that make women opt for home delivery exert more influence in families where early marriage and child-birth are seen, and financial incentives alone cannot overcome this. A more effective strategy would be to draw them in to more contact with the system through antenatal visits and counseling services. Denying them the JSY package in the non high focus states is not likely to help either the cause of maternal mortality or the cause of delaying age of marriage and age at first child birth.

Educational status

Across most districts, non literate or primary school dropout women account for between 61% of those reporting institutional deliveries and another 16.5% have had VI to VII class education. In contrast, among women who report home deliveries, the proportion of women who are non literate or dropouts before Class V is over 75%. However this is over 90% in districts like Madhepura, Hanumnagarh and Kaushambhi and over 80% in Dumka and Bastar.

Parity

A majority of women who delivered in institutions across the districts had two or fewer children, Except for Kaushambhi (26%) and Madhepura (27%) over 40% of women were primiparous, i.e., the index delivery was their first delivery. 15% in Dumka, Bastar, Kaushambhi, Madhepura, and Morena reported over three deliveries. Thus it appears that both "primis' and multi-parous women (women with over 3 children) were accessing institutional deliveries, a positive sign given the risk of complications among both groups.

For home deliveries the data on parity differs across districts. The good news is that except in Jharkhand the proportion of primis delivering at home is lower than primis delivering in institutions, an indication that JSY is enabling higher numbers of primis to seek institutional delivery. However between 20% in Madhepura and 53% in Dumka of home deliveries were primis who are more vulnerable to complications.

21% of home deliveries in Hanumangarh, 24% in Madhepura, and 19% in Bageshwar were third order births, and nearly 5% of deliveries in Garhwa and Kaushambhi, and 17% in Madhepura were fourth order births. These categories are more prone to complications and strategies to motivate them for institutional delivery would have not only ensured safe delivery but also to provide them with family planning services.

In summary it appears that the lower the age of marriage, the lesser the educational level, the greater the likelihood of home delivery which is really a cause of great concern.

5. Effectiveness of HMIS in Capturing Performance

One way of monitoring access to is to assess whether the potential beneficiaries are being counted by the HMIS of the district. One of the findings of the first phase visits was that the reported deliveries as available in the records/reporting forms in the district (at district and block levels) broadly matched the numbers seen in the HMIS web-portal. From the HMIS we obtained the total numbers of deliveries reported, including home and institutional deliveries and then compared it with the expected number of deliveries. We arrive at the expected number of deliveries by applying the crude

birth rate of the state to the expected population in the district, and adjusting for pregnancy wastage of 10%. The details are shown in Table 8.

The first conclusion from this table is that though there is a substantial increase in institutional deliveries in the public facility, a large percentage of the deliveries, nearly 40% are not accessing any skilled birth attendance at home or in the facility and are largely going unreported. We provide data on the coverage of childhood BCG, to support our contention that there is a significant gap between reported and expected deliveries. There is a possibility, especially in areas such as Dehradun, Hanumangarh, Raigarh and perhaps also in Bharatpur that women are going to urban private clinics, but in the other districts, there are few private clinics and much less so in the rural areas. It is thus much more likely that these are getting missed altogether. Often a neighbouring district has a high density of private nursing homes or has a better reputation for providing quality services and families would go there. For example, though Morena itself is a poorly developed district, the surrounding districts take up a major part of the institutional delivery load. The discussions revealed that almost all the complications and much of the normal deliveries in Kaushambhi go to Allahabad's famed Dufferin hospital, a public hospital that manages a huge case load. This analysis excludes data from Bijnor, which has reported 20,064 home deliveries, which is likely, and has reported 79,488 home deliveries paid under the JSY, probably a data error.

Comparing these figures with the sample study we find that the sample reports a higher institutional delivery rate than the HMIS partly because in the intervening one year further progress has been made and partly because of inherent incompleteness of reporting in the public sector. Yet these gaps can be interpreted at the district level since the context is much better understood there.

TABLE 8

District	Expected deliveries	Reported deliveries	Reported home deliveries (SBA & Non SBA)	Reported home deliveries (Non SBA)	No. paid JSY for home deliveries	Number of children immunised for BCG	% unreported deliveries	Unreported plus home non SBA%
Samastipur	118931	73512	4	4	0	175168	38.19	38.19
Madhepura	53120	20566	1894	1301	123	49962	61.28	63.73
Nalanda	82518	37816	5337	3840	0	59005	54.17	58.83
Raigarh	37021	32857	16554	8304	2062	32710	11.25	33.68
Koriya	17905	16615	9963	4713	2943	17710	7.20	33.53
Bastar	38159	34247	17366	8777	3305	33588	10.25	33.25
Garhwa	31545	18732	8470	8470	0	30016	40.62	67.47
Dumka	53605	19308	11572	7509	865	23878	63.98	77.99
Lohardaga	11105	8890	3946	3255	105	10498	19.95	49.26
Angul	28302	26588	4119	1982	738	28507	6.06	13.06
Nabrangpur	25490	19907	12015	9816	1064	25790	21.90	60.41
Mayurbanj	55201	43775	10562	8844	532	46843	20.70	36.72
Morena	54875	46821	1036	811	0	45759	14.68	16.15
Tikamgarh	41427	34411	8341	4864	0	33475	16.94	28.68
Barwani	37244	33255	11525	3396	0	33791	10.71	19.83
Bharatpur	71392	56765	10862	1196	1328	68081	20.49	22.16
Hanumangarh	51283	34268	7515	5661	111	43150	33.18	44.22
Dungarpur	37367	27999	5188	1746	483	34402	25.07	29.74
Sitapur	124981	122707	57485	36047	533	134086	1.82	30.66
Kaushambhi	45491	36062	12346	6303	171	45201	20.73	34.58
Dehradun	29696	19345	4756	2621	148	33865	34.86	43.68
Bageshwar	5778	4136	2201	451	188	4158	28.42	36.22
Pithoragarh	10707	9262	4435	1271	162	10172	13.50	25.37
Total	**1063143**	**777844**	**227492**	**131182**	**14861**	**1019815**	**26.84**	**39.17**

Source: HMIS 2010 2009-2010.

TABLE 9
Institutional delivery status of districts

District	Sample Study- July- 10	HMIS – Sept-09	Ranks in sample study	Ranks as per HMIS data
Madhepura	35.2	35	9	6
Raigarh	46.4	44	6	4
Koriya	59.9	39.5	4	5
Bastar	48.0	54.2	5	2
Garhwa	40.7	32.5	7	7
Dumka	39.1	14.4	8	9
Angul	83.5	44.5	2	4
Nabrangpur	40.4	31.0	7	8
Morena	92.0	83.4	1	1
Hanumangarh	75.0	52.2	3	3
Kaushambhi	75.8	52.1	3	3
Bageshwar	45.9	33.5	6	7

Source: Phase II sample survey HMIS 2009-10.

Broadly the HMIS data is in concordance with the survey data. The HMIS does not capture private sector data completely, and sometimes not at all, and some of the districts where there is a high variance also has a high private sector in the sample. If we add in 5 to 10% increase for the time gap between the two studies – (HMIS is data of 2009-10 – midyear is September 30th 2009 and the sample study is of July 2010) and add in the private sector data then there would be concordance for eight districts (excluding Angul, Dumka, Hanumangarh and Kaushambhi). If we rank the institutional delivery performance across the sampled districts using the two data sources – each district has a similar rank- even where there is a larger gap between the measured performances.

Are women getting JSY benefits for home deliveries? Only a small proportion are getting this benefit, and most of these are probably assisted by skilled birth attendance for the number paid JSY is less than the number of home SBA assisted deliveries. Thus though JSY is a step forward in access there is still a long distance that needs to be traversed before all pregnant women are accessed.

Discussions with most officers in charge indicated that the practice is to assess achievement using reported deliveries as the denominator and not the expected number of deliveries, leading to a gross over-estimation of their own performance and a serious lack of recognition of the beneficiaries who are missed or being excluded from services.

6. Home Deliveries

This section provides a glimpse into reasons why women continue to deliver at home, despite the increased access that the JSY offers. Reasons for home delivery appear to span three domains of behavioral, financial and institutional. In the household listing of all pregnant women in the sampled villages in 12 districts approximately 43.42% have had a home delivery with a range of 7.7% in Morena to 62.8% in Madhepura and a modal value of 46.2%. This is 9982 pregnancies in all. Of these only 32% i.e., 3219 home deliveries were eligible for JSY. A large number of home deliveries were excluded since these were not formally eligible for JSY not being BPL, or below 19 or one of the other exclusion conditions mentioned earlier. The number of home deliveries recorded in each district and the number eligible for JSY payment are given in the Table 10.

What is clear is that the processes of exclusion age, parity, BPL card as well as other conditions exclude almost all home deliveries. It would have been interesting to find out the obstetric history and outcomes of those so excluded and compare it with those included but that would have been one group too many to handle and our study design decided to stay with only those who were officially eligible for JSY benefits. In further analysis we excluded the two districts of Orissa and Morena in MP as the numbers were too small for analysis.

Over all we have studied a total of 710 pregnancies or about 7% of the total home deliveries reported in the line listing. These 710 were administered detailed questionnaires and their responses were tabulated and recorded. We already emphasised that of the home deliveries group, 75.7% had never been to school, 32.4% had been married before the age of 18, that 55% were either SC or ST though the representation of these two sections in the population of the sample villages were only 36%; that 90% of them had a monthly income below Rs. 3000 per month and that 95% of them had a BPL card and another 4.2% had filed for the card. All these figures are considerably higher than those who sought institutional delivery. This is not surprising since we have selected only BPL women as being eligible for JSY. But we urgently need to confirm our impression

TABLE 10

District	Percentage of home deliveries	Number of home deliveries	Number eligible for JSY	Percentage of home deliveries who were eligible	Number interviewed during the survey	Percentage of home deliveries eligible and interviewed
All	43.42	9982	3219	32.25	710	22.6
Madhepura	62.8	4709	2425	51.50	144	5.94
Raigarh	44	298	99	33.22	88	88.89
Koriya	39.8	295	90	30.51	68	75.56
Bastar	46.2	551	177	32.12	114	64.41
Garhwa	55.6	1149	113	9.83	86	76.11
Dumka	60.8	435	88	20.23	92	100.00*
Angul	12.8	105	1	4.76	5	100.00*
Nabrangpur	55.40	1028	16	1.56	7	43.75
Morena	7.7	182	5	2.75	3	60.00
Hanumangarh	22.6	328	68	20.73	24	35.29
Kaushambhi	23.2	172	72	41.86	22	30.56
Bageshwar	46.2	154	61	39.61	57	93.44
** 4 additional cases were interviewed because of maternal complications.*						

Source: Phase II sample survey.

that the huge numbers of those excluded are at the same risk as those who were eligible or even more at risk as they are underage, poor or multiparous.

One point worth noting is that all previous deliveries were also at home, except in about 10.2% of women where the previous child had been born at an institution and the index child was born at home. So though there is a major movement of about 50% from home to institution, there is a 10% movement in the reverse direction as well. This was highest in Hanumangarh - 15.8% and Bastar - 13.6%, but also present in Madhepura, Koriya, Garhwa and Dumka.

The delivery at home was assisted by a dai in 69% of cases, and in 17% it was relatives. Nurses and ANMs constituted only 9% and doctors 2.7%. ASHA conducting delivery was only one instance from Madhepura district and a few others were unqualified attenders.

Regarding intent to deliver in an institution, of the 695 home deliveries in 9 districts, about one third 235 said that they had wanted to go to an institution for a delivery. When asked what would have been the choice of institution, the choices were consistent with the usual pattern we describe in the next section – about 21% in district hospital or SDH, about 45% in CHC or block PHC and about 18% in the PHC and 9% in the sub-centre and 3% in a private hospital. There is some variation between districts. 20% to 40% preferred district hospitals in Madhepura, Garhwa, Dumka, and Koriya. In Bagehswar, 91% said they would have chosen the district hospital or SDH. No respondent in Raigarh, Hanumangarh, and Kaushambhi, indicated the district as a preferred choice. The CHC/BPHC appeared to the institution of choice, with over 50% of women expressing a preference for it in Garhwa, Raigarh, Kaushambhi, and Madhepura. The PHC was preferred by women in 67% in Hanumangarh alone, followed by 33% in Bastar and 23% in Kaushambhi. For the rest the PHC was a place of choice in less than 10%. The sub-centre was cited by fewer than 10% except in Hanumangarh (33%) and Bastar (27%).

Of a total of 151 women across the districts, who said they tried to go to an institution for delivery, about 40 women said they were unable to organise transport, 15 women said that the institution was too far, and nine women cited financial barriers. 82 said that it was too close to the time of actual delivery and there was no time left to go. About seven women reported that they had returned home after being told that they had false pains in the health facility, and then chose to deliver at home instead. Six women said there was no staff available in the institution. Eleven women had no one to accompany them to the institution, three said there was no one to manage the household, and about six said that the family had taken the decision.

Of those who opted for home delivery when asked about reasons for home delivery we got a wide range or responses many of them of low frequency. We could categorise it into three groups and present in order of frequency of response in this set of 695 women.

1. Inadequacies of the facility or logistics – the supply side constraints:
    a. No transport facilities – 27.0%
    b. High cost of transport – 6.9%
    c. No nurse or doctor in the facility – 1.5%
    d. Rude behavior of staff – 1.8%
    e. No medicines available – 1.8%
    f. Lack of amenities – electricity, water – 0.6%
    g. Previous experience of institution not good – 1.7%
    h. Late at night – 2.3%
    i. Colder – 0.3%
2. Subjective perceptions/Personal preferences:
    a. Family not willing – 32.4%
    b. Dai is good and reliable – 22.1%
    c. No complication so no need – 24.9%
    d. No one informed of advantage of institutional delivery – 11.0%
    e. Afraid of operative procedures – 3.8%
3. Demand Side Objective problems:
    a. No one to accompany – 9.2%
    b. Home is more comfortable – 8.2% (is institution uncomfortable)
    c. Have no time-work at home – 5.4%

This list highlights the constraints to home delivery that JSY did not address at all. Lack of knowledge about the scheme was a barrier in about 40% cases, ranging from Dumka - 72%, Raigarh 55%, Bageshwar, 51%, Koriya 50%, Hanumangarh 38%, Madhepura 35%, Bastar 32%, Kaushambhi 9% and Garhwa 9%.

For those who knew, the major source of information was predominantly the ASHA (64%), ANM (30%) or AWW (28%), with other sources of information including electronic media playing a trivial role. Women who knew about the programme also, most often knew about the payments (54%), the fact that it provided them with a safe delivery, quality care and the presence of a skilled provider was reported by 40%, 30% and 5% respectively.

When asked, if these women would opt for home delivery (of those who planned a pregnancy) about 69% stated that their choice would be to deliver in an institution whereas the rest said they would still prefer a home delivery. The most common decision maker for home delivery as reported by the woman is herself or her mother in law in about 57%, and then the husband and by about one fourth of women also the father-in-law. All others are less than 5%.

Summing up

1. There has been an increase in institutional deliveries with the JSY scheme. We can state that in many districts the improvement is directly due to the JSY scheme as other related dimensions of institutional delivery have not increased as rapidly. Increase in institutional delivery is evident in published literature based on population surveys – notably the DLHS-III and the UNICEF coverage evaluation study. The increase is evident in the secondary data collected from the HMIS and cross-checked with records in the first phase of this study. This is further validated by the phase II study where over 50% of those who opted for institutional delivery, had for a home delivery in the previous pregnancy.
2. Despite this increase there are about 40% home deliveries in these 12 districts taken together ranging from 7.7% to 62.8%. The study shows that those opting for home deliveries are more likely to be from the SC/ST community, are more likely to be BPL, and more likely never to have been to school than those opting for institutional delivery.
3. The percentages of those who are from the SC/ST community or from the BPL group in the institutional delivery group are more than their representation in the sampled villages showing equity in access. The exceptions are the tribal districts of Jharkhand and Chhattisgarh, where the percentage of ST in the institutional delivery group is less than that in the population. Since

only JSY beneficiaries amongst institutional deliveries were interviewed, it is likely that the women who opted for delivery in private nursing homes (which were not accredited for JSY) belonged to other social groups, underrepresented in the JSY groups.

4. About one thirds of those who opted for home deliveries would actually have preferred institutional deliveries, but problems of transport and affordability limited their access.

   Poor quality of service and costs in the institution were also a significant factor and about 10% of women who had home delivery reported an institutional delivery in the previous pregnancy. In about one third of women, there appears to be a subjective preference for the home delivery.

5. Both primis and multi-parous women are accessing institutional deliveries and this is heartening. In access to JSY benefits for home delivery however, a large number of women are excluded on a number of grounds. These excluded women, who probably are most at risk, may remain completely out of contact with the public health system. HMIS fails to even record and report these women, and though the infants appear for BCG vaccination, the delivery and birth itself goes unrecorded.

6. Better socio-economic indicators in terms of SC/ST population percentage, poverty levels or women's literacy did not relate with the difference between high performance and low performance in institutional delivery rates in many states. The proportion of women marrying before the age of 18 may be better related. Age at marriage is itself closely linked to women's literacy but there are districts where these two indicators do not move in parallel. The ranks in performance within a state on age of marriage does appear to match ranks in institutional delivery performance If we construct an indicator to measure health sector efficiency, and then study its interaction with different levels of age of marriage, women's literacy and poverty levels, then it is possible that these four factors may interact in a more complex way to determine outcomes. This could be explored further even with this data set using the figures from the 2011 census.

Recommendations

1. The HMIS needs to be strengthened with better private sector reporting and better block wise analysis to detect deliveries not being reported. It is not name based tracking but aggregate numbers and analysis with carefully constructed denominators, that would be most useful to identify the women who are currently "out of sight" – and thus unreported on the HMIS.

2. Paying JSY benefits of Rs. 500 to the poor woman who has a home delivery is a way of reaching out to these sections and must be enforced. A large number of exclusionary clauses that deny many poor women this Rs. 500 need to be reviewed. The women opting for home deliveries are amongst the poorest, young, least educated and have high risks for mortality. The Rs. 500 would help reach out to them and there is little reason to fear that it would promote home delivery.

3. The ASHA programme, the VHSC programme, and the sub-centres, especially those currently not providing midwifery services must be geared to analyse carefully which sections are continuing to opt for home delivery and understand their real reasons for doing so. Then based on this understanding, the system needs to create conducive conditions to enable such women to opt for institutional delivery.

4. Promotion of JSY needs to focus on the benefits to saving lives and health that institutional delivery could bring about and not just the monetary entitlement. The monetary entitlement should be projected as an enabling and empowering provision.

SECTION-III

Institutional Capacity to Manage Increased Case Loads

The next important question is to identify which facilities take up the increased case load, and whether these are adequate to manage further increases in case loads, or whether more facilities need to become functional to accommodate this increase. This table below explores the distribution of case loads across facilities and their management capacity.

The major finding that emerges from the table is that a substantial proportion (over 50% in many districts) of the institutional deliveries are taking place at the higher levels, district hospitals, some Sub Divisional Hospitals, and some private sectors institutions with capacity equivalent to a First Referral unit (FRU). In the table, we have not counted private sector deliveries – but if we assume most of

1. Distribution of Case Loads Across Facilities

TABLE 11*

District	No. of facilities					Total No. Institutional deliveries	Percentage of institutional delivery at each facility level*						Private (no. of deliveries)
	DH	SDH	CHC/ BPHC	PHC	SCs		DH	SDH	CHC/ BPHCs	PHCs	SCs	Total	
Samastipur**	1	3	22	59	355	42902**	39.1**	30.9**	30.8***	0.0	0.0	100	11.0
Raigarh	1	1	9	51	311	6143	48.4	32.1	16.4	2.6	0.4	100	1592.0
Bastar**	1	0	12	56	318	4192**	61.6**	na	28.0**	6.1**	4.3**	100	na
Lohardaga	1	0	4	10	111	4680	35.4	na	42.8	4.9	17	100	1296.0
Angul	1	3	3	32	136	15504	36.5	18.0	14.8	25.7	5.1	100	681
Nabrangpur	1	1	10	41	289	11396	33.0	17.6	37.9	11.5	0.0	100	na
Morena	2	0	8	16	197	38616	38.2	0.0	36.4	25.3	0.0	100	na
Tikamgarh	1	0	7	20	152	26280	21.0	0.0	55.0	24.0	0.0	100	na
Barwani	1	1	7	29	232	21752	23.0	0.0	38.1	38.9	0.0	100	na
Bharatpur	1	0	13	56	396	42664	23.3	na	54.0	20.9	1.8	100	2908.0
Dungarpur	1	1	7	39	305	14409	30.5	35.6	2.8	27.5	3.5	100	6603***
Sitapur	1	2	9	71	468	63961	20.5	na	41.8	31.3	6.4	100	2500.0
Bijnor	2	0	19	45	343	18731	16.2	na	58.6	0.0	25	100	na
Kaushambhi	1	0	9	29	176	31896	4.1	na	82.7	5.3	7.9	100	109.0
Dehradun	1	4	7	20	168	14749	58.2	18.0	17.0	2.9	4.0	100	na
Bageshwar	1	0	2	12	80	2002	47.2	na	27.2	9.9	16	100	na
Pithoragarh	1	0	8	18	154	4463	58.2	na	30.7	8.6	2.6	100	240***

* Detailed data available for 17 districts/ ** Data from visited blocks/facilities/ *** Extrapolated.

Source: Accelerating maternal and child survival – "The High Focus District" approach - Ministry of Health & Family Welfare, Government of India and JSY phase I reports.

them are FRU capacity, then this figure for deliveries at this level would rise even further. The one district hospital where the figure is low in the table above is Kaushambhi (a newly created district), and in this case most go the Dufferin hospital in neighbouring Allahabad. The district hospital in Kaushambhi is just starting up and most of the deliveries in the head quarter town of district are conducted in a block PHC in the same town.

The next major share of deliveries goes to block PHCs and CHCs. This share ranges from 20% to 83% across districts. The share of sub-centres and PHCs, is only in the 3% to 40% range.

Deliveries in Sub-centres

Sub-centres seldom account for more than 10% of deliveries and often less than 5%. Even this load is not evenly distributed across all the sub-centres, but concentrated in about 10% or fewer of the sub-centres, sometimes just in two or three, sometimes in as high as 25% of the sub-centres. The data presented by district authorities on sub-centres where deliveries take place, show the following pattern:

Why are so few sub are centers reporting deliveries? Even by policy all sub-centres are not sites of institutional delivery. A sub-centre has to be specifically accredited to be declared such a site, and that is done where the ANM has been trained in SBA training and there are enough basic amenities provided. In practice, accreditation of sub-centres is a grey area, and some states have accredited all those sub-centres where there are a "fair" number of deliveries (no clear rule on a cut off number exists) and this would of course help in showing a better institutional delivery performance. The rest refer all pregnancies to higher facilities. With referral transport becoming available, this process has been facilitated. Sub-centres are located on the same roads that also lead to the block headquarters town where the block PHC is located. So if one hires a vehicle or takes a public transport, with a small increment in expenditure they would reach the block PHC. Thus block PHCs or district headquarters with more assured service delivery become the focus of institutional health care seeking.

On the other hand there are some sub-centres which are conducting as many as fifty deliveries per month. The case study in the box below illustrates this.

TABLE 12*

District	Population in lakhs	Total number of sub-centres in the district	Total number of sub-centres reporting deliveries
Samastipur	41.26	355	3
Madhepura	18.57	272	2
Nalanda	28.33	261	4
Raigarh	14.40	311	30
Koriya	6.67	154	14
Bastar	14.88	318	48
Garhwa	12.20	111	40
Dumka	20.74	249	9
Lohardaga	4.29	111	6
Angul	12.78	136	9
Nabrangpur	11.51	289	23
Morena	18.94	197	9
Tikamgarh	14.29	156	7
Barwani	12.85	232	14
Bharatpur	25.56	396	28
Dungarpur	13.47	305	72
Sitapur	42.38	468	12
Kaushambhi	15.46	176	30
Dehradun	14.72	168	17
Bageshwar	2.86	80	20
Pithoragarh	5.31	154	17
Total	**351.47**	**4899**	**414**

* Data not available for Hanumangarh and Bijnor.

Source: Acclerating Maternal and Child survival – "The High Focus District" Approach- Ministry of Health & Family Welfare and JSY Phase 1 Reports.

We note that three such sub-centres in Kaushambhi, account for 90% of all deliveries recorded by sub-centres in the district!! The other 146 sub-centres contribute about 600 deliveries in a year between them.

These few sub-centres however, are an exception, and while policy must provide space for such exceptions, an effort to persuade every sub-centre to become equally functional is unlikely to yield results. Further we cannot state that the number of sub-centres doing delivery has increased under NRHM. If anything it has decreased. This is mainly due to referral transport becoming available and ANMs either on their own or through orders, are actively encouraged to refer these deliveries to the nearest hospital. Where the sub-centre is not

Ms. Suman Tiwari, an ANM works at Charwa in Kaushmambi district, covering a population of 14,000 from her sub-centre which is about 14 km away. She has been deputed to stay at the sub-centre in Charwa, which is co-located with a PHC. She organises immunization camps three days a week, in her sub-centre, during which time the other ANM in Charwa manages deliveries. Suman delivers close to 80 deliveries per month, and her companion, 40 deliveries. In a year they conduct about 1440 deliveries. She attributes this high case load to her popularity and the trust she enjoys. "Women even come in Taveras and Toyotas," she pointed out. This sub-centre caters to the nearby villages as well. After delivery the patients are shifted to the six bedded PHC which is in the same campus. There is also a new 30 bed PHC, which is not yet functional because there are no staff to manage it. Obviously Suman Tiwari cannot reach every village and therefore plans the immunisation session to cover two to three villages and is helped by the ASHA to mobilise the children. A single parent, who has brought up two children of her own, she is cheerful, confident and takes immense pride in her work. She gets the same salary, and the facility gets the same Rs. 10,000 that all other sub-centres get. We find from questioning community members that she asks for no gifts or bribes. Truly an unsung heroine!!

In the sub-centre of Sulhapur, also known as Manikpur, a single ANM, Nirmala, manages 50 deliveries per month. She has formed a team with the local dai and the ASHA. They take care of the sub-centre while she does outreach for immunization and other services in the population of 8000 that her sub-centre serves. This is a stand alone sub-centre and she has used a large floor mat to serve as beds for those waiting to deliver or those who have delivered. Though kept clean, water is obtained from a hand pump. She gets assistance from the community. Even when we visit, the village elders and some youth turn up to protectively stand around and support her, in case it is required. Clearly she enjoys enormous confidence and prestige. A private nursing home nearby that also offers C-section facilities is complaining of lack of case load and the need to be accredited for JSY, but Nirmala, gets her case loads irrespective of the JSY.

officially accredited to perform deliveries, it is not considered as institutional delivery and in most states most sub-centres have not been so accredited. Therefore it is not a failure, but part of the plan to shift deliveries from the remaining sub-centres to the nearest PHC or CHC. And it makes good sense, where it is possible to do so.

When it comes to health facilities, above the sub-centre level the pattern is different. All DH, SDH and CHCs are taking up a major part of the case load. Block level PHCs which have been rationalised are also functional. However in those PHCs below the block level only a few manage significant case loads.

Distribution across these three levels did not vary much across district types or states. Where the district headquarters had a major well functional district hospital or a number of mission hospitals and were easily accessible by road, increased case loads were being managed in these facilities.

In Bichiwara block of Dungarpur district, with a population of 2.33 lakhs, out of the total expected deliveries about 76% are institutional deliveries. This block has eight PHCs of which Taliya and Charwaha blocks do not conduct any deliveries. The PHCs at Shishodh and Sabli conduct fewer than five deliveries per month whereas the PHC at Dewal and Gamri Ahara and Genji conduct about ten deliveries per month. One PHC at Kura conducts about 40 deliveries per month. This is the dominant pattern in Madhya Pradesh and Rajasthan. In Pithoragarh where there are eight blocks with an average population of about 60,000, there is one well functioning Block PHC (BPHC) or CHC. All blocks have one PHC each, except Kanalichina and Manakote which have two PHCs each. None of the other PHCs conduct more that 3-4 deliveries per month. The maximum is reported from Talgochar PHC with ten deliveries per month. This is the dominant pattern in the hilly terrains of Uttarakhand, Chhatisgarh, Jharkhand and the tribal areas of Orissa.

In Uttar Pradesh's Kaushambhi district, most deliveries take place at the level of the Block PHC (BPHC) at the block headquarters or in the CHC, which is synonymous with the BPHC, except in Narwada block. All the eight BPHCs conduct on an average, about 100–200 deliveries per month. Of the 29 PHCs that are under these BPHCs only two conduct deliveries, and even in these the deliveries are conducted in the sub-centres co-located with the PHCs. Thus for example, Charwa block PHC reports 123 deliveries per month, all of which are conducted in the sub-centre within the PHC premises, and Sajidpur APHC in Kada block conducts 20 deliveries, which are also in the SHC co-located with it. This is the pattern seen in Uttar Pradesh and Bihar.

TABLE 13*

District	Population (In lakhs)	Total number of PHCs	PHCs reporting deliveries	CHCs in district	DH/SDH in district
Samastipur	41.26	59	16	22	4
Madhepura	18.57	23	0	13	1
Nalanda	28.33	36	18	23	2
Raigarh	14.40	51	11	9	2
Koriya	6.67	25	16	4	1
Bastar	14.88	56	15	12	1
Garhwa	12.20	10	5	8	2
Dumka	20.74	34	0	10	1
Lohardaga	4.29	10	0	4	1
Angul	12.78	32	11	3	4
Nabrangpur	11.51	41	12	10	2
Morena	18.94	16	4	8	2
Tikamgarh	14.29	20	16	7	1
Barwani	12.85	29	18	7	2
Bharatpur	25.56	56	9	13	1
Dungarpur	13.47	39	19	7	2
Sitapur	42.38	74	11	9	3
Kaushambhi	15.46	35	5	9	1
Dehradun	14.72	20	9	7	5
Bageshwar	2.86	12	4	2	1
Pithoragarh	5.31	18	4	8	1
Total	**351.47**	**696**	**203**	**195**	**40**
* Data not available for Hanumangarh and Bijnor.					

Source: Accelerating Maternal and Child survival – "The High Focus District" Approach- Ministry Of Health & Family Welfare and JSY Phase 1 Reports.

2. Findings from Phase 2 on Site of Institutional Deliveries

On the whole there are only 5.7% of JSY beneficiaries going to the private accredited institutions. The highest reported are from Garhwa 18% followed by Raigarh 14.8%, Dumka 13.5% and Hanumangarh 12.8%. We need to note that this is not the representative of all institutional deliveries but only those who were eligible for JSY payments. This relates therefore not only to private sector utilisation but also to the efficiency with which the district has accredited private nursing homes and clinics providing institutional delivery services.

Sub-centre deliveries comprised only 5.3% of all institutional deliveries. Only Bastar reported one quarter of deliveries occurring in the sub-centre followed by 16% in Hanumangarh, and 13% in Raigarh. The rest of the districts reported between none and less than 3% sub-centre deliveries. The UP districts and Bageshwar in Uttarakhand showed 10% to 20% sub-centre delivery in the first phase examination of secondary data from records and HMIS, which the sample study from 30 villages does not confirm. In other districts we have to remember that very few number of sub-centres like three sub-centres in Kaushambhi can provide as much as 10% of the total institutional deliveries and hence it may not have been picked up in the sample. However the general impression of sub-centres not being a preferred place of institutional delivery is confirmed. In most states, not all sub-centres are designated as sites of institutional delivery.

The distribution between FRU (district) and other facility levels (other than sub-centres) varies between districts. Across the districts we find about 32% of deliveries occurring at district hospital or SDH level and another 40.3% in CHCs or block PHCs. The aim of the NRHM was to develop these facilities

TABLE 14

District	District hospital	SDH	CHC/BPHC	PHC/ APHC	Sub-centre	On the way to institution	Private accredited institution	NA
All	28.4	3.5	40.3	16	5.3	0.5	5.7	0.4
Madhepura	25.9	3.2	60.8	7	1.3	0.6	0	1.3
Raigarh	11.7	0	51.5	8.7	12.8	0	14.8	0.5
Koriya	38.1	0.4	36.4	15.7	2.1	0.4	6.4	0.4
Bastar	14.4	0	32.4	24.5	24.5	0	3.2	1.1
Garhwa	33	1.9	40.8	5.3	0.5	0.5	18	0
Dumka	60.6	0.6	21.2	1.8	1.2	0.6	13.5	0.6
Angul	49.5	11.4	19.7	14.7	2.7	1.3	0.3	0.3
Nabrangpur	15.5	14.8	29	35.7	1.7	1.7	1.7	0
Morena	26.4	1.6	57.5	13.5	0.6	0	0	0.3
Hanumangarh	9.3	0.3	30.3	31	16.2	0	12.8	0
Kaushambhi	9.5	0	79.9	10.2	0	0.4	0	0
Bageshwar	84.6	0.9	4.3	4.3	1.7	0	2.6	1.7

Source: Phase II sample survey.

to FRU capacity. In practice all DH and most SDH and about one fifth of CHCs, would meet FRU standards. However the block PHC is the major 24×7 PHC facility that is operational and which manages the bulk of the case loads. Along with the DH and SDH a full 73% of all institutional deliveries take place at the level of the block or above. If deliveries in the private institutions (which are also almost always located at district or block level) are included, as much as 78% of all institutional deliveries occur at that level. The sub-centre accounts for 5.3% and the PHC for 16%. This confirms the secondary data analysis discussed earlier.

A significant proportion of institutional deliveries in most districts take place at block PHC/CHC, district hospitals deliveries were reported as follows: Bageshwar, reported 85% in district hospital, Dumka and Angul more than 50% reported district hospital deliveries, Garhwa, Morena and Madhepura report less than 30%. In the remaining districts, deliveries in district hospitals account for 15% or less.

The "on the way" deliveries which pose a dilemma for the JSY payment are reported as 0.27% when estimated across the states. This is a credible figure, but in 10,000,000 deliveries this would translate to 270,000 deliveries, on the way and needs to be considered seriously when planning the transport system and the training for the ASHA who escorts her.

Summing up

1. Institutional Deliveries have increased substantially in the NRHM period. The increase in case load has been taken up by a few of the facilities. There are 5830 public health facilities in these 21 districts that are expected to provide institutional delivery and manage the 9.55 lakhs expected deliveries in these 21 districts. But of these only 852 i.e, 14.6% actually provided institutional delivery services.

2. The major short-fall was in sub-centres where, across the districts, 0 to 35% provide these services. The short fall was next highest in PHCs other than the block PHC where again the facilities providing institutional delivery ranged from 0 to about 70% across the 21 districts of the first phase and 12 districts of the second phase.

3. PHCs located at the block level, CHCs, SDH and DH all provide institutional delivery services. Whether institutional delivery in these facilities is just "assured access to a certified nurse or midwife," or whether it also implies "access to a skilled birth attendant" or whether it implies "access to basic or comprehensive emergency obstetric care is discussed later.

4. It is not clear as to whether the total number of facilities providing midwifery services has

actually increased. In sub-centres providing midwifery services, it may have decreased and if the term institutional delivery does not include the average sub-centre this decrease must be seen as a gain and part of the plan and not as part of a set-back. In PHCs and CHCs there is no decrease, but no major increase in number of facilities providing midwifery services either. However the functionality of those facilities that were providing midwifery services earlier has multiplied enormously. Thus the huge increase in case load is largely taken up by the block and higher level facilities. Investments in improving supply side interventions have not necessarily factored in this uneven development, but it would be important to do so, if quality of care is to be maintained.

5. The reasons behind the uneven developments of these facilities need to be explored further. To some extent these changes are inevitable, and even desirable, and we need to build upon it. It does seem that as roads and transport are available to access a facility of choice, families would then choose those facilities where round the clock services are assured, where a team of doctors and nurses are available, and where there is credibility based on a reputation for providing high quality services. The availability of C-section may be an additional driver for choices in the upper strata of those who choose public sector and those who go to private sector. Facilitating transport to the higher facility and expanding the capacity of the higher facility which has an FRU level service package, to enable more effective, and better quality care even for normal delivery would then be the most important action.

6. On the other hand there are areas which are still too far and a functional, and a safe facility closer to home with a referral connection would be desirable. Also this would depressurise the FRU level district and equivalent hospitals. This was the idea with which the NRHM aimed to make every PHC that caters to a 30,000 population into a 24×7 facility with at least two doctors and five nurses. It would then have catered to about 30 to 60 deliveries per month. But we find that what has happened is that there is usually only one such facility in every block. In the blocks of Bihar and UP, there is often a 2.5 lakh population in each block, and one needs at least another one or two similar 24×7 facilities located suitably which provide basic emergency obstetric care services if the current increase in case load is to be managed. In a state like Madhya Pradesh, over 75% of the sector PHCs are usually functional for institutional delivery with a single nurse and doctor, but with a low case load – but in most other states only about one third of the PHCs including the block PHC is taking up the major part of the increased case load that JSY has brought about.

7. Though it is ideal to have a 24×7 facility within an half hour access time distance of every hamlet given our limitations in creating such facilities, the intermediate aim should be to provide at least assured access to a skilled birth attendant – a team of two or three nurses with or without a doctor could provide quality care, nearer home, which would also be safer than home delivery. The hospital is not only too far away, but it is too unfamiliar and costly to access for some communities and in carefully identified areas of high home delivery and limited access to institutional delivery of the basic emergency obstetric care standard, such a facility providing access to skilled birth attendance would be a step forward.

8. There is a substantial number of women not opting for institutional delivery. There is a concern that such women are not being provided even with antenatal care or postnatal care, and such support as could have been provided. Often ANC is not registered and their presence is not recorded. Some of this could be private sector deliveries but these are not being accounted for. The main reasons for home delivery remain marginalisation, financial constraints, limited or no access to referral transport, and the unavailability of a functional facility in which they are able to repose their confidence and is open to them.

Recommendations

1. Respect the fact that people make a choice and ensure that improvement of quality of services is prioritised for those facilities where women are going for delivery. This means

adequate financial and human resources and infrastructure and supplies to be prioritised to these 15% of facilities which are managing 100% of the increased case load.

2. Before starting to develop a facility, check to see whether it is indeed required, using a calculation of 30 minutes to a site of institutional delivery, which provides basic emergency obstetric care failing which it provides at least assured access to a skilled birth attendant and from there one hour to a site of comprehensive emergency obstetric care. Also consider the need to de-pressurise facilities which are getting overcrowded.

3. Identify areas of high home delivery due to problems of access and take up revitalisation or new facility development in such areas as a priority.

SECTION-IV

Fund Flows and Payment Mechanisms

1. The JSY Guidelines

The JSY guidelines have been formulated at the National level, with specific variations for the High Focus States, the North-East states and the non High Focus States. This section discusses the national guidelines, and examines their implementation as applicable to the eight High Focus study States.

<table>
<tr><th colspan="6">GoI Guidelines[3]</th></tr>
<tr><td colspan="6">All women delivering in Government health centres like Sub-centre (specifically accredited for institutional delivery by State), or in PHC/CHC/FRU/District and State Hospitals or a JSY accredited private hospital are eligible for JSY incentive:</td></tr>
<tr><td colspan="2">Rural Area</td><td>Total</td><td colspan="2">Urban Area</td><td>Total</td></tr>
<tr><td>Mother's Package</td><td>ASHA's Package</td><td>Rs.</td><td>Mother's Package</td><td>ASHA's Package</td><td>Rs.</td></tr>
<tr><td>1400</td><td>600</td><td>2000</td><td>1000</td><td>200</td><td>1200</td></tr>
<tr><td colspan="6">Conditionalities for Public Sector</td></tr>
<tr><td colspan="6">The Woman must have an MCH card and a JSY registration.</td></tr>
<tr><td colspan="6">Even pregnant women less than 19 years of age, and with over two children are eligible for the payment, if the delivery is in a government facility. This relaxation is only for the eight EAG states 42.</td></tr>
<tr><td colspan="6">A government health facility includes any PHC, CHC, sub-district or district hospital. For sub-centres the state government has to specifically declare the sub-centres as eligible site for JSY payment and being called institutional delivery based on its preparedness.</td></tr>
<tr><td colspan="6">As the incentive is to meet the cost of delivery, the incentive should be paid at the time of delivery at the institution where she delivers.</td></tr>
<tr><td colspan="6">Payment by cheque signed by Medical Officer in Charge (MOIC) and a paramedic.
At the DH - this is the Civil Surgeon and senior staff nurse.
At the BPHC - this is the Block Medical Officer in Charge (MOIC) and a second MO.
Payment would be made by ASHA/ANM if delivery occurs at PHC or SC.</td></tr>
<tr><td colspan="6">To collect the payment the beneficiary has to have the MCH/JSY card and the referral slip issued by the ANM at the facility where she delivered.</td></tr>
<tr><td colspan="6">Proof of residence is verified by the referral slip issued by the ANM/MO of area where she resides.</td></tr>
<tr><td colspan="6">Conditionalities for Private Sector</td></tr>
<tr><td colspan="6">A woman delivering at an accredited private institution would have to produce BPL/SC/ST/OBC card to avail benefit. She should also carry referral slip from ANM/MO.</td></tr>
<tr><td colspan="6">Every month accredited private institution should send statement to local MO, along with referral slips from ANM/MO for verification.</td></tr>
<tr><td colspan="6">Conditionalities for Home Deliveries</td></tr>
<tr><td colspan="6">BPL women, women > 19 years of age, and up-to two live births, are eligible to receive Rs. 500 for a home birth.
Disbursement would be done by ASHA/ANM at birth or within 7 days.
If BPL cards are not available, Antyodaya Anna Yojana card may be used instead. Payment will not be made for stillbirths.</td></tr>
</table>

3 (Secretary (H&FW) do letter no. Z. 140171112005-NMBS/JSY dated the 31st Oct, 2006). (Addl. Secretary, MoHFW do letter no. Z. 14017/1/2005-NMBS/JSY dated the 27th November, 2006).

2. Fund Flows to the Districts – From State and Center

The JSY is a centrally sponsored scheme draws its funds from the RCH programme. States estimate the funds required for JSY payments based on targets set for expected deliveries. This target notionally comes from the consolidation of the targets set by all the districts in the state. District authorities in turn calculate the expected deliveries or target JSY beneficiaries by generally adding 10% of the previous year's institutional deliveries in the district or more often are instructed by the state on how much to mark up targets for the current year. It has never been less than 10% annually.

The annual requirement is approved as part of the approval of the annual state project implementation plan (state PIP) approval. However, funds are released once utilisation certificates for previously released funds are submitted and there is a request for additional release. The funds are transferred from Centre to State Health Society and from there to district health societies which release it directly to district hospital and to block offices where the payment is made. The block payment office may be synonymous with the BPHC or CHC or it may be separated physically and administratively from it. Transfer to PHCs was envisaged, but in most situations the payment is from the block.

Delays in payments that span several months occur only in those districts and states where fund flows from state to district are irregular and poorly organised. This was seen in Jharkhand, Madhya Pradesh and Bihar, but not in Orissa, Uttarakhand, Rajasthan, UP and Chhattisgarh. The problems were worst in Jharkhand, where there is a virtual breakdown of payment mechanisms in one district and very inadequate systems in the other two.

Findings

No delays in fund transfers and backlogs were observed in Nabrangpur, Angul and Mayurbhanj of **Orissa** where the Mission Director has emphasised the better management of JSY funds and has authorised the District Health Society to draw funds from any other head of the RCH flexi-pool money to make JSY payments in case of funds shortage. In September 2009, all backlogs in JSY payment were cleared as part of a "campaign". This is also the case in Uttrakhand (RCH flexi pool money used to meet the shortage of JSY funds, if required). In Dehra Dun, block accounts managers reported that they estimate funds requirement for the next year based on the current year's achievements, and that there were no instructions or systematic formula to follow.

Regular fund flow with no backlogs at any level were observed in **UP** (Kaushambhi, Sitapur and Bijnor), **Rajasthan** (Dunagarpur, Hanumnagrah and Bharatpur districts) and **Uttrakhand** (Pithoragarh, Bageshwar and Dehradun).

In **Chhattisgarh**, in Koriya district money is transferred as advance, based on estimated cases on a quarterly basis. In most blocks the transfer is to the PHC, though in Sonhat block it is only till the block level because of either absence of "e-transfer" facility in Gramin (village) banks or because some PHCs do not have any bank account. In Raigarh, money is transferred on a monthly basis by bank transfers upto the PHC level in those PHCs where there are substantial deliveries and upto block level in the rest. Funds are transferred upto SHC level in Bastar district with a ceiling amount of Rs. 5000.

Officials from Public health institutions in district Barwani of **MP** reported the flow of fund to be irregular affecting the timely disbursal of money to the beneficiaries and ASHAs.

Huge backlogs were reported from all the three districts visited in **Jharkhand** – Garhwa, Lohardaga and Dumka. District officials as well as accounts-in-charge at facility levels, stated that the fund flow was very irregular and there was always a deficit in the districts leading to constant backlogs. District officials from Garhwa reported a current pending payments of Rs. 1,50,00,000 which had not been received even after drawing the attention of the state to this crisis, both in writing and orally in the monthly review meetings. This was also evident from the records at the block offices in Nagaruntari, Garhwa which had received an amount of 5 Lakh from the district headquarters, against a request made for Rs. 25 lakhs. At DH, Garhwa and in Saraiyahat block of Dumka, payments to clear the backlog were ongoing at the time of the study. Another issue was that better performing blocks like Kuru, Lohardaga are denied the next installment of funds, because some of the poor/low spending blocks had not submitted utilisation certificates. This is a problem of better

performing blocks such as Kuru, which were unable to obtain new funds despite high expenditures. This is a common problem and is due to the condition that the district SOE must reflect 75% expenditure, based on aggregation of expenditures from all blocks.

