

Understanding Barriers to Antenatal Care and Institutional Delivery-Survey

Part 1 –Survey of Women Who Recently Delivered a Child
Rajsamand, Rajasthan

July 2015

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Working paper Series

Model Districts Health Project

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List of Acronyms

AHS	Annual Health Survey
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
APL	Above Poverty Line
ASHA	Accredited Social Health Activist
BPL	Below Poverty Line
CES	Coverage Evaluation Survey
EI	Earth Institute
Hb	Haemoglobin
HPD	High Priority District
HD	Home Delivery
ID	Institutional Delivery
IFA	Iron Folic Acid
IMR	Infant Mortality Rate
JSY	Janani Suraksha Yojana
LHV	Lady Health Visitor
MCHN	Maternal and Child Health and Nutrition Day
MDG	Millennium Development Goals
MDHP	Model Districts Health Project
MDP	Model Districts Project
MMR	Maternal Mortality Ratio
MNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
NFHS	National Family Health Survey
NRHM	National Rural Health Mission
PCTS	Pregnancy Child Tracking Health Services and Management System
RMNCH+A	Reproductive Maternal Neonatal Child and Adolescent Health
SIFHW	State Institute of Family and Health Welfare
TBA	Traditional Birth Attendant
WHO	World Health Organization

Acknowledgments

This research paper would not have been possible without the support of many people. The MDHP team wishes to express their gratitude to Dr. Pritam B. Yashwant, IAS, former District Collector and Dr. Tarun Chaudhary former Chief Medical Health Officer (now Project Director, Maternal Health) of Rajsamand, Rajasthan for their invaluable assistance and support during the conceptualization of the study. We would like to thank the District Program Manager Mr. Vinit Dave, for his assistance and inputs during the implementation of this research. We express our sincere appreciation to the team members of Prayas, Chittorgarh who have supported the implementation of the study and to Mr. Kshitiz Sisodia who co-analysed the survey data. Special thanks to Mission Director, National Health Mission Rajasthan Mr. Naveen Jain, IAS, Dr. Anuradha Oswal, State Program Manager and Dr. Tarun Chaudhary for their time, consideration and inputs during discussion of the study results. Deepest gratitude is also due to the researchers Gargi Wable and Andrew Thorne-Lyman for the preparation of the initial needs assessment, study and instrument design. We express our appreciation to all the health personnel and study participants, who have given us insightful perspectives on the situation and barriers to antenatal care and institutional delivery in Rajsamand District. Finally, the team expresses immense appreciation to their donor – IKEA Foundation for their continuous support.

Executive Summary

The National Rural Health Mission focuses on extensive antenatal care and institutional delivery services for pregnant women and their children in order to achieve Millennium Development Goals 1, 4 and 5 related to nutrition, child and mortality. The network of ANMs, ASHAs and Medical officers are crucial to provide the benefits of the established public health system. However, implementation challenges prevent people from accessing these services and health personnel from providing them.

Rajsamand is one such district of Rajasthan in India where poor ANC indicators and stagnation of institutional delivery rates, especially in tribal zones was observed. At the request of the (then) leadership in the district, Earth institute at Columbia University conducted a study to assess the barriers experienced in antenatal care, nutrition, and institutional delivery in two blocks, Bhim and Kumbhalgarh. However the results and observations of this study hold true to many areas across different regions of Rajasthan, based on the discussion with the State Health leadership.

The study used a mixed methods approach with a quantitative and qualitative component. The survey with women who had delivered recently at home or an institution, gauged the situation of ANC and delivery services. Late registrations and quality of care were the primary concern highlighted in the data. The reasons varied from structural barriers like distance and time to consumer related barriers such as superstition and low importance perceived of benefits. Reasons for home delivery were related to delay in decision making coupled with 'convenience' factor of home. Key informant interviews with health personnel highlighted the system and beneficiary barriers which make it tough for them to perform their duties. Focus group observations with community members (ASHAs, mother in-laws, religious leaders and Dais) showed that Dais are still trusted members in many communities that depend on their experience and skill for conducting deliveries. Therefore communities do not always see the advantages of delivering at an institution. Misconceptions about nutrition prevent them from continuing with their normal diet which includes buttermilk and ghee. One of the reasons for delivering at home was also people not willing to stay for 48 hours at an institution. Migration in these areas makes it difficult to track a pregnant woman from pregnancy to delivery and providing her the full coverage of services.

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Based on the triangulation of information from the survey, key Informant Interviews and focus group discussions, the following recommendations need consideration and prioritization:

1. Improve the perception of importance of ANC and Institutional delivery

Late ANC registration reduces the number of check-ups and contact with ANM for health related information. Barriers related to attending MCHN day impedes full coverage. Therefore efforts need to be focused on improving the awareness of benefits of ANC and institutional delivery through more rigorous IEC. Only when the perception improves will there be a more permanent change in demand.

2. Providing quality services to generate demand

The want for quality services play a role in where the woman and her family choose to deliver. This is apparent through the benefits they perceive at a private institution-manpower, attentive care, faster delivery and fewer days of stay. Trust in Dais or experienced health personnel's skills also influence their decision making.

3. Improving MCHN Day Standards and Supervision

Having skilled ANMs is crucial to motivate the women to attend ANCs and help her understand the benefits. The basic tests are not being conducted rigorously. Quality supervision is required not only to monitor the quality of ANMs work, but also to draw out the implementation challenges to resolve bottlenecks.

4. Diverting Home Deliveries to Institutions – Addressing the Barriers

Analysis of barriers related to access institutions for delivery highlighted that although most villages are located within an hour of reach, difficult terrains, cell phone access barrier, higher use of private vehicles leading to out of pocket expenditure, might influence families to choose the more 'convenient' option of home delivery.

- Strengthening Subcenters as delivery points to address access and delayed decision making

- A plan for better use and monitoring of government sanctioned vehicles
- A systematic transport and referral plan for sectors with high home deliveries
- IEC that uses risk messages with positive framing should be applied. Involving the Panchayat to bring awareness in the community regarding timely access for pregnant women and the child is crucial.

5. Family Planning

Efforts to delay first pregnancy needs further stress. IEC strategy with innovative ways of reach and communicate must be adopted. Counsel cannot be simply given to women, but to men and their community as well. Indirect effects and benefits of delaying early pregnancies, including health benefits for the child and economic benefits for the family must be emphasized.

6. Nutrition – Community Based Prevention

Based on the study results, focus on community based prevention of malnutrition is crucial.

- If woman were to more clearly understand the benefits of IFA not only for themselves, but their child, may be uptake would be better. Adolescent girls who already have poor nutrition get married and pregnant early. If community members instead of just the ASHA and ANM counsel pregnant and lactating women, the acceptance will be better.
- Dietary misconceptions regarding 'ghee and buttermilk' intake during pregnancies should be cleared
- Good nutrition should be discussed as a community norm. Women might not perceive its importance as they don't understand the developmental and cognitive effects it has on the child.

7. Community Involvement- Do not depend on ASHA s alone

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Results show that there is no one key person who influences decision making of the woman regarding her pregnancy care and delivery. But the community norms as a whole do. Involvement of more peer women, committees or groups and the Panchayat would help the ASHA and ANM in their work.

Only when practices about good nutrition, ANC and institutional delivery become a norm in the community is acceptance better and it creates a demand from the consumer side to access the benefits of a public health system.

This Working Paper is a three part Series where the results of each of the 3 study components- Survey, Key Informant Interviews and Focus Group, has been separately presented. However the key recommendations provided are a triangulation of the data and findings from all 3 components of this mixed methods study. This is Part I of the Series- Survey.

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The Columbia Global Centers | South Asia is part of a network of Columbia Global Centers that the University has launched around the world. The Center seeks to engage in activities and research linked to business, health, environment, education, urban planning, infrastructure, economic development, arts and culture, by providing a base throughout South Asia. It is a platform for academic partnerships, schools and programs at the University and locally in this region to collaboratively examine discuss and find solutions to complex issues in the various disciplines. Through leveraging its world-class thought leaders, sharing resources, and conducting innovative projects using a multidisciplinary approach, Columbia Global Centers | South Asia aims to engage students, faculty and stakeholders in a truly global conversation.

Model Districts Health Project

The Model Districts Health Project was launched in 2010 as a joint initiative between the Earth Institute and Ministry of Health and Family Welfare, Government of India. Its aim was to demonstrate and support health and nutrition based interventions and activities to address the policy–practice gaps that were highlighted in the mid –term evaluation of NRHM by Earth Institute (Bajpai et al, 2011). More specifically the focus is on the Millennium Development Goals 1, 4 and 5. Currently the project is under the Center for Sustainable Development at Earth Institute and is working in three states- Rajasthan, Telangana and Jharkhand. Within these states EI works in two districts, one which was selected for the Model Districts Project and one High Priority District where EI is the lead development partner for RMNCH+A. In Rajasthan, Dausa and Rajsamand (HPD), in Telangana, Medak and Mahbubnagar (HPD) and in Jharkhand, Khunti and Simdega (HPD) were selected for implementation of the Models District concept.

