

**Assessment of Home Based Newborn Care Practices in rural
Chhattisgarh**

Field Survey - July, 2010

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April, 2011

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Executive Summary

State Health Resource Centre, Chhattisgarh (SHRC) carried out an Assessment of Home Based Newborn Care Practices in rural Chhattisgarh in year 2010 with support from National Rural Health Mission (NRHM), Chhattisgarh. The key objectives of this study were:

- To find out the current home based practices of newborn care in rural Chhattisgarh
- To find out the role of Mitnin in promoting desirable newborn care practices
- To compare the newborn care for children born in institutions vis-a-vis home deliveries

Sampling: The study was done by selecting 18 blocks (one block from each district) in the state. In each of the sample blocks, 10% of the total no. of villages in the block were selected for the survey. Two habitations were studied in each sample village. The selection of blocks, villages and habitations was randomized. In each selected habitation, all women who had delivered in last six months (1st January to 30th June 2010) were to be interviewed. In actual survey, 1410 mothers were interviewed in 390 selected sample habitations having a total population of around 105,000.

Results:

Newborn Care Practices

Keeping the baby warm: 98% of babies were wrapped within half an hour of birth; both for institutional or home deliveries. But 41% babies were wrapped later than 15 minutes after birth. This aspect may need improvement in homes as well as institutions. Use of cotton cloth for wrapping the newborn is the predominant practice. In 17% of home deliveries, the cloth used to wipe the newborn baby was used to wrap it also. This aspect therefore needs improvement. 73% of newborn were bathed later than 2 days of birth.

Breast Feeding after birth: Breastfeeding was initiated within an hour of birth for 84% of newborn. 90% of mothers fed colostrums to the newborn. 15% of respondent mothers had given some pre-lacteal or other complementary feeding to newborn.

Care of cord: 18% of respondents had applied some external material on cord.

Feeding mother after childbirth: 91% mothers received food on the day of childbirth.

Weighing of Newborn: 94% of newborn had been weighed. Mitnin, ANM and Anganwadi workers carry out most of the newborn weighing. The role of Mitnins is crucial especially for weighing after home deliveries.

Low birth weight: Low birth weight is a huge problem in the state with only 52% children having weight more than 2.5kg. Proportion of high risk newborn up-to 2 kgs is also significant (14%). The neonatal mortality rate is around three times higher for children up-to 2kgs weight.

Role of Mitanin in promoting desirable newborn care practices:

66% of the newborn received at least one post-natal visit by Mitanin. The proportion of newborns receiving multiple visits by Mitanin is further lower. This shows considerable scope for improvement. According to mothers of newborn visited by Mitanin, the aspects were assessed by majority of Mitanins included Breast Feeding, Umbilical Cord, Skin, Activity of Newborn, Abdomen and Temperature. Aspects which did not get assessed by majority of the Mitanins during their home visits were Breath Counting and Chest in drawing.

46% of respondents recalled that Mitanin had advised them for delaying the bathing of newborn. Mitanin has given advice for early breast feeding to 71% respondent mothers. Mitanin has given suggestion to 67% respondent mothers for feeding colostrums. In the home deliveries attended by Mitanin, she provided significant support for breastfeeding initiation. Mitanin played a useful role in this aspect even for institutional deliveries. Mitanin has given specific advice to 57% mothers to not to give any pre-lacteal feeding to newborn. 59% of respondents recalled that Mitanin had advised them for not applying anything on the cord. Mitanin has given suggestion for feeding to mother after childbirth for 79% of respondent mothers.

A comparison of newborn practices in institutional and home deliveries shows that most of the desirable practices are slightly better in institutional deliveries. Also, in terms of Mitanin's involvement in promoting desirable practices, it is higher for institutional deliveries. It perhaps shows that the greater presence rate of Mitanins in institutional deliveries is leading to better results. It indicates that the advice of Mitanin is effective. It also shows the need for Mitanin to cover and intervene for more of the home deliveries in the time period immediately after the childbirth. This can be achieved if Mitanins start attending all deliveries whether at home or at institutions.

Neonatal mortality rate: The neonatal mortality is quite high (43.8 per 1000 live births). This is considerably higher than the neonatal mortality of 37 per 1000, reported for rural Chhattisgarh by AHS 2010-11. 40% of neonatal deaths occurred within 24 hours of birth and 67% within a week of birth. The mortality rate amongst newborn born to mothers educated to 8th standard or above is considerably lower than for less educated mothers.

Peri-natal Mortality Rate: The perinatal mortality rate (still births and newborn deaths less than one week age divided by total deliveries) is also quite high at 52.4 per 1000 deliveries.

Summary of Key indicators:

1. Community Practices:

SI	Indicator	Value
	Newborn Care:	
1	Proportion of newborn wrapped within 15 minutes of birth	59%
2	Proportion of newborn bathed after 48 hours	73%
3	Proportion of newborn breastfed within 1 hour of birth	84%
4	Proportion of newborn given colostrums feeding	90%
5	Proportion of newborn not given any pre-lacteal feeding	85%
6	Proportion of newborn whose chord was kept dry	82%
7	Proportion of newborn weighed within 3 days of birth	94%
8	Proportion of newborn with more than 2.5 Kg birth weight	52%
9	Proportion of newborn with more than 2.0 Kg birth weight	86%
10	Neonatal mortality rate (per 1000 live births)	43.8
11	Still birth rate (per 1000 live births)	26
12	Peri-natal mortality rate (per 1000 deliveries)	52.4
	ANC and Delivery:	
13	% of mothers getting TT during ANC	96%
14	% of mothers getting BP measurement during ANC	56%
15	% of mothers going to public institutions for ANC	88%
16	% of mothers delivering in Institutions	51%
17	% of mothers given food within 12 hours of delivery	91%
18	% of Institutional deliveries in public institutions	85%
19	% of deliveries involving under-age (<20 years) mother	5%

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2. Role of Mitanin in Promoting Appropriate Home Based Care of Newborn:

SI	Indicator	%
20	Proportion of mothers visited and counseled by Mitanin for Birth Preparation (during 8 th /9 th month of pregnancy)	63%
21	Proportion of mothers advised by Mitanin for using clean (washed and dried) cloth for wrapping newborn after delivery	52%
22	Proportion of newborn visited at-least once by Mitanin within 30 days of birth	66%
23	Proportion of newborn visited more than once by Mitanin	42%
24	Proportion of mothers advised by Mitanin for early initiation of breastfeeding	71%
25	Proportion of mothers advised by Mitanin for colostrums feeding	67%
26	Proportion of mothers advised by Mitanin for not giving pre-lacteal feeding	57%
27	Proportion of mothers advised by Mitanin for delaying bathing of newborn	46%
28	Proportion of mothers advised by Mitanin for correct care of cord of newborn	59%
29	Proportion of families advised by Mitanin for feeding mother soon after delivery	79%
30	Proportion of home delivered newborn who were weighed by Mitanin	45%

Recommendations

The survey shows that in around 60-70% cases, desirable newborn care practices are being practiced in homes of rural Chhattisgarh now (mid 2010). The survey also shows that the newborn mortality is still very high in the state. Timely identification and treatment of newborn illnesses may hold the key. While identification, counseling initiating treatment and referral roles taken up by Mitanins for sick newborns

require further strengthening; it has to be matched with availability of full treatment especially at ANM and PHC level. Further investigations need to be made to assess the supply side issues.

