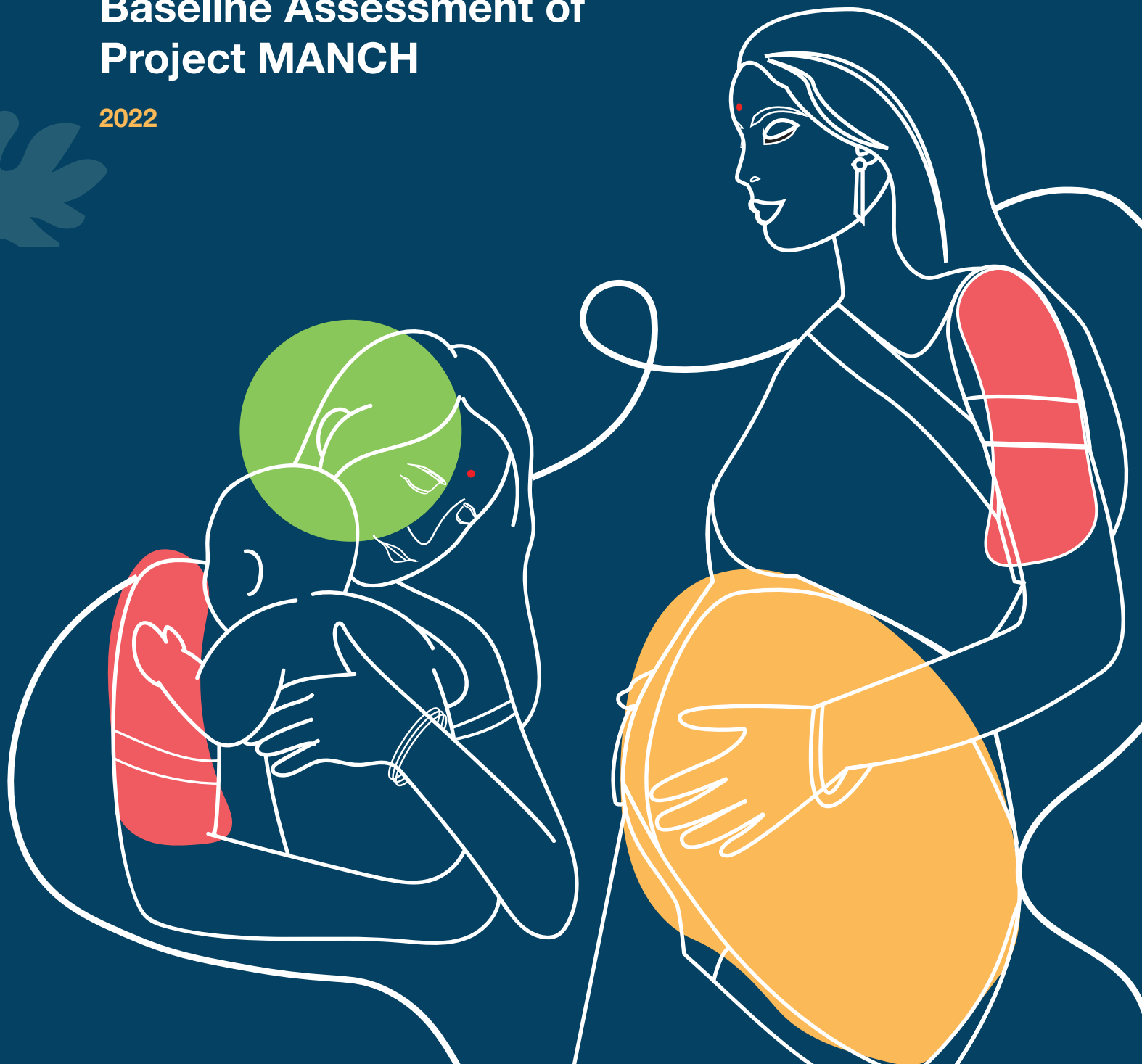


Maternal and Neonatal Health in the Tribal Areas of **Madhya Pradesh**

Baseline Assessment of
Project MANCH

2022



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List of Abbreviations

AMTSL	Active Management of the Third Stage of Labour
ANC	Antenatal Care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AWW	Anganwadi Worker
BP	Blood Pressure
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
FHR	Fetal Heart Rate
FRU	First Referral Unit
HBNC	Home Based Newborn Care
HRP	High Risk Pregnancy
IFA	Iron and Folic Acid
IU	Intra Uterine
KMC	Kangaroo Mother Care
MNCH	Maternal, Newborn and Child Health
MPIH	Madhya Pradesh Innovation Hub
PNC	Post Natal Care
PPH	Postpartum Haemorrhage
PV	Per vaginal
SN	Staff Nurse