In Lohardaga, the main reason for the backlog existed because the civil surgeon appointed two months back had not yet been delegated the authority to act as a signatory for any cash transactions, Staff salaries have not been paid for the last 2 months, and procurement of supplies was also affected.

Backlogs were also reported in Madhepura and Samastipur districts of **Bihar**. Again the main problem was receipt of funds by the district from the state. Of the total backlog of 21,471 payments in Samastipur, 2800 were from District hospital and 2891 were from PHC - Bibhutipur. A similar situation exists in Madhepura with a total backlog of 19,635 out of which 1819 were from District hospital and as high as 4165 were from one PHC - Udakishanganj. PHCs - Murliganj and Kumarkhand also reported heavy back logs. There were also delays in issuing of cheques in the district.

3. Intra-District Payment Mechanisms

The flow of funds till the PHC level is implemented in Madhya Pradesh, Bihar and Chhattisgarh whereas in Uttrakhand, Jharkhand and Uttar Pradesh funds are available only upto block level facilities. The flow of money till the level of sub-centre, empowering ANMs to disburse money directly is seen only in Orissa and Rajasthan

Although JSY guidelines specify clearly that the beneficiaries should be paid at the facility where the delivery takes place, this is implemented only in the states of Orissa and Rajasthan. In the other study states women who delivered in PHCs or SHCs had to collec their incentive from the block level PHCs or CHCs. In other six states payments are preferentially made from the block office or district hospital except for few PHCs in Madhya Pradesh, Bihar and Chhattisgarh. Payments are not made at the bedside, or even in the facility at the time of admission or even by time of discharge. Either based on a voucher or a note of some sort, the payment is claimed within the first two weeks after delivery. Whereas this is not a major problem at district and block CHC level, it could be very problematic for those delivering in PHCs. The problem is relatively less in Orissa.

On the whole in the states where funds flow from state to district are regular, the time taken for payment to the mother is one to two weeks post delivery. For collecting payment a separate visit had to be made by the mother and ASHA.

Of all the districrs where private facilities were accredited under JSY, only in Garhwa and Nabrangpur beneficiaries were paid at the private facility itself. But in other states where deliveries took place in the JSY accredited private clinic, a slip was issued and with this slip, countersigned by ANM and assisted by ASHA, payment was collected from the block office. This made for delayed and irregular payments more so than experienced in the public sector.

Facilitation for collection of payment has emerged as one of her major tasks of the ASHA although not specified as one of the roles of the ASHA in all states. The ASHA, ANM and the rest of the health system all perceived this task to be one of her major roles.

There is no clarity on what registration for JSY means, nor on why such a registration over and above usual registration of pregnancy at the time of the first ANC would help. JSY or maternal health cards have almost never been issued in all the states visited. If JSY registration or possession of a MCH card was treated as a mandatory condition of getting payments almost no one would get such payments and understandably, not much importance was given to this instruction. However in most states some documentation is required to establish that she is the beneficiary photo card plus a letter/voucher from the ANM and sometimes an additional paper that shows the time when she was registered and that she had received some ANC.

4. Findings from Individual States

Orissa

Payment mechanisms are most streamlined and effective in Orissa. In Angul electronic transfers are made up to the block PHC after which demand drafts (DD) or cheques are made for PHC (N) and sub-centres. A ceiling of Rs. 50,000 does exist for PHC (N) and SHCs. Though the same model is

implemented in Nabrangpur district, district officials admitted that in case of deliveries happening in some of PHC (N) a discharge voucher is being given to the beneficiaries instead of providing cheques for JSY incentive. Beneficiaries or their family members receive the cheques at the block level PHCs or CHCs after submission of this voucher which is the pattern seen in most states. Even at higher facilities, JSY payments are also made at the time of discharge if she stays for 48 hours, but it may take 15 days, if she leaves earlier. Most women do leave earlier. It was observed that the actual date of collection of the cheque is not mentioned in the JSY payment register, but the date of delivery of the beneficiary is written for every case. Another noteworthy point in Orissa is the mode of payment to ASHAs – a bank transfer being made to their accounts irrespective of the place of delivery of the beneficiary. The 10th of every month is fixed for the release of payments to the ASHA.

Bihar

In Bihar cash can be paid whenever cheques are not available. A photograph of the beneficiary and the newborn is clicked at the institution which has to be submitted at the time of submission of JSY forms. The photograph can be taken at the facility and the cost of the photograph is to be borne by the women. There is no specific process of JSY registration and there is no effort to relate it to antenatal care. ASHAs support for payment is considerable.

As per guidelines, delivery in the Additional PHCs or sub-centres is not eligible for JSY incentives. Although a negligible proportion of deliveries take place at these levels, there is a record of 113 cases from APHCs (Salempur in Samastipur), to whom no payments have been made for two years. This has brought deliveries in APHCs to a complete halt.

Uttar Pradesh

For PHCs and SHCs deliveries the ANMs submit the completed JSY forms and a copy of identity proof of the beneficiaries (usually the ration card and BPL card) at the respective block level PHCs or CHCs. The block medical officer is also required to sign these forms. After about a week the cheque is ready and then the beneficiary is informed and has to make the time to come to the block, to collect the payment. There is considerable time lost, distance to be travelled and inconvenience involved in this process and those women who cannot travel further than their local sub-centre for the delivery itself have now to travel to the block and negotiate to get their funds. In Bijnor district, there was a considerable backlog of payments for SHC deliveries, and there is a long process of verification of JSY forms which also involves the PHC MO under which the SHC is located, in addition to the routine procedure of verification done at the BPHCs or CHCs. This was particularly seen in Qadrabad SHC. In Kaushambhi district if a women stays for over 24 hrs then cheques are given on the day of discharge. Otherwise beneficiaries can collect it later as per their convenience. Some beneficiaries also reported paying Rs. 50–400 for claiming the JSY incentives in Kaushambhi while in Bijnor, benficiaries reported a few ANMs who were charging Rs. 50–100 for the JSY registration form.

Chhattisgarh

A different process is followed in Chhattisgarh where, two JSY forms are filled Form 1 is filled at the time of ANC registration and given to the beneficiary. At the time of delivery Form 2 is filled. Both the forms along with required identity proofs are to be submitted by the beneficiary for collection of the JSY money. The two form criteria had resulted in delays and denials to some beneficiaries in the past mostly because Form 1 was not always filled as not all women go for ANCs. Chief Medical Superintendent (CMS) in Raigarh has therefore relaxed this norm by allowing payments even if only Form 2 is filled. Also since adequate bank facilities are not available in Bastar beneficiaries are paid in cash after the orders issued by the current CMS. Due to the location of Koriya district at the border of the state people from neighbouring states were coming for deliveries and being paid JSY incentive but following a reported state level order such payments were stopped.

Payments are by bank transfers in Orissa, by cash or cheque in Chhattisgarh and by bearer or account payee cheque in all other states.

Madhya Pradesh

In MP bearer cheques are given to the beneficiaries after submission of the referral slip/JSY form at block level facilities and District hospitals. Ration card or a certificate by Sarpanch of Gram Panchayat is also accepted for making payment, if the beneficiary

does not have the ANM's referral slip in Barwani. Payments are made at the time of discharge in Morena DH where beneficiaries are asked to stay for at least 24 hrs. Some delays (up to 15 days) were reported in Barwani because of irregular fund flow.

Uttarakhand

In Uttarakhand account payee cheques are given to beneficiaries at block level facilities or District hospitals. Since Pithoragarh and Bageshwar are located in the upper Himalayas in very difficult hilly terrain, the JSY payments through Account Payee cheques has further increased the delay for beneficiaries in getting the cash benefits. District officials, field staff as well as the beneficiaries said that account payee cheques pose a major problem as many of the beneficiaries have to open an account only for this purpose which causes an extra financial burden (minimum of Rs. 50) and inconvenience because of difficult terrain and lesser availability of transport. There is a provision to convert the account payee cheques in to bearer cheques by CMS of Pithoragarh District hospital if the beneficiary is unable to open an account provided that the woman collects the form herself from the CMS. Another issue in verification of real beneficiaries faced by officials in Pithoragarh is that women across the border from Nepal access the DH for delivery and claim JSY benefits. Interestingly in Pithoragarh and Dehradun ANMs were collecting the cheques for the beneficiaries from the block level facilities or District hospitals, when either there were significant numbers of uncollected cheques or when they were making visits to the block/district on other work. In case of SHC deliveries in Dehradun district, ANMs inform the BLAs over the phone and a cheque is prepared for the ANM to collect later.

Jharkhand

Here the ANM issues a JSY form and a referral slip or coupon to the women during the last ANC check up. This slip is submitted by the beneficiary at the block level PHC/CHC or District hospital after delivery at any level. A receipt is given to the beneficiary after verification of the form and referral slip/coupon. Since the fund flow is irregular across Dumka, Lohardaga and Garhwa beneficiaries are asked to report when the funds are available at these institutions. This results in over crowding when cheques are distributed, and sometimes the police has to be deployed at the institution and at the bank. While bearer cheques are issued in a majority of cases, but when the banks run out of cheques, special permission is granted to pay by cash. This was specifically shared by staff in Ranka block of Garhwa district.

Rajasthan

The Funds for JSY are e-transferred to districts with the use of tally system. District Plan gives a projection every year for the funds required. which is calculated based on last years institutional deliveries with 10% added to it. If district makes a second request to the state the next head wise amount is also released. Although the state had a provision to use the flexipool funds in case of JSY funds shortage some accountants at block level in all three districts were not very sure of the process. Account payee cheques are given to beneficiaries and payments are made upto the sub-centre level. At district and CHC if the women leave before even 24 hrs then they have to come again to collect cheque.

5. Leakages

One of the most difficult areas to enquire about was leakages and corruption. The mode of study does not allow a detailed examination of this question. The limited findings we have are from beneficiary interviews who could only tell us whether they were being charged, and data from examination of the registers and mechanisms of payments. These approaches allow us to assess if women had to pay a fee for receipt of payment, or even if there was denial of payment. However we are not able to comment on whether false names are included in the beneficiary list, and whether there is inflation of the numbers at higher levels.

Clearly where payments are delayed and huge backlogs accumulate and are cleared up at one go, the opportunities and allegations of non-payment are maximum. Conversely where payment is prompt, made at the facility and through cheque the instances of corruption are least. For example, the issue of corruption surfaced from Block Bhandara (Jharkhand) as officials claimed not receiving any money since March, 2009 on account of refusal to pay "commission" to the officials at higher/ district levels.

Informal fees to providers at lower levels (between Rs. 100 to Rs. 400) are widespread in some districts and absent in others. In Bageshwar women reported spending as much as Rs. 2000 – in repeated trips to the center, plus out of pocket expenses, to claim the JSY incentive of Rs. 1400. In cash transactions many instances were reported from Bastar where beneficiaries were not paid the entire amount. Rs. 100–200 were deducted by the staff disbursing the cash especially if the delivery took place at odd hours and if forms were submitted during the night where staff demand extra money. In Barwani and Morena too, beneficiaries interviewed during the field visits said that they had to pay "some money" in order to receive the JSY incentive.

There is also the possibility of adding in delivery numbers at higher levels. There are two areas where the numbers between the sample study and the HMIS and JSY payments do not match the data from the sample survey. This is for the sub-centre deliveries and the numbers reported in district hospital. While this study has obtained information on non-payment to genuine beneficiaries it is not possible to comment on inclusion of false numbers at higher levels.

6. Information from the Sample Survey

Whereas the report so far discusses payment from the qualitative first phase study - we also looked at JSY payments in detail in the sample survey of the second phase. The first phase is a description of processes as perceived by the key stakeholders. The second is a validation of the first phase and a measurement of the extent of each of the issues being examined.

Of those who opted for institutional delivery in the public sector or in an accredited private sector institution a total of 2759 across the 12 districts 85.8% had received the JSY money and of them only 0.7% had received less than Rs. 1000 and only 4.0% had received less than the promised Rs. 1400. Some or all of the 3.3% who received between Rs. 1000 and Rs. 1400 could be women delivering in urban areas paid Rs. 1200 as per the rules. Overall 7.6% were hopeful and said they were likely to receive the JSY payment and only 5.9% said they had not received the payment. Together 13.5% had not as of date received the payment.

The non-payment (including the hopeful) was 55.8% in Garhwa, 35.4% in Madhepura, 31.2% in Dumka, 18% in Bageshwar. Non-payment was lowest in Angul (0.7%), Nabrangpur, Kaushambhi, Morena and Koriya (7.2%).

The most common form of payment across districts was the bearer cheque. Cash payments was down to less than 10% and came almost entirely from Bastar (75%) and Garhwa (24%). Account payee cheques for beneficiaries was reported in 19% from Bageswar,

TABLE 15
JSY payments

District	Respondents who received JSY money					JSY amount received						
	Base: All	Yes	Yet to receive	No	NA	N - who got JSY money	< Rs. 1000	Rs. 1000–1399	Rs. 1400	Rs. 1401–1700	> Rs. 1700	NA
All	2759	85.8	7.6	5.9	0.7	2366	0.7	3.3	60.6	33.2	1	1.2
Madhepura	158	59.5	12	23.4	5.1	94	0	2.1	81.9	1.1	0	14.9
Raigarh	196	89.3	5.1	5.6	0	175	1.1	3.4	17.1	77.7	0.6	0
Koriya	236	92.8	4.2	3	0	219	0.9	13.2	21	62.6	0.9	1.4
Bastar	188	88.8	6.4	4.8	0	167	0	1.8	39.5	52.7	5.4	0.6
Garhwa	206	44.2	40.3	15.5	0	91	4.4	3.3	23.1	59.3	9.9	0
Dumka	170	67.6	12.4	18.8	1.2	115	2.6	8.7	37.4	50.4	0	0.9
Angul	299	98.7	0.7	0	0.7	295	0.3	0.3	99.3	0	0	0
Nabrangpur	297	93.9	5.4	0	0.7	279	0	0	99.6	0	0	0.4
Morena	318	95	3.5	0.6	0.9	302	0.3	1.3	31.1	66.2	0	1
Hanumangarh	290	89	5.2	5.9	0	258	0.8	3.1	57	37.2	0.8	1.2
Kaushambhi	284	97.9	1.4	0.7	0	278	0	2.9	97.1	0	0	0
Bageshwar	117	79.5	6	12	2.6	93	2.2	4.3	74.2	17.2	0	2.2

Source: Phase II sample survey.

TABLE 16
Mode of JSY payments

District	N - who got JSY money	Cash	Bearer cheque	Account payee cheque	Bank transfer	NA
All	2366	9.8	87.1	1.7	0.3	1.2
Madhepura	94	8.5	84	2.1	0	5.3
Raigarh	175	7.4	92.6	0	0	0
Koriya	219	6.4	93.6	0	0	0
Bastar	167	74.9	24	0	0.6	0.6
Garhwa	91	24.2	64.8	11	0	0
Dumka	115	4.3	93.9	0	0.9	0.9
Angul	295	1	97.6	0	0	1.4
Nabrangpur	279	3.9	95	0.4	0	0.7
Morena	302	1.7	94.7	0.7	0.3	2.6
Hanumangarh	258	6.6	89.9	2.7	0.4	0.4
Kaushambhi	278	0.7	99.3	0	0	0
Bageshwar	93	6.5	65.6	19.4	2.2	6.5

Source: Phase II sample survey.

11% from Garhwa, from 1 to 3% in Hanumangarh and Madhepura and less than 1% in the rest. Payment by bank transfers was negligible.

Delay in payment appears to be the rule. Of the 2366 women who had received payment only 5.5% had received payment on the same day the highest being from Kaushambhi - 23.4% and Nabrangpur-10.8% and all the rest being less than 5% or even 1% in most districts. Another 30% received within 3 days and probably one third of these by the time of discharge as they had to make no further trips for payment. (10% of beneficiaries as shown in table 16 have made no trips to receive the funds). The majority, about 39% received the JSY money between 4 and 15 days and another 18.1% got even beyond this. We note that in phase I study we recorded a perception across the districts that though payment by discharge was a goal within 15 days was considered good and neither provider or even the beneficiary were expecting more than this to be achieved.

TABLE 17
Duration of receiving the JSY money

District	N - who got JSY money	Same day	1–3 days	4–15 days	16–30 days	> 30 days	NA
All	2366	5.5	30.3	38.9	10.3	7.8	7.2
Madhepura	94	0	26.6	36.2	8.5	3.2	25.5
Raigarh	175	0.6	21.7	46.9	15.4	15.5	0
Koriya	219	3.7	39.3	39.3	10.5	3.7	3.7
Bastar	167	1.8	26.9	44.3	13.8	9	4.2
Garhwa	91	1.1	5.5	28.6	12.1	49.5	3.3
Dumka	115	0.9	1.7	16.5	30.4	40.9	9.6
Angul	295	5.1	48.1	29.8	6.1	0.9	9.8
Nabrangpur	279	10.8	32.6	46.2	8.6	1.1	0.7
Morena	302	0	31.1	43.4	9.6	3.6	12.3
Hanumangarh	258	1.6	30.2	46.9	12	7.8	1.6
Kaushambhi	278	23.4	32.7	40.6	2.2	0.4	0.7
Bageshwar	93	1.1	22.6	18.3	8.6	2.2	47.3

Source: Phase II sample survey.

TABLE 18
Trips made to collect the money

District	N - who got JSY money	0	1–2	3–4	5–6	> 6	NA
All	2366	10	82.2	4.2	0.6	0.4	2.6
Madhepura	94	0	81.9	6.4	2.1	1.1	8.5
Raigarh	175	21.7	71.4	5.7	0.6	0	0.6
Koriya	219	20.5	74	4.6	0	0	0.9
Bastar	167	12.6	74.3	1.8	1.2	0	10.2
Garhwa	91	1.1	78	13.2	2.2	5.5	0
Dumka	115	2.6	72.2	17.4	3.5	0.9	3.5
Angul	295	40.7	55.3	1.4	0	0	2.7
Nabrangpur	279	0	97.1	2.5	0	0	0.4
Morena	302	0	90.7	4.6	0.7	0.3	3.6
Hanumangarh	258	1.9	94.6	2.7	0	0.4	0.4
Kaushambhi	278	0.7	97.8	1.4	0	0	0
Bageshwar	93	2.2	83.9	3.2	1.1	0	9.7

Source: Phase II sample survey.

The number of trips made by beneficiaries is a good indication of the degree of problems faced and we find that 82% had to make one or two trips to get the money and 5.2% had to make 3 or more trips to get the money. Timely payment was best in Angul. In the Chhattisgarh districts on one hand about 12% to 20% received the money before discharge about 75% had to make one or two trips to get their payments. The highest number of trips to the facility was most often reported from Jharkhand.

The cheque was given to the beneficiary by the staff at the facility in 67.8% of the instances, and by ASHA in 12.7% and by the ANM in 12.6%. Payment by bank or others was negligible. There was some variation in this general pattern with ANMs handing over the cheque or cash in 43.7% of instances in Bastar and 43.4% in Hanumangarh and 20.6% in Raigarh. ASHA handing over the payment occurs highest in Madhepura at 35.1%, Kaushambhi at 28.1%, Angul at 21% and in Garhwa at 15.4% and in the rest it occurs less than 12%. Payments are

TABLE 19
Payments made and collected

District	Payment made by									Who collected the JSY incentive				
	N - who got JSY money	ANM	ASHA	Staff at PHC/ APHC	Staff at block level	Staff at district hospital	By bank	Other	NA	Self	ASHA	ANM	Family member	NA
All	2366	12.6	12.7	20.7	26.3	21.8	0.4	3.3	2.3	89.1	6	0.3	5.1	2.6
Madhepura	94	3.2	35.1	16	24.5	4.3	0	1.1	16	93.6	5.3	0	1.1	1.1
Raigarh	175	20.6	4	8	41.7	13.7	0.6	8	3.4	88	4	0.6	4	4.6
Koriya	219	7.3	5.9	15.5	26.5	34.3	2.3	6.4	1.8	85.8	3.2	0	7.8	3.7
Bastar	167	43.7	4.8	18	19.8	10.2	0.6	2.4	0.6	88	3	0	4.2	6
Garhwa	91	1.1	15.4	22	23.1	26.4	1.1	11	0	90.1	4.4	0	4.4	1.1
Dumka	115	9.6	9.6	10.4	17.4	50.4	0	0.9	1.7	98.3	0.9	0.9	0	0
Angul	295	3.4	21	21.4	10.8	42.3	0	0.3	0.7	88.1	21.7	0	6.7	0
Nabrangpur	279	1.1	2.2	43	24.4	24.7	0	3.7	1.1	97.8	3.6	0	0.4	0
Morena	302	6.6	11.3	28.5	31.5	18.5	0.3	1.9	1.3	91.4	2.6	0	2	4.3
Hanumangarh	258	43.4	9.3	20.5	14	7.8	0	3.9	1.2	85.3	2.3	0.8	10.9	5
Kaushambhi	278	1.4	28.1	8.3	54	8.3	0	0	0	92.4	6.8	0.4	0	0.4
Bageshwar	93	8.6	11.8	20.4	16.1	22.6	0	5.4	15.1	53.8	7.5	1.1	32.3	6.5

Source: Phase II sample survey.

TABLE 20
Have you given any money in order to get the JSY incentive?

District	N - who got JSY money	Yes	No	NA
All	2366	6.7	90.7	2.6
Madhepura	94	18.1	72.3	9.6
Raigarh	175	10.9	84	5.1
Koriya	219	3.2	95.4	1.4
Bastar	167	0.6	91.6	7.8
Garhwa	91	27.5	72.5	0
Dumka	115	9.6	86.1	4.3
Angul	295	3.7	96.3	0
Nabrangpur	279	3.6	94.6	1.8
Morena	302	6.3	90.4	3.3
Hanumangarh	258	1.9	97.3	0.8
Kaushambhi	278	12.2	87.8	0
Bageshwar	93	0	94.6	5.4

Source: Phase II sample survey.

received by the women herself in 89% of instances and by some other family members in another 5% of instances. The ASHA collected the JSY incentive for beneficiaries in 6% of instances. This is seen maximally in Angul with 21.7%- but in most places less than 5% women reported that ASHA collected the incentive on their behalf.

We had one direct question on whether a commission had to be paid to get the cheque. We almost always got a direct answer though about 2.6% did not answer. Only 6.7% of the 2366 beneficiaries reported that they had to pay some money to get the money. This was most in Garhwa (27.5%) followed by Madhepura with 18.1%, Kaushambhi at 12.2%, Raigarh with 10.9% in Raigarh and Dumka at 10%. (but clearly this was not a major problem).

A testimony to the patience of our population most did not perceive receiving this money to have been a major problem and the problems in collection of the cheque, the need to pay some money, the delays in payment, the high out of pocket expenditure, all were all seen as reasonable provided the money was paid at all. Also people do not easily complain about their service providers to an outsider. 21.7% perceived some problem or other and the exact problem which they faced was widely distributed amongst the various possible causes discussed earlier. Districts and states should however look at the problems in their respective districts to understand what they need to address.

Payments for BPL home deliveries

In all states payments for home deliveries are highly irregular with exclusions on a wide number of grounds. Informally there is a strong feeling that paying women who deliver at home encourages them to have deliveries at home. In UP for example not only did very few BPL home deliveries get the JSY payments, but every provider and official, ASHA included were of the opinion that it should not be promoted. Sometimes the exact reasons stated may differ. In Garhwa officials stated that home deliveries should not be paid while in Lohardaga lack of BPL cards was the reason given. In Jharkhand, expenditure reports show that about 17% of incentives were paid for home deliveries, while on the field the numbers seemed lower. It is possible that it is much easier to attribute false beneficiaries to the home delivery payment route because the paper records for this are much weaker and the number of people involved are much less. Unlike for institutional delivery no clear payment mechanisms have been worked out.

Of the 710 eligible home delivery beneficiaries of JSY only 14.1% had got any JSY payment. The highest was in Koriya and Bastar where one third of these eligible beneficiaries had got the JSY money and Hanumangarh where about 30% had got it. The rest was less than 15% and this ranged from less 0% in Garhwa, 1% in Madhepura, less than 10% in Kaushambhi, Baghehwar, and Dumka, and 14%

in Raigarh. Of those 95 who got the JSY money 65 got the Rs. 500, only 7 got less than Rs. 500 (2 from Bastar, 4 from Koriya and 1 from Raigarh) and the rest got more than this indicating that as many as 12 to 17 may have been paid at institutional delivery rates. Of those who were paid for 51 women it took over 15 days to receive it and for 23 it took 4–15 days and for 12 it took one to three days. In 69 instances payments were made by the ANM, for 8 women it was through ASHA and for 18 by staff at PHC or block level. Payment was by cash in 76 cases and by bearer cheque in 16 cases. The payment was given to the woman who had delivered the child directly – in over 95% of instances. 61 of these 95 women made one or two trips to the office to collect the money and four had to make three or more trips. On the other hand 30 got the money directly and did not have to travel to get it. Of the 17 who got the payment in the form of a bearer check 13 had to go more than once to cash it. Seven of the 95 mentioned that they had to give a "cut back" at the block or facility level before they could get the Rs. 500.

7. Out of Pocket Payments (OOP)

This becomes important to examine for three reasons. First it throws light on how the programme works. If it is indeed cash catalysed behavior change then there should be a substantial monetary benefit from the transaction. If on the other hand it is primarily empowering poor women to overcome financial constraints to care seeking then it should cover substantial costs, and where it does not so cover the costs, care seeking will remain low. And finally if social protection is the aim, then not only should out-of-pocket expenditure be minimal, the JSY payment should be available to meet the invisible costs like loss of wages, and food for the accompanying attendants, etc.

The phase-I study indicated that in all states there were substantial out of pocket expenditure – which ranged between Rs. 500 to Rs. 1500 across states. In many states like Rajasthan the OOPs was at around Rs. 1400. Based on these findings a substantial part of the phase-II was devoted to understanding the extent and nature of out of pocket expenditures.

Out of pocket expenses in the sample study (phase II)

Of the 2759 institutional delivery JSY beneficiaries interviewed - 18.2% had no out of pocket payments- and another 16.45% reported out of pocket payment of less than Rs. 400 rupees. However others had substantial out of pocket payments - 21.5% reported payments ranging from Rs. 400–800 range; 13.1% had an OOPs of Rs. 800–1200, and 27.7% had out of pocket payments over Rs. 1200 a net out of pocket payment even where they would have received the full JSY incentive. The highest payments were in Angul and Raigarh, followed by Bageshwar, Hanumangarh and Koriya – clearly

TABLE 21A
Out of pocket expenditure on institutional delivery

District	0	<100	101–200	201–400	401–800	801–1200	1201–1600	>1600	NA
All	18.16	1.81	3.44	11.20	21.49	13.08	6.13	21.64	3.04
Madhepura	25.32	0.63	6.33	7.59	32.28	15.82	3.16	6.96	1.90
Raigarh	10.71	0.00	0.51	2.55	10.20	16.84	5.10	51.53	2.55
Koriya	9.32	2.12	3.81	7.63	19.07	14.41	8.47	33.47	1.69
Bastar	57.45	3.19	0.53	8.51	10.11	5.32	2.66	6.38	5.85
Garhwa	1.94	2.43	3.40	13.59	26.21	16.02	7.28	27.67	1.46
Dumka	15.88	3.53	2.35	10.00	20.59	15.88	7.65	17.65	6.47
Angul	2.68	0.67	0.67	3.34	13.04	16.39	12.37	50.17	0.67
Nabrangpur	41.41	2.36	8.08	11.11	14.14	10.10	2.36	6.73	3.70
Morena	11.01	1.26	4.09	10.38	38.68	19.18	8.49	4.72	2.20
Hanumangarh	29.66	0.69	2.41	7.93	17.24	8.62	5.52	22.76	5.17
Kaushambhi	3.87	4.23	5.63	37.68	36.27	4.93	2.46	4.58	0.35
Bageshwar	13.68	0.00	0.85	5.98	10.26	17.09	5.98	36.75	9.40

Source: Phase II sample survey.

correlating with high private sector usage. The most socially protected environments reporting the highest numbers of no out of pocket were Bastar (57.4%) and Nabrangpur (41.4%) followed by Hanumangarh at 29.7% and Madhepura 25.3%. If we add in trivial payments (less than Rs. 400) then about 40% across the states could be said to have had adequate social protection. The least protected would be Angul (7.5%), Raigarh (14.2%), Bageswhar (21.7%), and Koriya (24.2%).

In absolute amounts the averages of those 2226 who paid anything for institutional delivery per district works out to Rs. 1028 per delivery excluding the cost of transport. And this is of a group where only 5% opted for the private sector.

Across the states the average per patient cost of institutional delivery excluding transport is given in table 21B.

One interesting finding was that 46% of the 2504 women who got an antenatal care had also spent money out of pocket on it. Again this was highest in Angul where 84.9% had done so, followed by Koriya, Bagehswar, Raigarh, Madhepura, Garhwa

TABLE 21B
Out of pocket expenditure

District	All respondents	No. of patients who had OOPs	Total payment (Rs.)	Payment per user with OOPs (Rs.)
All	2759	2226	2288885.83	1028.25
Madhepura	158	118	88309	748.30
Raigarh	196	175	247430	1413.88
Koriya	236	214	300830	1405.74
Bastar	188	76	97954	1288.86
Garhwa	206	202	264970	1311.73
Dumka	170	141	205183	1455.19
Angul	299	291	334154	1148.29
Nabrangpur	297	156	156132	1000.84
Morena	318	277	213472	770.06
Hanumangarh	290	204	258188	1265.60
Kaushambhi	284	273	90930	333.07
Bageshwar	117	99	31335	316.50

Source: Phase II sample survey.

TABLE 22
Out of pocket expenditure on ANC in case of institutional delivery

District	N - women who got ANC done	Yes	No	NA
All	2504	45.8	53.8	0.4
Madhepura	51	60.8	35.3	3.9
Raigarh	194	66	33.5	0.5
Koriya	220	75.5	24.1	0.5
Bastar	184	42.9	57.1	0
Garhwa	200	51	49	0
Dumka	166	33.7	65.1	1.2
Angul	291	84.9	15.1	0
Nabrangpur	292	12.7	87.3	0
Morena	288	24.3	75.7	0
Hanumangarh	256	50	50	0
Kaushambhi	266	12	87.6	0.4
Bageshwar	96	74	22.9	3.1

Source: Phase II sample survey.

and Hanumangarh in that order where over 50% reported out of pocket payments for antenatal care. A large percentage of these women also reported ultrasound examination. In Madhepura and Bageswar the number of women who reported ANC check up was low, but a high percentage (61% and 74% respectively) reported making out of pocket. This needs to be explored further. The average and the maximum payment for complications was much higher and this is discussed in the section on complications.

Even for those women who had ANC and delivered at home, over one third said they had spent money. An important finding is the reporting of ultrasounds by women who delivered at home. Except in Bastar and Dumka, where only upto 2% reported this, about 5% in Raigarh and Madhepura, 7% in Koriya, and over 10% in the Bageshwar, Garhwa and Kaushambhi reported at least one ultrasound during the antenatal period. This figure was 21% in Hanumangarh. Findings from Bageshwar show 11% getting two ultrasounds done, another 7% reporting three and 2% even reporting more than three ultrasounds. These figures were less than 2% for other districts except for Garhwa with 5%.

What did the out of pocket payments go to?

If the average OOPs per paying patient was Rs. 1000 (rounding off Rs. 1028), most of it went to the purchase of consumables - drugs Rs. 356.70, other consumables (gloves, syringes) Rs. 63.70 together – Rs. 420.40 The next highest item of expenditure was the fees formal and informal. This averaged Rs. 198.60 per user of which Rs. 102 was for the nurse or ANM, Rs. 66.9 was for the doctor, Rs. 21.8 was the class IV employee and even Rs. 7.9 towards the ASHA. The third major item of expenditure was surgery that averaged Rs. 130.50 per patient for the group as a whole which is not a good way to measure it but which gives us a sense of the costs of complete social protection in a per person package for a person attending a public hospital. Expenses on food for self and relatives were Rs. 19.8, when arranged from hospital and Rs. 86.7 when arranged from outside. Other expenses that constitutes the Rs. 1000 included costs of blood for transfusion, costs of laboratory tests including ultrasound, the costs of registration for JSY – like the photograph requirement in Bihar, and even an user fee charged for delivery - an earlier era remnant, that remains in some districts.

We give table 23 the break-up for each district and for all taken together.

Out of pocket expenses in home deliveries

Among home deliveries in our sample study, less than one third reported having received the JSY. This ranged from less than 1% in Madhepura, and Garhwa, less than 10% in Kaushambhi, Baghehwar, and Dumka, 14% in Raigarh, and nearly 30% in the remainder. Of those who received JSY payment, most reported having received the full amount of Rs. 500, with about 18% in Koriya reporting less than Rs. 500. 10% of women across the district said they received the payment within three days, and the majority between two weeks to one month.

FIGURE 3
Out of pocket expenditure – total from phase II sample survey

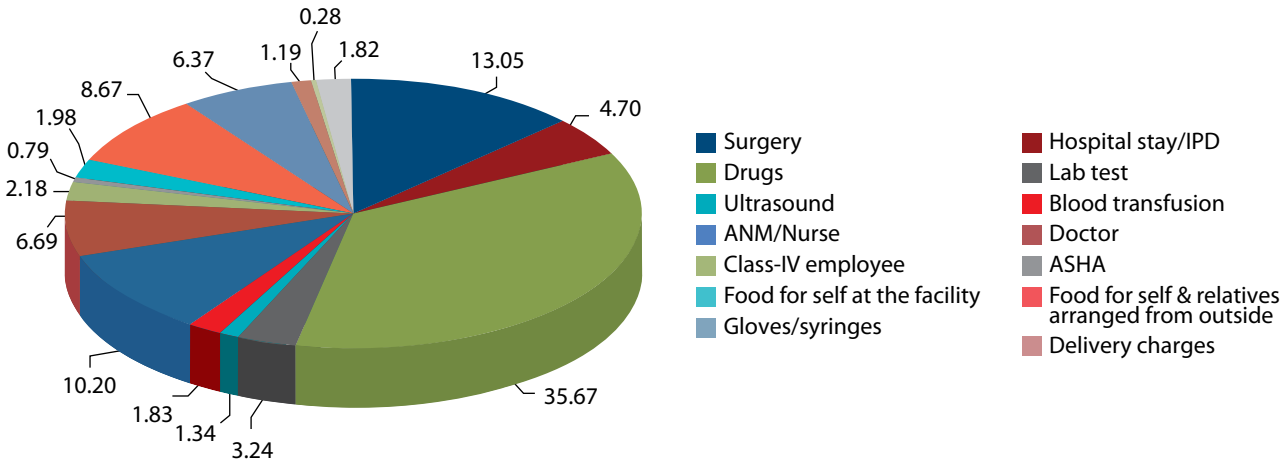


TABLE 23
Item wise expenditure on institutional delivery

	All	Ang	Nab	Gar	Dumk	Bast	Kori	Raig	Hanu	Kaus	More	Madh	Bage
N	2226	291	156	202	141	76	214	175	204	273	277	118	99
Surgery	13.05	3.35	1.35	28.06	8.83	5.10	26.79	23.04	10.46	0	0.59	13.59	31.91
Hospital Stay	4.70	0.47	5.25	5.89	3.08	12.53	11.84	5.16	5.54	0.60	0.19	0	0.08
Drugs	35.67	44.45	2.11	38.70	37.54	29.83	31.03	40.33	38.80	22.76	45.53	37.39	36.70
Lab tests	3.24	0.72	37.72	0.14	0.77	2.08	0.99	0.39	1.62	0	0.24	0.06	0.64
Ultrasound	1.34	1.38	1.99	0.36	0.73	1.02	2.75	1.37	1.82	0	0.94	1.13	0.48
Blood	1.83	1.56	1.73	0.83	1.32	1.53	1.01	0.73	8.34	0	0	1.36	0
Nurse fees	10.20	9.68	1.35	9.27	6.88	6.58	6.34	8.27	5.23	38.34	25.89	7.31	13.72
Doctor	6.69	17.45	7.09	0,62	7.96	1,38	3.52	4.49	10.42	1.98	5.88	0.94	2.39
Class-IV	2.18	1.55	4.84	0,62	2.22	1.89	1.61	1.65	0.86	10.36	3.24	1.81	0
ASHA	0.79	0.45	2.32	0.47	1.05	1.74	0.14	0.28	0.48	1.73	0.80	2.56	0
Food-hosp.	1.98	3	7.02	0.41	2.79	3.88	0.28	0.34	0.08	2.53	2.49	1.28	9.89
Food-all-arran	8.67	10.77	18.35	7.61	7.33	11.96	6.18	2.34	9.45	11.73	7.90	11.46	1.12
Gloves/ syringes	6.37	2.71	3.00	5.90	13.61	13.43	4.86	9.45	4.40	4.30	3.26	16.13	3.03
Delivery fees	1.19	1.41	0	0.30	1.85	4.58	1.16	1.48	0.70	1.42	0.96	1.18	0.03
Photo/ registr.	0.28	0	1.79	0	0	0	0	0	0.08	1.04	0.42	1.89	0
Others	1.82	1.04	4.10	0.82	4.05	2.46	1.49	0.68	1.74	3.21	1.69	1.93	0
Total	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**	**100**
Per User OOP (in Rs.)	1028	1148	1000	1312	1455	1289	1406	1414	1266	333	771	748	317

Source: Phase II sample survey.

However, one needs to view this data in the light of the part that only 33% of the home deliveries qualified for the benefit, of which 23% were interviewed. Of those who were interviewed only 14% had got the payment. In effect, therefore it appears that for most women who have home deliveries and even who are BPL and fulfill the requirements, no JSY payments are being made. About 54% of women had spent their money for home delivery. About 16.6% spent more than Rs. 1000, another 30% spent between Rs. 500–1000, and the rest spent less than Rs. 500. About 43% said they had spent no money for the home delivery, presumably because the delivery was conducted by a family member or the attendant had taken payment in kind. A high 36% in Bageshwar, a 30% in Hanumangarh, and 20% in Dumka, paid more than Rs. 1000. Given the situation that most women who had home deliveries were poor women, the out of pocket payments are unacceptably high. Thus the average cost for a home delivery is about Rs. 585.92 per user. Of this, the biggest share is to the Dai with 34%, followed by drugs with 29% and 11% also paid to the ANM/Nurse for home delivery. About 9% reported spending on injections and 2% on gloves.

Summing up

1. In case of institutional deliveries, funds are reaching most of those who are eligible. However they are reaching only a small part of the eligible home deliveries. There are diveregnces in this, with non payments being as high as 55% in some districts e.g. Garhwa. This largely relatesto poor fund flow to districts.

2. The biggest bottle neck related to payment occurs when the fund flow to the district is not regular. If there is break in the payments and arrears are built up, it is difficult to monitor and administer. This leads to a considerable waste of time and effort of the many beneficiaries who come to collect the payment. It is also the setting in which leakages and cut-backs are most frequent.

3. Payment on the day of admission or at least by discharge does not appear to be happening. The system seems to have accepted that a payment within 15 days is acceptable. But this defeats much of the purpose of JSY and also allows considerable space for leakages. The good news is that at least this 15 day deadline is now being reached in most districts. The process of verification and payment is so structured that in many states payments cannot be made within the same day. Also needless impositions such as taking a photograph and charging beneficiary for the cost and making payment conditional on her stay for 48 hours are a problem.

4. Leakages at the block and sub-block level do not appear a major problem except in Bijnor where the figures of home delivery and sub-centre delivery are obviously inflated. Generally recorded and reported data matches well and it also corresponds with HMIS. The same cannot be said about insertions of numbers at the district level. Aggregation at district and higher levels may be more susceptible to mark up the numbers. Further delayed payment correlates with non payments to beneficiaries. Most non payments are not necessarily leakages, but since monitoring becomes difficult, leakages become easier. This study by its design cannot comment with any greater reliability on the existence, sites or extent of leakages.

5. In most situations payment by bearer cheque seems to be adequate for prompt payment and record keeping. Recording formats must include the date when the cheque was collected and by whom, not just the date when the cheque was signed. In some areas, the bearer cheque is difficult to use and here local permission to use cash payment makes sense. Such local flexibility could be encouraged.

6. Out of pocket payments are high - average Rs. 1028 excluding transport across the states. With transport the out of pocket payment would be in the range of Rs. 1400 to Rs. 1600 which is about the amount of money that JSY provides. We also note that ther are significant out of pocket payments among home deliveries in almost 53% of the cases. It is likely therefore that JSY is not so much an inducement for behavior change as it is an enabling device for women to access delivery in health facilities l. Also one could propose that the JSY has acted as a major supply side pressure to provide these services in the public sector and that this is the major behavior change engineered by JSY.

7. The main out of pocket expenditure is in drugs, but there are also significant expenses on fees and on surgery. Since the surgery expenditure is not spread across many patients a large part of this this would be catastrophic expenditure for the poor and we need to be concerned about this.

Recommendations

1. There is a need to ensure that there are no fees of any sort charged for pregnancy and newborn care and this should be well advertised, so that it is part of public knowledge.

2. There is a need to build mechanisms to ensure an elimination of all out of pocket expenditure on account of provider fees (formal or informal), and for drugs and supplies, food and transport for the patient and one companion, through appropriate supply side arrangements. Transport should include the drop back home.

3. The payment of money on the first day of delivery needs to be enforces (or latest on the second day). Delays beyond this should not be seen as acceptable. Further the fund should be available at the facility and the woman should not need to make a separate trip to get these funds. The fund should be paid irrespective of time of day. If discharge is likely in late evening or night and the accounts/cash section does not work then, the payment should be made earlier instead of passing the burden on to the woman and asking her to come later.

4. Requirement of photo-id is uncalled for. This occurs only because delayed payments are perceived to be routine. If the woman is in bed with a newborn baby, the need for identification is redundant. Facility based payment while the woman is still in the institution should be the norm.

5. The single greatest source of delayed payments is delay in funds flow between state and district (we have not examined the national to state

fund flows) and measures to keep at least two months worth of fund requirement at the district level should be insisted upon. Thus state may send six months fund requirements to the district, and when their cash in hand drops to less than two months requirement, another four months fund should be sent. (Exact number of months could be decided but it is the principle that we are elaborating). Delayed payments also correlates with poor accounting and therefore also with leakages and every effort should be made to prevent any such fund flow blocks.

6. Much greater seriousness is needed to paying the BPL woman delivering at home. The HMIS grossly under-estimates home delivery and most of these go as unreported. (In contrast in BCG immunization, where these children appear in the HMIS). The major reason for non-payment of Rs. 500 is a strong almost universally shared amongst providers that women delivering at home do not deserve this Rs. 500, is uncalled for and that this adversely affects the thrust to promote institutional delivery. In many states, even ASHAs hold this view. If the government is serious about this Rs. 500, then internal advocacy and public awareness of this needs to be built. There is no evidence that paying Rs. 500 would de-motivate others from institutional delivery. But clearly this stems from the behavior modification understanding. The study shows that in fact there are substantial OOPs which the JSY is helping overcome. The payment of Rs. 500 paid for home delivery makes no difference to outcomes.

7. There is however a serious concern about the non compliance of the recommendation to pay the Rs. 500 earlier on during pregnancy. The reason for such a recommendation is the Supreme Court view that this Rs. 500 is part of a nutrition entitlement for maternity and should not be used as an institutional delivery device. This is why women who have home deliveries are eligible for this payment. However, a reduced payment at time of institutional delivery would be insufficient to cover out of pocket costs. Moreover given the substantial difficulty in delivering even this onetime payment, breaking the JSY payment into multiple transactions over small amounts of funds is almost impossible to manage and places a disproportionately huge burden on ASHA, ANM and of course on the mother and family. If a maternity entitlement addressing nutrition is being considered, then it is best to do so with a larger sum, and with no link to the JSY. That is being proposed by the women and child department but whether it would emerge as a conditional cash transfer, or as a maternity entitlement remains to be seen.

8. A system to check leakages should be put in place. Based on our study we recommend a shift of monitoring emphasis from monitoring only the point of data reporting by service providers, to the intermediate levels of data aggregation and block, district and state levels. This could be done as follows: We suggest the following measures:

    a. The HMIS records are used as the basis. The previous three months entries could be cross checked on the field for truth telling with respect to institutional deliveries and JSY payments.

    An internal monitoring team would analyse the data for tell tale signs and discrepancies. It would generate a few key indicators like % of beneficiaries to whom JSY payments have been made against the expected, facilities reporting unusually high beneficiary payments etc. It would also check to see if there are errors and mark ups being made in aggregation.

        i. Cross checking should be done by visiting external monitoring teams the external team would in each visit compare the number reported on HMIS with the number on the records at the district headquarters as aggregated from the block reports.

        ii. Then the team would visit a sample of two blocks and the block reports would be compared with the numbers reported on the records in the block headquarters as received and aggregated from the facilities.

        iii. Then the team would visit a sample of three facilities of each level, the facility reports would be compared with facility records.

iv. Finally a sample of beneficiaries on the facility records would be met in the village and receipts of the payments compared. This would be most difficult to do for those paid at the district hospital or block hospital but relatively easier to do at the sub-centre level.

9. Most deliveries take place at the higher levels and therefore the last step described above the name based beneficiary cross-checking may be a difficult goal to achieve. But it is our submission that this record based tracking and comparison with HMIS would be adequate.

10. The monitoring teams should be chosen from organisations active in community monitoring and from other public health institutions and departments of social work etc. The frequency of visit is annual. For 640 districts at Rs. 35,000 per visit it would mean an investment in the range of about 2.24 crores – or about 3 crores nationwide and it would not only serve to check on JSY payments, it would also improve the quality of HMIS reporting.