The survey shows the effective role being played by Mitanins in promoting newborn care. It indicates the following areas for strengthening for further improvement in this regard:

- a) Improve presence of Mitanin during all deliveries, including the home based deliveries so as to allow intervention in newborn care immediately after birth
- b) Improve coverage of newborn for multiple post-natal visits (at least 7 visits in first 42 days) through Mitanins
- c) Strengthening skills (like breath-counting, identifying chest in-drawing) of Mitanin in identifying newborn illnesses
- d) Improving referral rate of newborn from 1% to at-least 5%. Improve access to referral transport.

The high incidence of low birth weight shows that unless this aspect improves the root cause of poor neonatal outcomes may not go away. In terms of long term strategies, measures to boost nutrition especially of women; seems to be most essential. Interventions like organizing women for their rights through Mitanins, strengthening services under ICDS and healthcare, providing maternity entitlements need to be promoted for overcoming this barrier.

MAIN REPORT

Assessment of Home Based Newborn Care Practices in rural Chhattisgarh

Field Survey - July, 2010

A. Introduction:

National Family Health Survey (NFHS-3) reported that Chhattisgarh has the highest rate of neonatal mortality (51.1 per 1000 live births) amongst all the states in the country (for the 5 year period preceding the survey 2005). The peri-natal mortality rate in the state (63.5 per 1000 pregnancies) was also highest amongst the states reported by NFHS-3. Neonatal mortality accounts for around three-fourth of the infant mortality.

There is enough knowledge existing now which informs about the kind of newborn care practices that can help in reducing neonatal mortality, especially through the Community Health Workers. In Chhattisgarh, Mitanins have been trained in newborn care through the 10th Module of Mitanin Training on Newborn and Child Survival. The training was initiated in 2007-08 and completed in 2008-09 with coverage of more than 90% of total 60,000 Mitanins in the rural areas of the state. Since then, Mitanins have been involved in intervening in newborn care related practices at the community level. An assessment of HBNC related skills of Mitanins was carried out with help of SEARCH, Gadhchiroli in November, 2008 (Annexure-1).

There is dearth of information on the current status of newborn care practices in the state and the role being played by Mitanins in this regard. The current study aims to fill this gap.

A.1 Objectives of the study:

- To find out the current home based practices of newborn care in rural Chhattisgarh
- To find out the role of Mitanin in promoting desirable newborn care practices
- To compare the newborn care for children born in institutions vis-a-vis home deliveries

B. Methodology:

Selection of blocks: At the time of survey, the state had 18 districts. One sample block was selected randomly from each of the 18 districts.

Selection of villages: In each of the sample blocks, 10% of the total no. of villages in the block were selected for the survey. For this purpose, the villages were listed in the descending order of population and categorized in the following categories as per population: below 500, 500 to 1000 population, 1000 to 1500 population and above 1500 population. The no. of villages sampled from each category was proportional to the share of population of that category in block's population.

Once, the number of villages to be selected in each category was established, the actual sample villages were selected randomly (applying random start and interval). The distribution of sampled villages is as follows:

S.N.	District	Block	Population				Total
			<500	501 to 1000	1001 to 1500	>1500	
1	Bastar	Kondagaon	4	6	3	6	19
2	Bijapur	Bijapur	3	2	2	3	10
3	Bilaspur	Mungeli	7	9	6	4	26
4	Dantewada	Dantewada	1	1	1	2	5
5	Dhamtari	Kurud	0	2	4	7	13
6	Durg	Balod	1	2	2	4	9
7	Janjgir Champa	Sakti	2	3	2	5	12
8	Jashpur	Pathalgaon	0	2	2	7	11
9	Kanker	Charama	1	4	3	2	10
10	Kawardha	S.Lohara	5	8	3	3	19
11	Korba	Katghora	1	4	1	5	11
12	Koriya	Manedragarh	2	3	3	5	13
13	Mahasamund	Bagbahara	5	11	6	1	23
14	Narayanpur	Narayanpur	8	6	1	3	18
15	Raigarh	Gharghora	1	2	2	3	8
16	Raipur	Tilda	1	4	3	6	14
17	Rajnandgaon	A.chouki	4	7	2	2	15
18	Sarguja	Ramanujganj	1	3	2	5	11
Total			47	79	48	73	247
			19%	32%	19%	30%	100%

Selection of habitations: In selected villages which had more than two habitations, two habitations were selected randomly from amongst the total habitations in the village. Thus 390 rural habitations were studied.

Selection of Respondents: In each selected habitation, all women who had delivered in last six months (1st January to 30th June 2010) were to be interviewed. In order to reduce chances of missing any of the intended respondents, surveyors checked in each house if they had any delivery (at home or institution) in the defined period of six months. In actual survey, 1410 mothers were interviewed in 390 selected sample habitations having a population of around 105000. It roughly tallies with the no. of the expected births estimated on the basis of population (estimated) of the surveyed habitations and rural birth rate of the state (SRS 2009). The no. of respondents who could be actually covered for Bijapur and Dantewada districts was smaller than the planned sample size.

Limitations: The survey was based on what the mothers could remember for events which had taken place upto six months ago. The information collected thus is retrospective. One important aspect of newborn care for institutional deliveries is the time spent by the mother at facility after delivering. It got left out while designing the questionnaire.

C. Findings:

1. Profile of Respondents (Mothers of children <6 months age)

a: Age Distribution of Mothers

Table 1a.1: Age Distribution of Mothers (n=1410)

Age Category	% of respondents
<20 years	5%
20 - <35 years	90%
35-49 years	5%
>= 49 years	0%
TOTAL	100%

Most of the respondents (90%) are in the age group of 20-35 years. The proportion of under-age mothers i.e. <20 years; is 5%.

Table 1a.2: Place of Delivery according to Age category of Mother (n=1410)

Age Category	% delivering at home	% delivering at Institutions
<20 years	35%	65%
20 - <35 years	49%	51%
35-49 years	53%	47%
>= 49 years	0%	0%
TOTAL	48%	52%

Amongst the under-age mothers, 65% have gone for institutional delivery.

b: Caste Distribution of Mothers

Table: Caste distribution of mothers (n=1408)

Caste category	% of respondents
General/Others	2%
OBC	50%
SC	11%
ST	37%
TOTAL	100%

37% and 11% sampled mothers are respectively from ST and SC category which is almost same as their proportion in state's total rural population (38% and 11% - Census 2001).

Table: Place of Delivery according to caste category of mother (n=1408)

Caste category	% delivering at home	% delivering at Institutions	TOTAL %
General/Others	42%	58%	100%
OBC	45%	55%	100%
SC	57%	43%	100%
ST	51%	49%	100%
TOTAL	48%	52%	100%

Comparatively the proportion of institutional deliveries is lower amongst SC and ST mothers.

c: Education Profile of Mothers

Table: Education Profile of Mothers (n=1410)

Education of Mother	TOTAL %
Illiterate	38%
Literate but less than primary(>5)	7%
Primary but less than middle(>8)	23%
Middle or Higher	33%
TOTAL	100%

62% of the respondent mothers are literate. 56% have completed primary education (5th) and 33% are educated beyond 8th standard.

Table: Place of Delivery according to Education Level of Mothers (n=1410)

EDUMO	% delivering at home	% delivering at Institutions
Illiterate	60%	40%
Literate but less than primary(>5)	58%	42%
Primary but less than middle(>8)	43%	58%
Middle or Higher	37%	63%
TOTAL	48%	52%

There is a significant association between the education level of mothers and institutional delivery.