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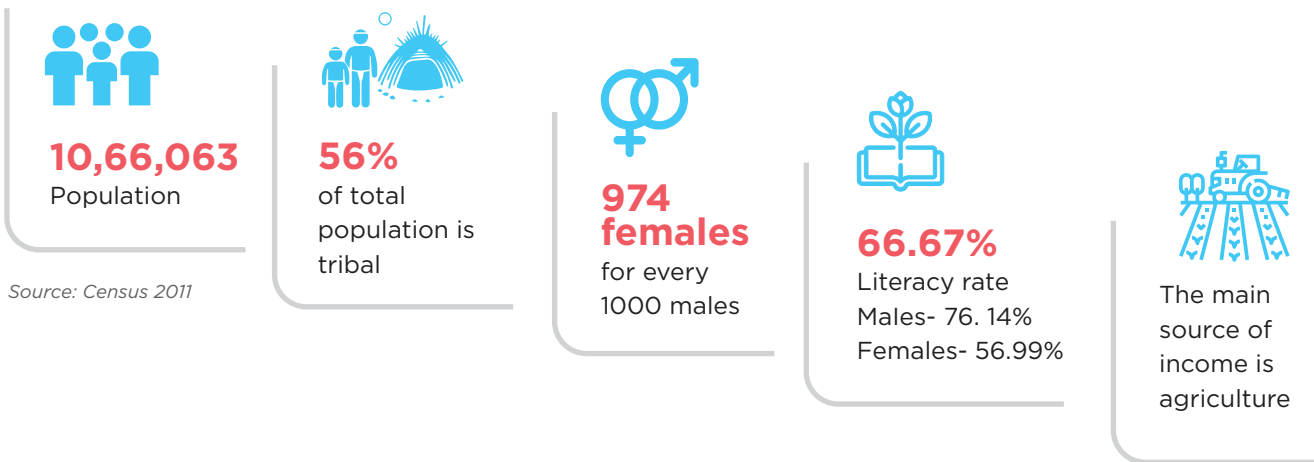
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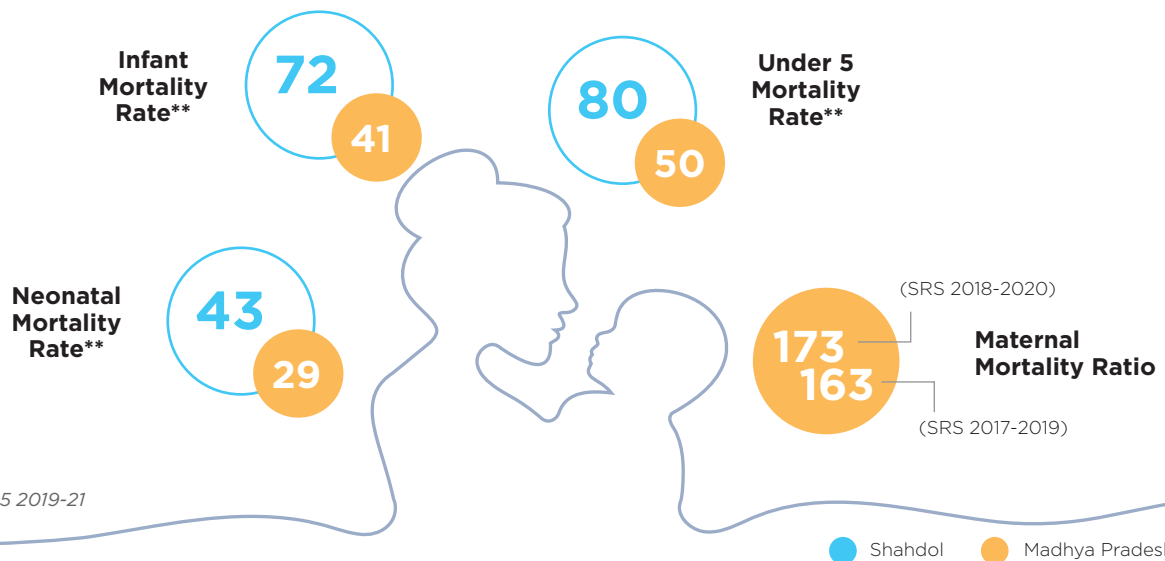
BACKGROUND