SECTION-V

Management of Obstetric Complications

1. Expected Standards for Provision of Skilled Birth Attendance at Birth

Current understanding of maternal mortality postulates the following: a small proportion (about 15% from various studies) of all pregnant women will experience obstetric complications, that it is not possible to predict which woman will develop what complication at what stage, and that deaths from these complications are largely preventable if attended to by skilled care. Not all the complications cause death, but they do cause serious lifelong disabilities in the mother and/or child. It is estimated that for each woman who dies, 20–30 more suffer health problems connected to pregnancy or childbirth (UNFPA/Aberdeen university), and a spastic child due to birth asphyxia is as much a preventable tragedy as a neonatal death. If all women had access to the interventions for addressing these complications, especially to emergency obstetric care, 74% of maternal deaths could be averted. (Wagstaff and Cleeson, 2004).

Universal access to skilled birth attendance and access to EmONC for women with complications, is thus a central strategy to reduce maternal mortality and morbidity. A skilled birth attendant following standard protocols of care could prevent or manage a substantial proportion of complications, such as for example the prevention of post partum haemorrrhage and sepsis in the mother, or the management of birth asphyxia in the newborn.

An ANM or staff nurse suitably trained in midwifery is considered a skilled birth attendant. Would a single nurse/ANM in a sub-centre or at home bring the same benefits as care provided by her in a facility? Theoretically it is possible. But in practice, she is catering to a widely dispersed population, with implications on travel time to reach the center or household. She must have drugs and equipment with her to manage complications, and have access to ready transport and referral services in case of complications that require surgery or blood transfusions. All of these make it easier to access skilled birth attendant services in a facility where there is a team of health providers available, with services guaranteed at all times of the day or night, than to rely on a sole service provider.

The current definition of services that a skilled birth attendant is capable of providing includes treatment for a wide range of complications in both mother and the newborn. Indeed the only difference between SBA skills and basic emergency obstetric care is that in the latter assisted vaginal delivery forceps or vacuum extraction, manual removal of placenta and manual vacuum aspiration for incomplete abortion are also part of the skill set. And where a doctor (or a nurse practitioner) is available, there is a potential to provide basic emergency obstetric care. This is the logic of strengthening the 24×7 PHC as the center-piece of supply side strategy for provision of institutional delivery. JSY is merely the demand side management of what was essentially a supply side plan.

The various levels of facilities required to provide care for all obstetric and neonatal complications are envisaged as follows:

1. An institutional delivery site functioning on a 24×7 basis, within an hour (preferably 30 minutes) of travel time from any habitation/ village. Ideally, most deliveries would occur in 24×7 PHCs, which are expected to have the capacity to provide normal delivery services and the management of complications at the Basic Emergency Obstetric and Newborn Care

(BEmONC) level. The core issue for life saving maternal and newborn health services is 24 hours availability of care, all year round. In terms of the obstetric package this level of care implies the availability of skilled birth attendance, with the skills for instrumental vaginal deliveries using vacuum/forceps, removal of a retained placenta for the management of post partum haemorrhage and removal of retained products. 24×7 PHCs are also expected to provide a broader range of reproductive and child health (RCH) services, beyond BEmONC. The provision of three nurses in a PHC was seen as the critical element in making a 24×7 PHC functional. It was expected that the gaps in Infrastructure, equipment and supplies would be much easier to address, given the availability of funds. By definition any nurse practitioner or medical officer is formally also certified and qualified to undertake this level of care, and therefore delivery of this package of services need not await any further approvals or even training if the requisite staff is in place. In practice skills are known to be deficient given the quality and priorities of medical and nursing education, and training is to be provided in skilled birth attendance and in basic emergency obstetric care. Where the population is truly scattered or inaccessible, and a 24×7 facility is difficult to provide, any form of access to skilled birth attendance, such as a ANM managed sub-centre or a single doctor and nurse managed PHC is an alternative to the provision of basic emergency obstetric care. Women with major complications requiring surgery or blood transfusion would be referred to centers providing CEmONC services.

2. But about one thirds of these maternal complications require a secondary care setting complete with blood transfusions and operation theatres and intensive care facilities to be able to manage. This is the First Referral Unit, (FRU) also known as the Comprehensive Emergency Obstetric and Newborn Care (CEmONC) care unit. One such FRU is needed within one hour vehicular travel time of any facility providing institutional delivery services. This translates into one FRU for every four or five PHCs, (about 1.2 lakh population, which is the norm set by the IPHS). However even one for every 10 or 15 PHCS, located in a more compact geographical region, would also suffice (one FRU per 500,000 population is also the WHO norm). The First Referral Unit, or CEmONC facility, is expected to provide not only emergency obstetric care services but a broader range of referral services for reproductive and child health. Other services to be provided in the FRU are the entire range of family planning services, safe abortion services including Medical Termination of Pregnancies beyond 12 weeks, and the management of RTIs and STIs. However newborn care did not develop in parallel, partly because the levels of care for newborn health have only recently been defined and are only just being put in place.

3. **Newborn care services:** The terms FRU and 24×7 PHC include limited newborn care services essential newborn care at birth, emergency care and care of the sick newborn. According to current understanding, District Hospitals should have a Special Newborn Care Unit (SNCU) and FRUs (other than the District Hospital) should have a Neonatal Stabilisation Units (NBSU); and all facilities below this would have Newborn Corner[4]. Some degree of management of birth asphyxia and complication is certainly needed in all sites of institutional delivery and even protocols of care and skills, need to be put in place for this even if they are not formally designated or have the infrastructure of a NSU. However newborn care has remained an area to which little attention has been paid with limited progress in agreement on terminology and definition of newborn care services to be provided at various levels of the health system.

2. Focus of the Study

The study looked primarily at a) access to emergency care services, b) the preparedness to manage complications in facilities designated for this purpose and c) the record of management of complications in facilities. Findings in these areas enable us to help us understand what more needs to be done to realise the health outcomes that we need to make the JSY programme yield value for money, beyond the social protection it provides to poor women in meeting part of their expenses at child birth.

4 Newborn corners is an arrangement and must be present in labour rooms of all three levels and in operation theatres to receive the newborn as soon it is delivered.

For assessing preparedness to manage complications in the newborn we assessed (i) Infrastructure, (ii) Skills, (iii) Equipment, and (iv) Supplies. Thus the availability of laryngoscope and endotracheal tubes in an FRU or a 24×7 facility shows its preparedness to provide neo-natal stabilisation services and its absence shows that even if the institution has been "declared an FRU" in fact, it has not yet taken on this task. Of course the presence of all these four elements does not translate into the actual delivery of services, and this gap is explored in the next section on the actual record of management of complications. The presence of a radiant warmer and a resuscitation table as well as availability of Ambu bag and mask was seen as the measure of a newborn corner being in place, and as described earlier this should be in place in all facilities.

a. Access to emergency obstetric care services

The availability of FRUs and 24×7 PHCs providing life saving emergency obstetric care services was low in the 23 districts visited. The application of stringent criteria for a facility to qualify as an FRU, resulted not only in too few facilities which could be categorised thus, but also fails to capture the improvements taking place and provide an understanding of how much more needs to be done to reach the objective of "universal access to emergency obstetric care services". We therefore relaxed the criteria to include any facility which has a C-section capacity, and then within this larger set identified as FRUs, those which have both critical elements, namely C-section and blood transfusion.

There were 101 institutions with C-section capacity and of these 37 in the public sector and 64 in the private sector could be called FRUs across 23 districts in eight states. This is in a population of 4.07 crores. This implies that there is 1 FRU per 500,000 population

The Table 24 gives the availability.

The availability in the public sector alone is about one FRU per 11 lakh population. The number of

TABLE 24

District	Population In lakhs	Public sector CS capacity			Private sector CS capacity		Density of institutions with CS capacity per 5 lakh
		DH	SDH	CHC/block PHCs	Profit	NFP	Total
Samastipur*	41.26	1	3	0	1	0	0.61
Madhepura	18.57	1	0	0	1	1	0.81
Nalanda	28.33	1	0	0	1	0	0.35
Raigarh	14.4	1	1	1	1	1	1.74
Koriya	6.67	1	0	1	1	1	3.00
Bastar	14.88	1	0	0	0	0	0.34
Garhwa	12.2	1	1	0	1	0	1.23
Dumka	20.74	1	0	0	1	1	0.72
Lohardaga	4.29	1	0	0	0	1	2.33
Angul	12.78	1	1	1	0	1	1.56
Nabrangpur	11.51	1	1	0	0	1	1.30
Morena	18.94	1	0	0	1	0	0.53
Tikamgarh	14.29	1	0	0	3	0	1.40
Barwani	12.85	1	0	0	1	1	1.17
Bharatpur	25.56	1	0	0	4	0	0.98
Hanumangarh	18.47	1	0	0	1	0	0.54
Dungarpur	13.47	1	1	0	0	0	0.74
Sitapur	42.38	1	0	1	6	1	1.06

District	Population In lakhs	Public sector CS capacity			Private sector CS capacity		Density of institutions with CS capacity per 5 lakh
		DH	SDH	CHC/block PHCs	Profit	NFP	Total
Bijnor	37.47	1	0	1	12	0	1.87
Kaushambhi	15.46	1	0	0	1	0	0.65
Dehradun	14.72	1	0	1	15	2	6.45
Bageshwar	2.86	1	0	0	0	0	1.75
Pithoragarh	5.31	1	0	0	2	0	2.82
Total	**407.41**	**23**	**8**	**6**	**53**	**11**	**1.24**

Source: JSY phase I reports.

FRUs in the private sector could potentially improve access, except that such facilities are nearly always located in the same place as the public sector FRU is located often within less than a distance of one kilometer, and certainly within the city itself.

Thus although private sector institutions do manage a significant part of the case load, including the management of complications that could not or would not be done by the public sector FRU, there are hardly any that meet the FRU criteria of "being within one hour vehicular time of any PHC or sub-centre", and therefore we cannot hope that the private sector would make a substantial difference overall.

Population ratios alone can be misleading. Koriya has more than the required number of FRUs by a one per 5 lakh criterion, but the blocks are spread apart and at least two additional FRUs are essential to achieve universal access to emergency obstetric care services. In all cases one FRU per one lakh would be a more assured strategy of providing universal access, but that would be impossible in the present context. Even with radical changes in the human resource policy it could take over ten years to achieve and one could provide universal access with a fewer number of facilities but with a higher capacity per facility.

An FRU is located in the district headquarters town, and generally, though not always; a second FRU in the district in the public sector usually means a different physical location. Examples were CHC Sarai Akil in Kaushambhi and SDH Sagwara in Dungarpur, CHC Sidhauli in Sitapur, Kharsia SDH and CHC Ghargoda in Raigarh, SDH Talcher in Angul, and area hospital Umerkote in Nabrangpur.

Institutional care for the sick newborn

Availability of newborn care services appeared to be even more limited with only eleven SNCUs available in the public sector in 23 districts. Five of these were at the DH Dungarpur, Bharatpur, Hanumangarh, Tikamgarh, and Dehradun); two were sub-district SNCUs at SDH Talcher in Angul district and one at the Area Hospital Umerkote in Nabrangpur district. In many of the remaining FRUs, neonatal stabilisation units were absent. Even an equivalent level of care was non-functional as indicated by absence of the tracer equipment for newborn resuscitation, i.e., a laryngoscope and endotracheal tubes. Often, even at the level of district hospitals, as in Barwani and Lohardaga these were absent. FRUs in Mission Hospitals, on the other hand, were noted to have all the required facilities for newborn care stabilisation. It is important to record that in the private (not for profit) sector FRU at Landour hospital in Dehradun, St, Ursula hospital in Lohardaga, Karuna hospital in Barwani, and Christian Hospital in Nabrangpur had newborn care equipment appropriate for a stabilisation unit were available. Equipment for newborn stabilisation units were also available in CHCs Vikasnagar, Doiwala, and Sahiya in Uttarakhand but were not being used.

b. Actual record of management of complications

This depends not only on physical preparedness of the facility, but the level of skills, motivation and confidence to manage complications and on "pressures" from the private sector to pass on or refer certain categories of cases. One major problem

in studying this across the states and the districts was the very poor record of complications. This is a problem in the HMIS reporting as well, since primary registers did not provide any space for documenting the nature of complications, management and outcomes. When referrals are made, the records of reasons for referral were also not documented in the majority of facilities visited.

Notwithstanding this, the overwhelming pattern from our findings is the poor management of complications. We used four indices to assess these.

A. **The proportion of all births in EmONC facilities:** The numerator is the number of women delivering in FRUs and 24×7 PHCs (EmONC facilities); the denominator is an estimate of all births in that area. Ideally this should be 100%. But even in very remote and difficult areas not more than 10% should deliver in a facility with no EmONC capability. This does not imply that those with complications were preferentially referred or that they were managed adequately. But that providers and users make rational choices, even without BCC and cash transfers, and many of those who needed service, did make it to facilities that could provide it. However despite availability of infrastructure and staff in most of these facilities, the proportion and type of complications managed by them is much lower then expected.

B. **Met Need for Caesarean sections:** Of the estimated births/deliveries in a district, 5% to 15% would be expected to be delivered by Caesarean section. The numerator is the number of Caesarean sections performed in FRUs, and the denominator is the expected number of C-section surgeries that would have been performed if 5% of all expected live births in the district underwent C-section. This is a very sensitive indicator and also an objectively measurable one. However unnecessary C-sections may make it less specific or valid. This is particularly true if there is a predominant private sector contribution. Thus there could potentially be a situation where on one hand, women who need a C-section are unable to access it and those who actually undergo one, may not have required it. A district reporting less than 5% or over 20% C-sections is of concern, but those falling in the 5% to 15% range are likely meeting the real need. The pattern we see in the districts visited is that C-Sections are less than 5%. The contribution of the private sector presence is too small and too skewed to have made a difference.

C. **Met Need for EmONC:** This is an estimate of the proportion of all women with direct obstetric complications who are treated in an FRU or in a 24×7 PHC providing EmONC services. The numerator is the number of obstetric complications treated and the denominator is the number of estimated complications in the district (which is 15% of all expected births in the district). This indicator is useful as it monitors the number of women managed by non-surgical and surgical modalities and shifts the focus from monitoring only C-sections, a factor which could further aggravate the epidemic of Caesarean sections, that is in the making. The only problem in this is that the recording of complications in the primary registers needs to improve considerably.

D. **Stillbirth Rate:** This is a useful indicator of quality of obstetric care, especially if we could separate and record stillbirths as full term or premature (by weight), those that die after onset of labour or those that die before. Then it would be a very high precision and specific indicator. Even without this disaggregation, and applying the general distribution as seen from published literature, one could still get a fair idea. With time, as the HMIS gets institutionalised into the system and the reporting improves, it can be expected to report on this indicator.

Findings

The table below has indicators as available from HMIS for these districts the Met CS rate and the Met EmONC rate. (The Met needs of sick newborn care are not calculated). Further these rates are calculated using reported deliveries, but this is a huge underestimate, since 5% of all expected deliveries usually require C-section. The stillbirth Rate (SBR) is shown as percentage of reported birth rates. This is likely to include a large number of early neonatal deaths. Peri-natal mortality data is available, but not included in this table, as the likelihood of under-reporting is likely to be higher. It is worth noting that adding Stillbirths to C-Section rates and EmONC

rates, would provide a rate closer to the desired EmONC rates, meaning that a fair percentage of stillbirths are likely to have been due to lack of access to emergency obstetric care. At this point in time it appears that the stillbirth monitoring remains outside the "HMIS as accountability" framework of understanding and is one reason why we see this statistic so realistically whereas maternal deaths and neonatal death are reported so poorly by providers. The blood transfusion rates are also very low and are much lower than the CS rate. Records of severe anemia management is very low, eclampsia cases, is very low, and treatment with anti-hypertensives (AHT), antibiotics (AB) and oxytocins are very low.

The visits to the districts and cross-checking of these reported figures in HMIS with reality as reflected in the records, bears out these figures as largely valid. In administration of parenteral anti-biotics, and anti-hypertensives the trend of under-reporting performance is due to lack of records and attention to this detail. The CS rate was about 0.9% overall. This is far short of the minimum of 5–15% expected. There was not much difference between largely tribal districts and the relatively higher and poorer performing districts in terms of managing institutional delivery load. 0.9% for tribal/SC districts, 1% in high performing and 0.8% in poor performing districts. Thus increase in institutional deliveries does not necessarily imply increased access to C-section facilities.

Further as we see below in these two tables from HMIS in many districts much of the CS reported is from the private sector. If some of this is unnecessary C-sections then the concern is both about lack of access plus moral hazards of an unregulated private sector. In many districts there are anecdotal reports of a nexus developing at the district hospital level between private nursing homes at the district headquarters towns where potential CS cases are lured or pushed into the private sector. Often these C-Sections are

TABLE 25

District	Expected births	Reported births	Birth prop in EmONC facilities (%)	Met CS need %	Met emONC rate (%)	SBR	Blood transfusion	Severe anemi	Eclampsia	AHT	AB antibiotics	Oxytocin
Samastipur	118931	73512	61.81	2.1	5.15	14	NA	78	18	43	146	618
Madhepura	53120	20566	38.72	21.1	24.90	45.5	119	541	0	1175	2125	2742
Nalanda	82518	37816	45.83	29.8	5	47.3	NA	18	16	11	70	147
Raigarh	37021	32857	88.75	113.8	66.20	21.4	NA	187	74	NA	NA	NA
Koriya	16384	16615	101.41	36.1	28.50	14.4	86	155	545	46	128	93
Bastar	38159	34247	89.75	47.2	76	27.2	-	674	1297	60	578	690
Garhwa	31545	27508	87.2	17.6	23.40	14.9	17	363	46	2	412	605
Dumka	53605	19308	36.02	42.7	0.30	10.3	NA	NA	5	19	451	272
Lohardaga	11105	8890	80.05	49.3	31	13.9	23	368	16	28	369	233
Angul	28302	28188	99.6	15.6	3.60	26.6	3	107	17	1	89	4
Nabrangpur	25490	19907	78.1	19.8	5.60	73.9	NA	396	96	NA	NA	NA
Mayurbanj	55201	43775	79.3	65.2	38.80	26.6	NA	1836	155	124	729	665
Morena	54875	46821	85.32	16.1	48.50	10	8	600	82	220	1518	286
Tikamgarh	41427	34411	83.06	12.8	13.70	10	NA	45	7	47	59	NA
Barwani	37244	33255	89.29	14	30.30	16.2	577	1513	78	245	650	271
Bharatpur	71392	56765	79.51	33.7	26	18.2	1156	1421	598	1281	2192	2732
Hanumangarh	51283	34268	66.82	35.5	14.20	10	10	14361	NA	33	205	32
Dungarpur	37367	27999	74.93	40.7	41.60	20.3	35	1820	23	217	467	178
Sitapur	124981	122707	98.18	3.4	20.50	4.8	NA	NA	NA	NA	NA	NA
Bijnor	110193	57219	51.93	24	NA	4.1	NA	NA	NA	NA	NA	NA
Kaushambhi	45491	36062	79.27	1.1	21	1.5	1	359	115	39	992	137
Dehradun	29696	19345	65.14	190	63	3.2	756	252	304	1041	7175	5035
Bageshwar	5778	4136	71.58	0	13	37.5	NA	4	NA	NA	109	87
Pithoragarh	10707	9262	86.5	44.5	55.50	13.2	316	291	2	35	472	713

Source: HMIS 2009-10.

also being reported from Mission Hospitals, which indicates that the need of emergency obstetric care being met somehow, but outside any role that the JSY social protection offers. In Lohardaga for example the case is referred from the district hospital to the private sector, patients make their own transport arrangement to the Mission Hospital or one other private clinic and pay for the CS services there at prevailing rates. The Rs. 1400 from JSY, does not cover even a fourth of the costs. In Lohardaga at least, the Mission Hospital was accredited, but in other districts private sector hospital providing emergency services may not even be accredited, in which case even this Rs. 1400 is lost to the woman.

3. Comparative Case Studies Across the Eight Districts

Bihar

(i) **Nalanda:** None of the public health facilities visited were managing complications, and the main reasons given by the staff were the lack of training and skills. Cases with complications were mostly referred to Patna Medical College Hospital about 70–80 kms. Blood transfusion facilities were available at the District hospital but the nurses and doctors were not confident of providing this. There is a private sector facility, with a gynecologist, under a PPP contract with the state, which has lapsed. The reason why the private sector facility could not be re-contracted in was not clear.

(ii) **Samastipur:** No complications are managed in any facility except in the DH. Patients are referred to DH or to the Medical College, Dharbanga, over a 50 km away. None of the staff had received any of the trainings prescribed.

(iii) **Madhepura:** All complicated cases are referred to the district hospital or to a private sector facility, the Alka Singh Clinic, not accredited under JSY. BPHC Murliganj designated as FRU refers all cases of complications to Purnia district hospital (60 km) instead of Madhepura District hospital (30 km) because of better facilities and road connectivity. Only 20 CS were done in the Madhepura DH last year. 104 maternal deaths have been reported. There are other private clinics beginning to mushroom around the district hospital, though the Alka Singh clinic manages the majority. This clinic is well managed with 30 beds, specialists and OT.

Chhattisgarh

(i) **Raigarh:** There are six accredited private sector hospitals including a Mission Hospital. The public sector has a district hospital, a CHC and a civil hospital which are FRUs all located in

TABLE 26

Chhattisgarh - Raigarh - C-sections & complicated deliveries Apr'09 to Mar'10			
	Institutional deliveries (Public)	Institutional deliveries (Pvt)	Total
	13,505	2,798	16303
C-Section	1,021	849	1870
C-Section %	8%	30%	11.3%
Complicated Pregnancies attended	2,205	NA	2205
Complicated Pregnancies attended %	16%	0%	13.5%
Chhattisgarh - Bastar - C-sections & complicated deliveries Apr'09 to Mar'10			
	Institutional deliveries (Public)	Institutional deliveries (Pvt)	Total
	15,821	1,060	16881
C-Section	180	629	809
C-Section %	1%	59%	4.8%
Complicated Pregnancies attended	2,425	811	3236
Complicated Pregnancies attended %	15%	77%	19.2%

different geographical areas. Approximately 700 CS are done in a year in the district hospital and the record of management of all complications at all these three public hospitals and in the private sector is good. The other facilities however do not manage complications and prefer to refer these to the CEmONC facility. There is however poor access to BEmONC facilities.

(ii) **Koriya:** At the district hospital about ten deliveries per day and about 20 C-sections per month take place. Blood banking is functional and blood transfusions are routinely given. For the C-sections, the anaesthetist from a private sector facility is called in. However, since the anaesthetist's private hospital is also the one out of total three accredited private facilities for JSY, patients with complications who come to the District hospital, at night, are referred to the private hospital as the anaesthetist is not willing to come during night. About 30-40 deliveries take place in the private facility and 40 percent of these are C- sections.

Only the Manendragarh CHC handles C-sections. At this CHC there is no blood banking or storing facility, but they are adept at unbanked blood transfusion, a time tested and valuable technique and have been doing so for the past 12 years. BEmONC level complication management is low. Vacuum extractors are not in use. In the past year, of 16,000 births, 36 maternal deaths, 181 neonatal deaths and 202 stillbirths have been recorded. The high wastage and mortality clearly relates to poor access to emergency obstetric care. Here physical access issues compound lack of development of facilities and the level of institutional delivery is itself low. Both CHC and DH are functional as FRUs, but the majority of emergencies are clearly not able to access them.

Table 27 illustrates the pattern of births and deaths from Koriya district. Thus the district should have expected 17,589 deliveries out of which 2638 (15%) were the expected complications. Of these 300 had C-Section and 565 were treated for complications. Of the remaining 1773, there were about 36 maternal deaths and 383 peri-natal deaths. It is likely that many more complications were unreported. The pattern of deaths is instructive, the highest were reported from Manendragarh, (which was the most functional and active FRU where the more serious cases must have been referred) followed by Khadgwa and Janakpur blocks, which are well beyond two hours from any FRU and where there are no facilities which have the capacity to manage complications. Though the numbers of births in these two blocks are low, the maternal, neonatal and stillbirth mortality rates are very high. Clearly the JSY is struggling even to meet immediate outputs, but even where the deliveries are in the institutions, there is no concomitant increased management of complications. C-section availability is better, but still far from adequate.

(iii) **Bastar:** All complications including C-sections are all managed in the district hospital, and in some CHCs. Complication management was higher in some CHCs than others. All PHCs did manage few complications but most of the cases were referred out to CHCs, Though there were adequate records of the cases managed

TABLE 27

Blocks	Population at 30/1000	Expected births	Abortions	Still birth	Total birth wt recorded	LBW (>2.5 kg)	0–27 day death	28 days to 1 yr death	Maternal deaths
Baikunthpur	1,79,751	5932	109	38	2883	210	28	13	2
Manendragarh	1,31,379	3941	77	61	3835	214	70	39	14
Sonhat	39,638	1188	40	4	1507	502	16	10	1
Khadgawa	1,63,456	4902	29	43	3906	266	31	1	7
Janakpur	72,103	2163	30	56	675	28	36	11	12
Total	**5,86,327**	**17589**	**285**	**202**	**12806**	**1220**	**181**	**74**	**36**

Secondary data from records phase I study.

but the records on referred cases were not maintained.

Jharkhand

(i) **Dumka:** the district hospital is the only functional FRU in the public sector but very few C-sections were reported last year. The problem is that they have to make do with a retired anesthetist who is available occasionally. None of the other 24×7 facilities were providing any level of complication management and were referring all of these to Dumka town. There are three private sector hospitals in the district, two of which were in Dumka town and both providing management of complications and C-sections. One of them is a Mission Hospital and the other is a private sector start up. The third is a Mission Hospital in an interior block which has a good nursing education school. No C-sections were being performed here, and complication management was limited. The cost of care in the private sector unit was very high, and there was no formal PPP tie up, though an informal link up more by default than design was evident. Blood bank is available only at the district hospital.

(ii) **Lohardaga:** The district hospital was the only public hospital providing C-section services and there were two private sector hospitals of which one, a Mission Hospital, did the bulk of the work. Case notes of about 500 patients delivered in the two hospitals over a period of three months, were reviewed and used for calculation of numbers of women needing EmONC services:

Population – 444,998;
CBR – 25.8 (2008); Estimated preg – 11,480;
Estimated complications – 1722
(15% of estimated pregnancies);
Births/deliveries – 10332
(90% of estimated pregnancies)

Most complications were managed at St Ursula's. The DH Lohardaga performed 15 CS in 6 months (against an expected 30 CS out of its 1836 births, extrapolating from review of the register and recorded deliveries for 6 months) giving a C-Section rate of 1.6% for all deliveries during 2009–10. St Ursula's would be expected to perform 477 C-Sections, out of 864 women expected to be delivered during 2009–10 (extrapolated from a 9 month review of its registers by the evaluation team). This would result in a CS rate of 55% at St Ursula's. Overall the proportion of district births delivered by Caesarean Section in Lohardaga would be a respectable 4.9% just short of 5% which is the minimum expected.

Of the estimated 1722 complications among women in the district (calculated as 15% of all

TABLE 28
Complications treated at two FRUs in Lohardaga and Met Need for Emergency Obstetric Care

	3 months		12 months (extrapolated)		Total complications over 12 months (extrapolated)	Met need for EmONC= % complications managed against expected
	District H	Ursula's H	District H	Ursula's H		
Direct obstetric complications						
Haemorrhage	12	7	48	28	76	4.4
Prolonged/ obstructed labour	4	67	16	268	284	16.5
Pre-ecclampsia/ Ecclampsia	10	6	40	24	64	3.7
Sepsis	1	0	4	0	4	0.2
Abortion complications	1	6	4	24	28	1.6
Indirect obstetric complications						
Severe anaemia	3	9	12	36	48	2.8
Malaria	2	5	8	20	28	1.6
Total	**33**	**100**	**132**	**400**	**532**	**30.9**

pregnancies), the two hospitals would handle 30.9% complications in the district, i.e., the "Met Need for EmOC" is 30.9%. it was difficult to study newborn complications as record keeping was very poor, but we noted that 12.5% newborns at the DH were recorded as being low birth weight.

None of the BPHCs or other PHCs was undertaking any level of complication management, choosing to refer every case. One PHC, Kuru, could be listed as capable of providing BEmonC. The GoI has designated MOs as providers of BEmONC after training. Although all BPHCs had more than sufficient numbers of MOs, none of them had received BEmONC training, and all complications were referred to the DH and St Ursula's. Stabilisation of women with complications prior to referral occurred to some degree at Kuru but was not done in other BPHCs.

(iii) **Garhwa:** A similar pattern was seen here as well. The district hospital and one private facility were the main providers of emergency services. At the district hospital, of 1000 deliveries conducted in the last three months only five C-sections were undertaken, 12 cases of eclampsia treated and two blood transfusions were given. In the private nursing home, of 169 deliveries, 39 were C-sections. The private nursing home has total of 21 beds and is headed by a government doctor, who is posted in a nearby facility. Clearly the rise in institutional delivery in Garwah, then, at best implies access to ANM or staff nurses, instead of the *Dai*. However complication management by SBAs is still not taking place, and nearly all complications are referred to Daltonganj, which is the headquarters of the neighbouring district.

Orissa

(i) **Angul:** The district hospital and the Talcher SDH, Kishorinagar SDH are the three major public health facilities where complications are managed. The total number of deliveries has tripled, from 5095 to 16,185, but the number of facilities managing these have increased by less than 30%, from 42 to 54 and the number of facilities conducting C-section has actually declined from four to three!! But the number of C-sections have increased from 11 in 2005–6 to 487 in 2009–10, a 40 fold increase. This is because the cases in the DH went up from four cases to 296 and in the SDH from two to 191 and the other two SDH stopped conducting C-sections. Kishorinagar averages about two CS every month. But the CS rate for the district is only 3%. Other facilities just do not manage complications at all, and refer all cases.

(ii) **Nabrangpur:** In the district as a whole the CS rate was only 2.3% and not much better for the Met Emonc rate. A maternal death review study done in the district by UNICEF in 2005 to 2007 had picked up 203 deaths most of which were clearly preventable if emergency obstetric services had been available. The DH and Umerkode SDH were the two hospitals managing an increasing load of complications. They had reasonable C-section rates, 8.7% for the former and 5.4% for the latter and in addition they were also using vacuum extractors and avoiding unnecessary CS. In the Mission Hospital the CS rate was recorded as 69%, though its major complication rate was recorded at about 20% (56 of 309 deliveries). Assisted vaginal delivery was also practiced here, with higher use of forceps than vacuum extraction. On the down side, all newborns and all normal deliveries were routinely given antibiotics, in violation of guidelines. Facilities other than the FRUs were just not managing complications.

Madhya Pradesh

(i) **Morena:** District hospital is the only FRU in the public sector and manages most of the complications. District hospital had referred 25 complication cases to the Gwalior Medical College in last 3 months. Though the no. of deliveries in DH is quite high, the CS rate was found to be only 0.01%. The private accredited nursing home, run by a Paediatrician and a Gynecologist (with Anesthetist and Surgeon being available on call), has conducted 293 C-sections out of total 3992 deliveries in last year with a high CS rate of 7%. The private centre also has a well equipped NICU. There are few more private nursing homes in the district. Incidences of patients being referred from DH to these private centres through touts were reported.

(ii) **Tikamgarh:** The DH is the only FRU, and it is the District Women's hospital. There is also an SNCU

being set up. It has a qualified gynecologist, the only one in the district. In all other facilities in absence of Gynecologists and lady MOs, in effect, it is a *dai* or a ANMs were conducting the deliveries and all complications are referred up. There is however, both in CHC Jatara and in CHC Badagaon a small number of complications that are being managed. MTPs too are mostly done only in the DH. No assisted vaginal delivery or manual removal of placenta is done. There are also high level of severe anemia and still births seen in the records. One major issue is the rampant misuse of oxytocin given early in labour to hasten it, leading to a high incidence of birth asphyxia, and this may be contributing to the high still birth rate. The district head quarter town has three Nursing homes (non accredited), which do C-section and also have ultra-sonography facilities which is also extensively used for patients of District women Hospital. One of these nursing homes has a Gynecologist posted in the district hospital who has not joined his services in last 2 yrs and has also applied for Voluntary retirement.

(iii) **Barwani:** There are five hospitals which are functional and provide CEmONC services. One is the district hospital at Barwani, a second is an NGO trust hospital Asha Gram also at Barwani, and a third is a Mission Hospital at Sendhwa and two private sector facilities in Barwani itself. The CS rate in the DH is only 4.4%. In the Asha Gram hospital 4 out 5 women had a CS (rate: 78%). In the Mission Hospital it was 24.5%. Both reported about 300 deliveries in the year. The overall district CS rate only 1.5%, implying that a large part of the emergency obstetric care need is not being met. Severe anemia is commonly reported and seldom managed with blood transfusion though recorded hemoglobin levels are at 2 to 4 gm%. Of the 17 deaths which were reported, six had mentioned severe anemia as the cause. The met need for emergency obstetric care was only 4.7%. At Barwani district hospital there was no neonatal care unit, and even a laryngoscope and endo-tracheal tubes were absent. Complication management in all other facilities is very weak.

Rajasthan

(i) **Bharatpur:** The major proportion of direct obstetric complications is managed in the district hospital of which records are available for only a small proportion of such complications. There is a major problem of oxytocin misuse contributing to neonatal problems. The CHCs do record a few complications, but all in single figures since most complications are referred to the district hospital, even where there is a gynecologist. Anemia is recorded as a major problem. C-sections are performed only at the DH which has done 1315 C-sections – far more than reported in the HMIS.

(ii) **Dungarpur:** All complications are managed at either the district hospital or at one SDH. A range of complication management is seen at the DH, but only CS are recorded at the SDH. The other facilities do not show any evidence of managing complications and are referring all. MTPs are only recorded at the district hospital. Since the district does not have private sector with capacity of doing C- sections, so patients either choose the DH or move to private sector in Gujarat which is nearly 40 kms from district headquarter

(iii) **Hanumangarh:** There is a record of complications management at the district hospital. The district CS rate is 3.2% and the rate in the DH is over 30%. Other than this, the CHC at Rawatsar also manages complications. Private nursing homes at Bhadra also contribute. Neonatal death rate, especially early neonatal is high, but facilities for sick newborn care are limited Neonatal death rate, especially early neonatal is high, but facilities for sick newborn care are limited.

Uttarakhand

(i) **Dehradun:** This is a largely urban district. There are three accredited private sector hospitals and the district women hospital is also fully functional and the entire range of complications is managed here. There is one other CHC, Doiwala which is C-section capable and was managing complications till three months ago. Elective C-sections are performed here and emergencies are referred since the one anesthetist posted here is not available round the clock. It is worth noting that services like MTP or female sterilisation are not always available. This lack of reliable services is on account of the nonavailability of skilled professionals. The situation is dynamic and affected by transfers, resignations, or absence on account of leave.

(ii) **Pithoragarh:** The DH and Dididhat CHC are FRUs. The DH is active in the management of

complications and has handled C-sections, with a 9% rate. It also does MTPs and blood transfusions regularly. The CHC does all complication management except those requiring surgery or blood transfusions, but the numbers handled are very low, with most being referred. The other BPHCs, though very scattered and distant from their hamlets as well as from the DH, record only an occasional complication managed. The unmet need for emergency obstetric care is very high. For newborn illness there is a pediatrician but no neonatal intensive care unit, and four neonatal deaths were recorded at the DH. There are two private sector hospitals in the town Sanjeevini and Malikarjun, both being C-section capable with about ten deliveries per month and half of them undergoing C-sections.

(iii) **Bageshwar:** District hospital is the only FRU and there are approximately 112 complications being managed in the year, as against an estimated 900 complications that the system should have encountered – a Met Emergency Obstetric Care Rate of only about 12.4%. A newly posted gynecologist makes it potentially C-section capable as well.

Uttar Pradesh

(i) **Sitapur:** In the public sector there is the District Women's Hospital (DWH) and the CHCs of Laharapur and Sidhauli. In the private sector there are four nursing homes in the commercial sector in the district headquarters and an active Mission Hospital with over 300 beds and a nursing school. There are two commercial sector hospitals in other blocks as well. All in all there are eight hospitals with C-S capacity- though most of the private sector hospitals contract in specialists for C-S. The Mission Hospital averages 50 CS per month or 600 a year out of 2500 institutional deliveries (about 25% institutional CS rate). They get referrals even from the district Women' s hospital. There is no coverage of costs. The district women's hospital is a fully functional FRU and so is the CHC at Sidauli with blood transfusion services and CS. The DWH has 132 beds and a bed occupancy of 155%, typical of almost all the DWHs. They usually do about 50 CS per month- but as one doctor was on leave for a few months this had declined. Since there are 1100 deliveries per month on an average, even the institutional CS rate is only about 4%. There is no newborn care unit here.

(ii) **Bijnor:** The DWH is the only C-section capable facility and it manages all the complications that the public sector manages. Of 3033 deliveries in the last year 721 were C-S and 211 blood transfusions were done. There is also a neonatal intensive care unit. The whole range of complication management is provided. None of the CHCs have specialists. The records show complications being managed in two of these, but at a very modest level, and in single digits. Lack of records meant that no detailed examination of this was possible. There were various private facilities providing similar institutional delivery services and a system of touts acting through dais who were funneling cases to them. These were charging high rates, and there were no linkages with the public system and many of the patients using these facilities were very poor (as seen during the visit).

(iii) **Kaushambhi:** At the sub-centre and APHC visited, ANMs refer complications detected to the District Women's Hospital at Allahabad, which is the Dufferin hospital. For most places in the district Sarai-akil CHC is about as far off as Dufferin and transport to the latter is better. Moreover there is greater reliability in services of Dufferin. Most providers in the health facilities feel that surgical care may or may not be available in Sarai-akil. There are no blood storage facilities in Sarai akil CHC-FRU. Two or three cases of C-section were done here to establish it as an FRU, but after that all cases requiring surgery have been referred to Dufferin a fact that everyone in facilities at lower levels are aware of. The CHC does however manage all other complications and provides safe abortion services also. Thus in practice this is at the level of Basic Emergency Obstetric Care. Thus in the whole of the district public health facility network there are only five C-sections recorded out of 22,700 deliveries in the last 10 month whereas one would have expected at least 1100 C-sections. The private nursing home does about 9 C-sections per month, out of about 32 cases per month that it sees, amounting to a 30% C-section rate. Of these four C-sections and 13 normal deliveries were BPL patients covered under Sowbhagyavati scheme. Five C-sections and 15 normal deliveries were other private patients. The facility management is not happy. It wants to remain in partnership with the government, but the standard package of

Rs. 1800 per delivery does not work out with such a high C-section rate, and for normal delivery most patients actively prefer the government system. The management says that this is because both beneficiary and ASHA get paid there. This hospital is not accredited for JSY. The Private nursing home however does manage a wide range of complications, including the occasional rupture of uterus (about two per year). The facility does arrange for blood transfusion. The patient's family is guided to organise it, from Allahabad, which is over 50 km away. The cost per bottle is Rs. 850. Curiously the nursing home does not do MTPs.

c. Complications in the ante-natal period: anaemia, hypertension, malaria, and sickle cell anaemia

As many as one third of all maternal deaths occur in the ante-natal period and the most common causes are malaria, jaundice, other fevers such as typhoid. Pre-ecclampsia, hypertension in pregnancy, severe anemia, and sickle cell anemia do not by themselves cause death but they are major causes of intra-uterine growth retardation, congestive heart failure and stillbirth, and untreated, they could lead to a maternal death at the time of delivery. There were serious problems with getting data on these conditions. We could not obtain records of the incidence of pregnancy related anaemia in the public sector facilities visited. Delivery registers did not have a column specifically for recording life threatening complications; lab registers did have not have data on haemoglobin tests done for pregnant women, although they did have records for haemoglobin tests done overall.

Well kept records were seen only in a few of the facilities visited. Review of the Bed Head Tickets/ case notes in three district hospitals (Lohardaga, Barwani and Nabrangpur) and three private not for profit hospitals (St Ursula's, Karuna, and Christian Hospitals) showed a high prevalence of anemia, more so in the public sector District Hospitals. The private sector hospitals also had large numbers of anemic patients. Ten cases of severe anaemia were recorded out of 118 major obstetric complications managed at the district hospital in Barwani and two cases out of 48 complications in Karuna Hospital. In DH Nabrangpur, 30 cases of severe anaemia were recorded among 267 complications managed and one out of 56 complications was managed in Christian Hospital.

But even in these facilities, the records were incomplete in many cases, and thus it is likely that the numbers could have been much more. Many of the case notes did not have reports of haemoglobin tests. Many women had a haemoglobin in the range of 7–8 gms % and these were not taken as severe anemia. The overall impression was that almost all women were anaemic and many were severely anaemic, and a significant number had anaemia with cardiac failure. The MAPEDIR study in Nabrangpur, with 207 maternal deaths between 2005–07, reported that anaemia was the most common complication accounting for 25% of all maternal deaths. Fever/ malaria accounted for 5%.

Data from HMIS also shows that in many districts severe anemia is infrequently reported, and blood transfusions are reported even less. Anaemia is further aggravated by malaria and sickle cell disease in several of the JSY study districts which had large tribal populations. Again there were no records of malaria or of sickle cell disease, in the registers or even the bed head tickets from the Obstetric Section, in the DH in Barwani and Nabrangpur. It is possible these women were admitted in the Medical Ward, and thus included in the Bed head Tickets of the Medical Ward.

Malaria is well known to be associated with poor perinatal outcomes and we looked for perinatal outcomes that might be indicative. In Nabrangpur DH, stillbirth recoding which had commenced four months ago had recorded 83 stillbirths; extrapolating this data for 12 months, that would mean 258 stillbirths during 12 months. Assuming an equal number of early neonatal deaths, the peri-natal mortality for this hospital would be 258x2/3912x1000, i.e., 132/1000 total births, compared to the perinatal mortality rate of 49/1000 pregnancies reported by NFHS-III. Malaria was a problem in all districts of Orissa, Jharkhand and Chhattisgarh visited and in Barwani of Madhya Pradesh. There was no active programme for pregnancy and malaria encountered and certainly not linked to JSY, though in some districts like Nabrangpur, LLINs (Long lasting insecticidal mosquito nets) were being prioritised for pregnant women.

Detection of hypertension in pregnancy and treatment with anti-hypertensives is also low in most districts detected. Referrals or admissions

during antenatal period are not covered by JSY or with associated free transport. Even where there are PPP arrangements, complications in this period are not covered.

d. Complications in post partum period

Complications in the immediate post partum period if occurring immediately after delivery do receive the level of attention described earlier. Once the patient returns home, whether it is at once, or after 48 hours, JSY and the special attention associated with this ceases to operate. Many ASHAs may out of their own will reach out and provide the same level of support as they did during delivery, but the system as a whole does not extend any benefit. Another substantial part of the mortality – about 25% would occur during this period. Post Natal visits home by ANM or AWW does not take place but ASHAs do make home visits. Since the ASHA is incentivised for JSY she does see it as her task to make these visits and even actual visiting is of a high frequency, but the skills needed even for early detection for referral are not in place. In ASHA modules 1 to 5 there is just no information or skills required to pick up a complication like puerperal sepsis. There is only information that signs such as heavy bleeding require referral, which is anyway apparent and obvious.

e. Family planning services

This was not the focus of enquiry. Many of the medical officers and senior nurses interviewed perceived that JSY would promote greater fertility. But as a rule ASHAs and the women themselves did not agree to this. Indeed most of them came "because we get services" or because "we can take some rest at this time" and did not think that money was what made them decide to come to the institution. There is evidence both from published literature and from this study that younger women and multiparous women are more at risk for complications and drawing them in to the facility, ensures a greater opportunity to them and to the system for ensuring future limiting of the family size rather than dis-incentivising them to stay out.

Access to family planning services was however an issue. Total unmet need (spacing and sterilisation) is estimated at 22.8% for Bihar, 10.1% for Chhattisgarh, 23.1% for Jharkhand, 11.3% for Madhya Pradesh, 14.9% for Orissa, 14.6% for Rajasthan, 21.2% for Uttar Pradesh and 10.8% for Uttrakhand. and we need to understand how the demands for these two services interact. Female sterilisation in Orissa, UP, and MP is provided largely through laparoscopic sterilisation, which can be performed only by specialists, mainly by gynecologists but also by surgeons. Given the existing shortage of these specialists in the system, deputing them for sterilisation camps, impacts immediately on availability of emergency obstetric care, and if there is no such withdrawal then one cannot sustain the female sterilisation rates and reduce unmet needs for these services. One way out is to meet the objective of performing female sterilisations by training medical officers to perform mini-lap as in Bihar, so that gynecologists are freed to provide life saving obstetric services. Given the important role of Family Planning in reducing maternal and infant mortality, services must be easily accessible and available, but we have to focus on these supply side issues rather than attribute it to the demand side of JSY.

The fall in sterilisation services in some districts and states should be seen in this context for unmet demand is very much present and continuing to grow. The government has also introduced an emphasis on post partum sterilisation, but very few of these were being seen. An example of FP services provided in Nabrangpur district shows 107 sterilisations done at the district hospital, 178 at the Umerkote area hospital, 500 plus at a PHC, and 59 in another PHC. In the latter two, it is provided by visiting surgeons in a camp mode. In addition 87 sterilisations were done at the Mission hospital. There were also 107 male sterilisations done, most of it in one CHC Jahrigram where a trained doctor was available and female sterilisation was not being provided here. IUD services were in effect available only in the CHC.

f. Safe abortion services

Unsafe abortion accounts for nearly 8% of maternal deaths in India, (SRS1997–2003) and most of these are preventible. Availability of MTP services was found to be very limited in most districts. There are expected to be four abortion facilities/100,000 population public or private. 87% of abortions are currently being provided

in the private sector (IPAS India). In the districts visited, abortion services were largely available only at the district hospitals. It was difficult to obtain details of the numbers of MTPs done in each DH and often it was difficult to separate MTPs from MVAs for incomplete abortion. At the DH, the numbers of MTPs performed varied from 14 at DH Lohardaga to 543 at DH Dehradun.