Table: District wise Education Profile of Mothers (n=1410)

District	% of Respondents							
	Illiterate	1st to 4 th	5th to 8th	9th to 10th	Higher Secondary	Graduate	Post-Graduate	Total
bastar	72%	7%	13%	3%	4%	0%	0%	100%
bijapur	63%	11%	18%	8%	0%	0%	0%	100%
bilaspur	44%	9%	33%	9%	3%	1%	0%	100%
dantewada	35%	6%	29%	18%	12%	0%	0%	100%
dhamtari	12%	6%	53%	15%	8%	4%	2%	100%
durg	13%	0%	49%	28%	3%	5%	3%	100%
janjgir champa	27%	2%	53%	10%	7%	2%	0%	100%
jashpur	35%	20%	33%	8%	3%	0%	0%	100%
kanker	15%	6%	57%	13%	6%	2%	0%	100%
kawardha	35%	10%	42%	6%	4%	4%	0%	100%
korba	14%	9%	50%	18%	5%	0%	5%	100%
koria	48%	11%	33%	7%	0%	0%	0%	100%
mahsamund	38%	4%	41%	11%	4%	2%	1%	100%
narayanpur	64%	1%	21%	7%	6%	2%	0%	100%
raigarh	28%	14%	47%	3%	8%	0%	0%	100%
raipur	21%	5%	50%	9%	14%	1%	0%	100%
rajnandgaon	8%	5%	57%	22%	6%	1%	1%	100%
sarguja	42%	12%	38%	0%	4%	0%	4%	100%
Total	38%	7%	38%	10%	5%	2%	1%	100%

Proportion of illiterate mothers is relatively higher in samples of Narayanpur, Bijapur and Bastar districts.

2. Ante-Natal Care

a. ANC of Mother

Table: ANC services received by mothers (n=1413)

ANC Service	Proportion of mothers receiving
Registration	92%
BP	58%
Weighing	69%
Abdomen test	71%
Blood test	57%
Urine test	56%
TT	96%
IFA	95%

In terms of ANC services, 58% of mothers had received Blood Pressure (BP) measurement, 57% had got blood test and 55% had Urine test done. Other ANC services reached 71% to 96% respondents.

Table: Place of delivery for mothers recipient of specific ANC services

ANC Checkup	YES		
	% delivering at home	% delivering at Institutions	TOTAL %
Registration	46%	54%	100%
BP	39%	61%	100%
Weighing	42%	58%	100%
Abdomen test	41%	59%	100%
Blood test	38%	62%	100%
Urine test	37%	63%	100%
TT	48%	52%	100%
IFA	47%	53%	100%

There is significant association between ANC and Institutional delivery and it is even stronger for services like BP measurement, blood test and urine test.

c. Proportion of Mothers accessing different Health Institutions for specific ANC service (n=1413)

ANC Checkup	VHND/ SUB CENTRE	PHC	CHC	District Hospital	Private	Total
Registration	60%	12%	14%	7%	7%	100%
BP	47%	16%	19%	5%	13%	100%
Weighing	54%	14%	17%	4%	11%	100%
Abdomen test	46%	15%	17%	7%	14%	100%
Blood test	43%	15%	19%	9%	14%	100%
Urine test	47%	14%	19%	6%	14%	100%
TT	59%	12%	13%	7%	10%	100%
IFA	60%	12%	13%	7%	9%	100%
Average of 8 services	52%	14%	16%	6%	12%	100%

Apart from VHNDs and sub-centre, significant proportions of mothers are accessing ANC services in higher level institutions. Amongst the mothers accessing ANC services, around half the number are approaching PHC, CHC or higher facilities. Around 88% of mothers are going to public facilities for ANC.

e. Education of Mother and BP Measurement test (n=1409)

Table: Proportion of Mothers getting BP measurement - according to Educational level of mother

Educational Category	BP Measurement Done	BP Measurement Not Done
Illiterate	45%	55%
1st to 4th Standard	58%	42%
5th to 8th Standard	63%	37%
9th to 10th Standard	77%	23%
Higher Secondary	78%	22%
Graduate	86%	14%
Post-Graduate	88%	13%
Total	58%	42%

There is significant association between education of mothers and accessing ANC services like BP measurement. While, 45% of illiterate mothers had got BP checked, the proportion is significantly higher for the mothers educated 5th standard or above.

3. Delivery

a. Place of Delivery (n=1405)

Place Of Delivery	%
Home	49%
Institution	51%
TOTAL	100%

51% mothers delivered in an Institution and the rest at home.

b. Women visited and counseled on birth-preparation during their 8th or 9th month of pregnancy by Mitanin (n=1404)

Mitanin visited 63% of mothers (n=1404) during 8th & 9th month of pregnancy to counsel for birth preparation.

c. Place of Delivery according to status of visit by Mitanin during 8th-9th month

Table: Place of Delivery according to status of visit by Mitanin during 8th-9th month

Did Mitanin Visit the mother in 8th and 9th month	% delivering at home	% delivering at Institutions	TOTAL %
Yes	39%	61%	100%
No	64%	36%	100%
TOTAL	48%	52%	100%

Amongst women who received such visit by Mitanin, 61% delivered in Institutions. For mothers not covered by Mitanin, only 36% went for institutional delivery. There is significant relation between Mitanin making this visit and delivery taking place in an institution.

d. Support provided by Mitanin in Preparation for delivery (n=887)

Table: Proportion of Mothers provided specific support by Mitanin

	TOTAL %
Preparation selection of organization	86%
arrangement of vehicle	14%
Persons to accompany	9%
Money arrangement	20%
clean cloths	52%

In terms of quality of support provided by Mitanin to pregnant women she visited for delivery preparation, 86% cases were supported in terms of selection of the specific institution for delivery and 52% for taking clean cloths along.

e. Suggestions given by Mitanin to Pregnant women at 8 & 9 month (n=887)

Suggestion	TOTAL %
Food	53%
Rest	41%

During the home visits to pregnant women in their 8th-9th month of pregnancy, Mitanin provided advice regarding nutrition to 53% cases and advice regarding rest to 41% women.

d. Presence of Mitanin during Delivery (n=1413)

Mitanin Presence	% delivering at home	% delivering at Institutions	TOTAL %
Yes (1)	43%	70%	57%
No(2)	57%	30%	45%
TOTAL	100%	100%	100%

Mitanin were present during delivery in 57% cases. While 70% of institutional deliveries took place in Mitanin's presence, 43% of home deliveries were attended by them.

e. Who gave the information of delivery to Mitanin (n=747)

Information	TOTAL %
A.N.M.	2%
Anganwadi worker	0%
Dai	1%
From Family	95%
Others	1%
TOTAL	100%

Amongst the cases for which Mitanin received information before delivery, in 95% cases, the respondent's family had informed the Mitanin.

f. Was Delivery conducted in the place decided by family (n=1402)

As planned by family	% delivering at home	% delivering at Institutions	TOTAL %
Yes	80%	90%	85%

85% of mothers delivered at the place as decided by the families earlier. This shows that in a small proportion of cases, the decision regarding place gets changed. 90% of the families who had earlier decided to go to institution, stuck to their decision. Thus, 10% of the families switch their decision regarding institution to home and 20% of families switch from home to institution.

g. If the initial decision on place of delivery was changed when was the decision of changing the place taken? (n=212)