Project MANCH aims to enhance the availability, quality and utilization of critical maternal, newborn and child health (MNCH) services in the tribal areas of Madhya Pradesh, with a focused effort in three blocks of Shahdol District. The Project is implemented in close coordination with the Government of Madhya Pradesh (GoMP) in partnership with HCL Foundation. The Project was initiated on April 1st, 2021 and will continue until March 31st, 2025. The Project is led by the Madhya Pradesh Innovation Hub (MPIH)¹, and receives technical support from senior technical advisors from India Health Action Trust and the Institute for Global Public Health, University of Manitoba. The project works on three platforms; community, facility and health systems strengthening.

Shahdol District was identified for the MANCH intervention as more than 50% of the population in the district is tribal. The Neonatal Mortality Ratio (43 newborn deaths per 1000 live births) is high, as are other maternal and child health-related indicators highlighting the need for improving coverage, quality and utilisation of services by strengthening the service delivery platforms at community and health facility levels.



MNCH Profile of Shahdol



1. National Health Mission, Government of Madhya Pradesh, and India Health Action Trust (IHAT) established the Madhya Pradesh Innovation Hub (MPIH) for improving health outcomes in the state of Madhya Pradesh. The primary objective of establishing MPIH is to collaborate for catalyzing the state's response to inequity and address critical challenges in public health through the establishment. Institute for Global Public Health (IGPH), University of Manitoba is also a part of the MPIH, as one of IHAT's key technical partners.