Among CHCs in 15 districts, provision of MTP services was limited, with some CHCs doing well. Vikasnagar and Doiwala CHCs in Dehradun were the highest performing CHCs; Deeg CHC in Bharatpur recorded 285 MTPs. PHCs seldom provided MTP services.

In Lohardaga, the number of abortion (MTP and post abortion care for incomplete abortion) services provided were obtained from a review of 6 months data from facility registers (Aug 09–Jan 10) and extrapolated for 12 months (table 29). The services provided included post abortion care for women with abortion complications, and medical termination of pregnancy.

Despite the fact that all BPHCs had trained MOs and the two FRUs had gynecologists, the district health system provided care to just 482 (total of all the data for one year) abortion cases. It is estimated that in Lohardaga, there would be an estimated 1652 induced abortions annually (Mishra et al, based on NFHS-2 calculation of 100,000 expected inducted abortions in Jharkhand). The district health system provides care to 29% of the estimated 1652 cases. St Ursula's provided 75% of the post abortion services though as a Catholic Mission hospital, it did not provide MTP services.

Abortion related data for Nabrangpur is provided below. All three FRUs including the Christian Hospital and Jharigam CHC, provided post abortion care for women with abortion complications; Among the public sector facilities, only the DH provided MTP services.

It is estimated that in Nabrangpur, there would be an estimated 3783 induced abortions annually (Mishra et al, based on NFHS-2 calculation of 100,000 expected inducted abortions in Orissa). The district health system provides care to only 4.6% of the estimated 3783 cases.

At Nabrangpur District Hospital, two gynecologists had received MTP training and the CDMO was also trained. However as can be seen, the number of abortion cases managed at the DH is insignificant. Umerkote Hospital had applied more than a decade ago for accreditation for provision of MTP services. However this had not been given to date. The hospital therefore does not provide MTP services, although the gynecologist at Umerkote has received MTP training.

TABLE 29
Availability of abortion services in Lohardaga, 2009–10

	DH	Kuru BPHC	Senha BPHC	Bhandra BPHC	St Ursula's
Annual MTP and MVA cases	74	40	8	0	360
Trained provider available	One Gyn*	4	2	3 including One Gyn	1 Gyn & 1 Surgeon
MTP& PAC	MTP & PAC	MTP and PAC	PAC only	No service- due to water problems	PAC only

TABLE 30
Availability of abortion services in Nabrangpur, 2009–10

	District hospital	Umerkote hospital	Christian hospital	CHC Jharigam
No. procedures (2009–10)	7 (MTP)+56 (PAC)	28 (PAC). MTP is not done here as centre has not received accreditation. Application sent over 10 years back	28 (PAC). Does not provide MTP services	No MTP/PAC
No. of providers trained in MTP	2 (Ob/Gyns)+1 CDMO	1 Ob/Gyn	N/A	No trained provider

4. JSY and the Improved Maternal and Newborn Health Outcomes – Insights from Phase II

In the second phase of this study, we tried to address the extent to which JSY and the resultant rise in institutional delivery contributed to a reduction in maternal and peri-natal mortality. Maternal mortality figures itself are difficult to obtain reliably and even where obtained, the sample sizes are too small for comment. However we did examine such deaths as were found in the sample listed. We listed every complication of pregnancy encountered in the sample villages and interviewed the women to understand the management of complications.

We reviewed the experience of women who reported complications, assessed the percentage of complications being managed and the protocols of management. Finally we looked at the clinical quality of care, through assessing adherence to standards. This analysis is the basis of conclusions of the probable impact of institutional delivery on maternal and neonatal mortality.

a. Maternal mortality

In the villages sampled across 12 districts there were a total of 188586 households. There were a total of 366 deaths in women in the age group of 14 to 49 years, in these households. On further questioning the family members regarding the relationship of the death to the pregnancy, 226 did not answer. 112 of the 366 deaths were reported as being related to pregnancy. Given the total number of deliveries as 22922 and minus 116 stillbirths, the live births are 22,806, which works out to a maternal mortality ratio of 491 in our sample. Given the predominance of poor performing and tribal districts in the sample this is not unexpected. But given the high levels of unanswered respondents amongst families where there was a death of a woman aged 14 to 49 years, in the previous year, one has reason for concern that the MMR could be much higher. This is particularly worrisome in districts where the majority of households with a death in a woman in the previous year in the age group 14 to 49 did not answer: The break up of such non respondents was in Angul - 30 out of 34 women who died, Hanumangarh - 32 of 32 women who died, in Bastar - 27 out of 38 women who died and Nabrangpur - 33 out of 57 women who died, all 7 women who died in Morena and in Madhepura 59 out of 81 women (in this age group of 14 to 49 who died in the last year). Added to this is very few maternal deaths, neonatal deaths, and stillbirths reported from these districts. In our sample we found no reported deaths due to unsafe abortions. This is not unexpected, but it explains why maternal mortality gets under-reported. The investigators repeatedly had the experience that even though a death was reported in the house hold listing stage, a repeat visit to the household, either ended in a refusal to answer or to even denial of the death as having taken place. Since the focus was on JSY processes, there were no further visits to persuade them to answer. The high deaths reported from Koriya, match with the numbers reported in the secondary data, but there is concern that if so many deaths are picked up in the sample villages, there could be more out there.

A special sub-study was organized on these 112 maternal deaths, using an interview schedule administered to a family member. These case studies are presented separately.

b. Pregnancy outcomes

In all there were 22292 women who were pregnant and had a delivery last year and survived. 112 died during pregnancy. Abortions are not included in this list. Of these 22292, those who gave birth to a live baby were 22176 whereas 116 women had a still-birth. Of the live-births 347 died after birth and before the time of the interview and therefore 21829 have a surviving child. There was a 2% (3453) non-respondents in the households listed.

Of the 22,292 pregnant women identified, a random sample of institutional deliveries and home deliveries eligible for JSY were interviewed with a detailed questionnaire. Of the 2759 women who had institutional deliveries, there were 30 stillbirths, amounting to a rate of 11 stillbirths per 1000 total births. There were 698 home deliveries interviewed and these had 9 stillbirths, a rate of 13 stillbirths per 1000 total live births. Overall the rate was11.28 stillbirths per 1000 stillbirths.

TABLE 31
Household listing

District	(N) - all	No birth in last 1 year	Live birth alive	Live birth child dead	Stillbirth	NA
All	188586	85.98	11.95	0.18	0.06	1.83
Madhepura	50234	81.20	14.60	0.20	0.10	3.90
Raigarh	7974	90.20	8.40	0.10	0.00	1.30
Koriya	7912	90.60	9.30	0.10	0.00	0.00
Bastar	9780	85.30	12.10	0.10	0.10	2.50
Garhwa	15388	86.40	13.10	0.20	0.10	0.20
Dumka	5943	88.00	11.90	0.10	0.00	0.00
Angul	10696	87.70	7.60	0.05	0.03	4.60
Nabrangpur	15047	86.20	12.10	0.20	0.00	1.50
Morena	23272	89.40	10.50	0.10	0.00	0.00
Hanumangarh	16848	89.50	8.50	0.00	0.00	1.90
Kaushambhi	20882	84.60	14.60	0.40	0.20	0.20
Bageshwar	4610	92.20	6.90	0.30	0.00	0.60

Source: Phase II sample survey.

TABLE 32
Outcome of recent pregnancy

District	Institutional deliveries			
	N	Live birth	Stillbirth	NA
All	2759	98.6	1.1	0.5
Madhepura	158	94.9	1.9	3.8
Raigarh	196	97.4	1.5	1
Koriya	236	100	0.4	0
Bastar	188	97.3	2.1	1.1
Garhwa	206	98.1	1.9	0
Dumka	170	98.8	1.2	0
Angul	299	99.3	0.7	0
Nabrangpur	297	97.6	1.7	0.7
Morena	318	99.1	0.6	0.6
Hanumangarh	290	99.7	0.7	0
Kaushambhi	284	99.6	0.4	0
Bageshwar	117	99.1	0.9	0

Source: Phase II sample survey.

About 2% of women who delivered in institutions in Bastar, Madhepura, Nabrangpur, Raigarh, Garhwa, and Raigarh reported stillbirths (table 32). In the case of home deliveries, reports of stillbirth were as follows: 2.2% from Dumka, 1% from Bastar, 4.2% from Hanumangarh, Madhepura, 2.2%, and Bageshwar: 5.5%. Stillbirths are known to be a specific indicator of the quality of care in pregnancy and delivery. It is likely that stillbirths that occurred after onset of labour or at term were picked up better in this study. It is important to note that these were only potential JSY beneficiaries who were sampled. Those left out by this criteria would likely be at higher risk for stillbirths.

c. Maternal complications

Of the 2759 institutional deliveries, there were 253 (9.2%) women who reported complications in the ante-natal period. Of these 253, in 64 women we did not have adequate information to decide the cause. The largest among the known causes was

anemia (73) followed by fever with chills suggestive of or proven to be malaria (64) and then bleeding (48) and high blood pressure 43 with 27 reporting convulsions. There were 28 who said that a fetal malpresentation had been detected and two who reported stillbirth.

(i) **Antenatal Period:** The reporting of complications during ANC among home deliveries in our study varies widely between districts. The highest reporting of complications among home deliveries is from Garhwa; at 28.2% (younger women, higher parity, higher stillbirth); Hanumangarh (15%), Morena (13.2%); The rest were all 10% or lower, with the lowest being 4.1% from Dumka. The most commonly reported complications were bleeding, anemia, high blood pressure, and convulsions, Fever with chills was reported from Angul (38%), Garhwa (37%), and Raigarh (37%), and to a smaller extent from Koriya (18%) and Bastar (27%).

(ii) **Intrapartum:** Of the 2759 institutional deliveries 204 had intra-partum complications during labour and delivery. In 22 we do not have a clear cause. Of the known causes, prolonged labour was the most common - 72, followed by malpresentation - 48, 28 were breech, and excessive bleeding 39. There was unconsciousness in 15, convulsions in 7, severe breathlessness in 6, and an intra-partum still-birth in 1

(iii) **Postpartum:** In the post-partum period of 2759 institutional deliveries, 169 reported complications. The most common was excessive bleeding 32, followed by severe weakness and anemia in 27, high blood pressure in 16, unconsciousness in 10, and fever or pelvic infection in 19. There was also urinary incontinences in 5, abnormal behavior in 2, and jaundice in 1.

d. Newborn complications

Newborn complications are also reported in 229 of the 2759 deliveries. Of these 213 on whom details are known, in as high as 70 –the baby did not cry immediately at birth, and in 25, did not breathe properly clearly a high incidence of asphyxia. Newborn complications were reported thus: limp (30), unconsciousness (20), jaundice (26), convulsions (4) and poor sucking (42), not passing urine (10). Obviously what we are seeing is a high range of complications all of which require at least a newborn stabilisation unit level of care. Five babies died subsequently. Many of those who survived would carry these handicaps forward for the rest of their lives.

TABLE 33
Complications – Maternal & Newborn (Numbers)

Complications during antenatal period			Complications during delivery			Complications during post natal period			Newborn complications		
	ID	HD		ID	HD		ID	HD		ID	HD
N - Who reported complications during delivery	253	65		204	39		169	33		229	33
Bleeding	48	14	Excessive bleeding	39	19	Excessive bleeding	32	12	Did not cry immediately after birth	70	6
High blood pressure	43	9	High BP	0	5	Foul smelling discharge	0	3	Did not breathe properly within 5 mins of birth	25	3
Convulsions	27	12	Prolonged/ obstructive labour longer than one day	72	18	Severe weakness with anemia	27	13	Fits/ Convulsions	4	

Complications during antenatal period			Complications during delivery			Complications during post natal period			Newborn complications		
	ID	HD		ID	HD		ID	HD		ID	HD
Malpresentation-breech/transverse	28	3	Breech delivery	28	1	Continuous dribbling of urine after delivery	5	2	Did not suck	42	3
Anaemia	73	14	Malpresentation of the baby	48	2	Unconsciousness	10	8	Baby was limp	31	6
Fever with chills/ diagnosed as malaria	61	23	Retained placenta	13	6	Abnormal behaviour	2	1	Baby was unconscious	20	4
Jaundice	11	1	Convulsions	7	4	High fever after 48 hrs of delivery	2	5	Had fast breathing	10	4
Intrauterine death of foetus	2	1	Severe breathlessness/ cyanosis	6	1	High BP	16	2	Grunting	25	5
Improper foetal growth	0	1	Unconsciousness	15	7	Jaundice	1	1	Not passing urine	10	1
Others	64	11	Intrauterine death of foetus	1	0	Lump at the vulva after delivery	6	2	Jaundice	26	0
NA	15	3	Others	22	1	Perineal pain with pus/ infection after suture was given	10	1	Death of the newborn	5	0
			NA	8	1	Fever with chills/ diagnosed as malaria	7	7	Fever	0	4
						Others	7	2	Pneumonia	0	2
						NA	52	1	Stomach problem	0	2
									Others	54	2
									NA	16	5

Source: Phase II sample survey.

5. Management of Complications

a. C-sections and instrumental vaginal delivery

Of the 2759 institutional deliveries, 4.7% had deliveries done by C-sections. This is as per expectations. Accepted rates for C-sections are between 5% to 15%. Lower C section rates in some districts imply that lack of appropriate facilities to conduct C-sections. They also mean that maternal mortality is likely to be much higher in these districts. Across the board about 84% of women reported normal delivery. Up to one percent of women reported C-sections from Kaushambhi, Madhepura, and Morena. Less than 3% were reported by respondents from Nabrangpur, Dumka and Bastar. Angul and Hanumangarh reported about 6%, and Garhwa, Koriya, Bagheswar about nine percent. 14% of women from Raigarh reported that they had C-sections. Though in districts like Kaushambhi and Morena, C-sections facilities are more accessible in neighboring districts in a village level sampling study we should have seen more evidence of women with such complications. However since this was a study on JSY those women in the household listing who had their delivery in an institution which was neither public sector nor accredited private sector were left out and we thus miss all these complicated cases which went only to unaccredited private sector. One of the main reasons for not seeing more C-sections in facility records is the problems of referral from the door. Women with complications are told from the door itself, that they cannot be managed and should proceed to the nearest facility which has C-section facility, often a private sector institution, often unaccredited, or a public or private facility outside the district. In both

TABLE 34
Type of delivery

District	Normal delivery	Normal delivery with episiotomy	Vacuum extractor	Forceps delivery	C section	Other	NA
All	84.1	10.6	0.1	0.3	4.7	0	0.1
Madhepura	91.8	7	0	0.6	0.6	0	0
Raigarh	72.4	13.3	0	0.5	13.8	0	0
Koriya	71.6	19.1	0	0.4	8.9	0	0
Bastar	89.4	8	0	0.5	2.1	0	0
Garhwa	84.5	6.3	0	0	9.2	0	0
Dumka	88.8	7.6	0	0.6	2.9	0	0
Angul	75.6	18.7	0	0	5.7	0	0
Nabrangpur	82.8	14.1	0.7	0.7	1.7	0	0
Morena	95.3	4.4	0	0	0.3	0	0
Hanumangarh	85.5	8.6	0	0	5.5	0.3	0
Kaushambhi	96.5	0.7	0	0.4	1.1	0	1.4
Bageshwar	64.1	26.5	0	0	9.4	0	0

these circumstance no trace would be found of these in the facility register.

Instrumental vaginal delivery either vacuum extraction or forceps accounts for only 0.4% of deliveries. This is a very good indicator of the establishment of basic emergency obstetric care as different from skilled attendance at birth. Only one district of the 12 reported any vacuum extraction and only seven districts reported any use of forceps. Of course there seems to be a trend of increasing C-sections and reluctance to use these methods, which should be the first preference every time. Others would disagree, and there is consonance with published studies. Whatever that debate, in the event of non availability of C-section, there is no question about the desirability of vacuum extraction. Its non availability is a clear indicator of the failure to establish basic emergency obstetric care as a level of care.

One interesting finding is that episiotomy has been done in only 10% of deliveries. Whether by intention or default, the low use of episiotomy in institutional delivery, especially when most deliveries are taking place at block and district headquarters hospitals would be welcome news to many women who have always seen routine episiotomy in all normal delivery as an unnecessary form of violence on what is a normal biological function. Normal delivery with episiotomy was reported by 27% in Bageshwar, 19% in Koriya, 19% in Angul and 14% in Nabrangpur. In the rest of the districts, this was less than 10%.

b. Who conducted the delivery?

The rationale for institutional delivery is that it enables the woman to give birth in a facility where there is access to a skilled birth attendant or a team of skilled professionals with basic emergency obstetric care skills. So it is surprising, that from most districts there are reports of dais conducting deliveries within facilities. Admittedly these are exceptions rather than the rules, but given the strong position against training dais and the whole rationale of investment in JSY, this finding needs reflection. Only in Angul and Nabrangpur, are there are no reports of dais and only 1% reported "others" conducting deliveries. Hanumangarh and Bageshwar reported that less than one percent of the deliveries were conducted by dais. This rises to as much as 13% in Madhepura, 18% in Morena, 38% In Kaushambhi. In Chhattisgarh, while Bastar reported less than one percent, Koriya and Raigarh reported 3% and 2% respectively. In districts with reports of high "dai conducted institutional delivery", not surprisingly records, especially of complications are poorer and referrals are higher. There is also the huge problem of "referrals from the door", referred to earlier.

c. Number of facilities accessed

Of 160 women who went to multiple sites for institutional delivery- 55.6% were referred up. The

common reasons of referrals were either lack of adequate facilities and staff but in some instances the complications were not managed even when facilities and staff were available at the institution. In Bageshwar nearly 15% of women, in Bastar about 13%, in Garwah 11% and in Hanumangarh, about 8% had to visit multiple facilities due to lack of services.. (data not complete for districts like Kaushambhi, Morena, Bageshwar – due to large number of non respondents). About 12% of the women accessed a second facility and 6% reported that they had to go to a third facility for delivery. This also indicates that there may be little assessment or understanding by ASHA or family of the nature of complication and the level of facility that needed to be accessed. While the numbers detected are low, all of these cases still represent near misses, and perhaps also the lack of risk stratification and appropriate choice of site of delivery during the last trimester of pregnancy.

d. Blood transfusions

The access to blood transfusions is much less than the access to C-sections. Of the 70 women who reported receiving blood transfusions five received three units, 32 received two units, 26 received one unit and seven an unknown number of units. Of these only 29 transfusions were reported in relation to C-section before in 11 cases and after C-section in 18 cases.

e. Family planning

The availability of family planning services tends to parallel the availability of emergency obstetric care services. Post partum family planning procedures (sterilisation and Intra Uterine Device) need to become available along with emergency obstetric care so that women who want to space or limit their children can do so in the immediate post partum period saving both time and effort and expense of coming later. Of the 2759 women who opted for institutional delivery, 98 went in for a post partum family planning procedure 81 of who opted for sterilisation and 7 for IUD insertion. The numbers are very small and for the most part it was just a few sporadic instances in one facility.

f. Complications

As discussed earlier, our study design focused exclusively on those women eligible for JSY benefits i.e., those women who had an institutional delivery in a public hospital or a private accredited hospital. In home deliveries a number of other restrictive criteria applied - only BPL, only above the age of 19 and with less than three children etc. But we know from the phase I study that many complications were referred to the private sector, most to those unaccredited for JSY in many of the districts. Therefore the most severe complications and their experience are likely to

TABLE 35
Blood transfusion (Numbers)

District	No. of units received by all					In case of C-Section	
	N - Who got blood transfusion	1	2	3	NA	Yes, before delivery	Yes, after delivery
All	70	26	32	5	7	11	18
Madhepura	1	0	1	0	0	1	0
Raigarh	6	3	2	0	1	2	2
Koriya	11	6	3	1	1	1	3
Bastar	9	6	1	0	2	1	2
Garhwa	6	3	3	0	0	1	4
Dumka	2	1	1	0	0	0	1
Angul	11	1	9	1	0	1	1
Nabrangpur	5	2	2	0	1	0	1
Morena	1	0	1	0	0	0	0
Hanumangarh	10	2	6	2	0	3	2
Kaushambhi	3	0	1	0	2	0	0
Bageshwar	5	2	2	1	0	1	2

Source: Phase II sample survey.

be underestimated. To compensate for this we had a special sub-study on just complications. Household survey showed a total of 22,893 women who delivered in the last one year. We asked all of them during household listing whether they had a complication irrespective of whether they would qualify for institutional delivery. Of these 88.14% reported a normal uncomplicated delivery, 11.8% reported complications. In absolute numbers the total number who reported complications were 2715. Of these 2715, a significant percentage was no longer in the village, many having come to the maternal home for delivery. Others were not willing to be interviewed on complications and some had complications which were unrelated. Thus we were able to interview 570 women with complications.

Of the 570 complications so studied, 95 had not been eligible for JSY for the sole reason that they delivered in an unaccredited private nursing homes or did not meet the criteria set for home deliveries. What we have done now is to study these 570 as a single group. When interpreting this part of the study we further need to caution that these are complications as perceived and reported by the mother and the reporting would change significantly if a doctors or gynecologist opinion was the basis of inquiry, - that too after an upto one year time gap. Thus the study would be accurate for understanding the experience in seeking care that the mother with complications faced, but not for a medical categorisation of the causes of complications or even the appropriateness/correctness of management. Also since the number of 570 out of 2715, is not chosen randomly but by availability of respondents, we can not be sure of how representative medical categorisation would be.

Of the 570 complications 274 were in the antenatal period, 192 during labour, and 98 in the post partum period of which 65 were within 48 hours of delivery, i.e., the immediate post partum period and 33 beyond 48 hours. Of those complications reported during labour nine were immediately after delivery of the placenta and should shift to the post partum group, thus making 183 intra-partum and 107 post-partum complications in all.

The largest numbers reported were from Garhwa, where the complications were predominantly in the ante-natal period, 90 of 128 and then from Kaushambhi where the complications were predominantly in the intra-partum and immediate post partum period. Hanumangarh was the next highest and both of these had ante-partum complications as largely equal to intra-partum and post partum complications. Indeed antepartum complications were invariably less than intrapartum and post partum combined except from Garhwa and Morena.

TABLE 36
Maternal complications – Household listing

District	N - All	No	Yes but not required surgery &/or blood transfusion &/or hospitalisation	Yes required surgery &/or blood transfusion &/or hospitalisation
All	22893	88.14	9.94	1.92
Madhepura	7499	88.87	10.37	0.76
Raigarh	677	73.86	23.78	2.36
Koriya	741	95.28	2.70	2.02
Bastar	1193	84.16	13.33	2.51
Garhwa	2066	85.91	11.52	2.57
Dumka	716	79.89	19.41	0.70
Angul	819	79.73	19.05	1.22
Nabrangpur	1855	83.45	16.12	0.43
Morena	2467	97.81	1.42	0.77
Hanumangarh	1450	85.79	8.41	5.79
Kaushambhi	3176	91.47	4.91	3.62
Bageshwar	234	82.91	5.13	11.97

Source: Phase II sample survey.

TABLE 37
When did the problem start (Numbers)

District	N - All	During pregnancy	During labour & delivery	Within 48 hours of delivery	In the 6 weeks following delivery (after 48 hours)	NA
All	570	274	192	65	33	6
Madhepura	38	9	21	5	1	2
Raigarh	19	8	9	1	1	0
Koriya	20	7	5	7	1	0
Bastar	34	15	11	3	5	0
Garhwa	128	90	19	13	4	2
Dumka	12	4	6	2	0	0
Angul	26	9	9	1	6	1
Nabrangpur	12	3	7	1	1	0
Morena	53	39	4	9	1	0
Hanumangarh	88	44	39	4	1	0
Kaushambhi	104	31	47	16	9	1
Bageshwar	36	15	15	3	3	0

Source: Phase II sample survey.

In terms of frequency the order of complications would be as follows:

1. Bleeding – after delivery 109; during antenatal period – 78
2. Prolonged Labour – 142
3. Malpresentations (often diagnosed in antenatal period - which has little significance except to encourage ultrasound or in the intra-partum period where it is quite dangerous) – 115
4. Anemia – 147
5. Fever with chills/malaria – 104
6. High blood pressure – 77, convulsions – 64

TABLE 38
Women with complications who sought care (Numbers): Facility where initial care was sought

District	N - Who sought treatment	Sub-centre	PHC/ APHC	CHC/ BPHC	District hospital	Private clinic/ nursing home	RMP doctor	Missionary hospital	Any other	NA
All	477	18	35	123	88	181	11	3	8	10
Madhepura	22	1	3	3	4	11	0	0	0	0
Raigarh	19	0	0	12	1	5	0	1	0	0
Koriya	19	0	2	7	7	3	0	0	0	0
Bastar	27	4	7	9	4	2	0	0	1	0
Garhwa	104	0	4	9	17	64	6	1	2	1
Dumka	8	1	0	1	2	2	0	0	1	1
Angul	23	0	4	1	9	4	0	0	0	5
Nabrangpur	10	0	2	7	0	0	0	1	0	0
Morena	80	8	8	20	8	30	3	0	3	0
Hanumangarh	46	1	0	10	7	26	1	0	0	1
Kaushambhi	89	1	5	42	7	31	1	0	1	1
Bageshwar	30	2	0	2	22	3	0	0	0	1

Source: Phase II sample survey.

7. Jaundice – 12
8. Foul smelling discharge-pus and pain – 2
9. Prolapse – 12
10. Urinary incontinence – 11
11. Loss of consciousness – 7
12. Others – 61- includes 2 CS for causes not known.

Clearly many of these are "near-miss" for death. Of these 570 only 477 sought treatment for complications.

Of the 477, 184 had sought treatment in a private nursing home, 123 in a CHC or block PHC and 88 in the district hospital. The others had sought treatment in PHCs (35), in sub-centres (18), RMP doctors (11) or others (8) - including ten non respondents.

Of the 85 who had not sought treatment the most frequent reason attributed were financial (37) and inaccessibility of facility including lack of availability of doctor and denial of care were reported by 16; and what could be demand side issues, household responsibility (13), no escort (7), or complication perceived as not severe enough 27. Of these 85 who did not seek treatment, 32 called for some advice or treatment to be provided at home, and it was almost always a unqualified practitioner (19) or a dai (5). The ANM was called to the house in three cases, and a doctor, who could also have been unqualified - in nine cases.

Of the 477 who sought treatment at an institution, 149 were referred again to another institution, most of these being to a private nursing home (76) and a district hospital or SDH in 43 cases and a CHC in 17. The movement is mixed a large number moving from public at the lower level to private care and another large number already in private moving to the public district hospital.

Of these 149 who were referred once, 51 patients were referred a second time now 41 being sent to the district hospital or SDH and 5 to a CHC and 4 to medical college hospitals with only one to a private nursing home. The movement is now clearly from private to public.

Of the 51 who were referred to two centers, 12 were referred a third time, with SDH receiving two cases probably from the CHC, and the DH receiving 10 cases. The movement is now completely from

TABLE 39
Reasons for not seeking care at any institution (Numbers)

District	N	Severity of complication not known	Health institution was inaccessible	Financial reasons	Doctor not available	Was refused admission from the institution	No one to accompany	Household responsibility	No problem during pregnancy	No faith in the doctor	Could not go because of ill health	No time	Others	NA
All	85	27	11	37	2	3	7	13	2	1	1	1	2	4
Madhepura	16	8	3	9	0	1	0	4	0	0	0	0	0	0
Raigarh	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Koriya	1	0	0	1	0	0	0	0	0	0	0	0	0	0
Bastar	7	7	0	1	0	0	0	0	0	0	0	0	0	0
Garhwa	23	6	1	11	1	0	1	2	0	0	1	1	0	0
Dumka	2	0	0	1	0	0	1	1	0	0	0	0	0	0
Angul	3	0	0	2	0	0	0	0	0	0	0	0	1	0
Nabrangpur	2	1	0	1	0	0	0	0	0	1	0	0	0	0
Morena	5	0	1	3	0	1	1	1	0	0	0	0	0	1
Hanumangarh	8	2	1	2	1	0	0	1	1	0	0	0	1	1
Kaushambhi	12	2	4	4	0	1	1	3	0	0	0	0	0	2
Bageshwar	6	1	1	2	0	0	3	1	1	0	0	0	0	0

Source: Phase II sample survey.

TABLE 40
Place of treatment of complications (Numbers) - final destination for complications

District	N - Who sought treatment	Sub-centre	PHC/ APHC	CHC/ BPHC	SDH	District hospital	Private clinic	RMP	Any other	NA
All	477	6	17	74	22	55	263	7	16	17
Madhepura	22	1	2	3	2	0	13	0	0	1
Raigarh	19	0	1	11	0	2	5	0	0	0
Koriya	19	0	0	7	0	6	4	0	1	1
Bastar	27	2	1	5	0	11	6	0	0	2
Garhwa	104	0	5	7	12	2	72	5	1	0
Dumka	8	0	0	0	1	3	3	0	1	0
Angul	23	0	4	0	4	10	4	0	1	0
Nabrangpur	10	0	0	3	0	0	7	0	0	0
Morena	46	1	0	5	1	2	35	0	1	1
Hanumangarh	80	0	2	10	0	9	54	0	3	2
Kaushambhi	89	1	2	21	0	6	53	1	4	1
Bageshwar	30	1	0	2	2	4	7	1	4	9

Source: Phase II sample survey.

private sector to public hospital. The pattern we find is that in the first resort and in the first referral the private sector is overwhelming the facility of choice though there is a fairly high representation of district hospital as well. In the second referral and beyond it is back to the public hospital possibly due to costs and due to better care (medical college hospitals). The final picture is that of 477 who sought care 263 were finally administered to at the private hospital and 78 in the district hospital level (includes SDH and other government hospitals) and 74 in the CHC/block PHC and 17 in the PHC and 6 at the sub-centre, 7 with RMPs and about 15 others.

We also note that of the 477 complications, 258 were hospitalised. Of these 258, 25 were admitted for over 10 days, 61 for 8 to 10 days, 94 for 3 to 7 days and 78 for less than two days. The care provider was a government doctor or specialist in 152 patients and this was most of the hospitalised cases. Though

TABLE 41
Duration of hospitalisation (Numbers)

District	N - Who sought treatment	1 day	2 days	3–7 days	8–10 days	More than 10 days	Was not hospitalised	NA
All	477	56	22	94	61	25	206	15
Madhepura	22	1	0	5	8	4	3	1
Raigarh	19	2	2	8	3	1	2	1
Koriya	19	2	1	5	5	3	3	0
Bastar	27	1	3	9	2	3	7	2
Garhwa	104	9	1	2	4	4	81	3
Dumka	8	1	1	2	2	0	1	1
Angul	23	1	3	5	2	2	9	1
Nabrangpur	10	2	1	4	2	0	1	1
Morena	46	5	1	6	1	0	32	2
Hanumangarh	80	8	3	26	16	4	23	0
Kaushambhi	89	22	5	17	10	3	31	1
Bageshwar	30	2	1	5	6	1	13	2

Source: Phase II sample survey.

private doctors contributed, it was much more to outpatient care. The site of hospitalisation was similar to that of seeking care for any complications 133 in private nursing home, 57 in DH or equivalent government hospital, 45 in the CHC/block PHC, 8 in the PHC and 7 others. For any institutional delivery private sector care is only 12.5% of all patients who sought institutional delivery. *For "any" complication private sector nursing homes (the 6 RMPs included) provide 60% of care provision. And for complications requiring hospitalisation 55.2% of patients (out of 250) got their treatment from private nursing homes and the rest are by the government sector.*

Of the 258 admitted, 161 received iv fluids and 53 received blood donations and almost all received injections and oral medicines. Of the 56 who got blood transfusions. Five needed five units of blood or more, and 24 needed two units of blood and 21 needed one unit of blood.

Curiously of those 32 who were treated at home two received IV fluids, 10 received injections and 11 were prescribed medicine. Six of those who got care at home had spent more than Rs. 2000, and 13 spent in the Rs. 400 to 1200 range and five spent below this.

g. Payments

Expenditures also could be huge. 50 of the 477 did not respond to this question or did not know the details. But of those who did, 38 reported spending above Rs. 20,000, 58 between 10,000 and 20,000 and 153 between Rs. 2000 and Rs. 10,000. A further 63 spent between Rs. 1200 and Rs. 2000. Only 115, roughly one fourth, spent an amount within the Rs. 1200 which the JSY would have covered.

What are huge costs going to? The average cost of surgery alone, without counting the costs of drugs ranged as follows: Angul - Rs. 4333, Nabrangpur - Rs. 3750, Garhwa Rs. 5833, Dumka Rs. 4500, Bastar 1150, Koriya, Rs. 5425, Kaushambhi Rs. 16,750, Madhepura Rs. 13,400, and Bageshwar Rs. 1500.

Added to this, (using data from Koriya district as the median): the average cost of Rs. 4283 for bed charges, Rs. 2518 for drugs and consumables, Rs. 1000 for lab tests, Rs. 533 for ultrasound, Rs. 3267 for fees, Rs. 950 for food and Rs. 700 on account of miscellaneous expenditures, is the cost to families.

The average cost per case with complication data set is Rs. 3431 as against Rs. 1028 for the institutional deliveries alone. This figure needs to be read with caution. For one it excludes transport costs. Secondly it is highly sensitive to the number of surgeries that were included in the sample. In raigarh and Bageshwar there was one or none surgeries in the sample - giving a deceptively low cost while in Madhepura a high CS proportion pushed up the average cost figure. Yet across states a sum or Rs. 3400 out of pocket excluding transport is realistic estimate.

TABLE 42
OOP on treatment for complications at institutions

District	N	Total	Average OOPs per user with complication	Average OOPs for institutional delivery per user
All	427	1465132	3431	1028.25
Madhepura	19	356285	18752	748.30
Raigarh	17	17000	1000	1413.88
Koriya	19	61710	3248	1405.74
Bastar	20	71190	3559	1288.86
Garhwa	98	168017	1714	1311.73
Dumka	5	41050	8210	1455.19
Angul	21	72674	3461	1148.29
Nabrangpur	5	39450	7890	1000.84
Morena	43	52065	1211	770.06
Hanumangarh	73	380530	5213	1265.60
Kaushambhi	84	199200	2371	333.07
Bageshwar	23	5960	259	316.50

Source: Phase II sample survey.

Of the 477 women who had to seek treatment for complications, 387 used one vehicle transport, and 27 needed two vehicles and three needed three vehicles.

The expenditure on transport also increases with each round of referral not necessarily costlier with each round. The pattern of expenditure is about the same as we saw for institutional delivery with 23 of 387 spending more than Rs. 1200 in the first referral or first visit.

h. The three delays

We tried to systematically gather data on the conventional three delays in the case of complications and this is given in table 43.

It is difficult to comment though on the interpretation when all complications are aggregated together. Thus 24 to 48 hour delay for seeking help in fever would be understandable– but in severe bleeding it would not be. The second and third delays are however quite independent of the nature of the complication, the time taken to reach and the time taken to be seen at the facility.

The second delay is huge, with only 254 of the 477 reaching within the stipulated time of two hours. This is not only the transport time, it is the time lost in intermediate hospitalisation and care seeking. Thus 100 persons – about 21% spent 2 to 4 hours, and another 59 patients took upto 24 hours to reach. About 30 were hospitalised for various lengths of time but at least a day before they moved again. This is not the conventional second delay but in terms of public health action, it could be one of the most remediable aspects of care seeking. We note also that the assured transport service fades off as a significant vehicle in use only 10 instances. It is public transport or the hired private vehicle which becomes the main source of transport. This is most problematic. Are the EMRI, and Janani express most active in normal deliveries and relatively failing to reach the woman with the complication?

At the facility, 188 of the 477 waited for 30 minutes before a doctor or nurse attended on them. Given the fact that many complications were not so serious, and that serious complications were largely attended to, this is not a major cause of concern.

Summing up

1. The impact of the JSY programme on maternal and infant mortality is critically dependent on the ability of the health sector to provide care to those women who develop complications. Though it is difficult for inherent public health reasons to measure maternal mortality on a continuous basis, the record of management of complications would give us a good idea of the likely impact on maternal and infant mortality.

2. In the districts chosen for the second phase of this study the maternal mortality is high as is expected from the choice of large poor performing districts within high focus states. There is the likelihood of its being even higher for methodological reasons. The incidence of complications is also in the expected range. The experience of care seeking in the pregnancy with complication is that women spend much greater time in a chain of referrals, with all its attendant costs and time delays before they get to the facility that provides them suitable care. The costs of care for complications, especially those requiring hospitalisation are inordinately high and not at all covered by the public health

TABLE 43

Baseline	First delay	< 1 hour	1 to 2 hours	2 to 4 hours	4 to 24 hours	24 to 48	> 48 hours	NA
477		76	68	25	94	54	34	126
	Second delay		<2 hrs	2 to 4 hrs	4 to 24 hrs	24 to 48	>48 hours	
			254	100	59	13	17	34
	Third delay		<15 min	15–30 min	30 min– 60 min	>1 hour		
			123	188	57	50		59

Source: Phase II sample survey.

programme. Even assured referral transport is much less available when complications strike than it is for normal delivery.

3. Increase in institutional delivery has certainly increased access to skilled birth attendance defined as any ANM, nurse or doctor attending on the delivery. This would prevent a large number of complications. However unless all those providing midwifery services are trained in a package of SBA training which includes early detection of complications and management with or without referrals, the use of the partogram, use of injectable antibiotics, use of magsulf for hypertension management, active management of third stage of labour, neonatal resuscitation, and the identification and basic management of hypothermia and sepsis in the newborn the life saving potential of skilled birth attendance cannot be realised. This study shows that this has seriously lagged behind because of a) slow roll out in the SBA and IMNCI training and b) because of inappropriate prioritisation of trainees.

4. The study also shows that the actual number of ANMs and nurses providing midwifery services are a small proportion of the total number of ANMs and staff nurses in the district. Therefore if this category is prioritized for training, and the entire training capacity of the state and nation are deployed without only limiting it to the training capacity within the district one could ensure within a three year period that every delivery is attended by a provider trained in SBA skills. The failure to plan thus in the first years of the NRHM is a lost opportunity, but with the course corrections of 2010, and a greater determination to ensure such coverage at least in the more vulnerable districts it could still be achieved.

5. The study shows that the concept of 24×7 PHC has helped to identify the need for a minimum of complement of nurses or ANMs in every PHC where institutional delivery is planned. This is a big gain. What however has been completely lost is the other part of the definition the 24×7 PHC as a provider of basic emergency obstetric care service (BEmOC)- in contrast to other PHCs and sub-centres which only provide access to a skilled birth attendant. BEmOC consists of provision of a number of life saving functions at the 24×7 PHC level, apart from surgery or blood transfusion.

6. The confusion may stem from the fact that there is a difference between the RCH Maternal Health Division's definition of 24×7 PHC which equates it with BEmoNC and the monitoring indicators used by NRHM for reporting on 24×7 PHCs which equates it with the availability of three nurses which itself is seen as indicating its ability to provide midwifery services even at night. Over time even these two got separated and now NRHM reports 24×7 facility as a PHC where midwifery services are available even at night (as reported by state) and then reports another figure the percentage of such 24×7 PHCs which have three nurses. The link between the 24×7 PHC and the provision of basic emergency obstetric care is almost completely lost. Further on the newborn side, the ability to provide institutional care was even more limited. Even the simple bag and mask that should be available even for home delivery by SBA was absent in about half the facilities and further resuscitation or sick newborn management was not available. The radiant warmer was present in many facilities but rarely in use. Training on either BEmonc or facility based newborn care was almost completely missing.

7. In practice therefore the programme has achieved the establishment one of the planned two or three FRUs per district and for the rest, are only able to provide access to skilled birth attendant. Given the fact that usually in each block there is only one or at best two such 24×7 facilities and that in a block like UP or Bihar it caters to a very large population, it would be essential to provide BEmonc services here. Indeed we note that by original design the aim was to provide comprehensive emergency obstetric care at this level, and settling for only BEmonc is itself a come down but to reduce this further to a position where mere skilled birth attendance is considered adequate would make the inputs sub-critical to achieve reductions in mortality.

8. There were strong perceptions that assisted vaginal delivery was outdated and no longer practiced. There is also the perception that the system is already overloaded with the effort to

make the FRU functional at the district level and to provide SBA training to the periphery. Therefore to provide a mid level of care would be too difficult. But to argue the converse:

a. The whole call of pushing for universal institutional delivery pre-supposes the creation of such a mid level facility as an essential component of primary health care. The availability of a team of doctors and nurses and support staff is in itself a requisite for managing complications other than just having skills and equipment. It also provides the confidence and capacity to manage the complications.

b. A team in position also means assured service on a 24×7 basis – which can never be substituted by a single ANM or medical officer.

c. Many of those who train for providing comprehensive emergency obstetric care become adept at handling basic emergency obstetric care. Unless this is provided regularly the former is more difficult to start up.

d. Without medical officers and senior officers trained in basic emergency obstetric care supervision of skilled birth attendance to ensure quality of care does not take place for the supervisors do not know enough.

e. That without such facilities the FRUs would get overloaded with normal deliveries and not be able to focus attention on management of more serious obstetric complications as well as a wide number of other functions

f. That it is not only emergency obstetric care but testing for STI, diabetes, HIV, malaria, safe abortion services for first trimester abortions, vasectomy, conventional tubectomy or mini-lap all these services and more that should be provided at this level along with Bemonc.

9. Although the creation of FRUs is slower than expected, this service is now available in almost all districts in the public sector. However in many districts the numbers of women that are provided these services are fewer than can be expected. The district hospitals are also the main stay of treatment for complications but financing of care in the district hospital does not provide funds for the management of complications and in many districts patients have to take on huge burden of costs.

10. A few not for profit private hospitals, especially the Mission Hospitals seem to be playing a significant role in the provision of such emergency services. In most districts visited, every 24×7 facility and even most designated FRUs are using them as the main back up or even as the first choice for emergencies requiring surgical care. Yet many of them are not covered even by JSY, let alone a more comprehensive package, and therefore despite the multi-crore investment in JSY the major proportion of the women who most need help are paying out of pocket at substantial rates to access this care and often for economic reasons failing to access this care. Programme design must give priority to bring such Mission Hospitals and not for profit health care facilities under the social protection roof.

11. For any institutional delivery private sector care is only 6% of all women who sought institutional delivery. For "any" complication private sector nursing homes (the 6 RMPs included) provide 57% of care provision. And for complications requiring hospitalisation 55.2% of patients (out of 250) got their treatment from private nursing homes and the rest are by the government sector.

12. At first resort for care in complications, the public and private sector are equally sought after. In the first referral there is a significant further shift from public to private sector. Then in the second and third referral, a smaller proportion of patients from the private sector get referred back to the public sector at the higher level medical colleges, district hospitals etc. Therefore without reducing the overwhelming role of the private sector in providing care, the important role of the public sector as the port of last call should not be forgotten. One major matter of concern is that patients may be exhausting financial resources and wasting precious time before they finally arrive at the district hospital thus adding to the burden of mortality in the

district hospital and giving it a bad name – out of proportion to its real faults.

13. Since maternal mortality cannot be computed often enough and reliably enough at the district level, the system must use the Met Needs for EmONC rate and met need for CS rates as proxy substitutes. This along with annual maternal death review and a medical audit of case management especially CS management in the major hospitals providing these services at least those handling over 1200 cases a year would serve as a proxy measure for maternal mortality calculation and provide the information needed to improve the provision of institutional delivery in the spirit and substance of what was intended under the JSY.

14. With a modest increase in numbers, a major increase in functioning of the current number of FRUs available, and a major effort to make 24×7 PHCs a level of care equivalent to a BEmONC and including newborn stabilisation, and not merely the number of nurses and careful choice and location of these facilities (also called level two facilities), the met needs for EmONC and CS currently less than 50% could rise to 100%, which is the objective of universal access to emergency obstetric care. Moreover it could do so within a three year period for the number of facilities that need to be so developed are only about 10% of all the facilities in a district.

15. In a sense these are not new recommendations. This is the very essence of the design of the RCH-NRHM plan itself. However in the implementation, interventions lost were the basic emergency care level and the notion of careful prioritisation of facilities without any compromise to the goal of universal access.

SECTION-VI

Facility Preparedness to Manage Institutional Delivery Case Loads

There are three areas of preparedness of facilities to manage deliveries. One is in terms of human resources availability with the necessary skills. The second is the infrastructure, especially the number of beds and equipment. The third is drugs and supplies.

We shall look at other aspects like adherence to quality of care protocols, recording and reporting, diet, security, cleanliness in the next chapter on quality of care.

1. Human Resources (data for 20 districts)

The most important factor affecting availability and quality of care in a health facility, is availability of human resources' doctors and nurses, with the necessary skills. The operational guidelines issued by Maternal health division requires five nurses (could be LHV or ANMs as well) for a 24×7 PHC and a minimum of nine nurses for a 30 bed CHC with a ratio of two to four beds/nurse midwife. IPHS standards are higher, requiring five nurses and two LHV/ANMs in a 24×7 PHC and 19 nurses in a CHC. The number of doctors required in a CHC, according to IPHS norms is eight MOs and six specialist doctors. At District Hospitals, the number of sanctioned posts of nurses and specialists would vary in proportion to the number of beds. Overall, the IPHS standard averages one nurse for a maximum of two beds, at CHCs and DHs. IPHS norms have a ratio of two nurses for one doctor. As part of multi skilling ANMs were expected to be trained as Skilled Birth Attendants through a 3–6 weeks course and a medical officer in EmoNC (16 weeks) and LSAS (18 weeks). These programmes were expected to be rolled out across states at training sutes located at teaching hospitals and district hospitals.