Deciding the Place for Delivery	% switching from home to institution	% switching from institution to home	TOTAL switching %
1 day before the pain started	3%	16%	8%
Within 2 hrs after labour pain starting	84%	36%	67%
After 2 hrs of labour pain starting	13%	49%	26%
Total	100%	100%	100%

Amongst the cases where the planned place was changed, 67% got changed within 2 hours of labour pain starting. Amongst the families who switched their decision from home to institution, 84% took that decision within 2 hours of labour pain starting.

i. Institutional Delivery conducted in different Institutions (n=730)

In which institution it was conducted	TOTAL %
Sub Centre	26%
Primary Health centre	18%
Community health centre	31%
District hospital	10%
Private hospital	15%
Others	1%
TOTAL	100%

Amongst the institutional deliveries, 31% took place in CHCs and 26% in Sub Health Centres. 85% of institutional deliveries took place in public institutions.

j. Delivery conducted by whom (n=1409)

Who conducted Delivery	% delivering at home	% delivering at Institutions	TOTAL %
A.N.M.	7%	30%	19%
Doctor	2%	18%	10%
Staff Nurse	1%	51%	27%
Dai	78%	1%	38%
Others	12%	1%	6%
TOTAL	100%	100%	100%

Only 10% of deliveries taking place at home had skilled attendance. In institutions, apart from staff nurses, ANMs also conduct significant proportion of deliveries, including a few at PHCs and CHCs too.

k. Result of Delivery (n=1408)

Result of Delivery	Per 1000 Home Deliveries	Per 1000 Institutional Deliveries	Per 1000 deliveries
Still Born	19	33	26

The still birth rate is 26 per 1000 pregnancies.

I. Sex of Newborn (n=1413)

Sex of Newborn	% delivering at home	% delivering at Institutions	TOTAL %
Male	54%	50%	52%
Female	46%	50%	48%
TOTAL	100%	100%	100%

In the sample, 52% newborn are male and 48% are female.

m. Type of Still born (n=29)

Condition of baby	delivering at home	delivering at Institutions	TOTAL %
Macerated	33%	24%	28%
Died few minutes prior to birth	67%	76%	72%
TOTAL	100%	100%	100%

28% of still births were macerated.

o. Effectiveness of Mitanin's presence during Home delivery:

% of cases given specific advice by Mitanin where she was present during home delivery (n=295)

Suggestions given during delivery	% of cases given advice by Mitanin
Washing hands of Dai	25%
New Blade	58%
New Thread	57%
Hot Water	44%
Clean Cloth	63%
Clean & Warm Room	27%

Amongst the home deliveries where Mitanin was present during the delivery, Mitanin has provided counseling on clean cloth to 63% cases, on new blade to 58% and on thread to 57% respondent mothers.

q. Role of Mitanin during home delivery (n=678)

Role of mitanin during delivery	% of deliveries at Home
Assisted Dai	17%
Herself Dai	5%
Total	100%

Mitanin assisted to Dai in 17% delivery. Mitanin herself conducted the delivery as a dai in 5% delivery.

r. Pre-term Deliveries (n=1413)

Duration of pregnancy at delivery	% delivering at home	% delivering at Institutions	TOTAL %
<8mth 14 days	3%	3%	3%
> = 8 month 14 days	97%	97%	97%
TOTAL	100%	100%	100%

3% of the deliveries were pre-term (less than eight months 14 days gestation). 56% of pre-term deliveries took place in institutions.

4. Newborn Survival

a. Neonatal mortality (n=1371)

Neonatal Mortality per 1000 live births at home	Neonatal Mortality per 1000 live births at institutions	Neonatal Mortality per 1000 live births
46.4	41.3	43.8

The neonatal mortality was 43.8 per 1000 live births.

b. Time of neonatal death (n=56)

Time of Death	% amongst newborn deaths (home delivery)	% amongst newborn deaths (institutional delivery)	% amongst total newborn deaths
Within an hour of Birth	15%	38%	27%
Between 1 to 24 hours of birth	19%	7%	13%
Between 2 to 7 days of birth	26%	28%	27%
Between 8 to 28 days of birth	41%	28%	34%
TOTAL	100%	100%	100%

40% of neonatal deaths occurred within 24 hours of birth and 67% within a week of birth.

Perinatal Mortality Rate

Perinatal Mortality per 1000 deliveries at home	Perinatal Mortality per 1000 deliveries in institutions	Perinatal Mortality per 1000 deliveries
42.5	61.6	52.4

The perinatal mortality rate (still births and newborn deaths less than one week age divided by total deliveries) is 52.4 per 1000 deliveries. The perinatal mortality rate is higher for deliveries taking place in institutions.

In order to triangulate the above findings, a Census of deliveries was also carried out in the same 18 blocks. The census was done in two retrospective rounds of three months each. In the census, Mitanin Trainers recorded the birth outcome (live birth or still birth) and neonatal deaths taken place during six month period of 1st November 2009 to 30th April 2010. According to the census, the neonatal mortality rate is 42 per 1000 live births.

Table: Findings of Census of births in 18 blocks by Mitandin Trainers

S.N.	District	Block	Total Birth	Still Birth	Live Birth	Neonatal Death	Neonatal mortality	Still birth rate
1	Bastar	Kondagaon	2033	48	1985	102	51.4	23.6
2	Dhamtari	Kurud	1725	27	1698	69	40.6	15.7
3	Jashpur	Pathalgaon	1484	30	1454	63	43.3	20.2
4	Mahasamund	Bagbahara	1643	26	1617	59	36.5	15.8
5	Bilaspur	Mungeli	1334	20	1314	55	41.9	15.0
6	Rajnandgaon	A.Chouki	827	10	817	48	58.8	12.1
7	Janjgir-champa	Sakti	1095	15	1080	47	43.5	13.7
8	Raipur	Tilda	1849	25	1824	68	37.3	13.5
9	Sarguja	Ramanujganj	1277	17	1260	41	32.5	13.3
10	Narayanpur	Narayanpur	864	16	848	40	47.2	18.5
11	Kawardha	S.Lohara	936	14	922	36	39.0	15.0
12	Koriya	Manedragarh	560	7	553	35	63.3	12.5
13	Durg	Balod	812	20	792	31	39.1	24.6
14	Kanker	Charama	663	10	653	26	39.8	15.1
15	Raigarh	Gharghora	614	4	610	24	39.3	6.5
16	Korba	Katghora	547	5	542	20	36.9	9.1
17	Dantewada	Dantewada	496	6	490	14	28.6	12.1
18	Bijapur	Bijapur	122	2	120	2	16.7	16.4
Total			18881	302	18579	780	42.0	16.0

Relationship between Education status of mother and neonatal mortality

Education of Mother	Neonatal Death	Live Birth	Mortality per 1000
less than 8th	46	924	49.78
8th or above	14	445	31.46

The mortality rate amongst newborn born to mothers educated to 8th standard or above is considerably lower.

c. Measures taken to resuscitate asphyxiated babies

Table: Measures taken to resuscitate asphyxiated babies (n=81)

Resuscitation Measure used	No. for deliveries at home	No. for deliveries in Institutions	No. for all deliveries	% for all deliveries
Back tapping	8	37	45	56%
Pinching	4	15	19	23%
Wiping the baby	9	19	28	35%
Tapping of foot	4	20	24	30%
Cleaning of mouth	10	21	31	38%
Massaging of cord	2	9	11	14%
Warming Placenta	1	2	3	4%
Ventilation	3	14	17	21%
Others	3	7	10	12%
TOTAL	44	144	188	100%