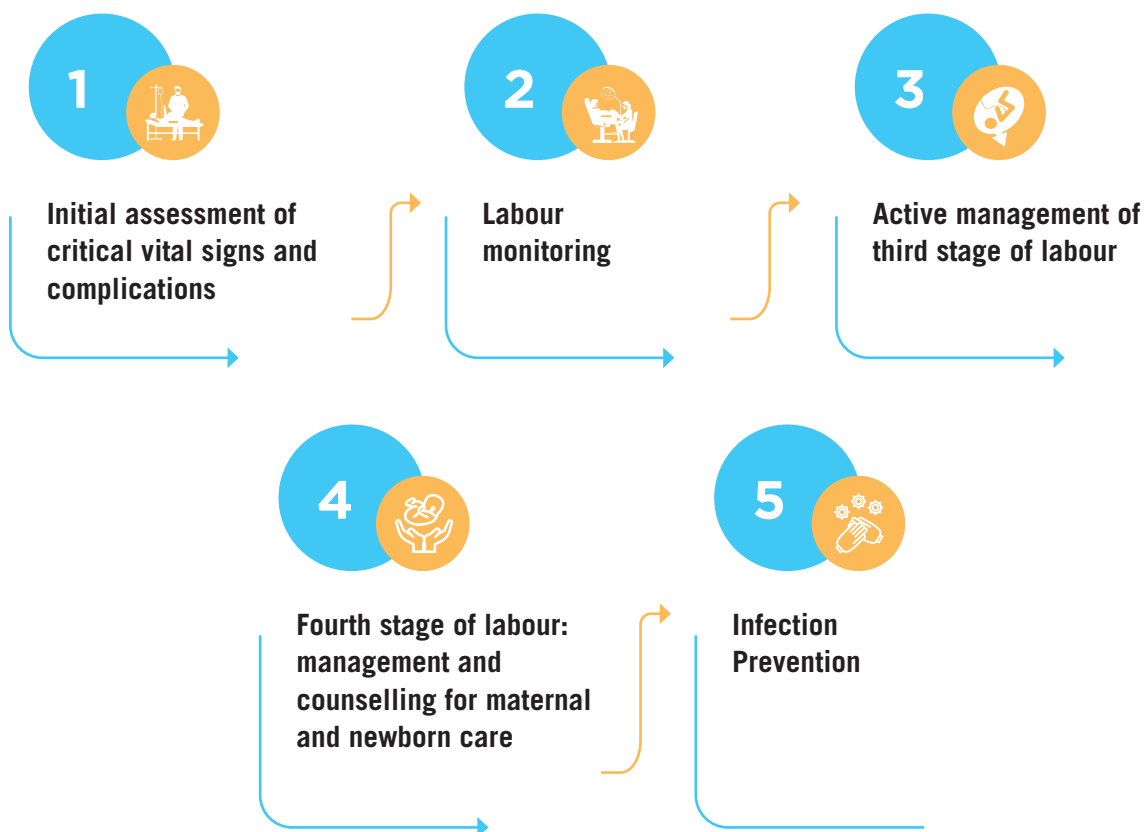
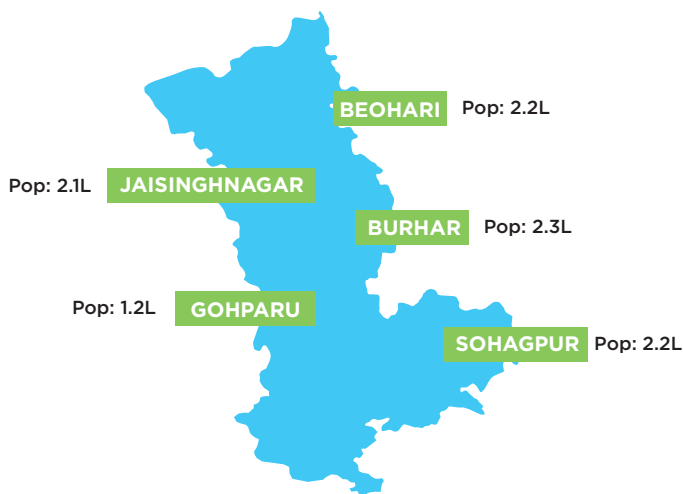
Project MANCH supports the government in achieving the MNCH health outcomes of the state through the approach of identifying and measuring gaps in effective coverage and developing interventions to address them at the community, facility and health systems levels. The learnings from the initiative of addressing the MNCH related gaps in this largely tribal district, can be scaled up through strong partnerships and collaboration with Governments, donors, local civil society organisations and local academic institutions.

A Baseline study was conducted to evaluate the effective coverage of MNCH services at the community and facility levels. The community survey focused on antenatal and post-natal care, while the facility assessment focused on the process around childbirth. This Brief provides insights from the cross-sectional study conducted to understand the prevalent issues at the community and facility level pertaining to the quality of MNCH services across the continuum of care. The results will be subsequently compared to the end-line results that will emerge during the last six months of the project.