What we have in district hospitals is a situation shown in the table below:

TABLE 44
Comparative case studies on HR availability in districts

District	Beds in DH	Nurses in DH	Bed to nurse ratio	Doctors in DH	Doctor nurse ratio	Specialists – (Surgeon, Gynecologist, Anesthetist, Paediatrician)
Samastipur	80	7	11.43	11	1.6	Except Paediatrician all were present
Madhepura	51	15	3.00	7	0.3	Except Gynecologist all three were in position
Nalanda	300	19	15.79	30	1.57	Except Gynecologist all three were in position
Raigarh	300	26	11.54	20	1.30	All four were in position
Koriya	100	16	6.25	10	1.60	Except Anesthetist all were in position
Dumka	93	18	5.16	5	0.28	Only Paediatrician was in position
Lohardaga	30	7	4.29	7	1.00	Gynecologist and Surgeon were in position
Nabrangpur	102	6	17	6	1	Except Anesthetist all were in position
Morena	208	6	34.66	11	1.83	Except Surgeon all were in position

District	Beds in DH	Nurses in DH	Bed to nurse ratio	Doctors in DH	Doctor nurse ratio	Specialists – (Surgeon, Gynecologist, Anesthetist, Paediatrician)
Tikamgadh	250	18	13.8	16	0.89	All four specialists posts were filled
Barwani	300	36	8.33	17	0.47	All four specialists were in position
Bharatpur	100	124	0.80	42	0.38	All four specialists were in position
Hanumangarh	150	42	3.57	19	0.45	All four specialists were in position
Dungarpur	200	95	2.11	8	0.08	Except Anesthetist all were in position
Sitapur	132	20	6.6	5	0.25	All four specialists were in position
Bijnor	50	6	8.33	5	0.83	Except Surgeon all were in position
Kaushambhi	100	2	50	5	2.5	Except Paediatrician all were present
Dehradun	111	32	3.47	19	0.59	All four specialists were in position
Bageshwar	32	12	2.6	11	0.91	Except Anesthetist all were in position
Pithorgarh	62 (W)	10	6.2	9	0.9	Except Surgeon all were in position

Source: JSY phase I reports.

Uttar pradesh

(i) **In Bijnor:** District of 45 sector level PHCs, none had a staff nurse and five did not have an ANM either, while the remaining 39 had one or two ANMs with average of 1.49. Of the 45 sector level PHCs, 28 had no doctors and only 17 had allopathic doctors though there were 25 AYUSH doctors who were recruited to close the gap in the remaining PHCs. This still works out to less than one doctor per PHC average. In the block PHCs the staff nurses and ANMs taken together averaged 2.90 per block PHC. All 11 block PHCs had one medical officer and seven of them had two. If we include the AYUSH lady medical doctor we have ten more, or an average of 2.5 per block PHC.

There are eight CHCs in the district, and extrapolating from the two visited they average 4.5 nurses or ANMs. Of the two CHCs visited, one had only one post of specialist filled with a paediatrician and the second had four specialists of which one was an anesthetist, two were surgeons, and one pediatrician; no gynecologist was available in both of the CHCs.

SBA training and IMNCI had not begun in the district and no one had been trained in EmoNC and LSAS training. There was some facility based neonatal care for staff nurses and MOs planned for that year.

(ii) **In Sitapur:** District of the 61 additional PHCs, only 47 had medical officers. Sitapur had nine CHCs all of which were functional. Of the two CHCs visited, there were three specialists (Medicine, Surgery, Anaesthesia), two MOs, four staff nurses and 24 ANMs in one, and five specialists (Medicine, Surgery, Obstetrics, Anaesthesia and Paediatrics); four MOs, three staff nurses and 26 ANMs in the other CHC. Both the PHCs visited had two medical officers each while none of the staff nurses positions were filled.

(iii) **In Kaushambhi district**: There were only ten staff nurses in the entire district, and 204 ANMs for a total of 176 sub-centres, 29 PHCs and 9 BPHCs. Many ANMs have been withdrawn to play the roles of staff nurse in PHCs and CHCs. The BPHCs all have two to three ANMs each and the PHCs may or may not have ANMs and staff nurses. This obviously limits their ability to perform. None of the CHCs had any specialists. About four to eight MOs were posted in each CHC. Of more than 20 ANMs met and interviewed who were conducting deliveries, only one had received a 21 day training, and another had attended a five day refresher. We have already noted that there were only about 12 sub-centres and a few PHCs where nurses or ANMs are active in midwifery. The training programmes had largely reached those who were not conducting delivery, in the hope that the training would serve as motivation to conduct delivery. No doctors had been trained on any aspect of delivery and were unaware of the protocols and even of what to supervise.

Rajasthan

(i) **In Hanumangarh's Bhandra:** CHC of the four specialists sanctioned, three are available, with

the only missing one being the gynecologist and of the four MOs sanctioned three are available. Eight of the ten staff nurse positions and all five ANM positions are filled. This facility therefore has adequate staff, except for the gynecologist whose absence renders the presence of the rest, less optimal, for the issue of maternal and newborn health. A similar situation exists in CHC Rawatsar where the post of a gynecologist has not been sanctioned. There are 11 staff nurses and two ANMs. In the four PHCs visited there was at least one medical officer and in two of them there was also one AYUSH medical officer. All four had three to five staff nurses or ANMs. Of the four sub-centres visited, two had two ANMs each and two had one ANM each. All had in addition two dais or helpers in each. Of the ten ANMs and staff nurses interviewed only two have received SBA training.

(ii) **In Dungarpur:** SDH under PPP mode has 13 doctors in position of which eight are specialists (including three gynecologists). About 16 Nurses and three ANMs were also available. There were no specialists in the two CHCs that were visited, and there were two medical officers in one, and only one in the other CHC. One of the CHCs had ten nurses and ANMs while the other had onlyone nurse and two ANMs. In the four PHCs visited there were two to five staff nurses in each. Only three PHCs had one medical officer in each. Of the 23 staff nurses and ten ANMs in these six facilities, two nurses and three ANMs had availed of SBA training. One doctor and two nurses at district hospital also had received SBA training. One doctor, two nurses and two ANMs had been trained in IMNCI.

(iii) **In Bharatpur:** CHC Bayana, there was one medical specialist, one MBBS and one AYUSH doctor; 11 staff nurses and two ANMs. The medical officer had completed a three month course in LSAS but had not received the certificate. There is a gynecologist available from the neighboring CHC- but no CS is done in either place. In CHC Nagar there are three medical officers and six nurses. CHC Deeg, had a gynaecologist and two medical officers, eight staff nurses and three ANMs. Of the three PHCs visited, all three had one medical officer each, though one was notional, as he was on deputation at PHC Pahari. All three had three to five nurses.

Uttarakhand

(i) **In Bageshwar:** In both the CHCs visited there were no specialists and there were three medical officers and six nurses in one (Baijnath), and two medical officers and four nurses (Kapkote) in the other. In the block of Kapkote there are four APHCs but no medical officers in any and an ANM in only one of them. In Baijnath block, there are three APHCs and two of them have medical officers and two have ANMs. In Bageshwar block, there are five APHCs but only three have a medical officer and an ANM in each. No staff nurses are available in any of the APHCs. None of the nurses/ ANMs in the district had received SBA training.

(ii) **In Pithoragarh:** None of the Block PHCs visited had any specialists posted. One of the designated FRU - BPHC Didhaat had 3 MOs alongwith 1 male nurse and 3 ANMs. At the time of visit, the lady MO was undergoing EmONC training. The other two BPHCS had one Medical officer, one or two staff nurses and one ANM each. Of the three PHCs visited, two PHCs had one MO, one staff nurse and one ANM each. The third PHC had no MO since 1 year and one pharmacist and ANM were the sole providers at the facility. None of the nurses or ANMs have received IMNCI and SBA training and said they had learnt much on the job. Only one MO reported being trained in EmONC and one more was under training at the time of training.

(iii) **In Dehradun:** Three CHCs were visited and each had a different situation. In Doiwala all specialists were in place, but there were no general medical officers. There were nine nurses and ANMs. The facility was conducting 70 deliveries per month. In CHC Sahiya there were no specialists, three medical officers and four nurses, and they were conducting 16 deliveries per month. In Vikasnagar, there were four specialists, but no gynaecologist, three medical officers and three ANM/nurses. They were conducting about 93 deliveries per month. Of the three PHCs, two had two doctors and two nurses each. One of these conducted 45 deliveries per month and the other 100. In the third there were three doctors and eight nurses who were conducting 93 deliveries per month. In Dehradun, five of the six nurses interviewed had received SBA training.

Madhya pradesh

(i) **In Barwani:** Of the two CHCs visited, only one had a surgeon. Against the four posts sanctioned for Senior medical officer in CHC Pati, three were in position. whereas in CHC Sendhwa, one was available against the two sanctioned posts. Nearly two to five staff nurses are available in both the CHCs. In PHCs, the Silawad block had three PHCs with one medical officer and two ANMs, the Sendhwa block had five PHCs with five Medical officers and six ANMs and the Pati block with three medical officers and four ANMs. No PHCs had any staff nurses.

(ii) **In Morena:** District of the three CHCs visited, the Sambhagarh CHC had five specialists (except anesthetist) in place with 12 medical officers and four staff nurses, but Jaura CHC had only one gynaecologist along with one medical officer, three staff nurses and four ANMs. The Paharganj CHC did not have any specialists at all but had four medical officers, one staff nurse and two ANMs. Out of three PHCs visited, each had one medical. Two PHCs had three to five nurses but there were no staff nurses in one of the PHCs. The MOs of DH were trained in SBA, EmOC, and LSAS that assures safe deliveries and management of complications, if any. The MOs at CHCs and PHCs were mostly trained in IMNCI, RNTCP, and Immunization. The ANMs were trained in SBA and IMNCI but had limited knowledge in practice.

(iii) **In Tikamgarh:** District all six CHCs had at least two medical officers each, with Prithivipur and Niwar having three. In Badagaon block, there was one orthopaedic while one surgeon and one paediatrician were posted in Jatara block. There were no specialists in Baldeogarh and Jaldaru CHCs. The Prithvipur and Niwar block only had two specialists in each CHC but there were no gynaecologists in any of the six CHCs. Only Jatara block had one anaesthetist, posted in a PHC in the same CHC. All APHCs were conducting deliveries. Of all the doctors interviewed, three were trained in SBA, BEmONC and MTP while only 2 nurses out of 10 were trained in SBA. 1 ANM had received training on SBA and HIV by JICA project.

Orissa

(i) **In Nabrangpur district:** The Area hospital has 3 specialist posts are filled (Gynecologists-1, Padiatritain- 1, Surgeon- 1), 3 MOs and 6 out of 9 sanctioned staff nurses are in place and 2 more nurses are on deputation from other PHCs.There were no specialists in the two visited CHCs, and against the three sanctioned posts of medical officers only two were available in each facility. BPHC Pujariguda did not have any sanctioned post for nurse while CHC Jharigam had one staff nurse and one ANM. Of the two PHCs visited, PHC Ichhapur run under PPP initiative had one medical officer, staff nurse and ANM each while in Sunabeda PHC posts for medical officers and nurses were vacant and one AYUSH doctor and one ANM were in position.

(ii) No detailed information available for Angul.

Chhattisgarh

(i) **In Bastar district:** No CHC had any specialists but nearly three to six doctors were available to handle the patient load of which nearly half were AYUSH MOs and RMAs. All CHCs had two - three staff nurses and ANMs each. In the three PHCs visited a minimum of two medical officers were available in each facility. Medical officers are often from the AYUSH stream or the three year stream – Rural Medical Assistants (RMA). All PHCs had one ANM each but no PHC had staff nurses. None of the providers were trained in LSAS, EmONC, BEmONC, SBA.

(ii) **In Koriya:** Of the three CHCs, only Manendragarh CHC had four specialists (Obstetrician, Anaesthetist, Paediatrician, and a Surgeon). But the other two CHCs had only medical officers, two in Khandwa CHC and one in Sonhat. All PHCs had Medical officers but two PHCs had only AYUSH doctors. RMAs were also posted in two of the three PHCs visited.

(iii) **In Raigarh district:** The Kharsia Civil hospital has one surgeon and one gynecologist – both deputed from CHC Chaple. It has four MOs, six staff nurses and 3 ANMs, of which one MO, two staff nurse and one ANM are also deputed from CHC Chaple. Out of the three CHCs visited each had atleast two specialists in position (Chaple – Physician and Pediatrician, Pussore – Surgeon and Pediatrician, Ghargodi – Surgeon

and Gyneologist). In each of the two CHCs - two MOs, four staff nurses and two ANMs were posted. In Chaple CHC, one MO, one RMA and no staff nurse was available while ANMs are called from SHCs as per requirement. All PHCs visited had one Medical officer as against the sanctioned posts of two. Two PHCs also had RMAs posted - No PHC had staff nurses. Except for Nawaparatenda PHC, all other PHCs had one ANM each.

Jharkhand

(i) **In Dumka district:** Out of the three BPHCs visited only one had specialists, (one internal medicine specialist, and one gynecologist), four MOs and six staff nurses. Of the remaining two BPHCs, one had three Medical Officers and six staff nurses while the other one had five Medical officers and three staff nurses. Only one APHC out of the three visited had a medical officer along with four staff nurses and four ANMs. Two of the APHCs were run by ANMs (6 in each) in absence of MOs. In most of the facilities visited, only a few of the nurses who were active had undergone SBA training.

(ii) **In Lohardaga**: In the four BPHCs visited, there were about three regular and two contractual MOs sanctioned, and most of these were in place. There are no posts for nurses created at either the BPHC or APHC, and this was compensated for by creating one to two ANM posts per BPHC, although one BPHC had no ANMs and another, the Kuru BPHC had five. This latter BPHC conducted 148 deliveries per month. In the PHCs too, 12 out of 14 MO posts are filled and there are ten contractual ANMs spread amongst them. In 73 sub-centers there are 121 ANMs in position. The DH is an SBA training site still none of the DH nurses had under gone training. All BPHCs had at least one or two ANMs trained in SBA- though this had not translated to use of the correct protocols as yet. The original 42 days was reduced to 21 days. Two MOs from DH have been trained in provision of CEmONC and Life saving Anaesthesia Skills (LSAS). The LSAS trained MO provides anesthesia services at the DH, making it possible for C- sections to take place

(iii) **In Garhwa:** Three of the PHCs visited had four doctors, and between three to five ANMs posted. They reported that some of the doctors took it in turns to attend, since many were involved in private practice in nearby cities. However with the ANMs and with the one or two doctors who are resident, a fair number of deliveries are done in these PHCs especially in Ranka. The APHC has a doctor posted, but he does not report for work on most days, and it is the lab tech and the ANM who manages it. As per directives of the previous Civil Surgeon, only those ANMs who are trained in SBA can conduct deliveries. So far only two batches (30 ANMs in total) have undergone SBA trainings and the third batch training was underway at the time of data collection.

Bihar

(i) **In Madhepura:** Only one of the BPHCs had a paediatrician posted (Udakishanganj). Four medical officers were posted in each of the BPHCs in Muraliga and Udakishanganj. Kumarkhand BPHC had five medical officers. None of the BPHCs visited had any staff nurses and about 10 ANMs were deputed from SHCs to each BPHC visited. Two APHCs had MOs on deputation from BPHC. The third APHC had no MO and only one ANM was posted there. Out of 7 nurses interviewed in different health facilities of the district only 1 of them had training in SBA. Out of 6 doctors interviewed 2 of them had received training in LSAS while no one has been trained in CEmONC

(ii) **In Samastipur:** Of the three SDH in the district, none had any specialists posted. Two SDH had minimum 3 medical officers posted while one SDH had only 1 Medical officer in position. The availability of Medical officers in BPHCs in Ujairpur and Hasnpura was seven each. Kalyanpur BPHC had only one medical officer. Staff nurses availability ranged from 2-4 in the three BPHCs. None of the nurses interviewed were trained in SBA and only one of the eleven doctors interviewed was trained for LSAS and BEmONC

(iii) **In Nalanda:** Out of the two BPHCs, Rajgir had four specialists (Gynecologist, Surgeon and Anesthetist) along with 4 MOs, 4 staff nurses and 16 ANMs. The other BPHC, at Karaiparsurai

TABLE 45
Hospital beds - Koriya

Name of Blocks	Population at 30/1000	Expected births	Beds required to meet 100% objective	Newborn beds required	Beds in functional PHCs/ CHCs- which could take up the load	Beds where memonc is available
Baikunthpur	1,79,751	5932	50	10	100 for DH (30 maternity)	50+4 (DH)
Manendragarh	1,31,379	3941	30	6	30 (15 for maternity)	30+4
Sonhat	39,638	1188	10	2	50	-
Khadgawa	1,63,456	4902	40	8	30	-
Janakpur	72,103	2163	20	4	6	-
Total	**5,86,327**	**17589**	**150**	**30**	**216**	

Source: Secondary data from district phase I report.

did not have any specialists and was functional with 3 MOs, three ANMs and one staff nurse on deputation. Of the four APHCs visited, only one had a MO posted while one ANM was posted in each. None of the staff interviewed had received any in service training.

2. Physical Infrastructure

We examined the adequacy of physical infrastructure, the wards or beds, the labour room, the operation theatre and newborn care facilities. We also looked at the provision for electricity, water supply and toilets.

Hospital beds – (as a proxy measure of physical infrastructure in wards)

An important factor linked to preparedness for delivery of services is the availability of hospital beds.

At the level of the district hospital, the situation varies widely. There are some hospitals, especially in the headquarters town of the original large districts which have large hospitals with numerous beds which are able to take in the increased load. There are others, more so in newly formed districts of large populous states where the huge infrastructure gap just cannot take in the increased load, especially since maternity beds are a proportion of total hospital beds. Also one has to factor in, how many of these are maternity beds. Maternity bed occupancy in many districts of UP and Bihar was invariably above 100%. The number of beds could vary from 10 to 50.

Clearly (Table 45) in the district of Koriya, the infrastructure is in place but what is missing is the functionality and quality of care. In Koriya, it is not the infrastructure again but the functionality and care. The average number of hospital beds in three not for profit Mission hospitals was 80. The number of beds in the private sector varies widely, and these could be used to supplement the bed strength available in the public sector. However it does seem that both by design and by public and provider behavior the trend is to reserve the private nursing home for those electively or as an emergency seeking surgical care.

Labour room

On the whole in PHCs, CHCs and in district hospitals, labour rooms are available and functional. There is however a high variation in standards of cleanliness and maintenance. The concept of the labour room having to maintain sterility and cleanliness similar to the operation theatre is not yet in place. Despite this, all facilities above the Sub-centre level did have a labour ward, although there were wide variations in quality. In sub-centres of course, all those which were not in their own building had a major problem.

Operation theatre

Lack of an operation theatre is seldom the critical constraint that hampers an FRU from becoming functional. On the contrary there are a large number of FRUs which have operation theatres ready, but no C - sections take place. Most of these are used during sterilization camps and function only when camps take place.

Electricity

All DHs had electric power lines and backup generators to ensure provision of 24×7 services; some had invertors too. Despite this, all DHs were affected by power cuts, due to inadequate capacity of backup systems. Daily power cuts in DHs, reported as hours/day without electricity, averaged four to six hours per day. Power cuts at the CHC level averaged five to ten hours per day and electricity back up lasted only for few hours. At the level of PHCs power cuts ranged from six to 13 hours. About half the PHCs did not have backup systems. The availability of electricity decreased from DH to CHC and PHC and finally to SHCs which generally did not have electricity. The extent to which critical service provision areas such as the operation theatre, labour room, SNCUs were affected during power cuts is not clear. At all levels of the health system, the poorly performing districts are seen to have longer power cuts.

In contrast, five private hospitals, of which four facilities were not for profit and one private nursing home, were able to maintain 24 hour electricity, despite power cuts, through greater investment in and more efficient use of backup systems such as generators and invertors. The general situation of access to electricity as reflected in the DLHS III was also reflected in health facilities.

Availability of electric supply continues to be a major problem in health facilities in MP, ranging from 10 hours at the district hospital in Morena to 6–18 hours in CHCs. However the state had taken a commendable initiative by providing Express Power lines to the District Hospital and the Civil Hospital in Barwani, which partly compensated for long power cuts. The power supply situation was worst in Bihar and Jharkhand. UP was reported to have long power cuts of about 16 hours in many of its facilities, but the backup systems were more functional.

Water

Water is critical to maintaining cleanliness and hygienic conditions, and is the foundation for hand hygiene and good infection prevention practices. At all levels of the system, however, the availability of 24×7 piped water was found to be low and decreased from DH to PHC to SC, where in many instances water was not available. As with electricity, the general availability of water in states, as reflected in proportion of households that had access to water, in the DLHS-III was associated positively with water availability in facilities. Piped water was generally available at all DHs, except for Madhepura DH. Piped water was often available at CHCs, but at the PHC level, not many PHCs had piped water and many relied on tube wells, wells etc.

At the SC level, the situation was more critical with very few facilities visited having piped water, and in fact many did not have any water connection. Health facilities in all three districts of Uttarkhand, had reasonably good availability of piped water, with storage tanks. Bihar and Jharkhand had the greatest shortages, with no piped water even at the District Hospital in Madhepura, Bihar In Angul district of Orissa, it was reported that in summer months, there was no water at some of the facilities, due to the large intake of water by Mahanadi Coal Ltd.

Interviews with beneficiaries in some of the districts showed that they did not drink the water in the facility and brought drinking water from home during delivery. Running water in toilets was available in most facilities in Uttarakhand; in the other states, running water in toilets was available only in some of the DHs, and below this level, it became even more scarce.

Private hospitals visited presented in contrast a picture of efficient water supply systems. Five mission (Nabrangpur, Barwani, Lohardaga, Raigarh, Dehradun), one trust hospital (Barwani) and two for profit hospitals (Raigarh, Morena) all managed to provide 24×7 running water supply despite power cuts and the variations between states in availability of water.

Toilets

Toilets in most facilities were reported as being dirty, and in some as dirty and non functional

The major equipments required for safe institutional delievrey and maternal as well as newborn care include delivery table, infant warmer and resuscitation table, ambu bag and mask, baby weighing scales, in all facilities, plus laryngoscope and endo-tracheal tubes, filled oxygen cylinder, vacuum extractor, plastic kit for manual vacuum aspiration in 24×7 facilities.

(blocked up, had not been cleaned, no water available, etc.). The lack of a toilet in the CDMO Office in Nabrangpur, which is responsible for public health in the district, is a telling example. Uttarakhand had more functioning and cleaner toilets, probably linked to better availability of water and electricity. Overall even in Uttarakhand, toilets needed much improvement. In many districts separate toilets were not provided and men and women had to share the same toilets. Separate toilets for men and women were available in UP, Bihar, Jharkhand and Chhattisgarh. Common toilets were reported in MP and Uttarakhand. Labour rooms did not have attached toilets in many instances, especially at lower levels. Some PHCs visited had no toilets or toilets were kept locked. At the SC level there were generally no toilets. Toilets in most of the private facilities visited were in better condition.

3. Equipment, Drugs and Supplies

Equipment

The preparedness for service delivery at each facility was assessed by examining the availability of some critical equipment essential for provision of life saving services.

In addition to above, equipements for operation theatre and blood bank and fluorescent tubes for phototherapy were also checked in FRUs. The only equipment consistently available with all facilities was the *delivery table,* in various stages of functionality and cleanliness.

Vacuum extractors are a basic requirement in labour rooms where basic or comprehensive emergency care is to be available, including in 24×7 PHC and the FRU level; they are required for assisting in the delivery of an infant during an emergency, such as prolonged labour/fetal distress before opting for a C-section. Vacuum extractors were available in four of eight DHs. They were generally unavailable in both CHCs and 24×7 PHCs.

Equipment for manual vacuum aspiration required to perform safe abortion, is also among the basic equipment for 24×7 PHCs and FRUs. This was available in 6 of 8 DHs. MVA Kits were available in over half of the CHCs in these eight districts and seldom seen in the PHC level.

Equipment for newborn care Ambu bag and mask was available in all DHs, in most CHCs and most block PHCs and but in about less than one thirds of other PHCs. Infant warmer and resuscitation table were available in all DHs and in most CHCs–but rarely below this. Laryngoscope and endo-tracheal tubes were available only in a few DHs and FRUs. Phototherapy equipment for management of the sick newborn was available in 6 of 8 DHs. Only Dehradun DH among eight DHs where this was examined had all the equipment discussed above. Even the CHCs were better equipped in this district. In contrast in all the four mission hospitals visited, all the equipment was available. The vacuum extractor was substituted by forceps in two of the hospitals.

Drugs

Assessment of drugs was limited to the availability of emergency labour room drugs, and studied in some detail in 8 districts - Bharatpur, Bastar, Nabrangpur, Bageswar, Dehradun, Pithoragarh, Barwani and Lohardaga. We looked at the availability of antibiotics (amoxicillin/ampicillin, cefotaxime for the newborn, gentamycin, metronidazole), anti-convulsants (magnesium sulphate, diazepam), oxytocics (oxytocin, misoprostol, ergometrine), intravenous fluids, Vitamin K for the newborn and iron folic acid tablets.

Only two district hospitals: DH Bharatpur, and Bastar had all the essential drugs. Cefotaxime for the newborn was available in 3 of the 8 hospitals, Magnesium sulphate was available in 6 of the 8 hospitals. Vitamin K for the newborn was available in 6/8 hospitals. IV fluids and IFA were available at all DH.

Among 16 CHCs where this was examined all drugs were available in the districts of Bharatpur, Dehradun, Jharigam CHC in Nabrangpur, Baijnath and Kapkote CHC in Bageshwar, in Bastar and in Didihat in Pithoragarh - about 9 CHCs in all. Magsulf availability was however a problem in almost all states at the CHC level. Of the remaining seven CHCs, four had major shortages - Area Hospital Umerkode, Barwani, Sendwa amongst them.

At least one of three oxytocic drugs was generally available at the CHCs. Among the three drugs, Oxytocin was more likely to be available. Basic

antibiotics were often unavailable - Ampicillin/ Amoxycillin was available in 6/8 District hospitals.

Cefotaxime was available in 6/8 district hospitals and Gentamycin was available in 7/8. IFA was available in all but one CHC.

In PHCs, IFA and IV fluids were almost always available. But Vitamin K for the newborn, Oxytocics, antibiotics and anti hypertensives were mostly unavailable. All drugs were available at all four mission hospitals.

3.3 Laboratory services

The availability of the most basic package of antenatal tests during pregnancy was assessed in some detail in the same 8 districts as above:

1. Haemoglobin.
2. Blood group and Rh factor.
3. VDRL
4. Urine albumin and sugar.
5. Pregnancy tests.
6. Rapid test for malaria.
7. At the FRU level, the availability of additional HIV and HbSAg tests was also assessed.

Among the 8 DHs, most performed all the tests. HIV tests were done at all DHs through the ICTC centre. Haemoglobin was done in most CHCs in Bharatpur and Dehradun, and in two out of four in Bageshwar and Nabrangpur and in two of 10 facilities visited in Lohardaga, Barwani, Pithoragarh and Bastar. Blood group and VDRL was done only in most CHCs in Bharatpur and Dehradun; and in one CHC at Sendhwa and was not available in any other districts. Rapid malaria test, pregnancy test and urine albumin, sugar was done in most CHCs. Rapid test for malaria was available in most facilities. HIV and HBsAg were generally unavailable at the CHC level, with the sole exceptions of Deeg in Bharatpur.

Most PHCs performed pregnancy detection tests and rapid tests for malaria. Very few did routine hemoglobin or urine tests.

Summing up

1. The human resources required for maternal and child health care is the single most important constraint in being able to respond to the demand for services created by the JSY programme.
2. Some states, notably Rajasthan have been able to respond to this pressure and have placed adequate nurses and ANMs in position. The doctor to nurse ratio is also good. At the other end there are states like Uttarakhand, that have not been able to make use of the NRHM opportunity to increase either medical or nursing strength - and doctor nurse ratio is about 1 to 1 at APHC level and reaches the minimum three only at the CHC level.
3. There was more uniformity in the numbers of sanctioned posts of specialists at the CHC level- generally 6 to 9, and there were generally 3 to 5 in a block PHC with only few having the full complement of 9. Even when there was a near full strength however the critical gynecologist and anesthetist specialists could be missing. This staff strength in PHCs and CHCs when present, in some districts is adequate since the case load is modest, but in others, this is insufficient. The key question is assessing adequacy is thus whether the number of nurses was adequate in relation to number of beds available or to caseloads dealt with.
4. Interestingly the private not for profit mission hospitals visited were also very short on skilled human resources, with a difference. For an average of 80 beds, there were 5 doctors (2.9 specialists and two MOs); there was an average of 27 nurses for each mission hospital. This gives a ratio of 1 nurse for 3 beds and 5.4 nurses for 1 doctor. The mission hospitals thus had slightly better nurse: bed ratio than the public sector facilities. The larger number of nurses proportionate to doctors, parallels the ratio of 6 nurses to 1 doctor in the very effective primary health care system in Thailand. Staff at mission hospitals expressed an interest in using partographs and of having their staff included in government's SBA training programme.
5. Data on training was patchy and incomplete. Since only a sample of providers were interviewed, to get an understanding of the level of training of the entire staff at the facility, interviewers were expected to obtain this information from the facility in-charge. However many facility in-charges were unaware of the training received by members of their staff. In order of frequency, the most common trainings received by health staff were IMNCI, followed by SBA training and

MTP. Among EmOC and LSAS, there were more candidates trained in LSAS. NSSK training in newborn care was the last training to start, and at the time of interview none of the providers had received the training. Even in SBA training most of the service providers met had not received the training though in most districts visited there had been considerable number of ANMs trained. One of the reasons for this was that training was often prioritized to those who were available, rather than those who were the busiest and who could not even be spared for a day. It was hoped that by training the others they would be encouraged to start providing services and the notion that it was training for upgrading the level of care provided by those already functional in this task was lost.

6. Infrastructure in terms of bed capacity is a limiting factor in some districts and not in others. In newly carved out districts the number of maternity beds available in the district hospital appear limited. Sometimes even larger district hospitals as seen Uttar Pradesh are showing 150% bed occupancy in the women's district hospital. At the CHC and block PHCs, most districts have developed adequate capacity during the NRHM period or are close to doing so.

7. Electricity supply and water supply and even the situation in toilets was in line with the level of electrification and drinking water supply levels for the state as a whole. Predictably therefore Bihar, Jharkhand, MP and UP had more problems, though UP had better back up systems and functionality. Power and water problems are greater as we move towards the periphery - but even the district hospital at Madhepura was facing a huge crisis in running water. The private mission hospitals in all these districts had solved these problems admirably and it is worth trying to understand how, within the constraints of each district, this is being achieved.

8. In both equipment and drugs, there is not enough conscious planning to provide for the higher level of complication management required from a sick newborn unit, or a newborn corner, or of a skilled birth attendant, or for basic or comprehensive emergency obstetric care. Thus only two district hospitals of 8 districts where this was studied had all the essential drugs and equipment for this level of care. Many had over 70% of the equipment and drugs - but since these are all vital to maternal and newborn survival, anything less than 100% of the essential package would be unacceptable.

9. For the eight identified laboratory tests, district hospitals on the whole always had all of them and all facilities below this including CHCs and block PHCs almost always had many missing components such as HIV testing or VDRL. Functionality of these services, below the district hospital level was also weak.

Recommendations

1. A population of ten lakhs at a birth rate of 30 per 1000 requires about 200 maternity beds- even providing for redundancy and limited occupancy. These should be distributed across 10 to 20 PHCs - depending on geographic access issues with at least 50 beds at the public sector FRU level dedicated to the women with serious complications. This is an easy target to achieve – if not already achieved in most districts. Since both the CHC and the PHC cater to a block population, in most contexts, the establishment of a CHC is adequate to cater to the increased case load, but an upgraded block PHC which is not, cannot do so. If a CHC has 30 beds and half of these are used for maternity purposes it gives 450 bed days per month. With two days per patient could cater to about 200 deliveries per month without much difficulty. Above this, it becomes difficult. Using this same logic, 15 dedicated maternity beds for a one lakh population, 20 if we include complications at all stages of pregnancy, then 200 dedicated maternity beds would do for a 10 lakh population assuming a birth rate of 25 to 30 per 1000. To this could be which we could add a four beds for sick newborns. Of course to give 50% of bed occupancy to just care in pregnancy is asking too much- a norm at 20% would be more suited for the district hospital. But currently CHC bed occupancy has to pick up - and this would be more than enough for the coming plan period - and one can add more beds at the block level later. If private sector capacities are roped in, it could

possibly already be achieved in most districts but the recommendation is that the public sector aim to achieve what is a trivial goal. The challenge of planning is intensified when objevtive is to encompass all facilities SHC, PHC and CHC as being sites for safe delivery and to be acheieved within a short time. Such a goal is both unrealistic and likely to be unattainable. Some single ANM and one doctor - one nurse PHCs would also offer midwifery services for small populations/habitations that are too distant and difficult to reach. A infrastructure development plan focused on the actual patterns of use could close the remaining gaps in a very short time.

2. The challenge is of bed distribution across a geographical terrain to ensure universal access with quality of care. Using the principle that there should be one health facility to provide maternal and newborn care within 30 minutes of vehicular travel time then one can estimate where these beds are to be placed. Though a 24×7 facility providing skilled birth attendance and BEmonc and newborn stabilization level care, is the goal for institutional delivery. However for those habitations which are beyond this 30 minute radius, access to skilled birth attanedant should be a short term goals. The important development is that whereas at the time of the Bhore report, a 30 minute radius would have for most villages meant the sub-centre, today it would mean the PHC, if not the CHC and district hospital itself- provided the assured referral transport is upto the mark. Thus in a large block of UP with say 2.5 lakh population, 50 maternity beds and 12 newborn beds are needed at block level. Thus a CHC with 50 beds, 25 of which are maternity and 6 are for sick newborn may have to be supplemented by three PHCs with at least 10 maternity beds and 4 newborn beds so as to close the gaps in the supply side. In practice district hospitals, where available take up a large part of the load, but ideally these should be additional and for a higher level of care. Reserving the maternity function for the 24×7 Bemonc enabled facilities. With NRHM the potential to reach this level of bed strength and distribution is now available or achievable - but it is likely that there could be a variance across states.

3. Every facility with these beds should be equipped, inspected and externally certified within a one to three year period for meeting specified standards for electricity, water, number of toilets, equipment and drugs and laboratory services. Mission hospitals which almost always has these in place, to understand how this can be achieved in the local context. Funds would be prioritized for this.

4. Once these targets are achieved, more facilities could be strengthened to provide MCH care and the maternity beds in larger facilities freed up by the development of more peripheral and local facilities, and could be used for other health conditions. This way we would be able to achieve service gurantees for universal access to RCH care within a two year time frame.

5. The critical gap, which would not be so easily solved is human resources. The first step is to skill those available and already providing services within a two year period. Again since the numbers are very low - this can be achieved with ease provided the trainers are brought in from outside into the district. The districts internal respources to generate the trainers within a short period is limited. The approach would be a combination of the usual training camps - with a:

    a. Introduction and sensitization of printed protocols for all levels of maternal and newborn care within six months in all PHCs and sub-centres and CHCs and private hospitals and district hospitals providing maternity care.

    b. Development of skill halls in all districts where one day refreshers can be organized for the service providers providing these services to both test and upgrade skills.

    c. A team of clinical supervisors - who visit the facilities in rotation and ensure on the job training and adherence to protocols.

6. The problems of number of nurses, doctors and specialists needed for RCH, is linked to the HR policy at state level and cannot be solved by each district on its own - except to the extent that it prioritises staff for providing these services. In particular we need to caution that. ANMs are not withdrawn from outreach functions to providing midwifery

services in PHCs and CHCs. Gynecologists should be prioritized for emergency obstetrics in higher FRUs and sterilization services move to either partnerships with theorivate or not for profit sector or conventional tubectomies by medical officers. Though much has been said about how JSY adversely affects the family planning targets, the focus of such comments is presumably on financially incentivizing deliveries more than sterilization - an understanding that reeks of prejudice and has no grounding in evidence or even anecdotal reality. The more obvious problems of a sole available gynecologist having to choose between running around between numerous sterilization camps or providing obstetric services in the district hospital, or ANMs withdrawn from their usual outreach services where they are the sole access to spacing methods - is seldom mentioned. But the contention of this study is that this is happening and in a big way - and it is not being addressed at all.

7. A HR policy that includes:
   a. Strategies of generation of more ANMs and nurses and facilities their easy recruitment into service,
   b. That provides a positive practice environment, and
   c. That includes a number of well tested innovations that lead to retention of skills in remote and rural areas - need to be deployed for the problem of HR for MCH services to be addressed.

SECTION-VII

Quality of Care

Access to institutional delivery alone is not a sufficient condition in itself to reduce mortality and morbidity. This we discussed in the chapter on complications. But we also need to note that quality care prevents complications whereas irrational care and poor quality care increases both costs and morbities. Also quality care ensures a growing demand for essential institutional services provided in an affordable manner by the public sector. And least but not the last quality of care is a right - women have the right to personal safety and comfort and dignity when they come to the facility for a child birth.

Quality relates to inputs - the skills of the provider, the number of providers, the infrastructure and the equipment and so on. But inputs alone do not make for quality of care. It is the organization of work and the nature of interaction between provider and service user that makes for patient satisfaction as well as for better health outcomes. We discuss below several dimensions of quality of care in the public health facilities, which are bearing the increased case loads under JSY.

1. Use of Standard Clinical Protocols

The survival of pregnant women and newborns depends on more than just reaching a facility where a service is available. They need to get appropriate treatment, appropriate in a clinical sense. The key to achieving this has been found to be the promotion of standard clinical protocols of care. Thus a partograph is a minimum requirement for every level of care. Active management of third stage of labour is another essential feature of these protocols. There are guidelines on whether to give antibiotics, when to give antibiotics and what antibiotics to give. Management of complications also have protocols, or what is agreed upon within the profession as the most appropriate way of managing these.

Use of protocols ensures effective care and safety of the patient, avoiding hazardous drugs and adverse outcomes. It reduces costs, especially out of pocket expenditures to the family. It protects the provider from charges of negligence or malpractice. Unfortunately, protocols were not being used in most facilities visited. Partograms were not in use, the use of antibiotics and oxytocics were often not as per norms and active management of third stage of labour had not arrived. No printed protocols were found either.

The misuse of oxytocin

Routine oxytocin for augmentation of labour in the first and second stages, is contraindicated. Fetal distress is a common effect of the use of this drug, with increased admission of infants to SNCU, stillbirths and neonatal deaths as well as rupture of the uterus and maternal death. While oxytocin augmentation for women in their first pregnancies is less likely to result in rupture of the uterus, in multiparas, i.e., women who have had previous deliveries, the use of oxytocin during labour could be dangerous and increase the risk of rupture of the uterus and maternal death. Oxytocin augmentation was seen to be routinely used in several districts, among them Dehradun, Nalanda, Bageshwar, Bharatpur, Nabrangpur. There appeared to be a correlation of the use of oxytocin with the lack of availability of nurses. From interviews and from an examination of case sheets in some of the DHs, it was learnt that although oxytocin drips were used, they were not always written into the case sheets.

Monitoring of clinical practices was inadequate or even non-existent. In some districts such as Barwani there was awareness of the problem and gynaecologists expressed a preference for using misoprostol or ergometrine for management of the third stage of labour instead of Syntocinon, because it was felt that availability of oxytocin in the labour room would increase the likelihood of its abuse for augmenting labour in the first stage.

Antibiotic misuse

The most important cause of out of pocket spending during hospitalization is due to cost of drugs (NSSO 60th round) of which expenditure on antibiotics was found to be the largest. Antibiotics are however not recommended for use during normal birth. Evidence from the Cochrane review indicates that a single dose of cephalosporins is indicated as antibiotic prophylaxis for the mother during Caesarean section, to reduce the incidence of infection related complications and duration of hospital stay. This dose is to be given after clamping the umbilical cord to ensure that the antibiotic does not reach the infant as this increases chances of drug resistance. The National Neoantology Forum also does not recommend any antibiotics for routine use for the newborn.

The study findings showed that in all health facilities, public or private, including the not for profit and Mission hospitals, a full course of antibiotics was routinely prescribed following delivery. The most commonly used antibiotic was parenteral cephalosporin following delivery, and a full oral course afterwards. Other drugs include ampicillin with cloxacillin and metronidazole given with one of the broad spectrum antibiotics, as a full course. Ofloxacins were also prescribed; these are drugs of last resort to treat serious and life threatening bacterial infections and not recommended for prophylactic use. In Nabrangpur we found that neonates were also prescribed a full course of oral antibiotics (ampicillin) as well as receiving a prescription for a full course of antibiotic eye drops, which patients were instructed to purchase from private pharmacies.

Post delivery in each facility, whether public or private sector (including the not for profit), all women were prescribed a long list of drugs. These include routine prescriptions for the following: painkillers such as Diclofenac used after major surgery, and Tramadol, an opioid analgesic to be used for severe pain; such analgesics are not indicated after normal birth, where there may be some pain from the episiotomy/perineal laceration.

Inappropriate clinical practices

An intravenous line is started for almost all women who enter a labor room. This is substantiated by the observation that IV fluids were the most commonly available supply in health facilities, at all levels of the system. Parenteral drugs are prescribed and the very limited numbers of nurses spend their time in giving injections that are not indicated, instead of completing partographs for charting the process of labour.

Reducing OOP on drugs by ensuring rational drug use

In Nabrangpur, the state has taken initiatives to reduce out of pocket payment for drugs. It has introduced two drug kits- one for normal birth and another for Caesarean delivery. Should any of the drugs on the list not be available in the health facility, they are to be locally purchased using funds from the Rogi Kalyan Samiti (RKS) and provided to women free of cost. A comparison of the state drug lists with national drug protocols, and international Cochrane reviews on evidence based antibiotic use for Caesarean Section shows that the Orissa protocols are well designed. For normal delivery no antibiotics have been recommended and for Caesarean Section, a full course of first generation cephalosporins (cefotaxime parenteral while in hospital followed by Cefadroxyl oral after discharge from hospital) have been recommended. However, in practice many users reported persistent albeit lower out of pocket payments for drugs, and some were still being prescribed a full course of antibiotics routinely following normal delivery and CS with drugs not included in the state protocols. This again highlights the need for clinical care supervision as distinct from administrative supervision.

2. Recording and Reporting Systems and the HMIS

The Health Management Information system (HMIS) is designed to capture several facets of quality of care in RCH. The indicators that are measured at PHC and CHC level include – Hypertension treated in the antenatal period is reported by the PHC and CHCs, a good indicator on whether BP is being measured during ANC check up at the sub-centre level. Severe anemia detected and blood transfusions given act as a indicator on both the detection and management of anemia and on the availability of blood transfusions. C-sections done are known. Eclampsia cases managed and injectable antihypertensives, antibiotics and oxytocics used give us a very good measure of the management of complications and the use of protocols. Still births are measured and they are also along with early neonatal deaths an accurate reflection of quality of care in pregnancy. Analysis of HMIS in these districts indicates that the management of complications is sub-critical. The available information is not being used for action and there is no effort to improve the quality of reporting. In addition to analyzing HMIS data, data on number of deliveries and number of Caesarean Section, was also collected from the facility delivery registers, for a three or six month period, and subsequently extrapolated for 12 months; hence small variations would be expected. Data obtained from field visits and the HMIS data were found to match, with small variations (maximum 10% Bharatpur), except in the case of Bastar, where a large difference was found between the field visit findings and the HMIS data. In Bijnor the home deliveries and JSY payments to home deliveries do not match, and are perhaps due to a data entry error.

The main bottleneck in the record of complications and indicators that reflect on quality are the poor recording systems or primary registers which are most rudimentary and miss out on many important data elements. In most instances, were no printed case sheets, delivery, operation theatre or family planning registers were found. There was generally a printed register for abortion services. Delivery registers were simple notebooks in which the labour room nurse drew columns to enter data she considered useful. Thus there was no consistency in the data recorded in delivery registers, across the districts. There was no column for recording complications; and this data, could noot be obtained from a register review. In the few districts from where this information was obtained, it was obtained from a review of bed head tickets and case notes from the hospitals. Details regarding the newborn and complications in the newborn were not recorded. In some DHs even the weight of the newborn was not recorded.

There are problems with reporting from the facility level, since much of it is by recall. Given the numerous providers, even if the time elapsed is only a month, the recall as a method is most unsatisfactory and incomplete. Rajasthan appears to have a system of recording complications in a separate register, although this is not a printed register.

Caesarean sections were however consistently recorded. Other procedures not requiring anaesthesia and or not performed in the OT, such as vacuum deliveries, forceps, MVA were not recorded-even where this was being carried out.

The lack of records also makes it very difficult for the supervisor to assess performance. One could also conclude that the state of records is a reflection of the sorry state of supervision.

Private sector: All private not for profit mission hospitals had reasonable facility records - case sheets, delivery registers, and OT registers that were printed. Partographs were not in use in any of the private sector hospitals visited. Data from private sector facilities is generally not being included into the HMIS data base, and effort to do so are far from sufficient. For mission hospitals and others where a large amount of RCH work is done, a separate unit needs to be available, and the data recorded on par with a CHC or DH.

3. Quality of Care and Services Available

Cleanliness, Hygiene and Housekeeping

Basic cleanliness and hygiene in health facilities is the foundation for good infection prevention practices. Housekeeping is essential to ensure that an admitted patient does not develop an iatrogenic or hospital infection due to bacteria that survive in the environment. The following activities under housekeeping for achieving these objectives were practiced in very few facilities:

- ❖ Cleaning the floor several times with detergent and water. Lysol may also be used.
- ❖ Walls to be cleaned at least weekly.
- ❖ Fans and lights to be cleaned once a month.
- ❖ All work surfaces to be disinfected by wiping with Lysol (7%) and then detergent & water twice a day.
- ❖ Curtains to be changed every month or whenever soiled.
- ❖ Patient's cot to be cleaned with detergent and water every week.
- ❖ Bathroom floors to be cleaned once a day with broom and detergent.
- ❖ Toilets to be cleaned with brush using detergent twice daily. More often when crowding and use is more frequent. Disinfection may be performed using Lysol.
- ❖ Wash basins to be cleaned with Vim powder every morning and with hydrochloric acid once a month.