6% of the delivered babies were reported to have undergone some form of resuscitation for birth asphyxia. Amongst the 81 cases for which specific measures were recalled by respondents, back tapping is the most common measure.

e. Resuscitation attempted by whom? (n=81)

Table: No. of cases according to person who attempted resuscitation of asphyxiated babies

Done By Whom	No. for deliveries at home	No. for deliveries at Institutions	No. for all deliveries
Mitanin	2	1	3
Dai	11	1	12
A.N.M.	3	10	13
Doctor	0	8	8
Staff Nurse	0	36	36
Others	6	3	9
TOTAL	22	59	81

5. Newborn Care Practices

a. Timing of cutting umbilical cord (n=1365)

When was the cord cut	% delivering at home	% delivering at Institutions	TOTAL %
Immediately after birth, before baby cried	0%	3%	2%
After the baby cried but placenta wasn't removed	2%	14%	8%
After Baby cried & placenta was removed	98%	83%	90%
TOTAL	100%	100%	100%

There is a predominant practice of cutting umbilical cord only after the placenta comes out including in institutional settings. Cases of umbilical cord being cut before the child cries are extremely rare, including in institutional deliveries.

b. Who cuts the Umbilical cord?(n=1374)

For most of the cases, the person conducting the delivery also cuts the umbilical cord. For deliveries conducted by Doctors, staff nurses cut cord in around 40% cases. In case of Dais conducting home deliveries, around 10% get assisted in cord-cutting by other assistants.

c. Tool used for cutting umbilical cord (n=1371)

Cut by what	% delivering at home	% delivering at Institutions	TOTAL %
Blade	98%	81%	89%
Scissor	1%	19%	10%
Knife	0%	0%	0%
Others /don't know	0%	0%	0%
TOTAL	100%	100%	100%

Use of blade during cord cutting is predominant, including in institutions.

d. Whether umbilical cord clamped/tied before cutting? (n=1373)

When was cord tied	% delivering at home	% delivering at Institutions	TOTAL %
After cutting	10%	11%	10%
Before cutting	90%	89%	89%
Hadn't been tied	0%	0%	0%
TOTAL	100%	100%	100%

Tying of cord before cutting is predominant in homes as well as institutions.

e. Material used for tying Umbilical Cord (n=1375)

Cord tied with	% delivering at home	% delivering at Institutions	TOTAL %
With thread	98%	86%	92%
With Rubber	1%	2%	2%
With Clamp	1%	12%	6%
Others	0%	0%	0%
TOTAL	100%	100%	100%

Use of thread for clamping the cord is predominant, including in institutions.

f. Timing of wrapping the baby after birth (n=1380)

Timing of Wrapping the baby after birth	% delivering at home	% delivering at Institutions	TOTAL %
<= 15mins	47%	36%	41%
16-30 mins	51%	62%	57%
31--60mins	3%	2%	3%
>1hr	0%	0%	0%
TOTAL	100%	100%	100%

In 98% cases, the baby was wrapped within half an hour of birth, both for institution or home based deliveries. But 41% babies were wrapped later than 15 minutes after birth.

j. Baby wrapped by which type of cloth (n=1374)

Type of cloth used to wrap the baby	% delivering at home	% delivering at Institutions	TOTAL %
Cotton	90%	94%	92%
Towel	6%	5%	5%
Others	4%	2%	3%
TOTAL	100%	100%	100%

Use of cotton cloth for wrapping the newborn is the predominant practice.

k. Baby wrapped with dry or wet cloth (n=1340)

Wrapped with dry or wet cloth	% delivering at home	% delivering at Institutions	TOTAL %
By Wet cloth	17%	8%	12%
By dry cloth	81%	92%	87%
Others	2%	0%	1%
TOTAL	100%	100%	100%

87% babies were wrapped by dry cloth. In 17% of home deliveries, the cloth used to wipe the newborn baby was used to wrap it also.

l. Suggestion given for Breast Feeding Immediately after Birth (n=1358)

Breast Feeding	% delivering at home	% delivering at Institutions	TOTAL %
Mitanin provided advice/support	60%	81%	71%
Mitanin did not provide support	40%	19%	29%
TOTAL	100%	100%	100%

Mitanin has given advice for early breast feeding to 71% respondent mothers.

n. Assistance provided by Mitanin to mother in initiating Breast Feeding for deliveries where Mitanin was present (n=839)

Role of Mitanin	% delivering at home	% delivering at Institutions	TOTAL %
Guided the mother in how to breastfeed	80%	56%	66%
Provided general advice	20%	42%	34%
TOTAL	100%	100%	100%

In the home deliveries attended by Mitanin, she provided significant support for breastfeeding initiation. Mitanin played a useful role in this aspect even for institutional deliveries.

o. Time of initiating Breast Feeding (n=1137)

Time of initiating Breast Feeding	% delivering at home	% delivering at Institutions	TOTAL %
Within half an hour of birth	59%	71%	66%
Within one hour of birth	81%	86%	84%
Within 24 hours of birth	91%	95%	92%

Breastfeeding was initiated within an hour for 84% of newborn.

p. Advice by Mitanin on Colostrums feeding (n=1350)

Advice by Mitanin on Colostrums feeding	% delivering at home	% delivering at Institutions	TOTAL %
Given	61%	74%	67%
Not given	39%	26%	33%
TOTAL	100%	100%	100%

Mitanin has given suggestion to 67% respondent mothers for feeding colostrums.

s. Colostrums feeding (n=893)

Colostrums fed to baby	% delivering at home	% delivering at Institutions	TOTAL %
Yes	87%	92%	90%
No	13%	8%	10%
TOTAL	100%	100%	100%

90% of mothers fed colostrums to the newborn.

t. Advice by Mitanin on avoiding pre-lacteal/complementary feeding to newborn (n=1191)

Advice by Mitanin on preventing pre-lacteal feeding	% delivering at home	% delivering at Institutions	TOTAL %
Yes	48%	65%	57%
No	52%	35%	43%
TOTAL	100%	100%	100%

Mitanin has given specific advice to 57% mothers to not to give any complementary feeding to newborn.

v. Pre-lacteal or other complementary feeding to newborn (n=654)

Pre-lacteal or other complementary feeding to newborn	% delivering at home	% delivering at Institutions	TOTAL %
Not given	81%	87%	85%
Given	19%	13%	15%
TOTAL	100%	100%	100%

15% of respondent mothers had given some complementary feeding to newborn.

w. Advice for not applying anything on the cord (n=1173)

Did mitanin advise?	% delivering at home	% delivering at Institutions	TOTAL %
Yes	53%	66%	59%
No	47%	34%	41%
TOTAL	100%	100%	100%

59% of respondents recalled that Mitanin had advised them for not applying anything on the cord.

y. Care of cord (n=650)

	% mothers delivering at home	% mothers delivering at Institutions	TOTAL %
Not applying anything on cord	76%	86%	82%
Applying something on cord	24%	14%	18%
TOTAL	100%	100%	100%

18% of respondents had applied some external material on cord.

z. Advice by Mitanin on Feeding to mother after childbirth (n=1184)

Did mitanin advise?	% delivering at home	% delivering at Institutions	TOTAL %
Yes	75%	84%	79%
No	25%	16%	21%
TOTAL	100%	100%	100%

Mitanin has given suggestion for feeding to mother to 79% of respondent mothers.

ac. Feeding mother after childbirth (n=1161)