The Model Districts Project focuses on health systems strengthening through implementation research, strategic technical advice, monitoring and evaluation, and policy advocacy to help ensure the successful scaling up of services. It is ultimately the district governments and district health units that are responsible for implementing the quality improvements, best practices, and innovations based on the situational analysis. State

governments and NRHM offices have a key role to play in driving innovations at a district level, and providing additional funding on evidence based need.

Introduction - Study

NRHM provides an extensive array of maternal health services to improve the health outcomes for women and children to achieve Millennium Development Goals 1, 4 and 5. The packages are comprehensive ranging from family planning services, nutrition, antenatal care, and safe deliveries, post-natal care for mother and child and management of complications at all crucial stages. Monetary incentives for the mothers to render these services and for health cadre to provide them efficiently are given to optimize usage and motivate them to engage with the health system. Providing services which are accessible and affordable play a crucial role in improving health indicators.

Under the Reproductive, Maternal, Neonatal Child and Adolescent Health (RMNCH+A) program a continuum of care is maintained at different stages. However implementation challenges at ground level impede and slow down the processes of achieving positive changes. Assessing factors that can be changed or approached differently based on ground reality, practicality and feasibility is important while designing health systems for equitable health care.

Earth institute at Columbia University is the lead development partner for RMNCH+A activities in Rajsamand and works closely with the District Health Team providing technical support and conducting regular gap assessments. Some of the tribal regions in the district had poor indicators for antenatal care, anaemia and pockets of high home delivery load. This study was undertaken at the request of the then District Collector and in consultation with the Chief Medical Health Officer to assess the situation and specifically focus on the barriers faced in Rajsamand.

Background

Antenatal Care

NRHM offers ANC which includes at least 4 ANC's check-ups, early registration within first trimester along with physical and abdominal examinations, Hb estimation and urine

investigation, two doses of Tetanus Immunization and consumption of IFA tablets¹. However there are barriers related to structure, norms, capacity and monitoring that impede efficient and effective ANC care. A community based study carried out in a tribal district of India highlighted that although a significantly high percentage of women were receiving ANC care at least 3 or more times, early registration rates were still poor as women were not motivated to come on their own accord for check-ups. Additionally the quality of ANC was poor (Bhaisare, Rao, & Khakase, 2015). In the rural north region of India, it was evaluated that although pregnant women had good knowledge on ANC, age and literacy had a significant association with utilization rates. 80% of women were delivering at institutions but registration within first trimester was still very low (Gupta et al., 2015). Another study assessed the coverage of ANC services at subcenters. Although 70% of women registered for ANCs, only 50% registered in the first trimester and only 29% had at least 3 visits. Additionally the women who had IFA for 100 days or more, was negligible (Singh et al., 2015). Although Maternal Mortality rates have decreased from 212 in 2007 to 167 in 2013, the progress has been slow (MMR Bulletin). ASHAs role in informing about ANC services and ANM providing them is crucial to the success of timely and key ANC services. Although NRHM has been able to set up services in most remote regions quality and coverage are crucial at this stage.

Anaemia and Nutrition

Anaemia during pregnancy has important consequences for both a mother and her child. It is responsible for 120,000 maternal deaths each year globally, and 18% of maternal mortality in low and middle income countries (WHO 2009). According to the World Health Organization, anaemia affects half a billion women of reproductive age worldwide. In 2011, 29 % (496 million) of non-pregnant and 38% (32 million) of pregnant women aged 15-49 years were anaemic (WHO 2011). South Asia and Central and West Africa bear most of the burden of anaemia cases (WHO Anaemia Policy Brief). The prevalence of anaemia in pregnant women in India is 58% and accounts for 20% maternal deaths (National Iron Plus Initiative). Therefore the National Iron Plus Initiative has recommended, Iron Folic Acid Supplementation for 100 days during pregnancy and post-partum. However distribution and compliance for IFA consumption has been an issue. A study in southern India found that the

¹ National Rural Health Mission

compliance of IFA was moderate; with the main reasons for noncompliance being forgetfulness, travel, constipation and vomiting. The side effects noted were vomiting and gastritis (Mithra et al., 2013). A study in Bihar found that women were more likely to receive IFA if they had higher number of counselling and ANC services, and IFA consumption would be optimum if she has at least 4 ANC visits or more (Wendt et al., 2015). The prevalence of anaemia among women in Rajasthan increased from 1998 to 2005, from 48.0% to 53.7% (Balarajan et al., 2013). As per NFHS 3 prevalence of anaemia among pregnant women (15-49) in Rajasthan was 61.7%. These figures highlight the importance of reducing anaemia in pregnancy for a substantial impact on maternal and child health indicators.

Institutional and Home Delivery

Skilled birth attendance is a key factor in determining maternal and child outcomes along the continuum of care. These health professionals are expected to manage normal pregnancies, deliveries, and postnatal care, and identify, manage, or refer complications for women who are delivering and infants (WHO 2005). It has been estimated that almost 40% of pregnancies could require specialized services, and about 15% of all pregnant women develop complications during the intra-partum and immediate post-partum period needing access to emergency obstetric care (Fauveau 2004). A review on Global causes of maternal deaths from 2003-2009 showed that 73% of all deaths from the sample were due to obstetric causes (Sal et al.). Delivery at an institution provides not only skilled birth attendance but also equipment and referral mechanisms to handle basic and emergency obstetric complications. As per CES 2009, institutional delivery rate was 68% in rural India. Improvement of institutional delivery rates, improves the coverage of skilled birth attendance with the advantages of having it at a facility. A study examined trends from two nationally representative survey sample determined that economic status is a more important determinant of institutional birth rather than access and distance. The importance of focusing on generating demand from users was highlighted. The influence of family member's role in decision making has not always been consistent and holds differing level of importance. Therefore although this should be considered within the framework for planning improvement in institutional delivery, other factors influencing women should be explored (Bruce et al., 2015).

Situation-Rajsamand:

Rajsamand is a small, hilly district in Rajasthan with an area of 4500 square kilometers. It has a population of 1.2 million, 84% of which live in rural areas. Female literacy remains low at 48%².

Maternal Mortality: While MMR in Rajsamand has apparently declined from 364 in 2010-11 to 265 in 2012-2013 as per AHS it remains far behind the state's MDG target of 248 maternal deaths per 1,00,000 live births by 2012-13³.

Anaemia: In 2012-2013 the number of women who had haemoglobin below 11 gm/dl was 20735 against 36588 registered for ANC (57%)⁴. In 2013-2014 the number of women who had haemoglobin below 11gm/dl was 26931 against 32932 registered for ANC (82%)⁵.

ANC Registration: In 2012-2013 18701 women registered in first trimester against 36588 ANC (51%)⁴. In 2013-2014 19550 women registered in first trimester against 32932 ANCs registered (59%)⁵. Although it is improving, it is low and requires special focus.

Percentage of Institutional Delivery: Institutional deliveries amongst the total deliveries reported for the district was 89.06% in 2013-2014⁴ vs 89% in 2012-2013⁵. This underscored stagnation in the rate of institutional deliveries in Rajsamand. Additionally the number unreported home delivery is a concern.

Purpose of Study

Based on the national, state and district scenario, a joint decision between Earth Institute and the District Unit was undertaken for EI to conduct a study to understand the status of antenatal care services and the reasons for home deliveries in Rajsamand, focusing on barriers. Findings of the study would enable data driven informed decision making at all levels of the health system by the State, District and development partners to collaboratively address the gaps and re-think strategy where applicable. As most issues cut across all districts in Rajasthan, many of the findings would be relevant to other parts of the state as well.

² Census 2011

³ Annual Health Survey 2012-2013

⁴ Pregnancy Child Tracking Health Services Management System 2012-2013

⁵ Pregnancy Child Tracking Health Services Management System 2013-2014

Study Objectives

1. Explain barriers and facilitators of antenatal care
2. Explain reasons for home delivery to make evidence based- recommendations
 - a. Assess the factors influencing delivery outside of institutions/home deliveries and perceptions about how those factors could be addressed among community members and healthcare providers
3. Explain the barriers and facilitators to prevention and treatment of anaemia during pregnancy
 - a. Assess coverage of preventive iron-folic acid - distribution and compliance among pregnant women

Materials and Methods

Sampling Frame

Kumbhalgarh and Bhim blocks were selected for the sampling frame as they have a high proportion of tribal population and highest number of reported home deliveries compared to other blocks (834 in Kumbhalgarh and 713 in Bhim, the total for Rajsamand being 3379⁵). They contribute to almost 50% of home deliveries for the whole block. Over 50% of public health facilities are understaffed. Access to health facilities in these blocks is also difficult and not easy for all users of the health system, given the hilly terrain and hard-to-reach areas.

Mixed Methods Study

This study consisted of 3 components to understand the study objectives:

1. A quantitative survey which included women who had delivered a child in the last 1 year (age group 18-45 years)
2. Focus Groups with ASHAs, traditional birth attendants (dais), religious leaders and mother-in-laws
3. Key Informant Interviews with health service providers –ANMs, LHV, Medical Officers, ASHA facilitators

Part I- Quantitative Component- Survey

Study Design and Procedures

Sampling

A purposive stratified sampling approach was used. Bhim and Kumbhalgarh was the sampling frame for the study. Each of these blocks is divided into sectors. From each sector one or two health facilities was chosen that had a high number of reported home deliveries in their catchment area based on analysis on one and half year data in PCTS. Registers from these facilities were used to choose the sample of women who delivered at an institution and at those who delivered at home, to assess antenatal care and delivery experience.