Source: Christian Medical College Vellore; Hospital Infection Control Manual.

All of this was poor in health facilities visited and as a result the overall impression was of a lack of cleanliness and poor hygiene. The state of toilets is merely the most obvious sign of a breakdown of housekeeping.

Cleanliness was relatively better in Uttar Pradesh - but was a problem in most other states. Part of the problem was a very high level of use. The lack of staff was not a problem except in higher facilities. There were no protocols in place to manage housekeeping and typically the need for planning this out was underestimated. Supervision too was weak. The four private mission hospitals in Lohardaga, Barwani, Nabrangpur and Dehradun visited were however exemplary in their cleanliness and hygiene and most of these practices were in place.

Infection Prevention and Waste Management

Infection Prevention and waste management was very inadequate, infection prevention more so than waste segregation and disposal practices. There would appear to be a possible association with the state level DLHS-III indicators for electricity, water and toilets, and somewhat better practices for infection prevention and waste disposal were seen in Uttarakhand. In this state, all facilities had boilers and used it for high level disinfection of labour room equipment.

Though autoclaving is the preferred mode for preventing infection transmission in labour rooms, it is uncertain whether autoclaved instruments were used in labour rooms in any of the DHs, it seems unlikely. In most health facilities including DHs, autoclaves were not used to sterilize labor room equipment. We checked for availability of sterile packed delivery kits, which is a basic minimum standard for all facilities conducting deliveries. We found that this was not available in nearly all public sector hospitals. Even in DHs, there were usually very few - sometimes two or three sets of instruments, which were washed, sometimes boiled, sometimes wiped with alcohol, sometimes soaked in glutaraldehyde or savlon and reused. In some others, labor room equipment was disinfected by exposure to fumes from formalin tablets in a closed chamber, which is not a standard protocol. In some of the district hospitals in Bihar, it is uncertain whether even this is done, prior to reusing delivery instruments for delivering the next mother.

Autoclaving was the mode of infection prevention used consistently for operation theatre equipment in all district health facilities. *The understanding that the same infection prevention procedures that apply to operation theatres must also apply for labour rooms had not percolated as yet to district and facility leadership*.

In facilities with better infection prevention procedures in place, the general practice was High level disinfection (HLD) by boiling. The number of delivery sets available in all health facilities in the public sector was very limited. In CHCs and PHCs, there was often just one set of instruments which was reused frequently, using various practices, mostly unsafe for infection prevention.

Four mission hospitals were assessed - located in MP, Orissa, Jharkhand and Dehradun. All these hospitals

however followed standard IP protocols and waste disposal practices. Delivery packs were prepared in all hospitals similar to packs for Caesarean section or hysterectomy. The number of delivery sets was calculated as being more than the average number of deliveries in 24 hours. All equipment was autoclaved. Waste segregation and disposal practices were exemplary.

Dietary Services

Some of the district hospitals provided diet to the patients. All of these had their own kitchen. None of the CHCs and PHCs made diet arrangements. In UP, the ASHAs played a major role in providing support for diet to the patient, arranging it sometimes from her own funds. But this was more out of generosity on their part, than a system in place. There was no recognition that this would help, or that it was needed for them to stay 48 hours. Some of the hospitals had systems of diet earlier and functional kitchens - but over the years and the shift to user fees, these had become redundant, till NRHM revived interest in making them functional. Outsourcing arrangements were discussed, but were not yet functional in any of the facilities visited.

4. Staff Behavior, Security and Quality Management Processes

User satisfaction also relates to a sense of security, positive interpersonal interaction and the efficiency with which work is organized. Rude behavior, especially by support staff, long queues, lack of punctuality among doctors lead to a feeling of neglect and even negligence. Unclean facilities, and the presence of stray animals inside hospital premises are problems that compromise the use of the facility. There is a particular problem with dogs who get attracted by the improperly disposed of placenta, and instances when the same smell has led them to maul a newborn is not unknown. In many districts, dogs and stray animals were reported to be roaming freely in the premises of health facilities - these include all districts in Bihar, most facilities in MP, Jharkhand, Orissa and Rajasthan. In Uttarakhand and UP these problems were less. Compound walls are essential for all facilities and in addition security staff would be needed for larger facilities to provide safety to women service users and service providers who may have to stay alone there at night.

There is a provision for a quality assurance cell and inspections and reports to see that all the parameters of quality discussed here are followed. However these were not observed to be functional or having an impact. The main problem seems to be that they are composed by the same staff who are anyway meant to supervise, and that there is no understanding of systems of quality improvement.

5. Findings on Quality of Care from Phase 2 Study

This section deals with quality of care in the following dimensions: time taken to see the women once she arrives at the facility, the protocols followed for antenatal care, stay for 48 hours after institutional delivery as an index of quality of care of the facility, the protocols of care followed for the newborn, the place of delivery and last but not the least the subjective dimension - that which is related to patient's own satisfaction level and subjective opinion of the care given. Following protocols of care for midwifery though important is difficult to judge through a questionnaire administered to a beneficiary. For other dimensions of quality the phase I study is the main source of information.

Clinical protocols of care

Time elapsed before being seen: Delays appear to be occurring at institutions in some districts. While over 80% of women reported that they were seen in the first half-hour in most districts, only three quarters reported this in Koriya, Morena, and Madhepura. More than an hour's delay was reported by 1% of women in Madhepura, 8% in Morena and 7% in Hanumangarh, with the rest of the districts reporting less than five percent on this account. Prompt attention for a woman seeking delivery services is an important indicator of quality of care, and an area of concern in facilities that allow more than half an hour to elapse before any attention is given. This problem is much less than feared or talked about.

Care of the newborn

Essential newborn care protocol includes care which is for prevention of illness, early identification of illness and which provides comfort to the baby and the mother. Essential newborn care includes early

initiation and support to breastfeeding, prevention of hypothermia especially by delaying bathing and ensuring warmth, weighing the baby to detect low birth weight and examination for other signs of illness. Most of this should be accomplished in the institution immediately after delivery – within the first three hours and then it should be repeated again on the second day since most mortality is accounted for on the first day. Then a further five visits on 3rd day, 7th day, 14th day, 21st day and 28th day is desirable even in a normal baby. These latter visits have to be home visits, by the ASHA since the ANM is likely not be able to visit. But if the post partum mother and child do not stay for even 12 hours as is the case in over half the instances, then even the second day examination would be at home. The bottom line is whether done at home or done at the facility, whether done by the ANM or by the ASHA, all elements of essential newborn care should be uniformly provided.

Over 75% of institutional deliveries across the districts reported initiation of breast-feeding within the first two hours. Overall about 23% reported feeding after two hours, and only about 5% said they had fed only after three days. In Bageshwar nearly 16% said they had fed after three days and 14% in Garhwa had done similarly. We note that if we were to measure in only the first hour instead of the first two hours- we would have come to an alarmist conclusion that only 59% are achievers. Though the advice is to breastfeed within the first hour, preferably the first half hour, the standard measurement of achievement could be even as much as first two or three hours, to give a more realistic and outcome linked picture.

74.6% of institutional delivery babies were weighed at the institution before discharge. This too is good news, though for institutions it should be 100%. Indeed in most districts it is over 90% - but in Bageshwar and Kaushambhi at 32%, Morena at 50% and Madhepura at 53%, rising to 68% in Garhwa and 80% in Hanumangarh.

Almost all women in all districts reported that the baby was bathed in the first 48 hours after birth which is a source of concern, since the recommendation is to delay bathing for 7 days. The pattern of bathing in the first 24 hours varies substantially across the districts. In Hanumangarh and Bagheswar nearly half the mothers, about 43% in Madhepura and nearly one third in Kaushambhi and Nabrangpur reported bathing the child in the first 24 hours.

Antenatal care

A standard protocol of antenatal care mandates three ante-natal checkups - four including the visit for registration. The first ante-natal examination should be done in the first trimester. During these antenatal visits weight should be taken, blood pressure should be measured, blood should be checked for anemia and urine for albumin and 100 tablets of IFA given to prevent anemia or

TABLE 46
Initiation of breast feeding – Institutional delivery

F1	Base: All	< 1 hr	1 hr–2 hr	2.1 hr–3 hr	3.1 hr–24 hrs	>24 hrs	>72 hrs	NA
All	2759	59.1	15.9	5.2	7.1	5.7	4.6	2.4
Madhepura	158	58.2	8.9	5.1	8.2	7	3.8	8.9
Raigarh	196	58.7	18.4	3.6	8.2	5.6	2	3.6
Koriya	236	57.2	16.1	5.9	11	5.1	3.8	0.8
Bastar	188	80.9	5.9	4.8	2.7	2.7	2.1	1.1
Garhwa	206	27.7	17	6.3	15	16	13.6	4.4
Dumka	170	71.8	16.5	2.9	2.4	1.8	2.9	1.8
Angul	299	62.5	23.4	2.3	4.3	6.4	0	1
Nabrangpur	297	80.5	10.1	3	1.3	1.3	2.4	1.3
Morena	318	63.2	14.8	4.7	7.5	4.1	3.1	2.5
Hanumangarh	290	41.7	20.3	9.7	13.1	7.6	6.6	1
Kaushambhi	284	58.5	20.1	4.9	5.3	3.9	5.6	1.8
Bageshwar	117	36.8	12.8	12	6.8	11.1	16.2	4.3

Source: Phase II sample survey.

TABLE 47
Weighing of the newborn at the institution

District	Base: All	Yes	No	NA
All	2759	74.6	23.1	2.3
Madhepura	158	53.2	41.1	5.7
Raigarh	196	95.9	2.6	1.5
Koriya	236	94.5	5.5	0
Bastar	188	93.6	3.7	2.7
Garhwa	206	67.5	30.6	1.9
Dumka	170	88.8	7.1	4.1
Angul	299	97	1.3	1.7
Nabrangpur	297	97	3	0
Morena	318	49.7	48.1	2.2
Hanumangarh	290	79.7	19.7	0.7
Kaushambhi	284	32.4	64.1	3.5
Bageshwar	117	31.6	58.1	10.3

Source: Phase II sample survey.

200 given to correct mild or moderate anemia and Injection TT should be given once or twice depending on the order of pregnancy. The JSY grant as conditional cash transfer mecahanism includes incentivizing complete antenatal care.

Overall 8.3% of women who were institutional deliveries and JSY beneficiaries did not receive any Antenatal check up, 33% received one or two check ups and 58% received three or more check ups which is the norm. Performance was over 75% in both districts of Orissa, in Bastar and Raigarh of Chhattisgarh and it was 64% in Koriya. In all remaining districts, it was less than 50% dropping to as low as 10% in Madhepura. Nearly 63% of women in Madhepura also reported no antenatal care at all.

First trimester contact for ANC was about 54% over all. It was lowest in Kaushambhi (22%), and Morena (31%). In most districts the rationale for either no ANC or fewer than three ANC appeared to be more due to behavioural issues/health seeking (no time, was not at home, did not know, did not think it was necessary). Except in Madhepura, where 13% of

TABLE 48
No. of ANC checkups received

District	Base: All	'0	1 to 2	3 or more	NA
All	2759	8.3	32.7	58.1	0.9
Madhepura	158	62.7	22.2	10.2	5.1
Raigarh	196	0.5	20.9	78	0.5
Koriya	236	6.8	29.3	64	0
Bastar	188	1.6	17.5	80.3	0.5
Garhwa	206	2.9	52	45.1	0
Dumka	170	1.8	20	77.7	0.6
Angul	299	2	12.7	84.7	0.7
Nabrangpur	297	1.7	23.2	75.1	0
Morena	318	8.8	43.7	46.8	0.6
Hanumangarh	290	11.7	40.3	47.9	0
Kaushambhi	284	6	64.8	28.9	0.4
Bageshwar	117	10.3	29.9	52.2	7.7

Source: Phase II sample survey.

TABLE 49
Services were given during ANC- atleast once

District	Base: Women who received any ANC	Weight taken	BP checkup	Urine test	Blood sample taken	Abdominal examination	Advice for food and rest	Tetanus toxoid injection	Information to identify danger signs	Counseling for family planning	Information about referral transport that can be used at the time of delivery	Telephone no. of state specific free service	None	IFA- Upto 100	IFA-101–200	IFA-0
All	2504	72.3	62.7	53.8	56.2	73.9	67.1	96.8	17.7	14	5.7	4.6	0.3	77.5	10.9	11.8
Madhepura	51	45.1	39.2	43.1	45.1	54.9	54.9	66.7	5.9	7.8	0	0	3.9	62.8	3.9	33.3
Raigarh	194	82	73.2	70.1	69.1	79.9	84	99.5	26.3	16	7.2	2.6	0	69.6	10.3	20.1
Koriya	220	66.8	75.5	79.5	77.7	88.2	80.5	89.5	35.9	23.6	19.5	12.7	0.5	78.7	12.7	8.6
Bastar	184	92.9	81	64.7	66.3	91.8	63.6	95.7	15.2	17.4	11.4	2.2	0	87.5	8.2	5.4
Garhwa	200	51.5	50	45.5	41.5	63.5	67.5	99	4.5	18	2	0	0	81.5	8	10.5
Dumka	166	80.1	65.1	61.4	38	97.6	92.8	93.4	12.7	7.8	1.8	0.6	0	72.9	20.5	6.6
Angul	291	95.5	88	88.7	85.2	90.4	82.1	99.3	21.3	17.2	6.2	7.9	0	62.9	23.4	13.7
Nabrangpur	292	95.2	92.5	61.3	64.4	93.2	86.3	99	22.6	22.3	2.4	11.3	0	81.6	15.8	2.7
Morena	288	65.6	32.6	24	52.8	55.6	52.8	98.3	9	9.7	1	1.4	1	76.7	8	15.6
Hanumangarh	256	84	63.3	41	53.1	51.6	31.6	98.8	14.8	5.5	5.5	1.2	0	82.1	1.6	16.4
Kaushambhi	266	28.9	18.8	13.5	12.4	38.7	43.2	100	7.1	5.6	2.3	0	0	89.5	2.3	8.3
Bageshwar	96	39.6	54.2	58.3	55.2	89.6	70.8	93.8	41.7	11.5	10.4	14.6	1	67.7	10.4	21.9

Source: Phase II sample survey.

women said that the ANM did not visit the village, this was cited as a reason by less than 10%.

In respects of components of ANC the overall averages for the entire 2504 women who had received an antenatal care was as follows:

1. TT Injection: 96.8%
2. 100 IFA tablets distributed: 78% plus additional 11% given 100 to 200 IFA
3. Abdominal examination: 73.9%
4. Weight taken: 72.3%
5. Counseling on food and rest: 67%
6. BP check-up: 63%
7. Blood sample taken: 56%
8. Urine test: 54%
9. Told about danger signs: 18%
10. Information on referral transport: 6%
11. Telephone number of state specific free services - 5% (this is important in those states where there is a free referral transport arrangement available).

Clearly the first two are what is universally presented as antenatal care. 90% of women in all districts reported that they received TT, the only exception being 67% in Madhepura.

Quality of antenatal care best relates to measurement of blood pressure and weighing and both districts of Orissa reported nearly 90% for both activities - as it is indeed for all the other components of antenatal care except the last three and on counseling where all districts do poorly. Thus micro - planning for institutional delivery in the spirit and substance of what it means and any form of counseling is the weak spot everywhere. On quality of care as measured by the measurement of blood pressure some of the high performing districts like Morena (33%) and Garhwa (50%) do poorly.

Curiously, while many districts such as Hanumangarh performs poorly on BP measurement as part of antenatal care, the numbers accessing ultrasound as part of antenatal care are high - ranging from 66% in Bageshwar and about 40% in Angul and Hanumangarh, to 32% in Koriya, There are also high Out of pocket expenditures in these districts on antenatal care. Utilization of ultrasound, often in the private sector is increasing the cost of antenatal care substantially. Of the 2759 institutional deliveries, 601 had ultrasounds done - about one in five. Of these, about 58 had three or more ultrasounds. There is clearly a major problem here that needs to be addressed.

ANC in Home Delivery cases was very low with only 40% reporting 3 or more ANCs. It was highest in Dumka with 72%, followed distantly by Bastar, Raigarh and Koriya with 58%, 52% and 45% respectively. For other districts it was less than

TABLE 50
Ultrasounds

District	Base: All	1	2	3	>03	None	NA
All	2759	13.4	6.3	1.5	0.6	76.9	1.2
Madhepura	158	3.8	1.3	0	0	88	7
Raigarh	196	14.8	10.7	1	1.5	71.9	0
Koriya	236	24.2	7.2	0.4	0.4	67.8	0
Bastar	188	7.4	3.7	0.5	0	86.7	1.6
Garhwa	206	13.6	5.3	1.5	0.5	79.1	0
Dumka	170	10	2.4	0.6	0	87.1	0
Angul	299	28.1	8.4	1	0.7	61.9	0
Nabrangpur	297	2.4	0.7	0.3	0	96.6	0
Morena	318	9.4	3.5	0.3	0.6	83.6	2.5
Hanumangarh	290	18.3	15.2	3.4	1	60.3	1.7
Kaushambhi	284	4.9	1.4	1.4	0.4	90.5	1.4
Bageshwar	117	27.4	22.2	12	3.4	33.3	1.7

Source: Phase II sample survey.

40%, dropping as low as 28% in Bageshwar, 21% in Hanumnagarh and the lowest of 6% in Madhepura. Even with such poor performance on ANCs, ultrasounds were not uncommon as 7% of the 695 beneficiaries report one ultrasound, 2% reporting 2 and 1% reporting 3 or more. Hanumangarh again has highest ultrasounds figures at 21% for one ultrasound. This is followed by Bageshwar with 14%, Garhwa with 12% and Kaushambhi with 9%. In Bageshwar another 11% and 7% got two and three ultrasounds done respectively.

Duration of stay in institution for delivery

Stay for 48 hours is considered mandatory as most complications occur in the immediate post partum period. We also include those who stayed beyond 36 hours as a slightly more practical interpretation. Of this 48 hours period, the first 24 hours is more critical. The actual duration women stayed is given in the table 51.

This norm of 48 hours stay post partum (with an interpretation of over 36 being adequate) was achieved in only 19.8% of the 2759 institutional deliveries. Another 24% stayed 12 to 36 hrs. (10% between 24 and 36 hours). As many as 54% did not even stay for 12 hours and this is the group we are most concerned about - for they are not fulfilling minimum quality norms for complete effectiveness of institutional delivery. About 22.5% leave within 3 hours. Only in Angul, Koriya, Raigarh do more than 50% stay for more than 12 hours - in all other districts the performance on this score is less than the group average.

We tried to probe the reasons for early discharge with a multiple response question. If we categorize the responses into supply side - where the facility authorities are perceived as asking them to leave and demand side where the choice of leaving for home was keen by the woman or family, some interesting findings emerge.

On the supply side 57.8% state they were discharged, 10% state they were asked to go and 7.6% said they were not asked to stay, that they assumed they needed to leave as no other instruction was given.

Even given over laps - the impetus to leave from the institution was about 75%. If we assume that asked to go and discharged is a complete overlap then the sum is still 65% of all women had been actively discharged. The sum of demand side percentages is 44.1%. We also note that responses such as not being comfortable, no one to take care, and "unsafe" were also supply side issues - but we classified them with demand side only to indicate that it was not active discouragement.

On the demand side – those who said "I decided to go" as family wanted to leave was 26.4%, as children

TABLE 51
Duration of stay at the institution after delivery

District	<3 hrs	3–6 hrs	6.1–12 hrs	12.1–24 hrs	24.1 – 36 hrs	36.1 – 48 hrs	>48 hrs	NA
All	22.5	16.7	15.2	14.8	9.5	6.3	13.5	1.5
Madhepura	17.7	24.1	15.8	13.3	17.7	6.3	4.4	0.6
Raigarh	2	4.6	13.8	14.3	5.6	11.7	45.4	2.6
Koriya	6.4	5.5	11.4	30.5	12.3	9.3	21.7	2.5
Bastar	32.4	14.4	14.4	3.7	8.5	10.1	15.9	0.5
Garhwa	46.1	24.3	12.6	3.4	2.4	1.9	9.3	0
Dumka	37.6	21.8	12.9	5.9	12.9	4.1	4.7	0
Angul	14.7	10.7	13.7	36.5	10.4	4.7	5.6	3.7
Nabrangpur	23.6	26.9	24.6	11.1	5.1	3.4	0.9	4.4
Morena	24.8	15.7	10.4	7.5	19.8	7.2	13.8	0.6
Hanumangarh	24.1	17.9	6.2	5.9	9.7	10	25.7	0.3
Kaushambhi	23.9	17.6	26.1	22.5	4.6	2.1	2.9	0.4
Bageshwar	20.5	19.7	21.4	14.5	1.7	5.1	17.2	0

Source: Phase II sample survey.

TABLE 52
Reasons for leaving the institution before 48 hrs

District	N: who left befor 48 hrs	Asked to leave by staff (shortage of beds)	I wanted to go- not comfort-able	I wanted to leave- not safe	My family wanted to leave	Was dis-charged	No one to care	No one asked to stay	Transport was waiting	Had to attend to children at home	Death of infant	Others	NA
All	2346	10	5.5	1.2	26.4	57.8	3.5	7.6	1.5	6.8	0.3	0.9	8.6
Madhepura	150	20.7	8	0.7	19.3	22	3.3	15.3	1.3	8	0.7	0.7	15.3
Raigarh	102	2.9	2.9	1	34.3	40.2	3.9	2	1	4.9	1	1	15.7
Koriya	178	2.2	4	1.7	21.9	58.4	1.1	2.8	0	4	0	0	12.4
Bastar	157	2.5	1.9	0	37.6	42.7	0.6	8.3	2.5	7	0.6	0.6	17.8
Garhwa	187	3.7	2.1	0	10.2	75.4	2.1	7.5	0.5	2.1	0.5	0.5	5.9
Dumka	162	4.3	1.2	0	30.2	87	3.1	13	1.9	1.9	0	0	5.6
Angul	271	4.8	10	1.1	33.2	65.7	1.1	1.8	0.7	2.6	0.4	0.4	3.7
Nabrangpur	281	3.9	3.2	1.1	56.2	56.6	3.2	5.3	0.4	13.2	0	1.1	3.6
Morena	272	27.9	7.7	2.9	13.2	54	5.9	13.6	7.4	5.1	0	1.5	8.5
Hanumangarh	214	3.3	5.6	0	28	61.7	0	7.5	0	4.2	0	0.5	10.7
Kaushambhi	275	23.3	4.8	2.5	6.5	68.7	10.2	6.2	0.4	13.8	0.4	1.1	6.5
Bageshwar	97	7.2	16.5	1	28.9	23.7	4.1	11.3	0	13.4	0	4.1	9.3

Source: Phase II sample survey.

at home was 6.8, as I was not comfortable was 5.5%, as no one to care was 3.5%, as I felt unsafe was 1.2%, as transport was waiting was 1.5%, and death of infant was 0.3%. As many as 9.5% did not answer.

Why do facilities discharge patients so rapidly? It is difficult to generalize. Possible reasons include lack of beds for further women streaming in, or provider reluctance to keep women and baby overnight. It is useful to study the pattern of reasons district by district and compare with phase I and work out the explanation. Active discharge is much more in the high performance districts of Morena, Angul, Hanumangarh and Kaushambhi – though it is also high in some of the low performers like Madhepura - who also have severe bed shortages even for the relatively lower case load.

Place of delivery

Over 88% of women reported that they had delivered in the labour room, 6% had delivered on the floor and 3.4% in the operation theatre and others on a bed in the ward or corridor. Of those who delivered in the labour room, most had delivered in the labour table. Deliveries on a bed instead of the labour table in the labour room were highest in Angul (21), Garhwa (28), Bastar (39), Koriya (24), Raigarh (30) and Bageshwar (49) and Madhepura (22). This is not necessarily a problem and even in these districts, most deliveries were reported as taking place on the labour table.

Deliveries on the floor are a problem, especially as the care giver would find it more difficult to help. This was reported from all districts except Dumka and Bageshwar. 46% women in Kaushambhi and 5% of women in Madhepura, and 4.8% in Bastar about 2.7% in Angul reported this. In the other districts it was less than 2%. We also need to read this along with the finding of 38% of deliveries done by dais in Kaushambhi and 13% in Madhepura.

6 The Subjective Dimension – User Satisfaction

When we asked the women who had an institutional delivery whether they were planning another child and if so, would they choose the same institution for delivery, again only 170 women out of 2759 said they would not do so. The most common reason was that they were not satisfied with the treatment given–76 said so, and an almost equal number said that they were not satisfied with the amenities available in the institution. An equal number had economic reasons not affordable or having to purchase drugs from outside. Highly dissatisfied with services or unable to afford/access, was about 11 who also said that they would not opt for institutional delivery and

TABLE 53
Where in the hospital did you deliver

District	Bed in labour room	Labour table in labour room	Operation theatre	Bed in ward	Bed in corridor	On the floor	Others	NA
All	17	71	3.4	0.8	0.1	6.1	0.5	1.1
Madhepura	22.2	70.3	1.3	0	0.6	5.1	0.6	0
Raigarh	29.6	58.7	9.2	0	0	1	0	1.5
Koriya	23.7	66.9	5.9	1.7	0	0.4	0.8	0.4
Bastar	39.4	54.3	1.1	0.5	0	4.8	0	0
Garhwa	27.7	61.7	7.3	1	0	1	1.5	0
Dumka	4.7	94.7	0.6	0	0	0	0	0
Angul	21.4	67.9	3.7	2.3	0	2.7	0.6	1.3
Nabrangpur	9.4	85.5	2.7	0	0	0.3	0.7	1.3
Morena	1.3	90.6	0.3	0	0.3	2.2	0.3	5
Hanumangarh	3.8	90.7	4.1	0.3	0	0.7	0	0.3
Kaushambhi	6	47.5	0.4	0	0	45.5	0.4	0.4
Bageshwar	48.7	35.9	8.5	6.8	0	0	0	0

Source: Phase II sample survey.

would still prefer home delivery. These are modest figures, given the huge problems in quality noted in the phase I of this study and even in terms of quality of care in the second phase.

Then why do women choose institution delivery?. This is difficult to probe. In the phase I study when asked as part of the qualitative inquiry the three most common reasons were:

a. It is safer (suraksha).

b. The services are available/accessible (yahan suvidhayen mil rahe hain).

c. Take some rest at the time of child-birth- there is much work at home (Kuch aaram kar loon).

When asked about money, the respondents reported that it "helped with the costs, we do not have to save money for it" When asked how they would react if the money were not given, many said they would still go, but some said that they would be unable to go, as it costs too much. Only rarely were reasons such as continuing with the tradition of home delivery or an unwilling family, given.

We also explored the reasons for choice of institutional delivery in the sample survey, converting the responses of the qualitative phase into a multiple response question, since most women offered more than one reason. The responses are given in the Table 53.

"Suraksha" and "Yahaan aana Suvidajanak hain" are the major reasons - 76% and 32% respectively. In fact suraksha or safety was cited in over 90% in most districts, with a low of 5.1% in Nabrangpur, 69% in Madhepura and 76% in Garhwa. When it came to accessible services the group averages would have been in the twenties but for a 91% response in Nabrangpur. The way this latter question is administered and the responses were interpreted implies that the institutional delivery was seen as both accessible and as leading to a safer child birth.

The money provided was a factor in about 51% of the women, this being most so in Nabrangpur, Orissa (93%), and Madhepura (70%). Given that the highest out of pocket expenses were reported from these districts, this could be interpreted as a rational choice related to reducing risks of mortality and morbidity, with money playing an enabling role, rather than as a behavior change induced by money.

Other reasons, offered by a minority included ASHAs escort, Doctors advice, complications in previous or index pregnancy, and past positive experience.

Summing up

1. Protocols of care were not in use in most facilities visited. Misuse of oxytocin was a significant problem in many districts, but thankfully not in all. Irrational choice and use of antibiotics and IV fluids was also a problem. Even on essential newborn care and ante-natal care, care as per protocol is often not followed - and a number of complications occur that could have been prevented by quality care in the normal pregnancy and child-birth.
2. There have been significant advances made in the reporting systems - but recording systems have lagged behind. Use of this information for planning and monitoring is also limited.
3. Systems of cleanliness, hygiene and housekeeping as well as biodmedical waste management are under-developed. There is an understanding that cleanliness is a function of motivation and supervision alone, often failing to recognize the organization and management processes required in a fair size hospital to manage this efficiently. It is only now that biomedical waste management is recognized to be more than common sense and training and systems are being put in place. But this is required for all aspects of cleanliness, hygiene and housekeeping.
4. Staff behviour, security from stray animals, arrangements for privacy, promptness of care on arrival - are all dimensions where in a significant percentage of facilities there are large gaps. There is no clear system in place of recognizing these gaps and acting on them.
5. Duration of stay in facilities is a resultant of transport access, comfort levels in the facility and of pressures of work at home. At this point of time only about 14% of mothers staying for more than 48 hours, and using a more relaxed criteria of 24 hours only one thirds of women would be staying in the facility for at least 24 hours.
6. Despite all the problems, subjective satisfaction of the user is very high. The poor want services, they need services. For most

TABLE 54
Reasons for institutional delivery

District	Consider institutional delivery safer	Institution was accessible	Money was provided under JSY	ASHA accompanied that gave confidence	Previous child was born here	Had some complications in the previous pregnancy	Recommended by ASHA/ANM/ doctor	Had complications during this pregnancy & was referred	Family's decision	Other	NA
All	75.7	32	50.8	18.1	5.3	1.7	8.2	1.6	13.4	0.7	0.9
Madhepura	69	7.6	70.3	17.1	3.8	0	10.1	0	6.3	0	3.2
Raigarh	92.3	25.5	26	11.7	3.6	0.5	9.7	0.5	12.8	0.5	0
Koriya	81.4	14.4	27.5	17.8	5.5	3.8	7.2	1.7	22.9	0.4	0
Bastar	85.6	25.5	39.4	10.1	5.3	2.1	12.8	4.3	16.5	1.5	2.1
Garhwa	76.2	6.3	30.6	4.4	3.4	1.9	3.4	4.9	18	0.5	0
Dumka	92.9	37.1	54.1	22.9	7.6	1.2	3.5	1.8	17.6	1.2	0.6
Angul	73.9	24.4	61.9	36.1	8.7	2.7	23.4	0	24.1	1	2
Nabrangpur	5.1	91.2	93.3	42.8	5.1	0.7	3	1	7.7	0	0.3
Morena	91.2	47.2	63.5	10.7	9.1	0	3.1	0	6	0.3	1.9
Hanumangarh	89.7	22.1	48.3	11	5.2	3.8	6.2	4.5	20	0.6	0
Kaushambhi	82.7	29.6	47.2	10.2	0.7	1.4	9.9	0	1.1	0.4	0
Bageshwar	93.2	18.8	6	8.5	2.6	2.6	1.7	0.9	6	3.5	0.9

Source: Phase II sample survey.

quality is important - but not the limiting factor. And they want it not because of the money but because they are convinced that the pregnancy in the institution is safer and is also seen as a place of rest. If they are enabled by JSY to afford these services and if the doors of these facilities have opened up to them, they come. If there is help at home to take care of children and other household chores, and a companion in hospital is available, they stay. The biggest contribution of JSY is in that it has put pressure on the public health facility to open its doors wider, and that it has signaled to the women that they can use it.

Recommendations

1. Proper recording formats at the facility level need to be put in place – case sheets, delivery registers with columns for recording maternal and newborn complications, operation theatre and family planning registers. These would help ensure collection of required and reasonably accurate data reporting in the HMIS. This must be seen as an essential part of supervision.
2. Protocols of care should be printed and liberally available and replaced regularly at every facility. Monthly meetings should review use of this handbook and develop innovative ways to ensure that providers read the book and follow these protocols. Since these are senior professionals, there would be contestation of protocols and technically competent professionals should be available to explain the logic of the protocol to each doubting professional. Mere administrative orders would not be enough.
3. Clinical supervision - as distinct from administrative supervision - should be institutionalized. Such supervision merges seamlessly with on the job training and to kick start this a separate team of supervisors could be brought in - with support from suitable NGOs, not for profit, professional or management agencies. In the course of a year or two internal capacity for clinical supervision to adhere to clinical protocols can be institutionalized.
4. Data from private sector facilities must be included into the HMIS data base. For mission hospitals and others where a large amount of RCH work is done, a separate unit needs to be available, and the data recorded on par with a CHC or DH.
5. Death reviews, especially institutional death reviews, including of those who were referred or left in a critical condition should be mandatory for every facility.
6. Every hospital should document what it can do on a minimum set of processes which are declared as essential for quality of care, and then record whether it is doing this. This should be accompanied by internal reviews, and external supervision and certification, to ensure that this is adhered to. This quality management system needs to be in place in every state.

SECTION-VIII

Referral Transport Models

The availability of transport to bring the pregnant woman from the house to the facility once she goes into labor, and to transport her during an emergency from a primary care facility to a place where emergency obstetric care is available, is one of the most important determinants of maternal mortality.

For such a service to be effective, it must be assured, be available within 20 to 30 minutes of need, it must be affordable, preferably free of charge and it must be able to reach the destination within an hour of the recognition of the complication.

Until the time of the end of the RCH-1 (2005), the main focus was to provide a fund for referral transport which was placed with panchayat or the health facility for covering the cost of a private vehicle. This was merged with the National Maternity Benefit Scheme and it was precisely through this merger that the JSY quantum of funding was estimated. However, though not a major part of the RCH-II design, the recognition that a demand side financing package was not enough, set in soon after, thanks to the flexibility given to states under NRHM to plan their own initiatives and the success of EMRI, Andhra Pradesh highlighting this possibility. Though subsequently beset by problems that it has still not fully recovered from, the EMRI brought the public financing of an emergency response system that also addresses pregnancy transport into the realm of what is possible and desirable.

Under NRHM, the states have developed several models of referral transport for obstetric emergencies. In the 24 districts studies in these eight states, the models seen were:

a. The 108 emergency transport facility operated by GVK Emergency Management Research Institute (EMRI) in Uttarakhand, Rajasthan and MP.
b. The Janani Express, operating in Orissa, Chhattisgarh and parts of MP.
c. Local Public Private Parternship (PPP) arrangements: Bihar.
d. Facility owned and facility based ambulance: Uttar Pradesh, Jharkhand.

a. **EMRI** is a state wide emergency transport facility, promoted as a public private partnership although it is more in the nature of a management contract since almost 100% of costs are from the government. The EMRI management share is only 5%. EMRI has a centralized call centre that receives calls from across the state with a toll free number "108". The ambulances have sophisticated and advanced life support systems (defibrillator, ventilator, oxygen, emergency drugs and supplies) and the objective is to provide care en route even before reaching the facility. The system is managed by teams at state, district levels and in the ambulances, where there are two Pilots (drivers) and two Emergency Medical Technicians each of whom operate in two shifts of 12 hours each. The 108 ambulance is completely free to the user and covers pickup from home and transfer to a facility for institutional delivery. This study examined this scheme in Bageshwar district at the district hospital. 38% of women delivering at the DH had used EMRI to reach the hospital. Utilization of EMRI ambulances decreased with increasing distance from the hospital. 80% of women who utilized EMRI ambulances came from within 40 kms of the hospital. Those who came from longer distances used other public transport

or hired vehicles. As a rule the EMRI does not cover any second referral, but in Bageswar it did. In Bageshwar, referrals from one facility to another were also provided free of cost by EMRI ambulances but not for the distances were over 40 km it did not do so. In Dehradun district, EMRI ambulances were also very popular. Nearly 40% of all transport episodes with EMRI have been for delivery cases.

The main issue with this mechanism of transport, from the public health viewpoint, is that its coverage is much better in urban and peri-urban areas and for those on the highways, and much less in more remote and rural areas. Often the EMRI would travel to a pick up point, pre designated and the mother has to reach that point. The other issue is the high cost. It is important to consider that the cost of travel for an EMRI trip is estimated anywhere from Rs. 400 to a high of Rs. 700, but if made by local transport for a distance of 30 kms it would be Rs. 50/- an amount which could be paid out of the JSY fund for referral transport. The advantage is that every ambulance has a trained paramedic and that the service is not limited to obstetric emergency alone.

There is a large section of the patients that reach the facility without the assistance of EMRI for one reason or another, and these women spend over 2000 rupees on the transport alone. To save costs often families keep the transport waiting, and rush back in the same vehicle after delivery, at a time when the risk of complication and death is high.

b. **The Janani Express** is a decentralized district/ block level PPP model, funded mainly from JSY and RKS funds. There is a call centre which is the co-ordinating unit to control vehicles, track calls received by drivers, monitor that calls are attended to and drivers reach their pickup points. There is a landline number provided but it is not toll free. Ambulances are generally placed at BPHCs, CHCs and DH, and additional ambulances stationed at facilities with a heavy case load. These are Jeeps and Maruti vans that have not been converted as ambulances. They do not carry any sophisticated technology and are manned by just one driver on a 24 hour shift, not trainined in delivery care or first aid. Drivers however are provided mobiles to take calls. In Guna where the scheme was piloted, about 40% of institutional deliveries in the district are reported to have been transported by these ambulances. This is a cost effective model as it uses existing resources to provide the transport facility. It was functional in the districts visited but not as effective. The Janani Express in Barwani district of MP was, for example found to be less effective, with only 3.5% of deliveries in the DH having been carried by Janani ambulances. There was also some concern that the service was not always reliably available.

In Nabrangpur district of Orissa, the Janani Express ambulances had been recently introduced, with one ambulance at block level. The Janani Express was found to be popular with communities. In one new PHC visited – Sunabeda, all 38 women delivering at this facility during the last three months, had arrived by Janani Express. The client does not have to pay for the cost of transport, which is paid from the JSY allocation for transport, and any excess is met from the RKS funds. Interviews with beneficiaries showed that women did not have to spend out of pocket for the ambulance.

c. **Local PPP:** Bihar attempted a system of allowing the RKS to contract in a local private vehicle owner to provide emergency transport at a fixed rate. The patient had to pay, but at least the service was available. There was no exemption from payments, either for the poor or for the pregnant woman. It worked. But the terms of the contract were too difficult for the provider and in many places it could not be continued. Even awareness of this system is low. However in some CHCs this service is still active. There were ambulances at block level facilities but these were seldom used for referral transport and patients were unaware about these ambulances. There is a scope to build on this, and in a sense the Janani express scheme is a development of this approach.

d. **Facility Ambulance:** Ambulances located at various facilities particularly the block PHCs/ CHCs and District Hospitals are to be available for patient transport. As a rule, they are used for transfer of patients for referral from that facility to a higher centre and in most instances

patients have to pay for their use, usually at subsidized rates which are less than the cost of hiring a private taxi. However the availability of these is unpredictable and often patients are asked to make their own way. Thus in Lohardaga, sometimes they would be sent to the DH on the CHC's ambulance and more often, they would be paid a sum as transport money and asked to hire their own tempo to go to the district hospital. In no state was it customary/possible for the ambulance to go to a patient's residence.

In UP, there were no ambulances available in Sitapur district except at Sidhauli CHC. Here there were two ambulances for emergency transport and were said to be well utilized. In Bijnor there were ambulances at the DH and two of the CHCs. The ambulance at the DH was said to be available at Rs. 5/km.

The extent of use of different modes of transport and the problems faced in referral transport were explored in great detail in phase II of the study.

1. Referral Transport - Phase II Findings

Mode of transport used

Of the 2759 women who opted for institutional deliveries and were JSY beneficiaries, about 53% opted for a commercial vehicle hired then and there for the trip and another 16% had made their own arrangement with a private vehicle owner. 6% used unsuitable options- cycles, rickshaws and horse carts etc. Private ambulance and a paid government ambulance both accounted forless than 1% each. About 5.8% did not need a vehicle as the facility was close and 0.8% had not recorded an answer. The assured free referral transport system (EMRI/Janani Express/other state run ambulances) which is the goal was the preferred mode of transport in 13%.

Variations across districts are very important to study- more so in this dimension than any other. If we look at those who said that they walked and facility could be so accessed- then we need to assume that a woman in labour made that

Referral transport in Nabrangpur

Nabrangpur is the only one of the twelve districts where the government organized referral transport was utilized by nearly 70% of all women who went to institutions for delivery. The set of innovations through which the district was able to ensure this level of usage includes ready availability, focused publicity, no costs to the patient, and universal access. In the Janani Express scheme as this is called the district enters into partnership with private vehicle owners, who are locally based to provide transport for pregnant women on call. The vehicles are located at the district hospital, CHCs and in 22 of the 32 peripheral PHCs. Vehicles stationed int eh PHC are called the Mini Janani express. The round trip (home to institution and back) service is available free of cost to all women who require delivery services, for those who have complications during pregnancy or in the post natal period, irrespective of class or social background, for sick newborns and children.

The features that likely contribute to its effectiveness include:

- Zoning of locations, such that there is one vehicle in every facility and within half an hour distance from most villages. The vehicle is positioned at the facility and the driver can be reached by a mobile number.
- Ensuring sufficient density of vehicles so that there are atleast four to five such vans in each block.
- Cashless service to the beneficiary so that they are not required to make any payments. The Rs. 250, which is the transport component of the JSY is deposited into the Rogi Kalyan Samiti account.
- Focused publicity through ensuring that the ASHA is actively involved in increasing awareness among the beneficiaries and enabling their access to the vehicle when required.
- A financing mechanism that enables a blended payment of a fixed monthly rent of Rs. 13,500 (Rs. 10,000 for the mini Janani express), with reimbursement for recurring costs and fuel charges that is sufficient incentive to retain interest in the programme. Fuel costs are reimbursed @ Rs. 64 for 10 kms.

TABLE 55
Mode of transport

District	Not required facility was close	Cycle/ Bullock-cart/ Rickshaw/ Horse craft	Owned/ arranged vehicle	EMRI 108/Janani Express/Govt. free ambulance/ State specific free service	Tempo/Bus (other public transport)	Private hired vehicle (care, jeep, tractor, bike)	Ambulance vehicle-private	Paid govt. ambulance	Other	NA
All	5.8	5.7	15.8	13.2	4.8	52.9	0.7	0.9	0.2	0.8
Madhepura	2.6	24.7	22.8	0	17.1	29.1	0.6	0	0	3.8
Raigarh	6.1	6.1	21.9	3.1	1.5	59.7	0	0.5	0	1
Koriya	2.9	2.1	20.3	15.3	6.8	50.8	0	0.4	0	1.7
Bastar	10.1	4.8	26.1	3.7	0	53.7	0.5	0	0	1.1
Garhwa	2	2.4	7.8	0	8.7	78.6	0	0	0.5	0
Dumka	1.2	13.6	10	0	3.5	71.2	0	0	0	1.2
Angul	0.3	0.3	3.3	21.7	1.3	71.6	0.3	0	0.3	0.7
Nabrangpur	1.3	0.7	1.3	69.7	0.7	20.5	4.4	1.7	0	0
Morena	6	3.1	14.5	0	7.2	68.2	0.6	0.6	0.6	0
Hanumangarh	15.1	4.5	16.9	2.4	2.1	58.6	0	0	0	0
Kaushambhi	4.6	12.8	30.7	0.4	9.2	37.7	0	5.3	0	0
Bageshwar	17.9	1.8	26.5	29.1	1.7	20.5	0	0	0	3.4

Source: Phase II Sample survey.

TABLE 56
Did that vehicle come

	N- who called any transport	Yes	No	NA
All	2256	96.7	1.6	1.7
Madhepura	142	94.4	1.4	4.2
Raigarh	142	97.2	0	2.8
Koriya	193	97.9	1	1
Bastar	158	100	0	0
Garhwa	181	99.4	0.6	0
Dumka	151	98	1.3	0.7
Angul	292	94.2	5.8	0
Nabrangpur	288	99	1	0
Morena	240	90.4	0.8	8.8
Hanumangarh	229	100	0	0
Kaushambhi	156	96.2	1.3	2.6
Bageshwar	84	94	4.8	1.2

Source: Phase II sample survey.

choice voluntarily. This is reported most in the hilly terrain of Bageshwar- 18%- where there is clearly a different concept of distance and walkability- and the lack of any other option. The next highest is tribal Bastar for which the same logic applies. But in Hanumangarh it is likely to be high density of villages and larger numbers of facilities within walking distance. It does not correlate with more sub-centres doing delivery- except in Bageshwar and Bastar where it does.

In Kaushambhi nearly 14% of all beneficiaries said they required transport but did not call for it. The highest percentage of those reporting that they did not need transport was from Kaushambhi (31%) followed by Raigarh (28%), and Bageshwar (23%).

EMRI is well established in Bageshwar but still reached only 29% of the pregnancies there.

In Nabrangpur the reach of the Janani express model is 70%. This is very good performance for the lowest cost option and one needs to quickly study and understand this result further. The other district in Orissa, which has an easier terrain and less dispersion this demonstrated only a 22%

TABLE 57
Time taken for the vehicle come

District	N- Who reported that vehicle came	<30 mins	30- 60 mins	1–2 hrs	>2 hrs	NA
All	2185	68	21.9	6.8	2.7	0.6
Madhepura	134	59	20.9	11.9	5.2	3
Raigarh	138	66.7	26.1	5.8	1.4	0
Koriya	189	63	24.3	7.9	4.7	0
Bastar	158	67.1	20.9	7	4.4	0.6
Garhwa	180	63.3	27.2	8.3	1.2	0
Dumka	148	52.7	37.8	6.1	3.4	0
Angul	276	72.8	18.1	5.8	2.9	0.4
Nabrangpur	285	53.3	34.7	9.5	1.8	0.7
Morena	218	71.6	13.8	8.3	5.1	1.4
Hanumangarh	229	82.5	16.2	1.3	0	0
Kaushambhi	150	94	5.3	0.7	0	0
Bageshwar	80	72.5	8.8	12.5	3.8	2.5

Source: Phase II sample survey.