Followed By family	% delivering at home	% delivering at Institutions	TOTAL %
Day 1	86%	95%	91%
Day 2	7%	3%	5%
>Day 2	7%	2%	4%
TOTAL	100%	100%	100%

91% mothers received food on the day of childbirth.

ad. Advice by Mitadin on delaying bathing of newborn (n=1185)

Suggestions mitadin	by	% delivering at home	% delivering at Institutions	TOTAL %
Yes		36%	55%	46%
No		64%	45%	54%
TOTAL		100%	100%	100%

46% of respondents recalled that Mitadin had advised them for delaying the bathing of newborn.

ag. Time of Bathing of baby (n=1143)

Time of Bathing of baby	% delivering at home	% delivering at Institutions	TOTAL %
On first day	27%	13%	19%
On second day	8%	9%	8%
Later than 2 days after birth	65%	78%	73%
TOTAL	100%	100%	100%

73% of newborn were bathed later than 2 days of birth.

ai. Weighing of Newborn (n=1278)

Was the newborn weighed within 3 days of birth?	% delivering at home	% delivering at Institutions	TOTAL %
Yes	89%	98%	94%
No	11%	2%	6%
TOTAL	100%	100%	100%

94% of newborn had been weighed within 3 days of birth.

aj. Weighing done by whom (n=1190)

Weighed by whom	% delivering at home	% delivering at Institutions	TOTAL %
Mitanin	45%	9%	25%
Anganwadi worker	35%	3%	17%
A.N.M.	13%	29%	22%
Others	7%	59%	36%
TOTAL	100%	100%	100%

Mitanin, ANM and Anganwadi workers carry out most of the newborn weighing. For home deliveries, Mitanin is the most important source of weighing.

ak. Weight of Newborn (n=1249)

Original weight	% delivering at home	% delivering at Institutions	TOTAL %
<=2 kg	21%	8%	14%
2.1 to 2.5 kg	32%	36%	35%
> 2.5 kg	47%	56%	52%
TOTAL	100%	100%	100%

52% children had birth weight above 2.5kg. Proportion of high risk newborn (weight upto 2 kgs) is also significant (14%).

Birth Weight	Neonatal Deaths	No.of live births	Neonatal Mortality per 1000
<=2 kg	12	171	70.18
>2 kg	25	1037	24.11
Total	37	1208	29.62

The neonatal mortality rate is around three times higher for children up to 2kgs weight.

am. Home Visit by Mitanin after delivery (n=679)

No. of visits by Mitanin	%
% of newborn who received at least one visit	66%
% of newborn who received at least two visits	42%
% of newborn who received at least three visits	18%
% of newborn who received at least four visits	12%
Total	100%

This shows considerable scope for improvement.

an . Assessment of condition of Newborn by Mitanin during home visits

According to mothers of newborn visited by Mitanin, the aspects were assessed by majority of Mitanins included Breast Feeding, Umbilical Cord, Skin, Activity of Newborn, Abdomen and Temperature. Aspects which did not get assessed by majority of the Mitanins during their home visits were Breath Counting and Chest in-drawing.

ao. Referral of sick newborn

The survey shows that only 1% of the total newborn get referred successfully by Mitanins.

D. Conclusions:

Age of Mothers: A positive feature is that the proportion of under-age mothers i.e. <20 years; is now 5%. It corresponds well with AHS 20010-11 data of 6% of marriages in the state being of under-age (less than 18 years) girls. Amongst the under-age mothers, 65% have gone for institutional delivery.

ANC services received by mothers : In terms of essential ANC services, 58% of mothers had received Blood Pressure (BP) measurement, 57% had got blood test and 55% had Urine test done. Other ANC services reached 71% to 96% respondents.

Apart from VHNDs and sub-centre, significant proportions of mothers are accessing ANC services in higher level institutions. Amongst the mothers accessing ANC services, around half the number are approaching PHC, CHC or higher facilities. Another feature is that around 88% of mothers are going to public facilities for ANC. There is significant association between education of mothers and accessing ANC services like BP measurement. While, 45% of illiterate mothers had got BP checked, the proportion is significantly higher for the mothers educated 5th standard or above.

Place of Delivery: 51% mothers delivered in Institutions and the rest at home. Only 10% of home based deliveries had skilled attendance. Amongst the institutional deliveries, 31% took place in CHCs and 26% in Sub Health Centres. 85% of institutional deliveries took place in public institutions. In institutions, apart from staff nurses, ANMs also conduct significant proportion of deliveries, including a few at PHCs and CHCs too.

There is a significant association found between the education level of mothers and institutional delivery. There is also a significant association found between ANC and Institutional delivery and the association is even stronger for services like BP measurement, blood test and urine test. The proportion of institutional deliveries is relatively lower amongst SC and ST mothers.

Visit by Mitanin during 8th or 9th month of pregnancy for Birth Preparation Counseling: Mitanin visited 63% of mothers during 8th & 9th month of pregnancy to counsel for birth preparation. Amongst women who received such visit by Mitanin, 61% delivered in Institutions. For mothers not covered by Mitanin, only 36% went for institutional delivery. There is a significant relation between Mitanin making this visit and delivery taking place in an institution.

During the home visits to pregnant women in their 8th-9th month of pregnancy, Mitanin provided advice regarding nutrition to 53% cases and advice regarding rest to 41% women. This shows that there is a need to strengthen these aspects in Mitanin's counseling efforts.

In terms of quality of support provided by Mitanin to pregnant women she visited for delivery preparation, 86% cases were supported in terms of selection of the specific institution for delivery, 52% for taking clean cloths along.

Presence of Mitanin during Delivery: Mitanin were present during delivery in 57% cases. While 70% of institutional deliveries took place in Mitanin's presence, only 43% of home deliveries were attended by them. This is a critical gap from HBNC perspective, as presence of Mitanin is of greater importance during deliveries taking place at home in order to ensure cleanliness, warm room and for counseling required for care of newborn immediately after delivery.

Are deliveries taking place at the place decided by family (n=1402): 85% of mothers delivered at the place as decided by the families earlier. This shows that only a small proportion of cases, the decision regarding place gets changed. 90% of the families who had earlier decided to go to institution, stuck to their decision. Thus, only 10% of the families switch their decision regarding institution to home and 20% of families switch from home to institution. Amongst the families who switched their decision from home to institution, as many as 84% took that decision within 2 hours of labour pain starting.

Still Birth Rate: The still birth rate was found to be 26 per 1000 pregnancies. Though the sample size may be inadequate to judge the disaggregated still birth for deliveries in institutions and home, the still birth rate seems to be higher in case of institutional deliveries (33 per 1000 for institutional deliveries as compared to 19 per 1000 for home deliveries). Another study done by SHRC (Gaurav Jain, 2006) had also indicated extremely high still birth rate for deliveries taking place in Raipur Medical College hospital in 2006. It may be perhaps because greater proportion of more complicated cases coming to institutions.

In the census exercise done by Mitanin Trainers in 18 study blocks, the still birth rate came out to be 16 per 1000 deliveries.

Role played by Mitanin in deliveries: Amongst the home deliveries where Mitanin was present during the delivery, Mitanin has provided counseling on clean cloth to 63% cases, on new blade and thread to around 58% cases. Mitanin herself conducted the delivery as a *Dai* in 5% home deliveries.

Pre-term Deliveries: 3% of the deliveries were pre-term (less than eight months 14 days gestation).