Study Subjects and Sample Size

Women who had delivered a child in the last 1 year at the time of the survey (November 2013 to October 2014) in the age group of 18-45 years were included in the survey. A total of 426 women participated. Four were excluded from analysis due to inconsistencies in data. Therefore the sample size for analysis was 422.

Study Instrument and Data Collection

A comprehensive questionnaire was designed that covered respondent's household and background information, ANC services undertaken, iron folic acid consumption and child delivery information in different sections. The questionnaire was translated in Hindi and piloted in the field by Prayas, Chittorgarh. The survey team from Prayas was trained by MDHP to administer the interview based questionnaire at a household level.

Ethical Approval

The study was approved by the Columbia University Institutional Review Board and Prayas Chittorgarh, Ethical Committee provided the in country approval. Before administering the survey informed consent was taken from the participants.

Statistical procedures

Data cleaning and descriptive analysis was carried out in SPSS, conjointly by researcher from MDHP, EI and Prayas, Chittorgarh.

Results

A. Household and Background characteristics of Study Respondents

(Women Age group 18-45 who had delivered a child in the last 1 year)

1. Type of delivery and Block

Table 1: Type Of Delivery and Respondent's Block

Type of Delivery	Block of Respondent		Total
	Kumbhalgarh	Bhim	
Home Delivery	100 (48%)	108 (52%)	208
Institutional Delivery	109 (51%)	105 (49%)	214
Total	209	213	422

422 women's surveys were analysed from Bhim and Kumbhalgarh blocks in Rajsamand.

- 209 and 213 women from Kumbhalgarh and Bhim were surveyed respectively
- Home Deliveries: 208 women from the sample had undergone a home delivery for their last delivery. 48% of them belonged to Kumbhalgarh and 52% were from Bhim
- Institutional deliveries: 214 women from the sample had undergone institutional deliveries, 51% of them were from Kumbhalgarh and 49% from Bhim.

2. Size of the family

- Majority (62%) of the women from the total sample belonged to families that had 5-8 members living in the household.
- 20% of the sample belonged to a family size of 1-4 members while 15% belonged to a 9-12 member family size.
- More than half, 53%, of the sample belonged to extended families while the rest 47% belonged to nuclear family.

There was no significant difference observed in the proportion between the two groups (women who delivered at home and at an institution) in comparing the type of families (nuclear or extended) they belonged to.

3. Household Head of the Family

The general pattern observed were males being the household head (93%).

- 56% of women responded that their husbands were heads
- 36% of the women responded their father in law were head of the family
- In 5% of the families, mother in laws were found to be head of their family

4. Ration card, Job card, Agricultural land and Bank accounts

- 97% families of respondents had at least some type of ration card available
 - 65% had Blue Ration card (APL)
 - 26% had Red Ration card (BPL)
 - 6% had Pink Card Ration card (Antodaya)
- 60% the women responded that at least one member in the family had the MNREGA job card
- 400 (95%) of the women's family had their own agricultural land
- 86% of the surveyed women or somebody else in their family had bank account.

5. Cell Phone Access

More than half of the women (53%) were found not to have their own cell phones

- 68% of the women reported that no one from their family and friends had cell phones
- 41% of the women were found to have no access to cell phones at all; since neither they nor anybody in their family had cell phones.

This data highlights the difficulty that could be potentially faced by them to contact ASHAs and referral services in case of emergencies.

Table 2: Cell Phone Accessibility

Respondent has her own cell phone	Family/Friends/neighbours Own Cell phone		Total
	No	Yes	
No	170 (40.7%)	50 (12%)	220
Yes	116 (28%)	81 (19.3%)	197
Total	286	131	417

Note: Percentages are calculated by keeping total (417) as the denominator and missing values are not accounted in the total, hence the total 417 instead of 422.

6. Age group of respondents

Most of the women belonged to the age groups 21-25 years and 26-30 years. About 12% of the women to the age category of 18-20 year and since we took the women who delivered in last 1 year as inclusion criteria in for the sample, it also demonstrates early pregnancies in this group.

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Figure 1: Age Group of Respondents

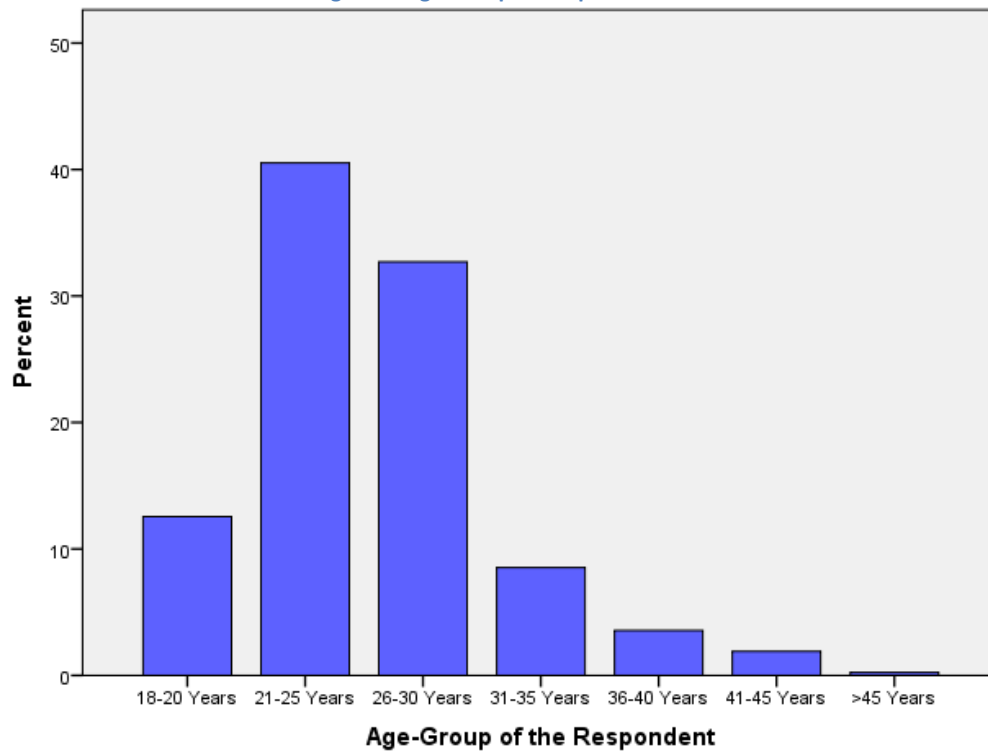


Table 3: Age of Respondent at First pregnancy

Age of the respondent at the time of their first pregnancy	Frequency	Percent	Cumulative Percent
16-20 Years	311	74	74
21-25 Years	105	25	99
26-30	3	0.7	99
31-35	1	0.2	100
Total	420	100	

Note: Missing values not accounted in analysis

- As it can be seen from the above table that about 74% of the women had their pregnancy within the age group of 16-20 years. This highlights the prevalence of early pregnancies at a young age which could pose a threat to their health.
- Only 25% of the women had their first pregnancy in the age group of 21-25 years, while 1% of the women had it after 25 years of age.

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Table 4: Age of Respondent at Time of Marriage

Age-Group of the Respondent at the time of her marriage	Frequency	Percent	Valid Percent	Cumulative Percent
10 years & Under	24	5.7	5.7	5.7
11-17 Years	198	46.9	46.9	52.6
18-24 Years	197	46.7	46.7	99.3
25-31 Years	3	0.7	0.7	100.0
Total	422	100.0	100.0	

- 53% of the women in the sample had got married before attaining the legal age of marriage. Early marriage leads to early pregnancies which could fall into the category of high risk pregnancies.
- 46.7% of the women got married between the age group of 18-24 years.
- 1% of the women who got married in the age group of 25-31 years.