TABLE 58
Time taken from the house to reach the institution at the time of labour

District	0–30 min	30 min–1 hr	1–2 hrs	>2 hrs	NA
All	50.1	34.9	10.1	4.2	0.7
Madhepura	26.6	48.1	15.2	7.6	2.5
Raigarh	57.7	28.6	11.2	2	0.5
Koriya	54.7	36.4	7.2	1.3	0.4
Bastar	51.1	34.6	7.4	6.4	0.5
Garhwa	33	43.2	10.2	13.1	0.5
Dumka	35.3	39.4	15.9	9.4	0
Angul	41.1	45.8	11	2	0
Nabrangpur	53.9	32	11.8	2	0.3
Morena	38.4	45	13.2	3.1	0.3
Hanumangarh	71	23.4	3.4	1.4	0.7
Kaushambhi	70.4	23.6	4.6	0.4	1.1
Bageshwar	54.7	11.1	17.9	13.7	2.6

performance. This phenomenon needs to be studied further.

In Madhya Pradesh both Janani express and EMRI are in operation, but in Morena no use of these systems is reported. We need to understand why these systems have not reached and whether the Janani Express is being perceived as indistinguishable from local commercial transport which provides 68% of the transportation.

The health and financial costs of the mode of transport

The next question we consider is whether there is a cost to the mode of transport used- whether in terms of delay, or in terms of financial costs or in terms of quality of care with respect mainly to stay in hospital. How soon after the onset of labor pains was the vehicle called- by those who wanted to call one? In most districts over 81% of women reported calling the vehicle within half an hour of onset of pains, and about 11% within an hour. Clearly there is not much delay in this aspect- at least as reported by women themselves. Only in Bageshwar, in 63% of cases vehicle was called within half hour, 10% called it after one hour and the 14% waited for over two hours. Why this delay where urgency of calling, given the hilly terrain, is most important. Perhaps the decision to shift to institutional delivery is taken later.

Failure of the transport in response to call is only about 3.3%. The highest failure to arrive was in Angul and Bageshwar at about 6% each. This means people knew whom to call and had possibly prepared for it. However, where there was no possibility of calling any vehicle, or it came too late or it did not arrive at all, it is likely that the woman would have delivered at home.

In 68% of cases the response to call for transport was met within 30 mins, and in 22% it was less than an hour. But it was over one hour in 7% and over two hours in 3% cases which is really an unacceptable level of delay, the second and avoidable delay. The gradient of "over one hour" delay across districts was as follows: Madhepura- 17%, Bageshwar 16%, Morena 13%, Koriya 13%, Bastar 11%, Nabrangpur 11%, Garhwa 10%, Dumka 9%, Angul 9%, Raigarh 7%, Hanumangarh 1% and Kaushambhi 1%.

The second part of what is known as the second delay - is the time taken on travel. The Table 58 is a measure of this delay in our sample.

On the whole 14.3% of women had a delay above one hour which for access to emergency obstetric care is an unacceptable level and of these 4.2% had an over two-hour delay. Of course here we are measuring access to any site of institutional delivery- which by the norms should be within 30 minutes. Another 35% had a 30 minutes to one hour delay. About 50% reached the facility

TABLE 59
Did you keep the vehicle waiting at the health facility

District	N- Who used private vehicles	Yes, vehicle waited and dropped back home	No	NA
All	1565	28.4	70.1	1.5
Madhepura	76	19.7	77.6	2.6
Raigarh	121	14	84.3	1.7
Koriya	122	15.6	82	2.5
Bastar	102	41.2	58.8	0
Garhwa	164	43.3	56.7	0
Dumka	141	29.8	69.5	0.7
Angul	216	19	80.1	0.9
Nabrangpur	79	35.4	62	2.5
Morena	223	48.4	51.1	0.4
Hanumangarh	170	22.9	77.1	0
Kaushambhi	126	11.1	84.1	4.8
Bageshwar	25	32	52	16

Source: Phase II sample survey.

within the norm of 30 minutes. The gradient across districts of the second component of the second delay being over one hour is as follows: Bageshwar 32%, Dumka 25%, Garhwa & Madhepura 23%, Morena 16%, Nabrangpur 14%, Bastar- 14%, Angul 13%, Raigarh 13%, Koriya-9%, Kaushambhi 5% and Hanumangarh 5%.

There is also a substantial delay in reaching the facility where services are finally accessed due to second referrals. This has been discussed in the section on complications.

One of the issues with transport is that the family is not assured of a drop home facility. Thus families are forced to keep the vehicle waiting and pay the requisite charges, and those who cannot afford to do so, use only a one way service, or hire another vehicle to take them back to the facility. This also creates a pressure for them to leave within 6 hours, often within 3 hours- as the vehicle if privately arranged will not wait or because it would cost too much. This has therefore a huge health cost which is not counted in the usual three delays approach. Over 28% of women made this choice. The gradient of those who kept the vehicle waiting was Morena- 48%, Garhwa- 43%, Bastar- 41%; Nabrangpur 35%, Bageshwar 32%, Dumka 30%, Hanumangarh- 23%, Madhepura 20%, Angul 19%, Koriya- 16%, Raigarh – 14% and Kaushambhi- 11%.

The financial costs of transport are also be very high. In over 91% of instances when averaged across the districts, the 1697 women who paid, did so out of their pockets. In only 6.2% did the ASHA make the payment- and most of these came from Kaushambhi (30%), Angul (11%) and Nabrangpur (8%). Otherwise ASHA making the transport payment is an exception rather than the rule. This is not surprising- for in most places the Rs. 250 of the ASHA package is either not paid, or paid to the family or it is given as an undifferentiated package of Rs. 600. The differentiation of the ASHA package into three components is not understood at most levels of implementation.

About 42% paid less than Rs. 300 across districts. Nearly 50% of women in Orissa, Chhattisgarh and Jharkhand appear to be paying over Rs. 300, with nearly one quarter in Bastar and Raigarh reporting payments between Rs. 600 and Rs. 1000. At the higher end 22% in Raigarh, 10.4% in Garhwa, 9% in Nabrangpur & Dumka, 7% in Bageshwar and Hanumangarh and 5% in Bastar, pay over Rs. 1500 for the transport alone!! (In Bageshwar 15% did not answer this question). It can clearly be seen that the JSY fund is so often recovered to enable the woman to be able to confidently spend and come to the facility- in the belief that she would later get reimbursed.

Recommendations

1. There is a need to develop two or three model plans – including the financing package–for organizing referral transport services. One where the state is able to afford a comprehensive emergency response system for covering all emergencies including obstetric emergency and another where it would prioritize obstetric and newborn care alone.
2. There is a special effort needed to map out those areas where home deliveries are high and persisting – mainly due to lack of transport and prioritize these areas for the development of emergency transport systems.
3. There is a need to note the high differentials between what various women have to pay to travel to the facility. A fixed reimbursement for all would not help those marginalizedareas where travel support is most required.
4. Second referrals should mandatorily be covered by the hospital.
5. In all areas where distances or costs are a problem- most clearly evidenced by keeping the vehicle waiting- the drop back home should be mandatory.
6. Free Referral transport cover needs to include transport for antenatal and post natal complications and sick newborns and all under 5 children.

SECTION-IX

The Role of Asha

The ASHA has a major role to play in the JSY scheme. These roles include:

a. Promoting choice of a health facility as the preferred place for women to have a safe childbirth.

b. Escorting the pregnant woman to the health care facility for her delivery, and if possible staying with her till discharge and bringing her home.

c. Mobilizing pregnant women to attend antenatal clinics for antenatal care (four times during pregnancy) and for post natal care.

d. Promoting appropriate health behaviors and health practices in relation to pregnancy and for newborn care.

The ASHA is incentivized for these functions and indeed this is the major performance based incentive that was planned for this cadre. This incentive which is also called the ASHA incentive package of the JSY is a sum of Rs. 600 rupees for any institutional delivery. This " package" is by rules composed of three parts:

a. **The Incentive component:** Rs. 200 is her incentive for promoting institutional delivery. This can be claimed if there is any evidence of her having promoted it- usually when the pregnant woman is registered, the ASHA's name should be written in, or the ANM should testify on a slip of paper that the ASHA was the motivator. This is a non transferable component- if ASHA does not do the motivation, this component package cannot be paid to anganwadi worker or dai. However many states did permit it to be transferable, and this was the cause of a lot of tension between dais and anganwadi workers and ASHAs in the early part of the programme. Even now Rajasthan allows this, but since the ASHA has a fixed payment there this is not causing too much conflict.

b. **The Transport Component:** Rs. 250 as transport costs of which the ASHA pays for the transport of the pregnant woman. She could use it for her transport also, but that is not the intention. This is a transferable component. If the pregnant woman or her family pays for the transport the transport component can be paid to them. If there is a supply side transport tie-up this amount is deducted from the package.

c. **The Transaction Cost Component:** Rs. 150 to ASHA only if she escorts the pregnant woman to the hospital and stays with her. This is a non transferable component.

In the phase-II study we looked at these different roles of the ASHA. It is difficult to judge the ASHAs role in promotion, as even if she did not directly convince the pregnant woman, her health education to the community and the examples others set, or even her just being there have an influence. Thus ASHA no doubt played a positive role. But measuring her direct promotion of theJSY concept role we find that in Kaushambhi over 95% named the ASHA and only 6% named the ANM as well, indicative of the reach of the ASHA. Over all 73% women reported ASHA as the source of information on JSY, this was over 90% in Angul, Nabrangpur and Kaushambhi; 82% in Madhepura; 60–65% in Garhwa, Chhatisgarh and Morena and less than 60% was reported from Dumka, Hanumangarh and Bageshwar (lowest – 46%).

TABLE 60
Reasons for institutional delivery

District	N- Respondents who went for institutional delivery	Consider institutional delivery as safer	Institution was accessible	Money was provided under JSY	ASHA accompanied that gave confidence	Recommended by ASHA/ANM/ doctor	Due to complications in the previous/ recent pregnancy	Others	NA
All	2759	75.7	32	50.8	18.1	8.2	3.3	19.4	0.9
Madhepura	158	69	7.6	70.3	17.1	10.1	0	10.1	3.2
Raigarh	196	92.3	25.5	26	11.7	9.7	1	16.9	0
Koriya	236	81.4	14.4	27.5	17.8	7.2	5.5	28.8	0
Bastar	188	85.6	25.5	39.4	10.1	12.8	6.4	23.3	2.1
Garhwa	206	76.2	6.3	30.6	4.4	3.4	6.8	21.9	0
Dumka	170	92.9	37.1	54.1	22.9	3.5	3	26.4	0.6
Angul	299	73.9	24.4	61.9	36.1	23.4	2.7	33.8	2
Nabrangpur	297	5.1	91.2	93.3	42.8	3	1.7	12.8	0.3
Morena	318	91.2	47.2	63.5	10.7	3.1	0	15.4	1.9
Hanumangarh	290	89.7	22.1	48.3	11	6.2	8.3	25.8	0
Kaushambhi	284	82.7	29.6	47.2	10.2	9.9	1.4	2.2	0
Bageshwar	117	93.2	18.8	6	8.5	1.7	3.5	12.1	0.9

Source: Phase II sample survey.

Over 75% of women in both districts of Orissa (75% and 94%) and Kaushambhi (90%), who delivered in institutions named ASHA as the prime source of information about ANC. In the remaining districts ASHA was the prime source according to over 50% of women except in Garhwa (39.3%), Bagheswar (42%), and Hanumangarh (47%). While the ANM was also named as a source of information on ANC, the proportions were much lower than for the ASHA in every district. Adding across districts 64% of women quoted ASHA as the source of information wheres only 20% cited the ANM and only 17% cited the AWW as the main source of information. In a few districts notably Bastar and Nabrangpur it was above 50% and in all the rest it was much lower. The dai was almost never a source of information.

The reasons cited by women for opting for institutional delivery was also an important indicator of the effectiveness of the ASHA and even understanding of the JSY. The most important reason- in 76% of instances was that the delivery was safer. Monetary considerations helped in 50% and the ASHAs presence gave confidence in 18%, this was particularly high in Nabrangpur at 43%.

The functionality of the ASHA in escorting the pregnant woman is high in a sample of women who opted for institutional delivery and were eligible for JSY. This is shown in the Table 61.

It ranges from 94% in Angul to a 38% in Haumangarh with an average for the 12 districts of 67%. It is lowest in Rajasthan- where it is a fixed payment and where there are other contenders for the incentive. A similar problem exists in Morena. It is generally lower in tribal and hilly districts where the cost, time and effort of escorting was likely to be much higher. The pattern of ASHA escorting is validated in the ASHA evaluation study.

When we asked the JSY beneficiaries why the ASHA had not accompanied them- in about 40% the reason was that institutional delivery was not promoted by ASHA. In a large percentage, the ASHA was the promoter, but either she could not be informed once the labour pains started (20%) or could not come (18%). Reasons such as the ASHAs refusing was 4% and not knowing the ASHA was a mere 1.5% (or 14 instances out of 905 non escorted pregnancies). In three instances ASHA was herself going for delivery- so there was no ASHA to escort!! These are good, figures for any programme.

Clearly this component of the programme is well functional and if for genuine reasons the ASHA is not able to come neither the woman, nor the family, nor the local providers find it odd and allowing that scope for local decision making is a strength of the programme.

The question of who, other than ASHA escorted the pregnant woman is also revealing. That in

TABLE 61
ASHA escorted during the time of delivery

District	N- Respondents who went for institutional delivery	Yes	No	NA
All	2759	66.9	32.8	0.3
Madhepura	158	81.6	16.5	1.9
Raigarh	196	45.9	53.6	0.5
Koriya	236	61	39	0
Bastar	188	69.1	30.9	0
Garhwa	206	49	51	0
Dumka	170	45.3	54.7	0
Angul	299	94.3	5.7	0
Nabrangpur	297	94.3	5.7	0
Morena	318	56.3	43.4	0.3
Hanumangarh	290	38.3	61.4	0.3
Kaushambhi	284	91.9	8.1	0
Bageshwar	117	53.8	45.3	0.9

Source: Phase II sample survey.

TABLE 62
Reasons for ASHA not coming with the woman at the time of delivery

District	N - Cases where ASHA did not accompany	Delivery not discussed/ promoted with ASHA	Delivery was promoted but escort service was not needed	Escort service was needed but ASHA could not be informed	Escort service was needed but ASHA could not come	Escort service was needed but ASHA refused	ASHA was not available in the village	No information about ASHA	She herself is ASHA	Others	NA
All	905	43.2	6.2	19.8	9.6	4	8.3	1.5	0.3	0.6	6.4
Madhepura	26	26.9	0	26.9	7.7	3.8	19.2	0	0	3.8	11.5
Raigarh	105	64.8	5.7	5.7	9.5	1.9	5.7	0	0	0	6.7
Koriya	92	31.5	10.9	20.7	10.9	3.3	4.3	0	1.1	0	17.4
Bastar	58	32.8	8.6	37.9	3.4	5.2	1.7	0	0	3.4	6.9
Garhwa	105	40	1.9	39	9.5	5.7	2.9	1	0	0	0
Dumka	93	40.9	5.4	15.1	7.5	8.6	20.5	0	1.1	0	1.1
Angul	17	17.6	0	29.4	17.6	0	5.9	5.9	0	0	23.5
Nabrangpur	17	41.2	5.9	5.9	23.5	0	17.6	0	0	0	5.9
Morena	138	38.4	5.8	12.3	21	5.1	10.9	0	0	0.7	5.8
Hanumangarh	178	63.5	7.9	16.3	1.7	1.1	4	2.8	0	1.2	1.7
Kaushambhi	23	17.4	4.3	21.7	17.4	8.7	21.7	0	0	0	8.7
Bageshwar	53	15.1	7.5	24.5	5.7	3.8	11.3	13.2	1.9	0	17

Source: Phase II sample survey.

most instances husband, or mother in law or other family members or friends escorted the pregnant woman is to be expected. Then why the ASHA? In most instances when we probed this in the phase I of the study the reply was that she was able to help the family to access the health facility and gave them confidence and support. There was also many instances where it allowed the mother or mother-in- law or one other family member to stay behind to look after the other children and the housework, and cattle etc. This was a major factor in many households. That the ANM was rarely an escort and the anganwadi worker never played this role is also not surprising. What was relevant is that the dai in Hanumangarh in Rajasthan was playing the role more frequently than the ASHA did- which correlates with what we know from other studies and other responses in this study, about 40% escorted by dai as against 38% by ASHA!! When the ASHA was not accompanying the pregnant woman, it was only the family as escort but in about 15% across the 12 districts it was the dai. In Haumangarh alone the dai as escort rose to 47% when the ASHA was absent whereas it was not present at all in Orissa.

In the tribal districts of Jharkhand and Chhattisgarh some 10% of pregnancies had a dai as escort. In Kaushambhi we know that the dai was not the escort- she was already there at the facility.

We also probed in what exact ways the ASHA was of help.

The answers were very similar across the 12 districts and could be listed in order of frequency as follows:

1. Helped in getting admission – 82% (max 96 – min 73)
2. Helped in receiving treatment faster – 61% (max 91 – min 35)
3. Stayed in the delivery room – 58% (max 78% – min 6%)
4. Helped in buying drugs – 34% (max 62 – min 13)
5. Helped in getting JSY incentive – 34% (max 58 – min 8%).
6. Provided encouragement at time of delivery – 29% (max 56% – min 12%)
7. Helped in taking care of newborn child – 28% (max 39% – min 3%)
8. Helped in obtaining food – 6% (max 10% – min 0)
9. Helped in cleaning the labour room – 4%. (max 7% – min 0)
10. No role – 2% (max 8% – min 0)

The role of ASHA in facilitating payment of the JSY is emerging as a much more important role than even these figures above reveal. For example if payment is not received on time or there is no payment, the most common person to whom the community takes their grievance is the ASHA- about 5 times more frequently than to the ANM- and in about 50% of the instances.

It is worth noting that in about 54% the ASHA was allowed within the labour room and this is much more than for others. Husband was allowed in, only in 1.1% the concept of male participation in this dimension obviously has not arrived!! The dai was an infrequent presence 13% most of it coming again from Hanumangarh (37%) where they were present in the labour room much more frequently and then it was in Kaushambhi 28%. The presence of the ASHA in the delivery room correlated with a much higher incidence of breastfeeding within the first hour, except in Hanumangarh, Bageshwar and Garhwa, where it remained less than 50%. It did not make a difference to practice of cleaning or bathing the baby after birth.

In post natal visits also the ASHA has played a major role- which though not enough is remarkable considering the lack of monitoring and policy support given to this. Where ASHA has not been given the skills to make use of this huge window of opportunity despite a clear direction form the Planning commission and policy understanding, babies lives have been lost due to this and someone should be held accountable. With some minimal support the outcomes, could have been better.

ASHA's role in home delivery

We examined the role of ASHAs in providing support to women who did not opt for institutional delivery but were home deliveries eligible for JSY. We found that 47% of them were informed by ASHA about ANC check ups which is over twice as

TABLE 63
Who else accompanied when ASHA did not accompany

District	N - Cases where ASHA did not accompany	ANM	Husband	Mother/ mother-in-law	Other family members	Friends/ neighbors	Dai	AWW	None	NA
All	905	2.3	67.7	76.5	68.3	16.8	15.1	0.3	0.2	0.1
Madhepura	26	0	46.2	84.6	53.8	23.1	3.8	3.8	0	0
Raigarh	105	4.8	84.8	70.5	63.8	13.3	5.7	1	1	0
Koriya	92	2.2	75	76.1	57.6	26.1	8.7	1.1	0	0
Bastar	58	3.4	87.9	84.5	69	22.4	13.8	0	0	0
Garhwa	105	0	66.7	77.1	72.4	13.3	10.5	0	0	0
Dumka	93	0	88.2	81.7	62.4	12.9	15.1	0	0	0
Angul	17	5.9	94.1	76.5	64.7	0	0	0	0	0
Nabrangpur	17	17.6	82.4	64.7	52.9	29.4	0	0	0	0
Morena	138	0	61.6	78.3	85.5	22.5	0.7	0	0.7	0.7
Hanumangarh	178	3.4	39.9	83.7	70.8	14	47.2	0	0	0
Kaushambhi	23	4.3	69.6	52.2	60.9	13	4.3	0	0	0
Bageshwar	53	1.9	71.7	50.9	60.4	9.4	5.7	0	0	0

Source: Phase II sample survey.

frequent as ANM or AWW as informant. About 21%, most of them in Bageshwar and Madhepura (47%) reported that no one informed them about ANC check ups- perhaps because their hamlets were not covered by ASHA. Of the 695, 403 or about 58% knew of the JSY and again ASHA was the main source of information with 63%, again about twice as frequently as AWW or ANM- with other media of communication being negligible. These figures were highest in Kaushambhi ranging up to 90%. ASHA was present at the delivery in only 21% and the most common reason was that this was not discussed with her and that she was not called. Actively called but refused is still only 4% and lack of knowledge about ASHA a mere 1.3%. Those who were present helped in taking care of the baby and in one thirds also gave information about the five cleans and other hygienic measures. Only 15% of these home delivery babies were weighed and this was mainly in the districts of Chhattisgarh- where this was part of the ASHA programme. Those who were weighed were by the ASHA acting alone or with ANM and AWW. The Rs. 500 payment was received by only 95 of the 695 women and the payment was made by the ANM in over 70% and by the ASHA in 9%, staff at the PHC or block level in 19% of instance. ASHAs visited the newborn in 45% of the 695 deliveries- mostly within the first week and in comparison ANMs visits were only about one thirds as frequent.

Payment to ASHAs

The ASHA incentive package as per rules was spelt out earlier. In practice the payment follows many different patterns.

In Chhattisgarh the three way split as proposed in the rules is adhered to. The actual amounts Mitanins received were amongst the lowest- also due to low population coverage per Mitanin. This was not much of a problem in Chhattisgarh because the orientation of the programme is more towards activism. In Madhya Pradesh and Orissa it is Rs. 600 but with a sum of Rs. 250 deducted if an assured transport system was available and used. Access to transport is varied across districts. Increasingly these states are shifting to the three component approach to payment. Orissa ASHAs seem to be earning more due to efficiency of paying systems.

In Rajasthan and Bihar all of Rs. 600 is paid without any sense of the package having three components. But in Rajasthan others- notably dai and AWW - can also contest this payment. In Rajasthan actual delivery of the JSY payment to ASHA is low- and mostly the state goes by the fixed payment to the

TABLE 64
Role played by ASHA at the institution

District	N: Cases when ASHA accompanied	Helped in getting admission	Helped in receiving treatment faster	Helped in buying the drugs	Stayed in the delivery room	Provide encourage-ment at the time of delivery	Helped in taking care of the newborn child	Helped in getting JSY incentive	Helped in obtaining food	Cleaning the labour room	None	Other	NA
All	1847	82	61.3	34	57.9	29.3	28.4	34.2	6	4	2.2	0.1	0.8
Madhepura	129	96.1	69.8	40.3	45	34.9	27.9	25.6	2.3	3.9	0.8	0	0
Raigarh	90	78.9	58.9	23.3	60	22.2	11.1	12.2	1.1	3.3	2.2	0	0
Koriya	144	81.3	55.6	29.2	57.6	40.3	25	17.4	6.3	6.3	4.2	0	0.7
Bastar	130	76.9	53.8	20	66.9	36.9	26.9	11.5	4.6	20	3.8	0	0.8
Garhwa	101	76.2	41.6	12.9	5.9	10.9	3	13.9	0	1	7.9	0	3
Dumka	77	88.3	90.9	51.9	76.6	55.8	29.9	27.3	9.1	2.6	1.3	0	0
Angul	282	73.4	67	47.2	68.8	23.4	25.9	58.2	9.6	1.8	0	0	2.5
Nabrangpur	280	81.4	70.7	28.9	85	38.9	39.3	44.6	8.2	1.8	0	0	0.4
Morena	179	95	85.5	62	77.7	29.6	27.9	44.1	5	6.7	2.8	0	0.6
Hanumangarh	111	83.8	55	17.1	55	36.9	29.7	21.6	0.9	2.7	1.8	0	0
Kaushambhi	261	81.2	34.9	27.2	26.1	12.3	41	44.1	8.4	0	2.7	0	0
Bageshwar	63	74.6	55.6	30.2	36.5	25.4	12.7	7.9	4.8	3.2	6.3	1.6	1.6

Source: Phase II sample survey.

TABLE 65
Initiation of breast feeding

District	N – ASHA allowed in the labour room	<1 hr	1 hr - 2 hr	2.1 hrs - 3 hrs	3.1 hrs - 24 hrs	>24 hrs	>72 hrs	NA
All	1483	66.9	15	4.6	4.2	4	2.9	2.4
Madhepura	122	59	9	4.1	6.6	8.2	4.1	9
Raigarh	57	70.2	19.3	1.8	0	0	0	8.8
Koriya	99	67.7	14.1	7.1	5.1	2	3	1
Bastar	119	84.9	1.7	5.9	1.7	1.7	2.5	1.7
Garhwa	36	41.7	22.2	2.8	5.6	16.7	5.6	5.6
Dumka	63	82.5	4.8	3.2	0	3.2	1.6	4.8
Angul	248	64.1	23.4	2.8	3.6	5.2	0	0.8
Nabrangpur	264	82.2	9.8	3	0.8	1.5	1.9	0.8
Morena	122	67.2	15.6	4.9	5.7	2.5	3.3	0.8
Hanumangarh	79	46.8	26.6	8.9	12.7	5.1	0	0
Kaushambhi	237	57.8	19.4	5.5	5.9	4.6	5.1	1.7
Bageshwar	37	35.1	8.1	10.8	10.8	8.1	21.6	5.4

Source: Phase II sample survey.

TABLE 66
PNC visits of ASHA and ANM

District	Base: All respon-dents	ASHA			ASHA			ASHA	ANM
		<1st day	2nd - 3rd day	4th - 7th day	<1st day	2nd - 3rd day	4th - 7th day	Never	Never
All	2759	23.1	34.3	19.9	3.7	8.7	7.4	32.1	62.4
Madhepura	158	36.7	32.9	19	5.1	3.2	0	20.3	84.8
Raigarh	196	19.9	23.5	17.3	8.7	8.7	7.1	40.8	75
Koriya	236	25.4	28.8	17.8	6.8	10.2	3.4	33.5	77.5
Bastar	188	47.3	42	26.6	4.8	13.8	11.7	20.2	57.4
Garhwa	206	7.3	15	4.9	0	1	0.5	61.7	96.1
Dumka	170	41.2	19.4	9.4	2.9	4.1	1.2	40.6	61.8
Angul	299	22.7	65.2	55.9	4.7	14.4	16.7	0	0
Nabrangpur	297	36.7	49.8	12.1	6.1	18.2	19.9	0	0
Morena	318	16	19.8	6.3	0.3	4.4	1.6	52.2	86.2
Hanumangarh	290	13.1	26.6	16.6	3.8	14.1	11.7	56.6	71
Kaushambhi	284	9.9	45.1	28.5	0.4	0.7	1.1	26.1	94.7
Bageshwar	117	11.1	22.2	13.7	2.6	5.1	5.1	49.6	83.8

Source: Phase II sample survey.

ASHA Rs. 950 in all of which Rs. 500 is delivered efficiently. In Bihar it is only performance based payment delivered with reasonable efficiency by the states standards. There are considerable problems in ASHAs getting the payment.

In Jharkhand it is Rs. 600 but Rs. 250 is deducted if the transport was paid by the beneficiary. The beneficiary also does not get the transport money. Actual payment is very poor- and there are huge backlongs and non payments.

In UP and Uttarakhand, ASHAs are paid Rs. 400 per JSY beneficiary and another Rs. 200 if they stay overnight with the patient. There is some variation in interpretation even with this Rs. 400,

with most medical officers holding that it has to be paid only if she comes with the pregnant woman and assuming that in all such instances she would pay for the transport. In UP the ASHA is paid only Rs. 200 if it is a sub-centre level delivery. If the distance to the PHC is less than one km she could be paid Rs. 450 instead of Rs. 600.

The ASHA faces considerable difficulty in most states, when she is staying at the facility with the woman in labour. There is no place to stay, toilets are difficult to access and there is no provision for food. That so many are still staying is to be respected and greater effort needs to be made to support her. Almost all ASHAs met and interviewed mention more than one pregnancy which delivered on the way or at home before they could leave for the institution.

Most of the above information is from the phase I of this study and borne out by the companion ASHA evaluation. This phase II study itself did not document the ASHAs version and is based only on the JSY beneficiaries account of the ASHA's role. We know from the other studies, that ASHA has an incomplete coverage of the population, but in most other respects the findings from the phase II of this study are in conformity with the findings of both phase I of this study and with the ASHA Evaluation.

Summing up

The JSY owes much of its success to the active role of the ASHA. The ASHA has effectively and efficiently promoted institutional delivery. She has also promoted antenatal care and makes post natal visits more than any other health care worker- though with less frequency than her support for institutional delivery.

The escort function is carried out by the ASHA with considerable sincerity. However ASHAs and the women she is to help see this as a voluntary activity (which is desirable but not mandatory). The division of the ASHA package into three components and the separation of the promotion incentive of Rs. 200 from the transaction cost of Rs. 150 was meant to facilitate this. However this understanding has often not percolated to implementation levels due to a possibly deliberate lack of emphasis on communicating the guidelines. Many implementers see pushing the ASHA to be personally and completely accountable for escort and stay for 48 hours as a way of defining her subjugate position.

That the ASHA was not the only option for this role is clear from the example of Hanumangarh where dais have been encouraged and supported to play this role and have therefore equally delivered on this objective of "institutional delivery promotion and escort". While giving space to the dai to participate helps to bring the dai on board, other health practices related to antenatal care and newborn care do not change as much with the dai. Breastfeeding in the first hour for example positively correlated with the presence of ASHA- but is not affected by the presence of the dai. But this may be due to the lack of effort invested in training dais for this role. If the ASHA is meant only for promotion of institutional delivery and immunization then the dai may have been an equal option, with less long term HR problems. But if on the other hand ASHA is conceived as a community level care giver also and as securing health care entitlements, the ASHA programme remains relevant. Unfortunately though the ASHA unlike the dai, or anganwadi worker or ANM is making post natal and newborn visits more often, in none of the states has she been provided adequate skills to convert these into early detection of illness or even into promotion of positive health practices.

The ASHA is often present during delivery and the only person allowed to play this role by the system- other than where they are using the dai. There is no evidence of the ASHA herself getting into the dai role whatever the context, and this fear expressed in policy circles is needless. There is however much interest in being trained for this role- but what the ASHA means by this is training as an ANM, not as a dai. Though ASHA is being used as a birth companion in over half the instances, she is not consciously trained as a birth companion- which is another wasted opportunity. The birth companion has had a very positive outcome in the Tamilnadu experience.

The ASHA is also often present when there is a delivery "on the way". On the way pregnancies in this study are 0.27%- but in absolute numbers this could be over two lakh pregnancies. Does the ASHA have skills to estimate how much time is left for delivery? If she is escorting the woman can she make herself useful and give at least "obstetric first aid" to the newborn and the mother. If she is present at a home delivery can she provide obstetric first aid? Or would we insist on the assured referral

transport mechanism to have such an obstetric first aid trained person, knowing that many of these cases would have more complications? As the programme goes into the sixth year, we need to find answers to these issues.

Recommendations

1. This three way split of the ASHA package should be amplified in communication downwards and implemented more uniformly. The transport component can be withdrawn from the ASHA package and shifted to supply side tie ups. There are few instances of ASHA package actually paying for the pregnant woman's transport to merit its continuation thus. The voluntary but desirable nature of the escort function as distinct from the promotional function should be understood at all levels.
2. The ASHA needs to be trained on an obstetric first aid package as she is required to play an escort function- even if only a voluntary basis. She also needs to be skilled to act as a birth companion in the full meaning of the term and as a provider of obstetric first aid in case of delivery during transport or while waiting for transport at home. The ASHA also needs skills for better effectiveness during her home visits in the post natal period, which even now she is making much more than any other care provider. There is a major case for providing her an incentive for these series of newborn visits.
3. The ASHA should be equipped with a communication kit and adequate skills for counseling pregnant and lactating women and providing support for a change to positive health practices as related to adolescence, pregnancy and the newborn health and contraception.

SECTION-X

Maternal Death in Times of JSY

If this was an outcome evaluation, the measurement of maternal and neonatal deaths would have been central to it. We were not set this objective, nor did we add it on. However we did try to identify and explore every maternal death we encountered in the 360 sampled villages- and make a case study of it. To try to capture all deaths, in the household listing we asked for any death of a woman in the 14 to 49 age group and conducted in depth interviews to find the cause. Of the 366 cases of deaths of women in the 14 to 49 age group, a high proportion-226, were unwilling to discuss the cause of death. but 112 did confirm that the death was pregnancy related. Of these 46 gave us permission for a detailed interview using a structured questionnaire and an exploration of the circumstances of death using a qualitative case study approach. These 46 cases are presented below. There were also 116 still births in this group and an equal number of neonatal deaths- which we have not explored further.

Though we have written up each of the 46 maternal deaths as a separate case study we present only 9 of these case studies below- each of which seems to represent a certain pattern of public health failure and have a lesson for the JSY and other efforts at the reduction of maternal mortality.

But before we start, we present a brief overview of the 46 who agreed to talk to us. These 46 came from seven districts, Bastar in Chhattisgarh, Angul and Nabrangpur in Orrisa, Madhepura in Bihar, Kaushambhi in Uttar Pradesh and Dumka and Garhwa in Jharkhand. Seven of these case studies are in the ante-natal period, 13 in the intra-partum period and 26 are in the post –partum period.

Socio-economic Background

Of the seven cases in the ante-natal period, 2 were from scheduled caste communities, 2 from scheduled tribe communities and 2 from the backward class. All of these were officially below poverty line with one in the income range of less than Rs. 1000 and the rest with an income in the range of Rs. 1000 to Rs. 3000 per month.

Of the 13 who died intra-partum, 6 of them were from the scheduled caste community, 2 from scheduled tribe, 2 from backward caste and 2 from other backward classes. All but one was in below poverty line with a family income below 1000 or in 1000 to 3000.

Of the 26 who died in the post-partum period 6 were from SC community, 10 were from ST community, 4 were from backward community, 5 were from other backward communities and only one was from a general category. Thus of the 46, 28 were from either SC or ST community.

In terms of income level too, of the 26, 22 described themselves as having a family income of Rs. 1000 to Rs. 3000 per month, with only one stating it was below this and three in the immediate category above. 19 of them were formally classified as BPL also. Thus of the 46 women who died 38 were officially in the BPL group and the rest too were poor.

Educational levels

Of the seven, who died in the ante-natal period, not one had been to school and only one of them was literate. Nine of the 13 who died intra-partum were illiterate and the other 3 were primary or middle school. Of the 26, 14 had never been to school, 7 had

been to primary school, three had been to middle school and only two had just completed middle school.

On the whole, only two had passed middle school-the 8th class level, and 5 had been to middle school though not completed it. Ten had been to primary school and the remaining 29 had never been to school and 25 were illiterate.

Age at marriage

Of the seven cases in the ante-natal period, 3 of them were married below the age of 14 one at the age of 15 and 2 at the age of 18. Of the 13 who died intra-partum, 9 of them had been married at age of 18 or below and 4 more at 19 to 21. Of the 26 post partum deaths, 15 had married before the age of 18, 10 in the 19 to 21 age group and only one above 21. Only one of the 26 admitted to a current age below 18.

On the whole, 30 of 46 had been married at or before the age of 18.

The obstetric history

Of the seven deaths in the ante-natal period, 5 of them were "grand multis" with 5 or 7 pregnancies in their past. 2 of them had 2 - 3 pregnancies. 3 of them had still births. One had 2 still births and neonatal death and one had an abortion.

Of the 13 intra-partum deaths, 4 were in their first pregnancy and five women had five or more past pregnancies. 7 of them had a history of still births, 2 of them had multiple still births with 3 of them additionally having neonatal deaths and one with only a neonatal death and other only with a spontaneous abortion in their obstetric history.

Of the 26 post partum deaths, nine were in their first pregnancy, 9 were in their second pregnancy and two in their third, and 6 were in their 5th to 7th pregnancy. Of the 26, eight had a history of still-births, with one also having a history of neonatal deaths. On the whole 7 of the 26 related a history of neo-natal deaths. Five of the 26 had their immediate prior pregnancy conclude as a still-birth.

On the 46 case studies, 13 women were primis and 11 were multigravidas. As many as 18 had a history of previous still births, of which six had had multiple still births. Seven had previous neonatal deaths.

Antenatal care

Out of the seven who died in the antenatal period, 2 had not had any antenatal checkups at all. One had one check up, two had 2 checkups and two had 3 or more checkups. At least 3 of them had severe anaemia with generalized oedema and hypertension. Two had severe pain and two had loss of foetal movements. Two did not seek treatment because of the severity of complications was underestimated and facility was too far and other because of the financial conditions.

Most women who had intra-partum deaths had received ANC check ups at the village PHC or private clinic and one of them alone had an complication in the antenatal period itself.

Care seeking patterns

Of the seven deaths in the ante-natal period, and sought care one went to the private clinic and other 4 went to public facilities usually at District Hospital or CHC level, and one, the poorest went to a PHC. One remained with the traditional healer till death. 3 out of the 5 were hospitalized, one for the day and one for 2 days and the others for longer before death.

In intrapartum deaths there were broadly two patterns – one the home deliveries where complications develop and patients then arrange and rush to a hospital where they often fail to get treatment on time. Sometimes there are delays at all three levels and sometimes in one or two of them. The other is where institutional delivery is sought actively but still the developing complication receives an inadequate response.

In the 26 post partum cases initial care seeking had been a home delivery in 15 of the deaths and district hospital in 5 of the deaths, CHC in 4, and one on the way. In 4 of the 26 the outcome of the current delivery had been a still birth.

Case study-1**

Lalita was 19 years old and lived in the Nawabasti Para (Hamlet) in Bastar. She was married when

** *The names of the deceased women, her family members and the villages have been changed to maintian confidentiality of the families in all the case studies presented here.*

she was 15 years old and Brijpal, her husband was approximately 19 years old at the time of marriage. She belongs to Scheduled Tribe community. Lalita did not know to read and write. Her family was categorised as BPL and their stated income was less than Rs. 1000 per month.

Her husband Brijpal owns one acre of rain fed land. He produces rice once during the year and he collects minor forest produce and brews liquor from Mahua. Lalita used to support her husband in the farming and did household work.

In her four years of marriage, Lalita had become pregnant twice. In her first pregnancy she had given birth to a daughter. In her second pregnancy, she had undergone two Ante Natal Checkups in the sub centre. No complications were reported, as per the family, in the checkups. She had gone for these checkups on her own.

On that fateful day, in the 22nd week of her pregnancy at about noon she suddenly developed severe pain in the lower abdomen. The family took her to the traditional healer of the village, where she remained till vening, gradually worsening and losing consciousness and passing away at about 6.00 Pm. Symptoms are suggestive of concealed abruptio placenta. The area is not connected with pakka road. The hamlet is 5 km away from the Primary Health Centre and 20 km away from the Community Health Centre. The Sub Health Centre is just 1 km away. In the Primary Health Centre currently there is one RMA, and three ANM and deliveries take place regularly, but none of them were approached. Even if they had been, it would have been difficult for them to save the mother.

Here we have a case with all the classic determinants of maternal mortality-early age of marriage, no spacing between pregnancy, illiteracy, poverty, no road access to the hamlet and to compound it healing when faced with life threatening emergency.

Hope for Lalita would have been there if she had come to the PHC and then been transported to CHC and onwards to another CHC which is an FRU. She would have taken half hour to reach the PHC and another hour or less to reach the FRU. Why did she not do so? Though economically poor and educationally unprepared, if the Mitanin had a mobile and if ambulance had been available and called, would the family have been willing to lift her to the road head which is at the sub-centre, one km away. Or if the hamlet had been on a road would the choice have been different? If....

Case study-2

Anjali, was a 24 year old woman from Gondi village in one of the evaluation districts. She was from the scheduled caste community, a daily wage labourer who had never been to school and whose family was classified as below poverty line. Married at the age of 14, this was her 3rd pregnancy and both earlier pregnancies were at the block hospital and both were still births. She had not had any ante-natal check up. On the day she noticed a loss of foetal movement. She was also severely anemic and edematous. She was pushed on a handcart to the block hospital, where IV fluids were started and injections were given since there was no further progress she was referred to the district hospital. Her family hired a private taxi and shifted her there. She was advised surgery and she was ready for it, but either they could not or would not operate there. After a few hours wait, she was sent back to the block hospital, now travelling by rickshaw where she was now operated upon and child delivered- a still birth. But she never recovered consciousness.

This district also has one of the costliest Cesarean sections in the whole study. Even the Rs. 4000 the poor family spent in public hospital has pushed them into debt. The grief stricken family related how they did not even have money for the funeral and had to raise the money for the last rites with the help of the community.

Here was a case of active care seeking in a clearly high risk pregnancy but after the complications have developed. There was no clarity or guidance on where to go, and a denial of care at the highest level. There is a failure at all levels. For her at least the JSY did not exist.

Case study-3

This is the typical case of the three delays- a concept that is most appropriate to intra-partum deaths.

Raksha Devi, a 34 year old lady from the Pahadganj village in Jharkhand, belonging to scheduled caste community, wage laborer and without education, below poverty line and an income less than

1000 per month, was now into her sixth pregnancy. She went to labour at 10 pm at night, in her house. At 1 am at the night- after watching the lack of progress of labour over three hours, the decision was taken to shift her and at 1:30 am the vehicle came and it took till 2.00 am to reach the Taluka hospital. There was no doctor present, but there were 2 nurses who tried their best could not get the labour to progress. The condition worsened till the lady died at 5 am in the morning. They neither had the money nor the transport to move to any other hospital- nor were they pushed to do so. The entire transport was done out of their own funds and cost Rs. 900. They were neither then, nor later eligible for JSY. One has to live to get these funds.

There was a delay in calling for help. It was a home delivery- and no referral tie up had been made. So it took some time for the vehicle to turn up. The second step was not otherwise much delayed. But at the hospital, no care was provided. In all the samples that we selected, such cases would have been missed because in most instances any patient in such a situation would have been referred. But whether it was because the nurses were not using partograms and could not make an informed decision on referral or because in that time of the day, there was no transport available, and for the patient affordable, we do not know. Here was prolonged labour which a C-section would have saved and it is precisely to identify and manage this complication in time that institutional delivery is promoted.

Case study-4

Savitri 30 year old lady from Kaushambhi district of Uttar Pradesh, a wage laborer of schedule caste community, and illiterate, but not officially classified as below poverty line despite an income of Rs.1000 to Rs. 3000 per month. This is her 6th pregnancy and she chooses to deliver in a private nursing home. There had been some bleeding and she apprehended complications. She had her ANCs done by a nurse in PHC which was normal. In the private clinic she delivered a still born child and soon developed bleeding as also a pain in the lower abdomen. The private nursing home charged a total of Rs. 8490 including 2800 for transport alone and 3000 for drugs. But yet could not arrange either blood or surgery. They however did charge Rs. 200 for ultrasound. She was there for over four and half hours before she died. The inability to arrange blood had been critical and the reason. Usually in Kaushambhi, they send for blood from Allahabad which is an hour away by car and it can take hours to arrange the blood.

This sort of reaching to the hospital and waiting for blood or trying for blood from various sources, or husband reaching with the blood but too late for transfusion is reported in 4 more of our case studies of the intra-partum period.

Case study-5

Sunita married at the age of 18 years to Ramcharan. They both started living together at Sunita's house with her parents in Bastar. She was living with her mother, father and her husband. She and her husband, both were illiterate. Her husband was engaged daily wage labour. He did not have land. They had enrolled in NREGA. They belong to Below Poverty Line (BPL) and they were receiving rice at Rs. 2/Kg.

This time was her first pregnancy. She had 2 Ante Natal Checkups from the ANM in the neraby PHC. The PHC is located just 5 minutes of walking distance in her own village. No complications were found in the ANCs. But she was suffering from weakness and she was taking IFA tablets from the Anganwadi. Mitanin did not accompany her in any of the visits for ANC. She had immunization from the Anganwadi.

She completed the nine months of the pregnancy. She was taken to the same PHC for delivery. She had a still birth at the PHC. After 1 day, she came back to home. She started working normally after returning back to home- basically domestic help to her parents.

Everything was normal but suddenly on 10th day, she had headache and severe pain in her lower abdomen. She was taken to the PHC. The doctor in the PHC referred to the district hospital. They were searching for vehicle but within half an hour after she was taken to PHC where she died.

Case study-6

Laxmi Devi was 25 years of age and had got married at 19 years. She was 8th pass. She had her first child a year after marriage. She got pregnant twice

after that in 2007 an in 2008. Both pregnancies ended in miscarriages at 3 months and 1.5 months respectively.

She was from Nagpur and after marriage shifted to Awaspur village in Chhattisgarh where she was staying with her son and husband, who is a Shiksha Karmi.

During her fourth and last pregnancy, she underwent ante natal checkups at a private hospital. They did not mention any risk factors, but she did experience swelling of the legs. They would also call a quack for treatment from the same village, whenever required.

In the 35th week of pregnancy, she suddenly experienced extreme pain and hemorrhage at around 12 noon. Immediately a vehicle was called and she was taken to nearby CHC. The doctor and nurse examined her and referred her to District Hospital which is around 15–20 kms from Awaspur. They did not give any treatment at the CHC. The family reached the District Hospital at 4:30 pm. The doctor came to examine her only after two hours. Meanwhile she continued bleeding. She was prescribed medicines, injections and blood transfusion. The family made arrangements for all the requirements including the blood which they got by late evening. A sonography was done which showed that the baby had died but none of the medicines or injections were administered to her during this time. Nor did the blood transfusion take place. The doctor came at 10 pm and she was taken to the OT. She died at 11:30 pm and the family was told of her death at 12:30.