Neonatal mortality rate: The neonatal mortality is quite high (43.8 per 1000 live births). This finding gets supported by the census exercise on neonatal mortality done by Mitanin trainers in 18 blocks, according to which, the neonatal mortality rate came out as 42 neonatal deaths per 1000 live births. This is considerably higher than the neonatal mortality of 37 per 1000, reported for rural Chhattisgarh by AHS 2010-11.

The mortality for neonates born in institutions (41.3) is marginally lower than that of home born babies (46.4). This may perhaps be due to better birth weight of babies born in institutions which in turn may reflect the

40% of neonatal deaths occurred within 24 hours of birth and 67% within a week of birth.

The mortality rate amongst newborn born to mothers educated to 8th standard or above is considerably lower than for less educated mothers.

Perinatal Mortality Rate: The perinatal mortality rate (still births and newborn deaths less than one week age divided by total deliveries) is also quite high at 52.4 per 1000 deliveries. The perinatal mortality rate is higher for deliveries taking place in institutions. The reason as explained earlier mainly relates to high still birth rate in institutions, presumably because more of high risk cases being delivered there.

Measures taken to resuscitate asphyxiated babies: 6% of the delivered babies were reported to have undergone some form of resuscitation for birth asphyxia. Amongst the 81 cases for which specific measures were recalled by respondents, back tapping is the most common measure. The resuscitation measures were rarely employed during home deliveries. Asphyxia management is one area where institutional deliveries were at an advantage. Surprisingly, the traditional community based methods of resuscitation like massaging of cord and warming placenta are also in practice in some institutions.

Practices related to cutting of umbilical cord: There is a predominant practice of cutting umbilical cord only after the placenta comes out; even in institutional settings. Cases of umbilical cord being cut before the child cries are extremely rare, including in institutional deliveries. Use of blade during cord cutting is predominant, including in institutions. Tying of cord with thread before cutting is the predominant practice in homes as well as institutions.

Newborn Care Practices

Keeping the baby warm: 98% of babies were wrapped within half an hour of birth; both for institutional or home deliveries. But 41% babies were wrapped later than 15 minutes after birth. This aspect may need improvement in homes as well as institutions. Use of cotton cloth for wrapping the newborn is the predominant practice. In 17% of home deliveries, the cloth used to wipe the newborn baby was used to wrap it also. This aspect therefore needs improvement. 73% of newborn were bathed later than 2 days of birth.

Breast Feeding after birth: Breastfeeding was initiated within an hour of birth for 84% of newborn. 90% of mothers fed colostrums to the newborn. 15% of respondent mothers had given some pre-lacteal or other complementary feeding to newborn.

Care of cord: 18% of respondents had applied some external material on cord.

Feeding mother after childbirth: 91% mothers received food on the day of childbirth.

Weighing of Newborn (n=1278): 94% of newborn had been weighed. Mitanin, ANM and Anganwadi workers carry out most of the newborn weighing. The role of Mitanins is crucial especially for weighing after home deliveries.

Low birth weight: Low birth weight is a huge problem in the state with only 52% children having weight more than 2.5kg. Proportion of high risk newborn upto 2 kgs is also significant (14%). The neonatal mortality rate is around three times higher for children upto 2kgs weight.

Role of Mitanin in promoting desirable newborn care practices:

66% of the newborn received at least one post-natal visit by Mitanin. The proportion of newborns receiving multiple visits by Mitanin is further lower. This shows considerable scope for improvement. According to mothers of newborn visited by Mitanin, the aspects were assessed by majority of Mitanins included Breast Feeding, Umbilical Cord, Skin, Activity of Newborn, Abdomen and Temperature. Aspects which did not get assessed by majority of the Mitanins during their home visits were Breath Counting and Chest in drawing.

46% of respondents recalled that Mitanin had advised them for delaying the bathing of newborn. Mitanin has given advice for early breast feeding to 71% respondent mothers. Mitanin has given suggestion to 67% respondent mothers for feeding colostrums. In the home deliveries attended by Mitanin, she provided significant support for breastfeeding initiation. Mitanin played a useful role in this aspect even for institutional deliveries. Mitanin has given specific advice to 57% mothers to not to give any pre-lacteal feeding to newborn. 59% of respondents recalled that Mitanin had advised them for not applying anything on the cord. Mitanin has given suggestion for feeding to mother after childbirth for 79% of respondent mothers.

A comparison of newborn practices in institutional and home deliveries shows that most of the desirable practices are slightly better in institutional deliveries. Also, in terms of Mitanin's involvement in promoting desirable practices, it is higher for institutional deliveries. It perhaps shows that the greater presence rate of Mitanins in institutional deliveries is leading to better results. It indicates that the advice of Mitanin is effective. It also shows the need for Mitanin to cover and intervene for more of the home deliveries in the time period immediately after the childbirth. This can be achieved if Mitanins start attending all deliveries whether at home or at institutions.

E. Summary of Key indicators:

3. Community Practices:

SI	Indicator	Value
	Newborn Care:	
1	Proportion of newborn wrapped within 15 minutes of birth	59%
2	Proportion of newborn bathed after 48 hours	73%
3	Proportion of newborn breastfed within 1 hour of birth	84%
4	Proportion of newborn given colostrums feeding	90%
5	Proportion of newborn not given any pre-lacteal feeding	85%
6	Proportion of newborn whose chord was kept dry	82%
7	Proportion of newborn weighed within 3 days of birth	94%
8	Proportion of newborn with more than 2.5 Kg birth weight	52%
9	Proportion of newborn with more than 2.0 Kg birth weight	86%
10	Neonatal mortality rate (per 1000 live births)	43.8
11	Still birth rate (per 1000 live births)	26
12	Peri-natal mortality rate (per 1000 deliveries)	52.4
	ANC and Delivery:	
13	% of mothers getting TT during ANC	96%
14	% of mothers getting BP measurement during ANC	56%
15	% of mothers going to public institutions for ANC	88%
16	% of mothers delivering in Institutions	51%
17	% of mothers given food within 12 hours of delivery	91%
18	% of Institutional deliveries in public institutions	85%
19	% of deliveries involving under-age (<20 years) mother	5%

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4. Role of Mitanin in Promoting Appropriate Home Based Care of Newborn:

SI	Indicator	%
20	Proportion of mothers visited and counseled by Mitanin for Birth Preparation (during 8 th /9 th month of pregnancy)	63%
21	Proportion of mothers advised by Mitanin for using clean (washed and dried) cloth for wrapping newborn after delivery	52%
22	Proportion of newborn visited at-least once by Mitanin within 30 days of birth	66%
23	Proportion of newborn visited more than once by Mitanin	42%
24	Proportion of mothers advised by Mitanin for early initiation of breastfeeding	71%
25	Proportion of mothers advised by Mitanin for colostrums feeding	67%
26	Proportion of mothers advised by Mitanin for not giving pre-lacteal feeding	57%
27	Proportion of mothers advised by Mitanin for delaying bathing of newborn	46%
28	Proportion of mothers advised by Mitanin for correct care of cord of newborn	59%
29	Proportion of families advised by Mitanin for feeding mother soon after delivery	79%
30	Proportion of home delivered newborn who were weighed by Mitanin	45%

E. Recommendations

The survey shows that in around 60-70% cases, desirable newborn care practices are being practiced in homes of rural Chhattisgarh now (mid 2010). The survey also shows that the newborn mortality is still very high in the state. Timely identification and treatment of newborn illnesses may hold the key. While identification, counseling initiating treatment and referral roles taken up by Mitans for sick newborns require further strengthening; it has to be matched with availability of full treatment especially at ANM and PHC level. Further investigations need to be made to assess the supply side issues.