7. Educational Background of the respondent

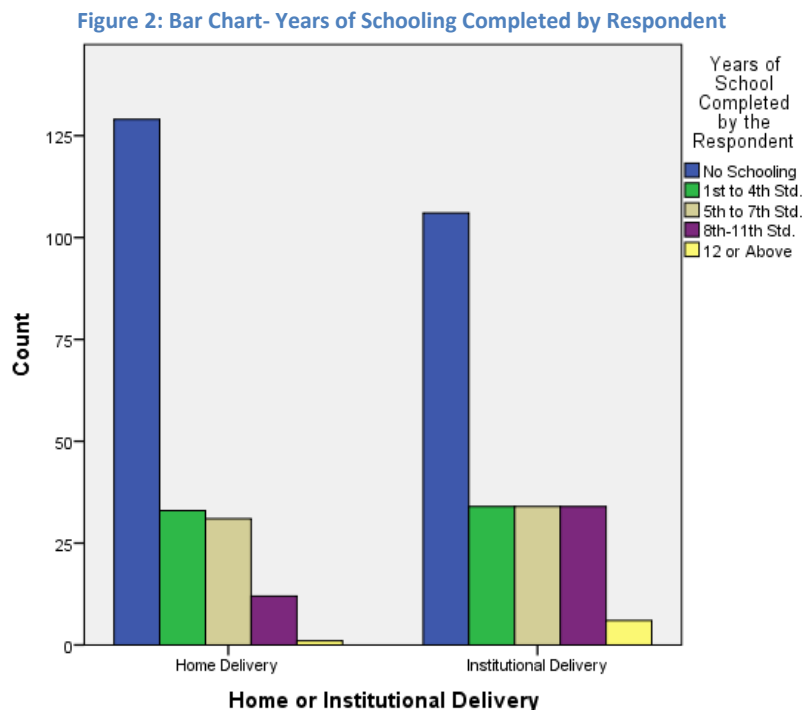
- 56% of the women have never attended school and a very few (1.5%) of them have attended school till 12 or above.
- Women having home deliveries and not having attended school previously (63%) are a little more in number than women who had institutional deliveries (50%)

Table 5: Cross tabulation- Type of Delivery and Years of Schooling Completed

Type of Delivery	Years of School Completed by the Respondent					Total
	No Schooling	1 st to 4 th Std.	5 th to 7 th Std.	8 th to 11 th Std.	12 or Above	
Home Deliveries	129 (62.6%)	33 (16%)	31 (15.1%)	12 (5.8%)	1 (.5%)	206
Institutional Deliveries	106 (49.5%)	34 (15.9%)	34 (15.9%)	34 (15.9%)	6 (2.8%)	214
Total	235 (56%)	67 (16%)	65 (15.5%)	46 (11%)	7 (1.5%)	420

Note: Percentage is calculated on total home deliveries and institutional deliveries and missing values are not accounted in the total, hence the total 420 instead of 422.

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8. Occupation of respondent

- Almost 98% of the women were home makers and very less few were engaged in any primary occupation.

9. Information on Husband of respondent

- Location of Husband: There is no apparent difference between the two groups - women who delivered at institution and at home and if they live with their husband. The factor of living with husband does not seem to play a prominent role and affecting the outcome of delivering at home or institution

Table 6: Type of Delivery and Living Status with Husband

Living with Husband		Frequency	Percent	Valid Percent	Cumulative Percent
Home Delivery	Currently Living with her husband	147	70.7	70.7	70.7
	Husband is out for work	61	29.3	29.3	100.0
	Total	208	100.0	100.0	
Institutional Delivery	Currently Living with her husband	151	70.6	70.6	70.6
	Husband is out for work	61	28.5	28.5	99.1
	Divorcee/Widow	2	0.9	0.9	100
	Total	214	100	100	

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- Schooling of Husband: Most of the respondents' husband had attended school from 5th to 7th Std. (26%) and 8th to 11th Std. (40%)
- About 47% of the respondents' husbands have received education up to 8th grade or higher
- There did not seem to be any major difference in schooling years of husband between the group of women who had institutional delivery and home delivery

Table 7: Years of Schooling Completed by Husband

Schooling Years of Husband	Frequency	Percent	Cumulative Percent
No Schooling	60	14.3	14.3
1st to 4th Std.	56	13.3	27.6
5th to 7th Std.	109	26.0	53.6
8th-11th Std.	165	39.3	92.9
12 or Above	24	5.7	98.6
Don't Know	6	1.4	100.0
Total	420	100.0	

Note: 2 missing responses not considered

- Occupation of Husband: Most of the respondents' husbands (60.3%) were labourers. Migratory labour constituted the 21.7% of the total respondents' husband occupation, with no significant difference between the group of women who had institutional delivery and home delivery.

Table 8: Occupation of Husband

Occupation of the Respondents' husband	Frequency	Percent	Cumulative Percent
Shop owner/Business	35	8.3	8.3
Farm Owner	58	13.8	22.1
Labour in Farms	60	14.3	36.4
Migrated Labour	91	21.7	58.1
Labour in Mines	53	12.6	70.7
Labour	49	11.7	82.4
Others	74	17.6	100.0
Total	420	100.0	

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Note: 2 missing responses not considered

B. Antenatal Care (ANC) Services

1. Visit to a Health Facility for ANC check up

Table 9: Visit to Health Facility for ANC

Women who delivered child in last 1 year had visited facility for ANC		Frequency	Percent	Valid Percent	Cumulative Percent
Home Delivery	No	6	2.9	2.9	2.9
	Yes	202	97.1	97.1	100.0
	Total	208	100.0	100.0	
Institutional Delivery	Yes	214	100.0	100.0	100.0

From 422 women in the sample 416 registered and visited the health facility for ANC check-up. The 6 women who did not were eventual cases of home delivery.

- Out of the 416 who did visit the facility and register for a check-up for ANC check-up, 1 woman was not able to have any check-ups as she reached the facility late and did not try going again.
- 98% of the women who registered reported that they received a Mamta Card. However within a year or less only 302 participants were able to show the card at the time of the survey.

2. Facility for First ANC Check Up

Table 10: Facility visited for first ANC

Facility visited for First ANC	Frequency	Percentage
PHC/CHC/Higher Facility	34	8%
Sub-center	26	7%
MCHN day	336	81%
Private NGO Trust Hospital /Clinic/Maternity Home	19	4%
Total	415	100%
N/A	7	
Sample Size	422	

- 81% of 415 women who had an ANC check-up, had their first ANC check-up at MCHN days
- 8% had their first ANC at PHCs, CHCs or higher district level facilities

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- 4% had their first ANC at a private maternity home, institution/clinic/NGO

3. Personnel registering and conducting first ANC

- 83% were registered by the ANMs at SCs and MCHN days and 13% by Government Staff nurse.

Table 11: Personnel conducting first ANC

Health personnel conducted the first ANC check up	Frequency	Percent	Valid Percent	Cumulative Percent
ANM	328	77.7	79.0	79.0
Doctor	30	7.1	7.2	86.3
Nurse	57	13.5	13.7	100.0
Total	415	98.3	100.0	
NA	7	1.7		
Total	422	100.0		

4. Month of First ANC

- **48% women had first ANC after first trimester**
- Women who delivered at home: Less than half the women, 45%, had their first ANC check up in the first trimester
- Women who delivered at institution: Just over half the women, 60% had their first ANC in the first trimester. Therefore a higher proportion of women who had registered in the first trimester delivered at an institution rather than home.

Table 12: Month of Pregnancy during first ANC cross tabulated with Type of Delivery

	Month of First ANC	Frequency	Percent	Valid Percent	Cumulative Percent
Home Delivery	2	8	3.8	4.0	4.0
	3	83	39.9	41.3	45.3
	4	39	18.8	19.4	64.7
	5	30	14.4	14.9	79.6
	6	25	12.0	12.4	92.0
	7	11	5.3	5.5	97.5
	8	2	1.0	1.0	98.5
	9	2	1.0	1.0	99.5
	DK	1	0.5	0.5	100.0

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	Total	201	96.6	100.0	
	NA	7	3.4		
	Total	208	100.0		
Institutional Delivery	2	22	10.3	10.3	10.3
	3	106	49.5	49.5	59.8
	4	37	17.3	17.3	77.1
	5	22	10.3	10.3	87.4
	6	14	6.5	6.5	93.9
	7	11	5.1	5.1	99.1
	8	2	.9	.9	100.0
	Total	214	100.0	100.0	

Reason for ANC check-up after first trimester

195 out of 415 women had their check up after first trimester because:

- 126 women were not aware that they had to register within 12 weeks
- 81 one did not feel it was necessary because they did not have health problem
- 40 claimed that they were not informed that they were to register with 12 weeks
- 42 women were shy to inform anyone

5. Reason for ANC Check Ups

- 92% of the women who had received check-up stated that it was only for ANC and 8% went due to a problem
- 47% (almost half) of the women reported that nobody explained to them why ANC was being done

Reasons reported by the women for not having even 1 ANC check up

- They did not think it was necessary
- They did not have transportation to go for a check up
- ASHA did not inform them
- Their family did not allow them to go
- Reached late and MCHN day was over

6. ANC Check up by Dais/ Traditional Birth Attendants

- Only 8 women went to a Dai for a check-up mostly during the later months, in the third trimester if they had problem, to get their abdomen examined.

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7. Number of times ANC check-up received

- 69% of the women who delivered at home and 85% of the women who delivered at an institution had at least 3 ANC check ups
- Within the sample of women who eventually delivered at home 25% had 4 ANC check-ups or more while 43% of women who eventually delivered at institutions had 4 ANC check-ups or more.
- Therefore the trend in the data shows that if a woman had more ANC check-ups, there were higher chances of delivering at an institution.