Case study-7

Mira Patnaik of the Diogarh village in Nabrangpur was 29 years old, tribal, below povery line with an income in the 1000 to 3000 per month range, barely literate, but never been to school. This was her sixth pregnancy and she was married at the age of 17. She was known to have severe anaemia during her antenatal check ups and had been given iron tablets for this. She went into labour pains prematurely at 3 in the morning, in only the seventh month of pregnancy and promply went to her local PHC using the referral ambulance. The PHC doctor said the case was beyond him and shifted her to CHC where she delivered a premature baby. But soon after, bleeding developed and she was referred again to the district hospital at Nabrangpur. The family however decided against going to the district hospital - and brought her back home where she died at 2 AM the next morning. Four days later the premature baby also died. There was a total cost of Rs. 600 and it is not clear whether financial considerations prevented them from going to further treatment, or just a sense of hopelessness.

Case study-8

Mahima Devi, aged 21, an adivasi woman from Chilka village in Jharkhand, married at the age of 20, was in her first pregnancy. Her family is BPL, but without the card, who have patch of land for cultivation and she has never been to school. She gave birth to a live child at home and the delivery was normal. She had severe anemia and edema. And now after the placenta was delivered developed severe pain abdomen as well. She is then seen by an RMP and given injections. A vehicle is called and she is over the next hour or two shifted to the district hospital. She gets laboratory tests and ultrasound there. She is given blood transfusions and IV fluids. She spends over Rs. 10,000 in the process. When after two days, the doctors said they could not do more and must refer her further to another hospital- a private hospital, the family simply could not afford it, gave up and brought her home. ("If I did not get well her, I will not get well there also"- the woman is quoted as saying) On the way in the vehicle bringing her home she developed breathlessness and died.

Case study-9

Seema was 28 years old, and this is her fourth pregnancy. She was married at 16 yrs. She has been to primary school and her husband is a salaried employee earning Rs. 1000 to Rs. 3000 and not classified as BPL. All her past deliveries were institutional and so was this one. The first baby, a girl died at 11 months of age, but the other two are living – a boy and a girl at 2 years and 6 years of age. She delivered a live baby this time too – a boy. She had her antenatal check ups by the ANM- twice and has gone to the PHC for her delivery. She was told that the baby was in a wrong position, and at 10.00 am that morning she has a breech delivery- head coming out last. It was a live child though and the child was doing well. Four hours after delivery she was shifted home nevertheless and she was bleeding on the

way home. She called a private doctor home and showed him- the next day. He gave her an injection and IV fluids. We do not know whether he referred her and whether she refused to go or had no time to go or no money to go. The family had spent Rs. 1400 on the private doctor and his treatment. She continued to stay at home and on the morning of the fourth day, passed away. Just like that…

Summing up

Is there any pattern at all in these deaths. How does the JSY programme relate to this. How do we understand these deaths in the context of the JSY and NRHM?

The first message seems to be that – yes it is relevant to try to bring them from the home to the hospital for delivery. The vast majority of deaths is happening in those who are having home deliveries – even if they come to the hospital later. Perhaps what JSY is doing is by providing access to a midwife or nurse, reducing the incidence of complications, though most of the providers individually or the facility as a whole is still far from responding to complications adequately.

But it also brings out the fact that bringing to the institution is only a small part of the story. If the woman develops complications, then there is no assurance that these complications are being managed and much more work is needed to bring the focus to the management of complications.

The ones most at risk – the under aged woman with multiple pregnancies and the women with more than five pregnancies are over-represented in the group that had home deliveries and all of these would not have been eligible for the Rs. 500 of JSY home delivery package. If we had given them Rs. 500 earlier in the pregnancy would we have reached out to them and drawn them in and persuaded them for a safer health behaviour then what we have managed to do now? Or would the risks remain the same even if they had reached the institution and should we consciously stream all primi pregnancies and women beyond four pregnancies to facilities with basic or comprehensive emergency obstetric care available.

Another major concern is that as many as 27 of these deaths would not have qualified for any JSY main or collateral benefit- because these were complications of the antenatal or postnatal period, which does not come under JSY or any other partnership scheme. Moreover in many states still births and deaths are not eligible for JSY fund- in practice almost always- but sometimes even by rule. Free transport, and escort by the ASHA etc also do not extend, though in practice many ASHAs do help.

How do we build a system such that the prohibitive costs of managing complications are covered- with immediate effect- whether it occurs in the private sector or public sector? And not only for complications at delivery, but during the antenatal and post natal period as well.

We note that in two other case studies – a private clinic in one case (4) and a public hospital in the other (3) the patient languished for care that never came. We note that in one case study (6), the patient had reached well in time and yet though blood should have been available, it was not- and by the time it arrived death had ensued. In one case study (3), perhaps the most distressing of these a pregnant woman is shuttled at her own expense between a number of facilities, and when she finally gets care it is too late and too little to save her. In yet another case study (5) institutional care was in itself not at fault, nor was health seeking behaviour but the sort of home based post natal follow up that was required to supplement institutional care was missing.

We also need to note that in four of the case studies presented above the deaths occurred at home. In the first case there was never any choice exercised to go to an institution- neither JSY nor behaviour change had reached. In the last case study (case 9), the delivery was at the institution, but even when it was life threatening the family remained at home for managing the complication. Obviously whatever health seeking behaviour change had been secured to get her to the institution for delivery did not extend to how the family responded to a complication. In two others (8;7) the family had been treated extensively at a secondary level care facility but then returned home to die- one because they ran out of money and the other because they ran out of hope.

Admittedly, since these are instances of deaths, they are extreme examples of failure and what

a health system is meant to protect against. But they testify also to the need to supplement the current JSY design with a much more focused design and resource inputs that can address the issue of maternal and newborn mortality and morbidity and provide social protection from the prohibitive costs of managing complications. Every one of these case studies also demonstrate the continued relevance of work to address the social determinants of health. It is the poorest and most marginalized and most disempowered who are most vulnerable. Pregnancy and child birth is a natural event and the basis of all human life of earth. Only when the worst of social determinants conspire with the worst of systems failures does death ensue. And the least we can do, in memory of these tragic incidents, is to learn from them to plan for a better future.

SECTION-XI

Key Findings and Conclusions

1. The JSY has clearly increased the number of institutional deliveries, and this increase, documented in other population based surveys is validated by our study findings that over 50% of women who a previous home delivery had opted for an institutional delivery. The study also demonstrates equity in access of women to institutional deliveries, given that the representation of SC/ST and BPL in the sample was higher than the population representation. However in Jharkhand and Chhattisgarh, the percentage of ST among institutional deliveries is lower than in the population.

2. Despite this increase, the study finds persistence of home deliveries, which was about 40% in most districts studied, with a wide range- from 7.7% to almost 63%. Women who deliver at home had higher proportions of SC/ST and non literate or primary school drop outs. The JSY excludes a significant proportion of women by virtue of the criteria, and these women who are excluded are those under 19 years, multiparous, poor women, often with no access to a BPL card, all of whom are at higher risk of maternal and perinatal outcomes, the first two directly and the third as a proximate determinant. Many of these women are not counted even in the HMIS, although their infants are recorded as receiving BCG vaccination.

3. About one third of those who had home deliveries were not able to access institutions on account of not being able to afford transport costs. Poor service quality and high costs in institutions were also reported as deterrents of institutional delivery in another third. About one third had a cultural preference for the home delivery and a lack of awareness about how quality care could reduce risks. At least half of these home deliveries would become institutional deliveries if transport and quality of care improved and another half would also require communication related to risks of pregnancy. Messages on JSY have not reached about 40% of those who deliver at home, and to those whom the message has reached, the financial incentive is much better communicated than the health and safety aspects.

4. JSY funds are reaching most of the beneficiaries who deliver in institution in contrast to those that deliver at home. Non payments however in some districts are as high as 55%. Non payment and delayed payments are related to irregular fund flows to the districts and local imposition of additional conditions such as photographs for proof of identity, and a 48 hour stay. Payment on the day of admission or at least by discharge is not happening and often not even insisted upon as the system seems to have accepted that a payment within 15 days is acceptable. This undermines the purpose of JSY and also allows more space for leakages and builds up need for complex system of identity proof and payment authentication.

5. In most situations payment by bearer cheque seems to be adequate for prompt payment and record keeping. Records should however insist on showing the date when the check was collected and by whom- not just the date when the cheque was signed. In some facilities and some areas, the bearer cheque is difficult to use- and here local permission to use cash payment instead is happening and such local flexibility could be encouraged. However as a rule the bearer cheque has

been a step forward in both regularity and reliability of payments.

6. This study by its design cannot comment with reliability on the existence, sites or extent of leakages. However the study did develop a few tools to look at this issue. Leakages at the block and sub-block level do not appear a major problem- except in Bijnor where the figures of home delivery and sub-centre delivery are obviously inflated. Generally recorded and reported data matches well at the facility level and it also corresponds with HMIS upto the block and sub-block level. The same cannot be said about insertions of numbers at the district level. Aggregation at district and higher levels may be more susceptible to mark up of the numbers. Further complaints of mismanagement of funds and and non payment were more where there were delayed payments and huge backlogs- and this related usually to fund flow from state to district.

7. Out of pocket payments are high, amounting to Rs. 1028, and including transport, to about Rs. 1400 to Rs. 1600. OOP on home deliveries are also high, with almost 53% paying out of pocket for delivery services. The main out of pocket expenditures in instutional delivery are on drugs, but there are significant expenses on fees and on surgery. In such a circumstance what JSY does is to reduce the influence of financial constraints as a consideration in the choice for institutional delivery, but given the costs of home delivery and the fact that over half would be paying more than what they get from JSY- the explanation of a behavior change induced by an incentive linkage requires to be re-examined.

8. The increase in institutional delivery is skewed with only a few facilities taking the load of this substantial increase. Of the 5830 institutions that should have managed the nearly 3.88 crores of expected deliveries only 852 or roughly 15% actually provided institutional delivery. The load is taken up predominantly by the facilities at the block and higher levels.

9. Sub-centres in every district provide a very small part of the midwifery services. Even including skilled birth assistance at home the midwifery role played by ANMs working in sub-centres would range from 0 to 35%. This is not to belittle the importance and acceptance locally of some of these sub-centres who do a great job and which serve otherwise under-services areas and which need to be strengthened- but to point out that these are exceptional circumstances rather than the rule. In most sub-centres, due to a choice made by both the pregnant woman and the provider, and facilitated by much better roadways and communications then was available earlier, people prefer to use the larger facility with a team of providers than the sub-centre. Policy also has worked to develop the sub-centre as the last option and the numbers of sub-centres providing delivery services may even have decreased. This understanding of sub-centres is important for their infrastructure and equipment development plans. Sub-centres would have continued relevance as outreach centers for immunization and antenatal and post natal care and even as health posts for a variety of communicable and non communicable diseases – without making the provision of midwifery services mandatory in all.

10. The short fall is next highest in PHCs -other than those located in the block headquarters. The performance of these PHCs have three patterns- the first is where they are in a situation similar to the sub-centres- where only two or three exceptions in the district provide institutional delivery services and all the rest do not- a pattern seen most frequently in Bihar and Uttar Pradesh. The second is where about 50 to 70% of PHCs at this level provide institutional delivery services but a low volume- and the block PHC or sometimes one other PHC as well provide the bulk of the care provided at this level. This is the pattern of Madhya Pradesh and Rajasthan. And the third is the pattern of Jharkhand, Uttarakhand, Chhattisgarh and tribal Orissa where there are very few PHCs at this level – at best one or two in a block, sometimes none- and those which are there provide services at very low case loads.

11. PHCs located at the block level, CHCs, SDH and DH all invariably provide institutional delivery services. Whether institutional delivery in these facilities is just "assured access to a certified nurse or midwife," or whether it also implies "access to a skilled birth attendant" or whether it implies "access to basic or comprehensive emergency obstetric care is discussed later. However the functionality of those facilities that were providing midwifery services earlier has multiplied enormously. Thus the huge increase in institutional delivery case loads is largely taken up by the block and higher level facilities. Investments in improving supply side interventions have not necessarily factored in this uneven development, but it would be important to do so, if quality of care is to be maintained.

12. The reasons behind the uneven developments of these facilities need to be explored further. To some extent these changes are inevitable, and even desirable, and we need to build upon it. It does seem that as roads and transport are available to access a facility of choice, families would then choose those facilities where round the clock services are assured, where a team of doctors and nurses are available, and where there is credibility based on a reputation for providing high quality services. The availability of C-section may be an additional driver for choices in the upper strata of those who choose public sector and those who go to private sector. Facilitating transport to the higher facility and expanding the capacity of the higher facility which has an FRU level service package, to enable more effective, and better quality care even for normal delivery would then be the most important action.

13. In the districts chosen for the second phase of this study- the maternal mortality ratio is high – 492 per 100,000 live births, as is expected from the purposive choice of large poor performing districts within high focus states. For methodological reasons, there is a likelihood of it being even higher. The incidence of complications is also in the expected range. The experience of care seeking in the pregnancy with complication is that women spend much greater time in a chain of referrals, with all its attendant costs and time delays before they get to the facility that provides them suitable care. The costs of care for complications, especially those requiring hospitalization are inordinately high and not at all covered by the public health programme. They are much more likely to have to choose private sector care than public sector. Even assured referral transport is much less available when complications strike than it is for normal delivery.

14. For any institutional delivery private sector care is only 12.5% of all patients who sought institutional delivery. For "any" complication private sector nursing homes (the 6 RMPs included) provide 60% of care provision. And for complications requiring hospitalization 55.2% of patients (out of 250) got their treatment from private nursing homes and the rest are by the government sector. At first resort for care in complications, the public and private sector are equally sought after. In the first referral there is a significant further shift from public to private sector. Then in the second and third referral, a smaller proportion of patients from the private sector get referred back to the public sector at the higher level- medical colleges, district hospitals etc. Therefore without reducing the overwhelming role of the private sector in providing care, the important role of the public sector as the port of last call should not be forgotten. One major matter of concern is that patients may be exhausting financial resources and wasting precious time before they finally arrive at the district hospital- thus adding to the burden of mortality in the district hospital and giving it a bad name – out of proportion to its real faults.

15. Increase in institutional delivery has certainly increased access to delivery by an ANM, nurse or doctor attending on the delivery. However this study shows that this has not necessarily meant increased access to skilled birth assistance because most nurses and ANMs who are actually providing services were not prioritized for the training. Thus practices like the use of the partogram, active management of third stage of labour and practices which represent the life saving potential of SBA like - the use of injectable antibiotics, oxytocics and the use of magsulf for hypertension management, neonatal

resuscitation, and the identification and basic management of hypothermia and sepsis in the newborn- all of which represent the life saving potential of skilled birth attendance are not being realized.

16. The study shows that while the concept of 24×7 PHC has helped to identify the need for a minimum of complement of nurses or ANMs in every PHC where institutional delivery is planned, it has almost completely lost out in the other part of the definition- the provision of basic emergency obstetric care service (BEmONC) (in contrast to other PHCs and sub-centres which only provide access to a skilled birth attendant). The link between the 24×7 PHC and the provision of basic emergency obstetric care is almost completely lost. Further on the newborn side, the ability to provide institutional care was even more limited. Even the simple bag and mask that should be available even for assisted home delivery was absent in about half the facilities and further resuscitation or sick newborn management was not available. The radiant warmer was present in many facilities- but rarely in use. Training on either Bemonc or facility based newborn care was almost completely missing.

17. Although the creation of FRUs is slower than expected, this service is now available in almost all districts in the public sector the coverage is below the norms. However in many districts the numbers of women that are provided these services are far less than can be expected. The district hospitals are also the main stay of treatment for complications- but financing of care in the district hospital does not provide funds for the management of complications and in many districts patients have to take on huge burden of costs.

18. A few not for profit private hospitals, especially the Mission Hospital seem to be playing a huge role in the provision of such emergency services, though not much talked about. In most districts visited, every 24×7 facility and even most designated FRUs are using them as the main back up or even as the first choice for emergencies requiring surgical care. Yet many of them are not covered even by JSY, let alone a more comprehensive package, and therefore despite the multi-crore investment in JSY the major proportion of the women who most need help are paying out of pocket at substantial rates to access this care- and often for economic reasons failing to access this care. Programme design must give priority to bring these mission hospitals and not for profit under the social protection roof.

19. In the provision of services in public health facilities- the lack of skilled human resources is the central and most resistant problem that the system faces. There are shortages of ANMs, nurses, doctors and specialists. Rajasthan has been able to respond to this pressure and have placed adequate nurses and ANMs in position and Orissa has also increased nurses significantly- though much more is needed. In all other 6 states ANMs and nurses are very low- and most facilities visited and secondary data shows gaps. However three nurses in designated 24×7 facilities- usually the block PHC, shows improvement in all the states. In many states, there is an expansion of nursing and ANM education and many more should become available for recruitment, but as of now, it has not yet happened.

20. One concern is that even where contractual appointments of staff nurses and ANMs have happened states have not taken adequate steps to create permanent posts. Another concern is that the increased nurses and ANMs in the PHC did not match the case loads- and there could be redundant staff in one PHC and a scarcity in another. A third major problem is that often nurses and ANMs are being withdrawn from other services, especially sub-centre level outreach services to keep the institutional deliveries going. This was most seen in Bihar, but there is some evidence of this in a few other states.

21. There was more uniformity in the numbers of sanctioned posts of specialists and medical officers at the CHC level- generally 6 to 9, and there were generally 3 to 5 in a block PHC with only few having the full complement of 9. Even when there was a near full strength the critical gynecologist and anesthetist specialists could be missing. This staff strength in PHCs and CHCs when present, in some districts is adequate since the case load is modest, but in others, this is insufficient.

22. Interestingly the private not for profit mission hospitals visited were also very short on skilled human resources, with a difference. For an average of 80 beds, there were 5 doctors (2.9 specialists and two MOs);- much less than the public hospital, but there was an average of 27 nurses for each mission hospital. This gives a ratio of 1 nurse for 3 beds and 5.4 nurses for 1 doctor. The mission hospitals thus had better nurse: bed ratio than the public sector facilities. Staff at mission hospitals expressed an interest in using partographs and of having their staff included in government's SBA training programme but this programme is not extended to private clinics, even not for profit ones which are handling the bulk of the complications in the district.

23. One problem with available gynecologists is their availability for sterilization camps comes into conflict with their availability for emergency obstetric care services. A similar problem exists with ANMs between sub-centre functions and attachement in PHCs for institutional delivery. It does seem that like pulse polio took away about 90 days of the ANMs time thus de facto, substituting routine immunization by pulse polio, JSY could so threaten all of RCH. A sole gynecologist in a busy district hospital would operate upto 5 or 6 times a day- and all near death cases. If she is the sole laproscopic surgeon she would need to give at least 60 days in a year to this- often much more. That would be 300 C-sections versus 1500 sterilisations- at the least. The JSY is often referred to as undermining population stabilization efforts- but if this is happening that has little to do with JSY and more to do with prioritization of which service to provide in a context of acute shortage of qualified service providers.

24. Infrastructure in terms of bed capacity is a limiting factor in some districts and not in others. In newly carved out districts the number of maternity beds available in the district hospital may be limited. Sometimes even larger district hospitals like in Uttar Pradesh are shoing 150% bed occupancy in the womens district hospital. At the CHC, block PHCs, most districts have developed adequate capacity during the NRHM period or at the point of doing so. A infrastructure development plan focused on the actual patterns of use could close the remaining gaps in a very short time.

25. Electricity supply and water supply and even the situation in toilets was in line with the level of electrification and drinking water supply levels reached for the state as a whole. Predictably therefore Bihar and UP had more problems, though UP had better back up systems and functionality. The more peripheral we go, the more the power and water problems- but even the district hospital at Madhepura was facing a hug crisis in getting water in its taps. The private mission hospitals in all these districts had solved these problems admirably and it is worth benchmarking with them to understand how, within the constraints of each district this is being achieved.

26. In both equipment and drugs, more conscious planning is needed to provide for the higher level of complication management required from a sick newborn unit, or a newborn corner, or of a skilled birth attendant, or for basic or comprehensive emergency obstetric care. Thus only two district hospitals of 8 where this was studied had all the essential drugs and equipment for this level of care. Many had over 70% of the equipment and drugs- but since these are all vital to maternal and newborn survival, anything less than 100% of the essential package would be unacceptable.

27. In Laboratory tests of 8 identified laboratory tests, district hospitals on the whole always had all of them and all facilities below this including CHCs and block PHCs seldom had many important components- like HIV testing or VDRL. Functionality of these services, below the district hospital level was also weak.

28. Protocols of care were not in use in most facilities visited. The advantages of protocols were seldom realized. Misuse of oxytocin was a significant problem in many districts, but thankfully not in all. Irrational choice and use of antibiotics and iv fluids was also a problem. There have been significant advances made in reporting systems but recording systems have lagged behind. Use of this information for planning and monitoring is also limited.

29. Systems of cleanliness, hygiene and housekeeping as well as biomedical waste management are under-developed. There is an understanding that cleanliness is a function

of strictness, and motivation- often failing to recognize the organization and management processes required in a fair size hospital to manage this efficiently. It is only now that biomedical waste management is recognized to be more than common sense and training and systems are being put in place. But this is required for all of cleanliness, hygiene and housekeeping. Staff behavior, security from stray animals, arrangements for privacy, promptness of care on arrival- are all dimensions where in a significant percentage of facilities there are large gaps. There is no clear system in place of recognizing these gaps and acting on it.

30. Duration of stay in facilities is a resultant of transport access, comfort levels in the facility and of pressures of work at home. At this point of time only about 14% would be staying more than 48 hours, and using a more relaxed criteria of 24 hours only one thirds of women would be staying in the facility for at least 24 hours.

31. Despite all the problems, subjective satisfaction of the user is very high. The poor want services, they need services. If they are enabled by JSY to afford these services and if the doors of these facilities have opened up to them, they come. If it is comfortable and there is help at home and a companion with them they stay. The greatness of JSY is in that it has put pressure on the public health facility to open its doors wider, and that it has signaled to the women that they can use it.

32. The assured referral transport system as defined, which is the goal – (a cashless prompt service that could be called over the mobile, available for transport at the time of need), was the preferred mode of transport in 13%. Of the 2759 women who opted for institutional deliveries and were JSY beneficiaries- 5.8% did not need a vehicle as the facility was close and 0.8% had not recorded an answer. The majority, about 53%- opted for a commercial vehicle hired then and there for the trip and another 16% had made their own arrangement with a private vehicle owner. 6% used unsuitable options- cycles, rickshaws, horse carts etc. Private ambulance and a paid government ambulance were both very small players- less than 1% each.

33. On the whole 14.3% of women had a delay above one hour which for access to emergency obstetric care is an unacceptable level and of these 4.2% had an over two-hour delay. Of course here we are measuring access to any site of institutional delivery- which by norm should be within 30 minutes. Another 35% had a one 30 minutes to one hour delay. About 50% reached the facility within the norm of 30 minutes. The gradient across districts of the second component of the second delay being over one hour is as follows: Bageshwar 32%, Dumka 25%, Garhwa 23%, Morena 16%, Nabrangpur 14%, Bastar 14%, Angul and Raigarh 13%, Koriya 9%, Kaushambhi and Hanumangarh 5%. There is also a substantial delay in reaching the facility where services are finally accessed due to second referrals. This has been discussed in the section on complications.

34. One of the issues with transport is that the family is not assured of a drop home facility. Thus families are forced to keep the vehicle waiting and pay the requisite charges, and those who cannot afford to do so, use only a one way service, or hire another vehicle to take them back to the facility. This also creates a pressure for them to leave within 6 hours (pressurizing health providers to use oxytocin for augmentation), often within 3 hours- as the vehicle if private arranged will not wait or because it would cost too much. This has therefore a huge health cost not counted in the usual three delays approach. Over 28% of women made this choice. The gradient of those who kept the vehicle waiting was Morena 48%, Garhwa 43%, Bastar 41%, Nabrangpur 35%, Bageshwar 32%, Dumka 30%, Hanumangarh 23%, Madhepura 20%, Angul 19%, Koriya 16%, Raigarh 14% and Kaushambhi 11%.

35. Regarding payment for transport the ASHA making the transport payment is an exception rather than the rule. Of the out of pocket payments by the users about 42% paid less than Rs. 300 across the 12 districts. Nearly 50% of women in Orissa, Chhattisgarh and Jharkhand appear to the paying over Rs. 300, with nearly one quarter in Bastar and Koriya reporting payments between Rs. 600 and Rs. 1000/-. At the higher end 7.4% in Bageshwar and 14.5% in Raigarh, 7.4% in Nabrangpur, 6% in Garhwa, and about 3% in Dumka, Bastar and Hanumangarh pay over Rs. 1500 for the transport alone!!

Recommendations

1. JSY has stimulated the demand for institutional delivey services. The challenge is to use this opportunity to achieve a major reduction in maternal and neonatal mortality and use the positive energy of this programme to improve the service delivery of all RCH services.
2. It should be possible for all districts to achieve universal access to quality RCH services in a three to five years period with the level of reliability that the government could hold itself legally accountable for its provision. This would make the promise of a service guarantee, at least for RCH services, a reality.
3. The core of this approach would be to recognize that even as of now only 10% of public health facilities are providing 90% of the services and strengthening these to ensure delivery of good quality of the entire package of RCH services- with emphasis on management of complications would be the key.
4. On the other hand there are areas which are still too far and a functional, and a safe facility closer to home with a referral connection would be desirable. Also this would depressurize some of the FRU level district and equivalent hospitals which would otherwise get overcrowded. These areas would have to be identified and facilities built or strengthened in these areas. The principle should be that every habitation should have a 24×7 facility provding basic emergency obstetric and newborn care within an half hour access time but where this is not possible at least a functional sub-centre or a PHC that provides at least skilled birth attendance.
5. There is a need to ensure that no user fees and provider fees are charged for pregnancy and newborn care and this should be well advertised, so that it is part of public knowledge. Also there must be a planned elimination of all out of pocket expenditure on account of provider fees- formal or informal, and for drugs and supplies, food and transport for the patient and one companion, through appropriate supply side arrangements. Transport should include the drop back home.
6. There should be insistence on JSY money being paid on the first day of delivery- or latest on the second day- and delays beyond this should not be seen as acceptable. Further the fund should be available at the facility- and the woman should not need to make a separate trip to get these funds. The fund should be paid irrespective of time of day. If discharge is likely in late evening or night and the accounts/cash section does not work then, the payment should be made earlier- instead of passing the burden on to the woman and asking her to come later. Requirement of photo-id etc. are uncalled for- and occurs only because we are consenting to delayed payments as the routine. If the woman is in bed with a newborn baby- no further ID is required. In case for whatever reason this cannot be made, then the onus of reaching the money to her house is on the facility- and no further papers should be required of the woman. Requirements of vouchers to show that she is from the district are not required- if the delivery is in the institution. Facility based payment before discharge must be the norm.
7. The single greatest source of delayed payments is delay in funds flow between state and district (we have not examined the national to state fund flows) and measures to keep at least two months worth of fund requirement at the district level should be insisted upon. Thus state may send six months fund requirements to the district, and when their cash in hand drops to less than two months requirement, another four months fund should be sent. (Exact number of months could be decided- but it is the principle that we are elaborating). Delayed payments also correlates with poor accounting and therefore also with leakages and every effort should be made to prevent any such fund flow blocks.
8. Much greater seriousness is needed to paying the BPL woman delivering at home, the Rs. 500 due to her. The HMIS grossly under-estimates the home delivery and most of these go as unreported. (In contrast in BCG immunization, these children appear in the HMIS). The major reason for non- payment of Rs. 500 is a strong almost universally shared view amongst providers that this Rs. 500 is uncalled for and would adversely affect the JSY thrust to promote institutional delivery. In many states even ASHAs hold this view. If the government is serious about this Rs. 500, then internal advocacy and public awareness of this has to be built. There is no evidence that paying the home

delivery Rs. 500 would de-motivate others from institutional delivery. This is part of the cash as behavior modification understanding that finds no support in this study. On the contrary, the study shows that JSY is ensuring affordability and accessibility to the facility.

9. There is however a serious concern about the recommendation to pay the Rs. 500 earlier on during pregnancy and not at the time of delivery. The reason for such a recommendation is the Supreme Court view that this Rs. 500 is part of a nutrition entitlement for maternity and should not be used as an institutional delivery device. That is why this is also available to poor women who deliver at home. However, a reduced payment at time of institutional delivery would be insufficient to cover the out of pocket costs. Moreover given the substantial difficulty in delivering even this onetime payment, breaking this JSY payment up into multiple transactions over small amounts of funds- is almost impossible to manage and places a disproportionately huge burden on ASHA, ANM and of course on the mother and family. If a maternity entitlement addressing nutrition is being considered, then it is best to do so with a larger sum, and no link to the JSY. That is being proposed by the women and child department- but whether it would emerge as a conditional cash transfer or as a maternity entitlement remains to be seen.

10. A system to check leakages should be put in place. This is one of the terms of reference. Based on our study we recommend a shift of monitoring emphasis from monitoring only the point of data reporting by service providers, to the intermediate levels of data aggregation and block, district and state levels. This could be done as follows: We suggest the following measures:

    a. The HMIS records are used as the basis. The previous three months entries could be cross checked on the field for truth telling with respect to institutional deliveries and JSY payments.

    b. An internal monitoring team would analyze the data for tell tale signs and discrepancies. It would generate a few key indicators- like % of beneficiaries to whom JSY payments have been made, facilities reporting unusually high beneficiary payments etc. It would also check to see if there are errors and mark ups being made in aggregation.

    c. Cross checking should be done by visiting external monitoring teams- the external team would in each visit compare the number reported on HMIS with the number on the records at the district headquarters as aggregated from the block reports.

    d. Then the team would visit a sample of two blocks and the block reports would be compared with the numbers reported on the records in the block headquarters as received and aggregated from the facilities.

    e. The team would then visit a sample of facilities and check reported and recorded data. It could also visit a number of beneficiaries whose names appear in the registers, in the villages. The last is not essential- and particularly where the delivery is at the district or block level may be difficult to make. Mobile phone checks would have little contribution to make

If every district is to be visited once a year by a team of two- it would cost approximately Rs. 30,000 per team or Rs. 3 crores for the nation- an affordable expenditure for verification of a Rs. 1000 crore expenditure. Also this visit strengthens and validates the whole HMIS system improving out cost benefit ratio substantially.

11. With a modest increase in numbers, a major increase in functioning of the current number of FRUs available, and a major effort to make 24×7 PHCs a level of care equivalent to a Bemonc and including newborn stabilization, and not merely the number of nurses and careful choice and location of these facilities (also called level two facilities), the met needs for Emonc and CS currently less than 30% could rise to 100%, which is the objective of universal access to emergency obstetric care. Moreover it could do so within a three year period for the number of facilities that need to be so developed are only about 10% of all the facilities in a district.

12. A population of ten lakhs at a birth rate of 30 per 1000 requires about 200 maternity beds- even providing for redundancy and limited

occupancy. These should be distributed across 10 to 20 PHCs- depending on geographic access issues with at least 50 beds at the public sector FRU level dedicated to the women with serious complications. This is an easy target to achieve within three years – if not already achieved in most districts. If private sector capacities are roped in, it could possibly already be achieved in most districts- but the recommendation is that the public sector aim to achieve this on its own as well. The objective could be stated as: 200 maternity beds per 10 lakh population distributed across 10 to 20 facilities with a team of doctors and nurses and at least Bemonc capability, such that there is one such facility within half an hour of every habitation, and every one of these facilities externally certified to have quality of care on parameters specificed in the next four paragraphs. As an interim stage and in particularly difficult areas- access to a single ANM or single doctor –nurse facility which provides some limited access to skilled birth attendance is a flexibility that would be built in.

13. Every one of the facilities where these beds should be equipped inspected and externally certified within a one to three year period for having the electricity, water, number of toilets, equipment and drugs and laboratory services required as per standards. These could be benchmarked to the nearest mission hospital which almost always has these in place- to show how within the context of this district it could be achieved. Funds would be prioritized for this.

14. Every one of these facilities should also have in place arrangements for diet, security, cleanliness, hygiene, and good housekeeping, bio medical waste management. Every one of these facilities should have standard treatment protocols in place that every service provider is aware of and uses. Institutional death reviews, including of those who were referred or left in a critical condition, C- section reviews and medical and prescription audits done by district management would ensure this. It is not possible or desirable to monitor each of these aspects separately through complex formats by visiting state and district teams. Every hospital should document what it could do on a minimum set of processes which are declared as essential for quality of care, and then record whether it is doing this. This should be accompanied by internal reviews, and external supervision and certification, to ensure that this is adhered to. This in its totality would be a quality management system needs and this needs to be put in place in every state. The state can choose whether it acts as its own accreditor, using qualified auditors for the audit, or whether it adopts the NHSRC-ISO framework, which a standardized, rate contracted version of doing this, or whether it goes for the more input intensive NABH. But eventually all these dimensions of quality of care are to be put in place and certified by an external professionally competent authority.

15. Every one of these facilities should ensure that the providers serving there have the necessary skills and are periodically certified to so have it. Since the numbers of those already providing midwifery services are very low- this can be achieved with ease providers the trainers are brought in from outside into the district. Districts own capacity to generate the training capacity within a short period is limited. The approach would be a comobination of the usual training camps- with a combination of:

    a. Introduction of printed protocols for all levels of maternal and newborn care within six months in all PHCs and sub-centres and CHCs and private hospitals and district hospitals providing maternity care.

    b. Development of skill halls in all districts where one day refreshers can be organized for the service providers providing these services to both test and upgrade skills.

    c. A team of clinical supervisors- who visit the facilities in rotation and ensure on the job training and the adherence to protocols.

16. The problems of number of nurses, doctors and specialists needed for RCH, is linked to the problem of state HR policy and cannot be solved by each district on its own- except to the extent that it prioritises staff for providing these services. In particular we need caution that a. ANMs are not withdrawn from outreach functions to providing midwifery services in PHCs and CHCs. Gynecologists are prioritized

for emergency obstetrics in higher FRUs and sterilization services move to either partnerships or conventional tubectomies by medical officers. Though much has been said about how JSY adversely affects the family planning targets, the focus of such comments is presumably on financially incentivizing deliveries more than sterilizations- an understanding that reeks of prejudice and has no grounding in evidence or even anecdotal reality. On the other hand the more obvious problems of a sole available gynecologist having to choose between running around between numerous sterilization camps or providing obstetric services in the district hospital, or ANMs withdrawn from their usual outreach services where they are the sole access to spacing methods- is seldom mentioned. But the contention of this study is that this is happening and in a big way- and it is not being addressed at all.

17. A HR policy that includes a. strategies of generation of more ANMs and nurses and facilities their easy recruitment into service, b. that provides a positive practice environment and c. that includes a number of well tested innovations that lead to retention of skills in remote and rural areas- need to be deployed for the problem of HR for MCH services to be addressed.

18. Adequate financial and human resources and infrastructure and supplies to be prioritized to these 15% of facilities which are managing 100% of the increased case load. We need to respect the fact that people make a choice as regards which facility to go to and to ensure that improvement of quality of services is prioritized for those facilities where women are going for delivery. The financing mechanism has to be flexible enough to provide more funds to those facilities which are seeing greater case loads, a larger range of services and which are certified as providing a better quality of care.

19. There is also a need to develop two or three model plans – including the financing package - for organizing referral transport services in two or three standardized geographic and social contexts. One must also develop a model where the state is able to afford a comprehensive emergency response system covering all emergencies including obstetric emergency and another model for those states where it would provide transport services for obstetric and newborn care alone. There is a need to note the high differentials between what various women have to pay to travel to the facility. A fixed reimbursement for all would not help those marginalized areas where travel support is most required. Second referrals should mandatorily be covered by the hospital. In all areas where distances or costs are a problem- most clearly evidenced by keeping the vehicle waiting- the drop back home should be mandatory. Free Referral transport cover needs to include transport for antenatal and post natal complications and sick newborns and all under 5 infants.

20. Protocols of care should be printed and liberally available and replaced regularly at every facility. Monthly meetings should review use of this handbook and develop innovative ways to ensure that providers read the book and follow these protocols. Since these are senior professionals, there would be contestation of protocols and technically competent professionals should be available to explain the logic of the protocol to each doubting professional. Mere administrative orders would not be enough.

21. Clinical supervision- as distinct from administrative supervision- should be institutionalized. Such supervision merges seamlessly with on the job training and to kick start this a separate team of supervisors could be brought in- with support from suitable not for profit, professional or management agencies. In the course of a year or two internal capacity for clinical supervision to adhere to clinical protocols can be institutionalized.

22. Proper recording formats at the facility level need to be put in place – case sheets, delivery registers with columns for recording maternal and newborn complications, operation theatre and family planning registers. These would help ensure collection of required and reasonably accurate data reporting in the HMIS. This must be seen as an essential part of supervision.

23. Data from private sector facilities must be included into the HMIS data base. For mission hospitals and others where a large amount of

RCH work is done, a separate unit needs to be available, and the data recorded on par with a CHC or DH.

24. Recording and reporting of complications should be increased substantially. Both primary registers in the facilities and the HMIS needs to be strengthened for the same. The principle of HMIS development should be the ability of those collecting and entering data to be able to analyse district, block and facility level data for these critical indicatos and provide feedback and points for action. Any system that cannot do this would be valueless in the effort to accelerate child and maternal survival. However the system would also need to meet the standards of interoperability needed for it to communicate to the national web-portals. HMIS would provide information on volume of care and quality of care, and on payments- and this is adequate for all planning and monitoring purposes. Asking for more information, especially all manners of disaggregations becomes a way of undermining the efficiency and use of information- and while appearing to do more, actually compromises what is happening. HMIS must be strengthened by the sort of checks described earlier.

25. Since maternal mortality cannot be computed often enough and reliably enough at the district level, the system must use the following four indicators to measure progress in this regard- Proportion of births in Emonc enabled facilities, Met Needs for Emonc rate and met need for CS, still birth rates as proxy indicators. This along with annual maternal death review at DH and FRUS for a start and a medical audit of case management especially CS management in the major hospitals providing these services- at least those handling over 1200 cases a year- would be a good proxy for maternal mortality ratio and perinatal mortality rates and give all the useful information needed to improve the provision of institutional delivery in the spirit and substance of what was intended under JSY. Meanwhile improved compulsory registration of deaths and births should be able to capture maternal, neonatal mortality and still birth rates more completely.

26. For ASHAs, the three way split of the package needs to be communicated better to ASHAs and to the public and even to the administration. And in most situations they would not have to pay for the transport. ASHA paying for the food of the patients is not to be encouraged and is frankly exploitative. Linking even the Rs. 200 payment to her escorting or making her payment dependent on the staying for 48 hours or suggestions for linking it to birth outcomes are all misconceived.

27. The current JSY package for mothers should be maintained as such. There should however be considerable clarity that this package is just barely covering the costs of seeking care for normal delivery and does not cover the costs of treatment for complications, nor even assure access to such treatment. Costs of treatment for complications are catastrophic and they are most so in the poorest districts. Necessarily therefore, all costs incurred in referral care from a public hospital should be reimbursed to the hospital providing it and the mother herself should be provided service on a cashless basis. There would be concern that this would strengthen the nexus between the public provider and the private commercial market, a nexus which was observed in many districts in the course of our study. However there are not for profit hospitals which are less prone to these moral hazards and anyway a package for C-sections linked with a medical audit of C-sections should be provided for. We have not examined the Chiranjeevi model here, but where we came across equivalents this bundling of normal deliveries and C-sections into a normative single rate, which worked well in Gujarat is not as effective in other states. For one such packaging tends to push out C-sections and complication to non accredited hospitals, and for another the volume of normal deliveries needed are not available where the public hospital is functional- especially since those under this scheme do not also qualify for JSY and finally there are too few hospitals in the private sector and in such a monopoly situation they are charging very high rates which they are reluctant to give up.

28. The higher financing needed for the woman most at risk and for any and all improvements in quality of care has to come from better resource allocations to transport providers or service

providers – whether public or private- and to provide these resources in a manner which is responsive to the widely different needs and costs of care of different patients. Without such a differential financing, expenditure on JSY will continue to burgeon and the commensurate gains in maternal and neonatal survival or in social protection we expect of this programme would fail to materialize.

In conclusion therefore, the study demonstrates that the JSY has unarguably resulted in an increase in institutional deliveries, and has enabled poor women to access public health facilities. It has also perhaps for the first time, challenged the public health system, forcing the providers and the system to deliver services for safe childbirth. This has been made possible by the commensurate increases in infrastructure and human resource provided through other NRHM inputs. Notwithstanding these successes, much more needs to be done. The study also demonstrates that increases in human resources and infrastructure, while necessary are not sufficient to provide functional, effective or quality services.

Some issues demand immediate attention, such as for instance, the removal of the exclusionary criteria for home and institutional deliveries which limit this entitlement for the most vulnerable women, effectively putting it out of their reach. The second of these is streamlining payments and addressing issues of leakage. The third is ensuring that out of pocket expenses to women are stopped. One way to do this would be public dissemination of recent policy decisions that user fees should not apply to mothers and newborns.

The report proposes several recommendations, and while there are no short cuts to reducing maternal mortality, some of the recommendations can be acted upon immediately and some others need immediate planning and initiation, but may take a longer while to bear fruit. Expanding the base of institutions to provide services through roping in not for profit institutions, skill building for existing staff, use of printed protocols, recording and reporting complications, and clarifying the role of the ASHA in the JSY are all actions that can be undertaken within a short time span. Longer term actions include the development of additional facilities so that met need for EmONC and C-sections is increased, training of skilled birth attendants, enabling facility based newborn care across facilities, developing optimal HR policies, and establishing a pattern of differential financing across facilities.

Finally, the study re-emphasizes that safe motherhood need to be reviewed in a context where care for the antenatal women, post partum mother and newborn need home based care and enabling the ASHA to provide such services is critical to address the mortality and morbidity associated with these periods.

With the JSY, a beginning to address maternal mortality has been made, but is far from sufficient. The pressure built up on the system has to be sustained, and accelerated. Urgent and focused action is needed and if not forthcoming, our goals for reduction of maternal mortality are likely to elude us for a long time.

References

1. Save the Children; Women on the Front Lines of Health Care. State of the World's Mothers; 2010.
2. Adam Wagstaff, Mariam Claeson, World Bank; The millennium development goals for health: rising to the challenges, 2004.
3. Ministry of Health & Family Welfare, Government of India; Operational Guidelines for Maternal and Newborn Health; 2010.
4. Dr. Oona MR Campbell and Prof Wendy J Graham; Strategies for reducing maternal mortality: getting on with what works; Lancet Maternal Survival Series, 2006.
5. WHO SEARO, Country Health Profile Thailand- http://www.searo.who.int/en/Section313/Section1525_10864.htm accessed on 6th May, 2011.
6. Christian Medical College Vellore; Hospital Infection Control Manual; 2003.
7. UNICEF India; Operating Perinatal Referral Transport Services in Rural India; 2010.
8. Ministry of Health & Family Welfare, Government of India and International Institute for Population Sciences Mumbai. 2007-08. District Level Household and Facility Survey (DLHS-3). Fact Sheets.
9. International Institute for Population Sciences, Mumbai; National Family Health Survey (NFHS-3); 2005-06.
10. Ministry of Health & Family Welfare, Government of India; Guidelines for Operationalizing First Referral Units; 2004.
11. Ministry of Health & Family Welfare, Government of India; Guidelines for Operationalizing a Primary Health Centre for Providing 24 Hour Delivery and Newborn Care under RCH –II; 2005.
12. Office of Registrar General of India. Sample Registration System; Special Bulletin on Maternal Mortality in India; 2007-09.
13. Ministry of Health & Family Welfare, Government of India; Infection Management and Environment Plan. Guidelines for Health Workers for Waste Management and Infection Control in Community Health Centres ; 2007.
14. Ministry of Health & Family Welfare, Government of India; Skilled Birth Attendant Guidelines; 2010.
15. Smith ND et al. 2009. Estimating the burden of malaria in pregnancy: a case study from rural Madhya Pradesh, India. Malaria Journal 8:24.
16. Villar J. et al. WHO 2005 Global Survey on Maternal and Peri-natal Health Research group. Maternal and neonatal individual risks and benefits associated with Caesarean delivery: multicentre prospective study.
17. Pisake L. et al. Method of delivery and pregnancy outcomes in Asia: the WHO global survey on maternal and perinatal health, 2007-08.
18. Jeanne-Marie G. June 2010. Vaginal Birth after Caesarean section. New insights on maternal and neonatal outcomes. Obstetrics and Gynaecology. Vol 115, No. 6.
19. Mehta A. et al. 2001. Trends in Caesarean Section Rates at a Maternity Hospital in Mumbai India. Journal Health Population Nutrition. Dec: 19 (4); 306-312.

20. Chhabra S. 2006. Caesarean Section. J MGIMS, Vole II, No. (ii) 5-9.
21. Sreevidya S. et al. 2003. High Caesarean rates in Madras (India); a population based cross sectional study. BJOGS.; 110 (22) ; 106-11.
22. Gita A. 2008. Caesarean Section: Evaluation, guidelines and recommendations. Indian J Medical Ethics. July-Sept: 5(3).
23. Majoko F. et al. 2008. Cochrane review. Trial of instrumental delivery in theatre versus immediate caesarean section for anticipated difficult assisted births (Review).
24. Bailey PE. 2005. The disappearing art of instrumental delivery: time to reverse the trend. Int J of Gyn Obs (200) 91, 89-96.

National Health Systems Resource Centre
NIHFW Campus,
Baba Gangnath Marg, Munirka,
New Delhi 110067