The survey shows the effective role being played by Mitans in promoting newborn care. It indicates the following areas for strengthening for further improvement in this regard:

- e) Improve presence of Mitans during all deliveries, including the home based deliveries so as to allow intervention in newborn care immediately after birth
- f) Improve coverage of newborn for multiple post-natal visits (at least 7 visits in first 42 days) through Mitans
- g) Strengthening skills (like breath-counting, identifying chest in-drawing) of Mitans in identifying newborn illnesses
- h) Improving referral rate of newborn from 1% to at-least 5%. Improve access to referral transport.

The high incidence of low birth weight shows that unless this aspect improves the root cause of poor neonatal outcomes may not go away. In terms of long term strategies, measures to boost nutrition especially of women; seems to be most essential. Interventions like organizing women for their rights through Mitans, strengthening services under ICDS and healthcare, providing maternity entitlements need to be promoted for overcoming this barrier.

F. References:

1. "Home Visits for the newborn child: a strategy to improve survival" WHO/UNICEF joint statement, 2007. http://whqlibdoc.who.int/hq/2009/WHO_FCH_CAH_09.02_eng.pdf
2. Bang et al, 'Neonatal and Infant Mortality in the Ten Years (1993 to 2003) of the Gadchiroli Field Trial: Effect of Home-Based Neonatal Care'
<http://www.searchgadchiroli.org/Research%20Paper/Journal%20of%20Perinatology/Neonatal%20and%20infant%20jp%20final.pdf>
3. 'What works for children in South Asia - Newborn Care: An Overview 2004' UNICEF
<http://www.unicef.org/rosa/Newborn.pdf>.
4. 'Neonatal Survival programm' training guideline for neonatal resuscitation programme, Indian Association of Paediatrics, World Health Organization, Govt. Of India.
5. 'Maternal and Newborn Health Safe Motherhood' Essential Newborn Care, Report of a Technical working group Trieste, 25-29 April 1994. World Health Organization.
6. 'Jug Jug Jiye Naheman' Training book for Mitanins on Newborn and Child Survival, SHRC, 2007-08, Raipur.
7. 'Evaluation of Mitanin Programm', ECTA, 2011
8. Thiagarajan Sundararaman, 'Community health-workers: scaling up programmes' *Comment* www.thelancet.com **Published online March 6, 2007 DOI:10.1016/S0140-6736(07)60326-2**

Annexure -1

Evaluation of Mitanins to decide the content of HBNCC training of Mitanins

Introduction: An Assessment of Skill and Knowledge of Mitanins (related to neo-natal survival) was done by SEARCH, Gadhchiroli with participation of SHRC. The exercise covered 113 Mitanins from 6 blocks – Chhura, Bhilaigarh (from Raipur district), Bhanupratappur, Kanker (from Kanker district), Pharasgaon, Darbha (from Bastar district). Since Mitanins had received a 5-day training (10th module) on newborn Care, the assessment was done to know the existing gaps for training Mitanins further on HBNC.

Objective: To determine the present level of knowledge and skill of Mitanins on Home Based Newborn Care (HBNC).

Methodology: Evaluation was conducted of Mitanins from six blocks. It was expected that 20 literate and 20 illiterate Mitains would participate in the evaluation process from each block. The actual number of Mitanins who participated from each block is as follows:

District	Block	Literate Mitanins	Illiterate Mitanins
Raipur	Chhura	12	5
Raipur	Bhilaigarh	18	3
Kanker	Kanker	14	6
Kanker	Bhanupratappur	15	5
Bastar	Darbha	8	8
Bastar	Pharasgaon	10	9
TOTAL		77	36

Thus, a total of 113 Mitanins participated in the evaluation of which 77 (68%) were literate and 36 were illiterate (32%).

For Chhura and Bhilaigarh evaluation was conducted at SHRC office Raipur. For Kanker, Bhanupratappur, Darbha and Pharasgaon evaluation was conducted at Samudaik Bhavan, Govindpur in Kanker.

Evaluation team: The team comprised of SEARCH team and the team from SHRC. Those who participated in the process of evaluation were:

SEARCH team: Principal Investigators - Mrs Priya Paranjpe and Dr. Sanjay Baitule

SHRC team: Support Role – Shakuntala Lahre and Puran Sinha

Method:

1. Written evaluation
2. Skill evaluation

Content for the evaluation of Mitanins:

Working in the community and home visiting during pregnancy

- Preparing the 'List of women who are eligible to become pregnant'
- Preparing the register to record the 'List of women who are eligible to become pregnant'
- Determining the date of last menstrual period (LMP)
- Preparing the list of pregnant women

Interpersonal Communication

- Asking questions
- Listening
- Sharing health information and advising on care
- Interpersonal communication: Assessment

Breastfeeding

- Local breastfeeding customs and beliefs
- How breast milk is made
- Effective breastfeeding practices
- How to breastfeed: Latch-on and positioning
- Counseling for breastfeeding

Final steps in the training for newborn care

- Referral of sick newborn and mother
- Use of counseling cards on continued care of baby
- Skill Evaluation in First examination of Newborn
- Cleanliness and hand washing by the ASHA
- Evaluation of newborn breathing
- Temperature Measurement and interpretation

For the written test a questionnaire was developed covering the topics listed above for the literate and illiterate Mitanins. The literate Mitanins wrote the answers on their own whereas the illiterate Mitanins were asked questions from the questionnaire and answers were recorded in the questionnaire by the evaluators. Skill evaluation was done by observing demonstration of skills and the role plays with the help of a checklist.

Results:

The main results of the evaluation are summarized in Table below:

Table: Proportion of Mitanins scoring > 50 %			
	Total Mitanins (n=113)	Literate Mitanins (>=5th standard) (n=77)	Illiterate Mitanins (n=36)
Working in Community- overall	80%	74%	92%
Determining date of Last Menstrual Period	43%	38%	56%
Breastfeeding-overall	87%	83%	94%
Breastfeeding-problem management	21%	16%	33%
Referral of Neonate	74%	66%	92%
Handwashing	99%	99%	100%
Interpersonal Communication	56%	53%	61%
Chest Indrawing	97%	96%	100%
Temperature	47%	Not tested	47%
Referral of Pregnant	94%	Not tested	94%

Conclusions:

The overall skill and knowledge level of Mitanins on most dimensions like chest in-drawing, referrals etc. seems to be satisfactory. 47% of the illiterate Mitanins are also able to read thermometers. The results from this objective assessment exercise show that Mitanin Training on Newborn Care (Newborn Survival, 10th Module) has been reasonably effective. There were gaps though in 2 specific aspects: a) determining the date of the last menstrual period b) case specific counseling to new mothers on breastfeeding related problems. These aspects need to be strengthened in future efforts.

Another interesting feature of the findings has been that the illiterate Mitanins did significantly better (10 to 20 percent points) than literate Mitanins (5th standard plus), even on skill related dimensions.

Recommendations:

- Breastfeeding problem management and counseling for breastfeeding problems should be included in the HBNCC training of Mitanins
- The portion of referral of sick newborn should be revised for Mitanins.
- Determining LMP should be included in the HBNCC training of Mitanins. Alternatively, arrangements should be made so that ANMs calculate EDD and inform to Mitanin.
- The module of interpersonal communication skills need not be revised as it is a clear strength shown by Mitanins.
- Skill training of measuring temperature should be revised for Illiterate Mitanins.