Table 13: Cross tabulation of number of ANC's and type of delivery

Delivery Type	Number of ANC's	Frequency	Percent	Valid Percent	Cumulative Percent
Home delivery	1	16	7.7	8.0	8.0
	2	46	22.1	22.9	30.8
	3	87	41.8	43.3	74.1
	4	33	15.9	16.4	90.5
	5	10	4.8	5.0	95.5
	6	6	2.9	3.0	98.5
	7	1	.5	.5	99.0
	8	2	1.0	1.0	100.0
	Total	201	96.6	100.0	
	NA	7	3.4		
	Total	208	100.0		
Institutional Delivery	1	5	2.3	2.3	2.3
	2	27	12.6	12.6	15.0
	3	91	42.5	42.5	57.5
	4	48	22.4	22.4	79.9
	5	20	9.3	9.3	89.3
	6	15	7.0	7.0	96.3
	7	4	1.9	1.9	98.1
	8	3	1.4	1.4	99.5
	11	1	.5	.5	100.0
	Total	214	100.0	100.0	

Reasons described for not completing 3 ANC's

95 women could not complete a minimum required 3 ANC's

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- 68 (71%) women thought it was not necessary
- 22 women did not remember to go
- 15 women did not have anyone to accompany them
- 14 women stated that ASHA did not inform them
- 13 women had no time to go

8. Facilities accessed by women for ANC

Out of 415 women who had their ANC:

- 361 attended MCHN days
- 85 women went to SCs
- 69 women went to PHCs
- 48 women went to CHCs
- 80 women accessed private institutions/clinics/maternity homes/NGOs

9. People influencing women to go for ANC Check ups

It does not seem that particularly mother-in-laws or ASHAs or husbands influence a women's decision to access ANC care. It might vary family to family and each pregnant woman's circumstance might be different. Therefore focusing on raising the importance of ANC to the community as a whole is more crucial rather than targeting once specific group of people within the family or community.

- 191 women went on their own accord
- 123 reported their husbands also told them to get ANC done
- 108 women were influenced by ASHAs
- 47 were influenced by their mother-in-law

10. ANC Tests and Examinations

Women that reported the following tests and examinations were conducted during ANC (at least once)

- Weight Measured – 91%
- Blood Pressure- 91%
- Blood test – 90%
- Urines Test- 61%
- Abdomen- 74%

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- General Well Being- 54%
- 40% of women in the sample had under a sonogram out of which 60% went to a private facility

Number of times tested/examined

- Although most of the above results look positive, the number of times each test has been conducted is low as compared to the requirement, as reported by the women.
- When the number of times each test/examination was done was compared to the number of ANC's reported, women who had at least 3 ANC's or more showed a downward trend of the number of times they were tested or examined for individual tests.

Table 14: Cross tabulation- Number of ANC check-ups and blood test

Number of ANC check ups	Number of times blood test done during ANC check ups							Total
	1	2	3	4	5	6	7	
1	12	0	0	0	0	0	0	12
2	32	28	0	0	0	0	0	60
3	61	52	49	1	0	0	0	163
4	27	26	12	13	0	0	0	78
5	9	11	6	1	2	0	0	29
6	3	3	10	2	0	3	0	21
7	2	1	0	0	0	0	2	5
8	0	2	2	1	0	0	0	5
11	0	0	1	0	0	0	0	1
Total	146	123	80	18	2	3	2	374

Out of 302 who had 3 ANC's or more 65% had their blood tested 2 times or less

Table 15: Cross tabulation- Number of ANC check-ups and weight measured

Number of ANC check ups	Number of times weight was measured during ANC check ups						Total
	1	2	3	4	5	6	
1	12	0	0	0	0	0	12
2	13	52	0	0	0	0	65
3	30	68	61	0	0	0	159
4	15	29	20	15	0	0	79
5	3	10	14	1	1	0	29
6	2	2	9	3	0	5	21
7	1	1	2	1	0	0	5
8	1	3	1	0	0	0	5
11	0	0	0	1	0	0	1
Total	77	165	107	21	1	5	376

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Out of 299 who had 3 ANC's or more, 55% had weight measured 2 times or less

Table 16: Table 17: Cross tabulation- Number of ANC check-ups and BP measured

Number of ANC check ups	How many times was BP measured during ANC check ups							Total
	1	2	3	4	5	6	7	
1	14	0	0	0	0	0	0	14
2	18	47	1	0	0	0	0	66
3	38	60	67	0	0	0	0	165
4	17	29	13	17	0	0	0	76
5	5	11	10	0	2	0	0	28
6	1	2	10	2	0	4	0	19
7	0	2	0	1	0	1	1	5
8	0	3	1	1	0	0	0	5
11	1	0	0	0	0	0	0	1
Total	94	154	102	21	2	5	1	379

56% of 299 women who had 3 ANC's or more, had they BP checked less than 3 times

Table 18: Cross tabulation- Number of ANC check-ups and urine test

Number of ANC check ups	How many times was urine test during ANC check ups						Total
	1	2	3	4	5	6	
1	5	0	0	0	0	0	5
2	25	9	0	0	0	0	34
3	53	34	21	1	0	0	109
4	31	15	10	3	0	0	59
5	9	8	3	0	1	0	21
6	5	4	6	0	0	2	17
7	2	1	1	1	0	0	5
8	4	0	0	0	0	0	4
11	1	0	0	0	0	0	1
Total	135	71	41	5	1	2	255

Out of 219 women who had ANC at least 3 times or more, 76% had urine test less than 3 times

11. Advice received during ANC check ups

Women who reported receiving the following advice during ANC's

- Delivery Date: 67%
- Rest During pregnancy: 83%
- Diet during pregnancy: 89%
- Benefits of IFA: 92%
- Institutional Delivery: 82%

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- Transportation Services: 73%

12. ASHA visits during pregnancy

- 85% (352) of women reported that they had been visited by an ASHA during their pregnancy
- 34% were very satisfied and 64% were somewhat satisfied with the support given by them

13. Complications encountered during pregnancy

Table 19: Complication Information

Complication	Frequency (out of the 415 women who had ANC)	Percentage that sought care	Most common facility reported where care was sought
Severe Fever	58	90%	SC, PHC, CHC, Govt. Facility
Persistent Vomiting	94	76%	Doctor Nurse at Govt. Hospital/CHC or PHC
Palpitation/Fatigue	17	63%	Private
Breathlessness at Rest	51	77%	Doctor Nurse at Govt. Hospital/CHC or PHC
Swelling of legs, body and face	66	69%	Doctor Nurse at Govt. Hospital/CHC or PHC
Severe Headache and blurred vision	46	71%	Doctor Nurse at Govt. Hospital/CHC or PHC
Vaginal Bleeding	8	86%	Private
Weak/No Movement of Foetus	20	90%	Doctor Nurse at Govt. Hospital/CHC or PHC OR Private
Abnormal Vaginal itching and burning	10	78	Private

C. Nutrition and Iron Folic Acid Tablets during pregnancy

1. Diet during pregnancy

- 358 out of 422 women (85%) received supplementary nutrition from Anganwadi Centre
- Women were asked if they ate less or more during their pregnancy to assess any changes in diet, or adoption of healthy nutrition practices
 - 20% women said they ate more than usual

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- 10% of these claimed that they had more green vegetables and 7% claimed that had more pulses during pregnancy.
- From the 36% women who had meat during pregnancy 70% had it once a month

These points highlight that majority of the women do not specially take nutritious food to maintain a healthy pregnancy, a proper level of haemoglobin and sufficient protein.

2. IFA Received during pregnancy

Free IFA

- 378 out of 422 (90%) women received free IFA from ANM/Nurse.
- Facility from where IFA was received:
 - MCHN Day: 322 women
 - SC: 42 women
 - PHC: 26 women

Purchase IFA/Syrup

- 47 out of 422 women purchased IFA tablets or syrup

Reasons for Purchase of IFA

- 55% purchased it because private doctor had requested them
- 15% claimed that they had not received IFA during pregnancy
- 11% reported they did not like the taste of IFA received during ANC

Amount of IFA received/purchased

- 45% out of 394 women received/purchased 90 or more IFA tablets (ranging from 90-240 tablets)

Therefore the required amount of IFA during ANC was accessed by less than half the women in the sample.

3. IFA intake during pregnancy

IFA tablets consumed during pregnancy

- **10% (43)** respondents claimed that they **consumed none of the tablets** because
 - 25 women did not like the taste of IFA
 - 29 women vomited or felt nauseous and sick

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Table 20: IFA Tablets- Amount Consumed

IFA Consumption	Frequency	Percent	Valid Percent	Cumulative Percent
All tablets	222	52.6	56.3	56.3
Half of the tablets	71	16.8	18.0	74.4
Few (Less than Half)	58	13.7	14.7	89.1
None of the tablets	43	10.2	10.9	100.0
Total	394	93.4	100.0	
NA	28	6.6		
Total	422	100.0		

Frequency of IFA consumption

- Of the 351 women that did consume IFA tablets, 32% consumed IFA 'sometimes' because:
 - 80 women felt nauseous or sick
 - 21 women did not like the taste
 - 19 women did not remember to take it regularly

Table 21: IFA Tablets- Frequency of Consumption

IFA Consumption Frequency	Frequency	Percent	Valid Percent	Cumulative Percent
As per dose prescribed by ANM/Nurse/Doctor	238	56.4	67.4	67.4
Sometimes	112	26.5	31.7	99.2
DK	3	.7	.8	100.0
Total	353	83.6	100.0	
NA	69	16.4		
Total	422	100.0		

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Stopping IFA tablets

- Out of 351 who took IFA, 55 women completely stopped taking IFA because
 - 31 women felt nauseous after taking tablets
 - 16 women vomited after taking tablets
 - 10 women did not like the taste

Table 22: Pregnant women who stopped IFA consumption

Completely stopped taking IFA during Pregnancy	Frequency	Percent	Valid Percent	Cumulative Percent
No	295	69.9	84.3	84.3
Yes	55	13.0	15.7	100.0
Total	350	82.9	100.0	
Missing	1	.2		
NA	71	16.8		
Total	72	17.1		
Total	422	100.0		

Therefore although 90% women claimed that they took IFA tablets during their pregnancy, the above data highlights that in many instances it was taken sometimes, irregularly and/or completely stopped at some point.

4. Referral for Anaemia

- Out of 422 women, 30 women (7%) were referred for getting iron sucrose injection/blood transfusion
- 26 (87%) of those women did receive treatment. The 4 who did not were mainly due to decision of staff based on health status of woman
- Half these women were given injection/transfusion once, while 5 women received it 3 times or more
- 50 % of the cases received treatment at CHCs/PHCs or private hospitals

D. Delivery Information

1. Number of Home and Institutional Deliveries

- The outcome of recent place of delivery for the chosen sample was compared with where their previous deliveries took place.

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Table 23: Cross tabulation: Type of delivery recently and number of home deliveries pregnant woman has ever had

Recent Outcome of Delivery	Number of home deliveries the woman has ever had	Frequency	Percent	Valid Percent	Cumulative Percent
Home Delivery	1	82	39.4	39.4	39.4
	2	46	22.1	22.1	61.5
	3	35	16.8	16.8	78.4
	4	19	9.1	9.1	87.5
	5	10	4.8	4.8	92.3
	6	5	2.4	2.4	94.7
	7	8	3.8	3.8	98.6
	8	1	.5	.5	99.0
	9	1	.5	.5	99.5
	10	1	.5	.5	100.0
	Total	208	100.0	100.0	
Institutional Delivery	0	138	64.5	64.5	64.5
	1	30	14.0	14.0	78.5
	2	15	7.0	7.0	85.5
	3	16	7.5	7.5	93.0
	4	6	2.8	2.8	95.8
	5	4	1.9	1.9	97.7
	6	3	1.4	1.4	99.1
	7	2	.9	.9	100.0
	Total	214	100.0	100.0	

- 65% of the 214 women who delivered at an institution this time have never delivered at home (this includes first time pregnancies). This is a positive indicator that more than half the sample of women who had institutional deliveries demonstrated preference for it, instead of home deliveries.

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Table 24: Type of delivery recently and number of institutional deliveries ever had

Present Outcome of delivery	Number of institutional deliveries the woman has ever had	Frequency	Percent	Valid Percent	Cumulative Percent
Home Delivery	0	117	56.2	56.2	56.2
	1	66	31.7	31.7	88.0
	2	19	9.1	9.1	97.1
	3	4	1.9	1.9	99.0
	4	2	1.0	1.0	100.0
	Total	208	100.0	100.0	
Institutional Delivery	1	95	44.4	44.4	44.4
	2	65	30.4	30.4	74.8
	3	42	19.6	19.6	94.4
	4	11	5.1	5.1	99.5
	6	1	.5	.5	100.0
	Total	214	100.0	100.0	

- From the above table it can be deduced that about 44% of the 208 women who delivered at home this time had institutional deliveries before. Therefore this time they either opted or were forced to deliver at home for one reason or the other.
- 56% women of the 208 women who delivered at home this time, have never had an institutional delivery before (this includes first time pregnancies).

2. Place of delivery

Home Deliveries

Table 25: Home Delivery: Place

Delivery Type	Place of Delivery	Frequency	Percent	Valid Percent	Cumulative Percent
Home Delivery	Husband's home	163	78.4	78.4	78.4
	Parent's home	14	6.7	6.7	85.1
	Dais home	1	.5	.5	85.6
	Home Other	25	12.0	12.0	97.6
	Private Vehicle	4	1.9	1.9	99.5
	En route Other	1	.5	.5	100.0
	Total	208	100.0	100.0	

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- From the 208 home deliveries in the sample majority (78%) took place at respondent's/husbands home.
- 7% of women went to their parents' home to deliver.
- Out of the 25 women who have a home delivery at "Home Others" 19 of them delivered at the home of LHV. These are currently working LHVs who conduct private deliveries at their residence. These cannot be classified as "private" as they did not take place at a formal institution or maternity home. People trust the LHVs skill and therefore prefer approaching her privately for quality services.
- 2% of deliveries occurred on the way to the hospital/institution, however once the women delivered they did not see it necessary to access the hospitals for post-natal care.

Reasons why women delivered at home

Table 26: Reasons delivered at home

Reason for home delivery	Frequency	Percentage
Did not Feel it was necessary	93	45%
No time to go to the facility	78	38%
No transport was available	47	23%
Facility was too far to reach	17	8%
Enroute delivery	5	2%
Others (wanted to deliver at institution)	4	2%

*207 out of 208 women answered this question

- If we consider (1) women who had no transport available to reach, (2) deliveries happened enroute and (3) others who expressed indirectly that they wanted to deliver at an institution, it shows that 56 (29%) women (home delivery) had the intention to deliver at an institution.
- 78 women did not have time to go to the facility. This highlights possible delay in decision making.
- 93 women felt that it was not necessary, which shows the poor perception of importance of delivering at an institution.

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Institutional Deliveries

Table 27: Place of Institutional Delivery

Delivery Type	Place of Delivery	Frequency	Percent	Valid Percent	Cumulative Percent
Institutional Delivery	Govt. municipal hospital	39	18.2	18.2	18.2
	UHC/Family Welfare Center	2	.9	.9	19.2
	CHC/Rural Hospital	51	23.8	23.8	43.0
	PHC	57	26.6	26.6	69.6
	Sub Center	36	16.8	16.8	86.4
	Public Other	4	1.9	1.9	88.3
	Pvt. hospital/Clinic	15	7.0	7.0	95.3
	NGO/Trust Hospital/Clinic	10	4.7	4.7	100.0
	Total	214	100.0	100.0	

- Out of the 214 deliveries majority (50%) took place at the PHC (57) or CHC (51)
- 18% took place at higher district level institution while 17% took place at sub centres
- 12% women delivered at a private institution/NGO.
- This data highlights that there is a scope for selective strengthening of sub centres that are able to handle simple deliveries, which might be currently resulting in home deliveries.

Reasons Why Women Delivered at an Institution

- 163 women believed it was safer (demonstrates want for quality care)
- 79 women reported that ANM or Doctor had convinced them during ANC
- 68 women were motivated by the JSY incentive and benefits as informed by the ASHA

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3. People who accompanied women to facility/institution of delivery

Table 28: Person Accompanied to Place of delivery (Institutional)

Person accompanied to facility of delivery	Frequency	Percentage (214)
Husband	139	65%
Mother-in-Law	127	59%
Parents	49	23%
ASHA	40	19%
Relatives or Friends	58	27%

- 76% were accompanied by more than 1 person
- 23% were accompanied by more than 2 people
- Currently JSY supports only 1 person to accompany her. Therefore the cost to a family is higher, as in most cases family members accompany women to look after her. JSY money does not alone motivate a woman to deliver at an institution and in many cases women who prefer the convenience of their home.

4. Main person who assisted woman to conduct the delivery

Table 29: Person Assisted to conduct delivery

	Person Assisted to conduct delivery	Frequency	Percent	Valid Percent	Cumulative Percent
Home Delivery	ANM/Nurse/LHV	25	12.0	12.7	12.7
	Other Health Professional	5	2.4	2.5	15.2
	Dai (TBA)	134	64.4	68.0	83.2
	Mother/ Mother-in-law/ Aunt	25	12.0	12.7	95.9
	Friend/Neighbor	1	.5	.5	96.4
	No One	7	3.4	3.6	100.0
	Total	197	94.7	100.0	
	Missing	11	5.3		
	Total	208	100.0		
Institutional Delivery	Doctor	59	27.6	27.6	27.6
	ANM/Nurse/LHV	149	69.6	69.6	97.2
	Mother/ Mother-in-law/ Aunt	1	.5	.5	97.7
	ASHA	3	1.4	1.4	99.1
	No One	1	.5	.5	99.5
	Other	1	.5	.5	100.0
	Total	214	100.0	100.0	

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➤ **Home Deliveries Assisted by:**

- 68% (134 women) home delivery cases were assisted by Dais
- The number and proportion of Dai assisted cases was higher in Bhim than Kumbhalgrah (81 cases V/s 53). Dais conducted 50% of home delivery cases in Kumbhalgarh and 75% of home deliveries in Bhim.
- ANMs/LHVs assisted in 12% of the home deliveries

➤ **Institutional Deliveries Assisted by:**

- 70% of institutional delivery cases were conducted by Nurse/ANM/LHV. *This highlights the capability of nursing staff and further potential for training to handle basic cases at sub-centre level and more complicated cases for ANMs and Nurses who demonstrate proficient skills.*
- 1 person who delivered at an institution also reported that nobody assisted her, and the nurse simply cut the cord once the baby was out

5. Mode of transport to reach institution/facility of delivery

Table 30: Mode of Transport (Institutional Delivery)

Mode of Transport to Delivery Facility	Frequency	Percent	Valid Percent	Cumulative Percent
On foot	8	3.7	3.7	3.7
Family-owned motor vehicle	11	5.1	5.1	8.9
Hired private vehicle	117	54.7	54.7	63.6
Government sanctioned vehicle	78	36.4	36.4	100
Total	214	100	100	

- More than half the women and their families hired a private vehicle to access the facility (55%)
- Only 36% used government sanctioned vehicles, either 104 or 108 to reach the facility.

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- These data points highlight that there might be a preference to immediately try and reach facility via private vehicle to avoid delays instead of waiting for the government ambulance to arrive.
- Additionally percentage of women reported advice given for transport was low (73%). With almost half the women reporting no cell phone access, would make it difficult to contact the ASHA or Government ambulance.

6. Distance, time and cost to reach delivery facility

Table 31: Distance to Facility for delivery (Institutional)

Distance to facility	Frequency	Valid Percent	Cumulative Percent
5 KM or less	58	27.1	27.1
6-10 KM	40	18.7	45.8
11-20 KM	61	28.5	74.3
21-30 KM	22	10.3	84.6
31-40 KM	6	2.8	87.4
41-50 KM	8	3.7	91.1
51-60 KM	7	3.3	94.4
61 and Above	10	4.7	99.1
DK	2	.9	100.0
Total	214	100.0	

Table 32: Time to Reach Institution for Delivery

Time to Delivery Facility	Frequency	Valid Percent	Cumulative Percent
20 Minutes or less	76	35.5	35.5
21-30 Minutes	67	31.3	66.8
31-40 Minutes	8	3.7	70.6
41-50 Minutes	4	1.9	72.4
51-60 Minutes	36	16.8	89.3
61 Minutes or more	22	10.3	99.5
DK	1	.5	100.0
Total	214	100.0	

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- The above two tables demonstrate two positive points: majority of the facilities accessed by people were within 60 km radius (94%) and within 60 minutes from their home (89%).
- However this does not take into consideration the time it took for government or private vehicle to come from the facility, time and difficulty to access a private vehicle, especially at night time and the difficult terrain that some families had to overcome to reach the vehicle. Therefore the time between labour pains initiation and actually reaching the facility would be possibly more.

Table 33: Cost to reach facility for Delivery

Cost to reach Delivery Facility	Frequency	Valid Percent	Cumulative Percent
0	94	43.9	43.9
250 Rupees or Less	23	10.7	54.7
251-500 Rupees	44	20.6	75.2
501-750 Rupees	17	7.9	83.2
751-1000 Rupees	16	7.5	90.7
1000 and Above	18	8.4	99.1
DK	2	.9	100.0
Total	214	100.0	

- Almost half the women (46%) spent more than the JSSK scheme reimbursable cost of Rs.250 on transport to reach institution for delivery
- 8% of the total women spent Rs.1000 or above
- This highlights the fact that people are not able to reach place of delivery within the sanctioned Rs.250 unless they come by government ambulance. However only 36% used the ambulance.

7. Complications during the delivery

Type of Complications

Table 34: Complication during delivery

Complications	Frequency	Percent
At least one complication	61	14.5%
Excessive Bleeding	10	16.4%
High Blood Pressure	8	13.11%
Premature Labour	22	36%
Prolonged Labour >8 hours	23	37.7%

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Prolonged Labour >4 hours	9	14.75%
Convulsions	2	3.27%
Others	6	9.8%

- Among all the women surveyed (422) 61 (14.5%) of them reported one or more complications during their last delivery.
- Of these 61 women, 28% delivered at home. *It is a positive finding that most women that reported experiencing a complication delivered at an institution.*
- Most of the women had premature (36%) or prolonged labour >8 hours (38%) as a complication. *Preterm birth can have serious implications on the development and survival of a child.* Multiple births, high BP and infections are some of the reasons as explained by WHO⁶ for preterm delivery.
- 10 women reported excessive bleeding and 8 reported high blood pressure as a complication during their delivery.

Table 35: Complication related information

Type of Delivery	Complications during delivery	Women referred for Complications	Percentage of complications referred to a higher facility	Went to the facility where referred
Home Delivery	17	1	5.8%	1
Institutional Delivery	44	24	54.5%	23
Total	61	25	41%	

Referral for Complications

- Out of all the 61 women who had some kind of complications, 25 (41%) were referred to higher facility.
- But out of all the women who delivered at home and had complications only 1 woman was referred out of 17 women.
- From those who delivered at institutions, almost 55% were referred to the higher facility.
- It's possible that the complications must have been dealt at the facility itself in case of institutional delivery cases that were not referred. But the women who delivered

⁶ <http://www.who.int/mediacentre/factsheets/fs363/en/>

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at home are at very high risk since most of them did not go to institutions, even after they self-reported complications experienced.

Table 36: Time to reach referral facility

Time to Reach Referral Facility	Frequency	Percentage
30 minutes or less	12	50%
30-60 minutes	6	25%
More than 60 minutes	6	25%
Don't Know	0	0%
Total	24	100%

*1 missing response not included in analysis

Table 37: Cost to reach referral facility

Cost incurred to reach referral facility	Frequency	Percentage
0	13	54.17%
1 – 250 rupees	2	8.33%
More than 250	8	33.33%
Don't Know	1	4.17%
Total	24	100%

*1 missing response not included in analysis

- Though it took less than 30 minutes for half of the women to reach the referral facility, 25% of women referred still had to travel more than 60 minutes to reach.
- Nearly 42% of the women referred had to spend some amount of money to reach to the referral facility. The fact that they had to incur cost indicates either non availability of government transport at the facilities from where they were referred or if the transportation was provided they had to pay out of pocket as well.

8. Expenditure incurred during delivery (other than transportation)

Table 38: Expenses incurred during delivery

Type of Delivery	Cost incurred Categories	Frequency	Percentage
Home Deliveries	Any additional Cost incurred during delivery	56	26.9%
	Cost incurred on Diagnostics	0	0%
	Cost incurred on Medicines	16	7.69%
	Money Paid to TBA	39	18.75%
	Money Paid to Nursing Staff	13	6.25%
	Total No. of Home Deliveries	208	
	Any additional Cost incurred during delivery	61	28.5%
	Cost incurred on Diagnostics	11	5%
	Cost incurred on Medicines	30	14.01%

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Institutional Deliveries	Money Paid to TBA	4	1.89%
	Money Paid to Nursing Staff	53	24.7%
	Total Institutional Deliveries	214	

Note: The denominators used to calculate percentages in this table were the total number of home or institutional deliveries.

- 27% of the women have reported that they had to pay some amount of money on medicines, diagnostics or traditional birth attendants etc.
- Among institutional deliveries, 25% reported paying nursing staff (in many cases it was reported that it was their own wish to pay) and 14% paid for medicines
- Among those who incurred expenditure in home deliveries, 70% (39/56) paid the TBAs for their services.

Table 39: Expenditure for Delivery in Public and Private Institutions

Place of Delivery	No. of people delivered	No. of people incurred additional cost (not transport) in relevant institution
Public Hospital	189 (88%)	41 (21%)
Private Hospital/ NGO Trust hospitals	25 (12%)	20 (79%)
Total	214	61

- Delivered at Public facilities: 21% of those women had to spend some amount of additional cost other than transportation cost
 - Almost the same proportion (27% - Table 38) of the women who delivered at home had spent some money on additional costs.

Therefore apart from transport women are paying some additional costs, be it they deliver at home or at an institution.

9. Status of JSY received from public facilities

Table 40: JSY incentive status (Institutional Delivery)

Received JSY Cheques	Frequency	Percent	Valid Percent	Cumulative Percent
In full amount	185	86.4	86.4	86.4
Did not receive the JSY in full amount	6	2.8	2.8	89.3
Did not receive the JSY incentive	23	10.7	10.7	100.0
Total	214	100.0	100.0	

- About 86% of the women reported to have received JSY incentive to deliver at institutions while 11% of the women did not receive JSY incentives. The above table only tells us if they have received the cheque from the public institutions. Having the money in their actual accounts has not been validated. During interactions with the participants of the study it was clear many did not have bank accounts of their own and the cheque had not been encashed.
- Out of all the women who received JSY cheques, about 90% of them have received it from the place of delivery and on time.

E. Mamta Card Data

- The relevance and importance of Mamta card has to be rethought so that both the system and the woman can benefit from this information document.
- Majority of the Mamta cards had some missing information
- Data entered did not seem valid based on observation (interval data entry pattern, precise value of BP with decimal points where no automatic BP machines were available, and Hb value incorrect entries).
- Expected Delivery Dates of 150 and 142 Mamta cards from Kumbhalgarh and Bhim respectively, for which data was available was compared with the actual delivery dates. 41% and 57% respectively from the 2 blocks had a difference of more than 15

days with a maximum of 3 month difference. May be this is due to women giving incorrect last menstrual period date, ANM calculating it wrong or an error of entry in the Mamta card. The aim of providing an expected delivery date: alerting family, alerting ambulances and providing them with lists, is lost.

Discussion and Recommendations Based on Triangulation of Data

(Survey, Key Informant Interviews and Focus Groups)

Based on the triangulation of information from the survey, key Informant Interviews and focus group discussions, the following facts need consideration and prioritization.

1. Improve the perception of importance of ANC and Institutional delivery

- Within the sample 45% of the women who delivered at home and 60% of the women who delivered at an institution had registered in the first trimester. The reasons quoted for late registration within the survey point out that they were not aware, were not informed to register early or had no apparent health problem.
 - a. Although the ASHA is making efforts to inform women, they face the obvious challenge of pregnancy identification. The reasons are varied from women not informing them due to fear of bad omen, being shy to reveal pregnancy and fear of abortion risks. This in turn ties into the perception of 'importance' as many believe no ANC check-up is required as such unless they face a problem.
 - b. 47% of the sample belonged to nuclear families. There was not much difference between these in the group that delivered at home verses an institution. However the service providers do feel that this issue to some extent influences the support the women has to access health facilities. She is not able to leave her other children at home if there is no one to look after them. Even if she does deliver at an institution, she is sometimes unable to visit the once a month MCHN day due to the same reason, as it does take up a significant proportion of her day. This in turn affects the number of ANC check-ups.

Efforts need to be focused on improving the awareness of benefits of ANC so that women and community members perceive early registration and ANC follow up as very important.

Only when the perception improves will there be a change in demand from the community for these services.

2. Providing quality services to generate demand

- Education is crucial to understanding the counsel of ANC, benefits of delivering at institution and importance of nutrition during the life cycle of an individual. More than half the sample (56%) did not have any schooling. There was not much difference in proportion of women who delivered at home and at an institution in schooling years. It is clear via the data in this study that apart from education, there are other important factors that play a role in the outcome of place of delivery. For example:
 - a. The women and the community's perception of the importance and benefits of ANC and delivery at an institution and the 48 hour stay are poor.
 - b. Even if they understand the benefits of delivering at an institution, there is a want for quality services. This is apparent through the benefits they perceive at a private institution-manpower, attentive care, faster delivery and fewer days of stay. Trust in Dais, who they also perceived as more skilled to conduct deliveries rather than being referred from facilities even for simple deliveries, leads to the high numbers of reported and unreported home deliveries.
 - c. Manpower also determines the quality of services that the system can provide. Specialized personnel, lady gynaecologists and availability of 24x7 doctors generate better demand from people.

Changing the perception is not enough. This has to be followed by provision of quality to maintain the continuum of increased service delivery efforts.

3. Improving MCHN Day Standards

- Over 80% of the women had their first ANC check-ups at MCHN days by the ANM. Therefore the ANM is crucial to motivate the women to attend ANCs and help her understand the benefits.

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- a. Assessment by SIFHW has already pointed out that the basic skills of ANMs need strengthening through quality based trainings. However to improve the quality, better supervision is necessary.
- b. The data in this survey highlighted that, 50%-80% women who had undergone 3 ANC's, had not undergone the relevant basic tests even 3 times. 47% women reported that they were not explained why the different check-ups during ANC's had been done.

Quality Supervision: Supervision is required not only to monitor the quality of ANMs work, but also to draw out the implementation challenges so that the block and district officials can actively discuss how to resolve bottlenecks in a participatory way. This will also be motivate well performing ANMs and ASHAs and identify personnel that are not carrying out their duties. Currently our interaction has revealed that supervisors sometimes only come to drop off the vaccines.

4. Diverting Home Deliveries to Institutions – Addressing the Barriers

- a. **Distance and Time:** Although data revealed that 90% of women were reaching facilities within 60 minutes and they were placed within 60km, many deliveries are still occurring at home. This is because it does not take into consideration the time it takes for transport to be contacted and reach the woman's home.
- b. **Terrain:** Difficult terrain makes it tough for woman to reach the road where the vehicle is waiting. 55% of the women hired private vehicles which points to less use of the government sanctioned vehicle. The response of vehicles, especially at night and when they have to navigate difficult terrain is poor.
- c. **Cost:** Almost half the women had to pay more than Rs.250 for transportation cost. In fact proportion of women paying additional costs at public institutions is close to that of women delivering at home and incurring additional costs.
- d. **Case Load:** Most of the case load is going to PHCs and CHCs as per the data. The subcenters are underutilized for deliveries.

- e. **Cell Phone Barrier:** Within the sample 53% women were found to have no cell phones of their own. 41% of women had no cell phone access (did not own a cell phone, neither did husband or close by living family/friends). This highlights the fact that although ASHAs and ANMs may provide them with their own numbers, with relevant numbers for referral and transport services, but people might not be able to make the prompt contact as required. This might also lead to delay while reaching an institution. Many of these areas have poor cell phone network making it difficult even for the ASHA to contact ambulances and private vehicles.

Strengthening Subcenters as delivery points to address some of the above barriers related to access and delayed decision making will be crucial to better uptake of services.

Monitoring of government sanctioned vehicles must be heightened as women and their families are spending even above Rs.1000 to reach the delivery facility, out of pocket.

A Systematic transport and referral plan needs to be in place for each village based on the access (road and cell phone network) and needs to contact and reach facilities, (based on broader guidelines provided). A similar plan to reach functional First Referral Units also needs to be in place to avoid delay of high risk cases reaching these facilities. Additionally a systematic and simple plan also motivates people to use facilities. Private vehicles might be more convenient for people and also within closer reach. The challenges faced to access them should be addressed.

IEC and involving the Panchayat and prominent community members to bring more awareness in the community regarding timely access for pregnant women and the child is crucial in improving the perception of the community to deliver at institutions. IEC that uses risk messages with positive framing should be applied.

5. Family Planning

- 53% of the sample had married before the legal age. 74% of these women had their first pregnancy between the age of 16-20 years.

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- a. An effort to delay first pregnancy via family planning education for this vulnerable age group is crucial to bring change, even though it is a sensitive topic to address in communities.
- b. Women who do get pregnant early on are more shy to come forward for ANC and sometimes do not realize they are pregnant within the first trimester. Their young age already puts them at high risk.

IEC Strategy for family planning and spacing needs to be given more focus and innovative ways of reach and communication must be adopted. Family Planning advice and counsel cannot be simply given to women, but to men and their community. For example may be the focus should be on indirect effects and benefits of late marriage and delaying early pregnancies. This includes health benefits for the child and economic benefits for the family.

6. Nutrition – Community Based Prevention

- There is already an initiative towards community based management of malnutrition. However based on the data this program also needs to include focus on community based prevention of malnutrition.
 - a. IFA consumption is low and irregular mainly because women feel nauseous and sick. However if they were to more clearly understand the benefits that their health has on the developing foetus, rather than just understanding how IFA benefits the “blood and delivery process” may be they would make a better effort for uptake.
 - b. Adolescent girls who marry young, and have poor nutrition are further at risk if they become pregnant early on.
 - c. From the interviews it was apparent that ASHAs and other personnel within the health system do not give the required focus and face challenges related to beliefs and family’s access to a diversified diet.
 - d. If community members instead of just the ASHA and ANM convince adolescent, pregnant and lactating women to take iron supplementation and complement it with a balanced nutrition, the acceptance will be better.
 - e. Based on the focus groups and interviews women stop taking buttermilk and ghee based products during pregnancy as the community believes it will accumulate on the head of the child make delivery difficult. These

misconceptions prevent them from even consuming their normal diet let alone adopting a healthy diet.

- f. Good nutrition is not a community norm and women do not understand the reason for increased requirements during pregnancy and lactation. They might not perceive this as important as they don't understand the developmental and cognitive effects it has on the child. Anaemic women are at higher risk of giving birth to low birth weight babies. Poor nutrition affects development which affects the productivity of the generation. This vicious cycle continues.

Reinforcement via risk messaging in a positive frame is a potential strategy for improved diet and community based management of prevention of malnutrition.

7. Community Involvement- Do not depend on ASHA s alone

- It was apparent from the interviews of the ASHAs and mother-in laws that there is no one key person who influences decision making of the woman regarding her pregnancy care and delivery.
- When the ASHA alone tries to deal with difficult cases there is the attitude that "she is doing it for money" which also demotivates the ASHA to carry out her work.

Involvement of more peer women, committees or groups and the Panchayat would help the ASHA and ANM in their work.

Conclusion

Based on the discussion and recommendations, improving the quality of ANC care, nutrition and institutional delivery needs to be a joint effort of the Health Unit and the community. However the community involvement has to be propelled by the State and District Health teams. Encouraging women to go for the required ANC check-ups and further deliver at a facility has to be coupled with quality services by the health care workers so that the people feel motivated, trust the system and perceive its benefits. Only when practices about good nutrition, ANC and institutional delivery become a norm in the community is acceptance better and it creates a demand from the consumer side to access the benefits of a public health system. Additionally structural and system barriers related to poor roads and cell phone connectivity needs to be addressed by district and state leadership, and not just the

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health department. Convergence between different departments although tough, is crucial, as a platform for shared goals is necessary. Education, nutrition, health, sanitation and access to services are interdependent to a large extent.

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