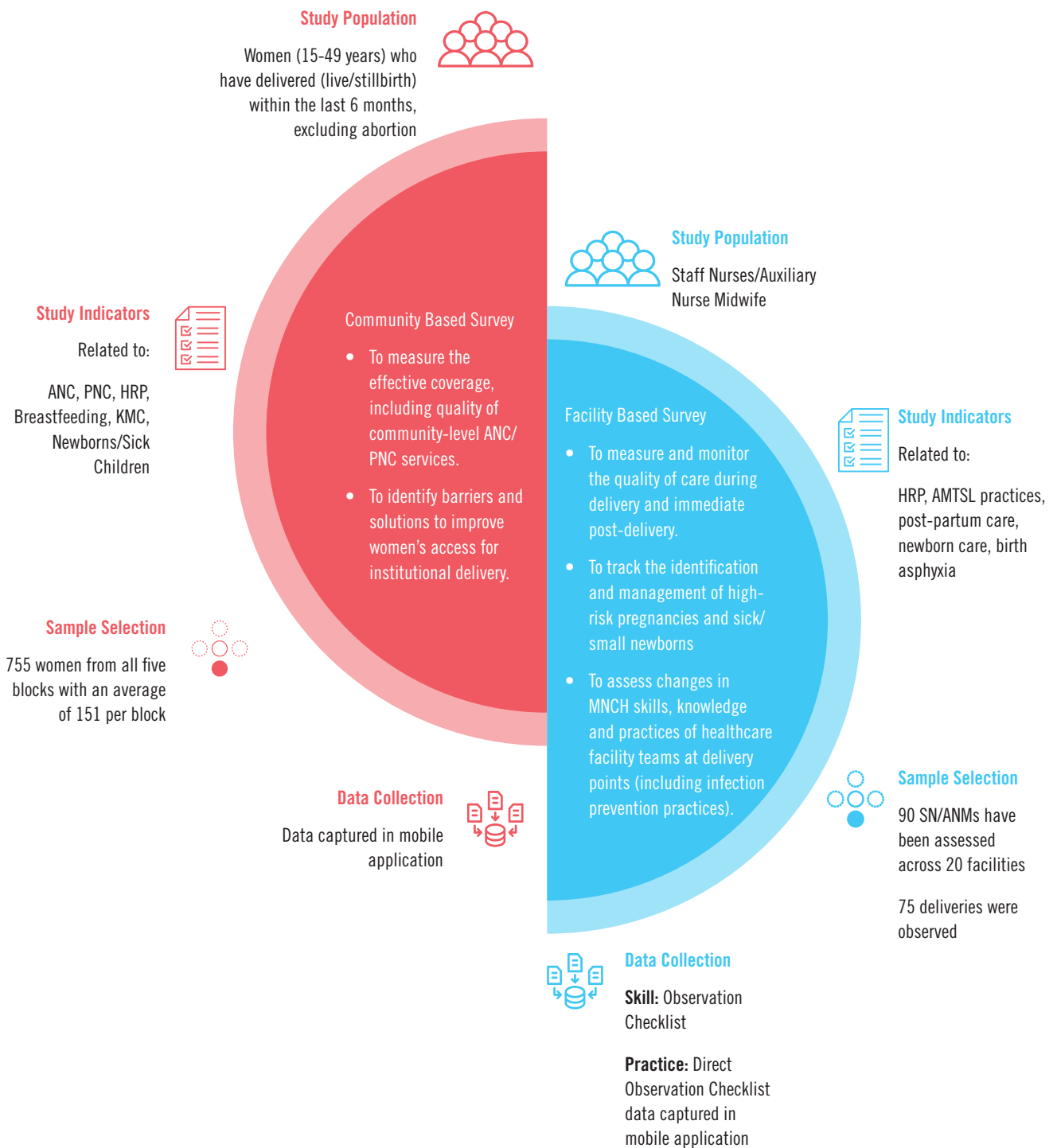
PROJECT MANCH BASELINE STUDY

The baseline study was conducted in the district of Shahdol covering all the five blocks, namely: Beohari, Jaisinghnagar, Burhar, Gohparu, Sohagpur.

Target population in the community based survey included women who had recently delivered (within the last six months), including both live and still-births. The facility survey examined the knowledge, skills and practices of the Staff Nurses (SNs)/ Auxiliary Nurse and Midwife (ANMs) in context of critical domains that are relevant for improvement in maternal and newborn care:



Knowledge of SNs/ANMs was assessed using a structured close-ended questionnaire, skill was demonstrated using mannequins and patient stimulation and assessed using an observation checklist, and delivery related practices were directly observed and captured in observation checklist. Other aspects, such as availability of basic infrastructure, essential drugs and injections, and referral systems, were also captured through an observation checklist. The below figure highlights the study design.



BASELINE FINDINGS

Respondent Profile

Nearly 7% women interviewed were aged below 20 years, and an additional 47% between the ages of 20 and 24 years, with the average age of respondents being around 25 years. The majority of women (56.3%) belonged to the tribal population, and a sizeable proportion (26.2%) had received an education below the 5th standard (Figure 1).

In terms of their reproductive history, approximately two-thirds (67%) of the women had one to two children, while 13% had four or more children (Figure 2a). Over two-fifths of the women reported experiencing at least one complication during delivery with 20% experiencing 2+ complications (Figure 2b). Among those who experienced any complication, the most common issues were excessive bleeding immediately after delivery (17.5%), prolonged labour (13.4%), and obstructed labour (11.1%) (Figure 2c).

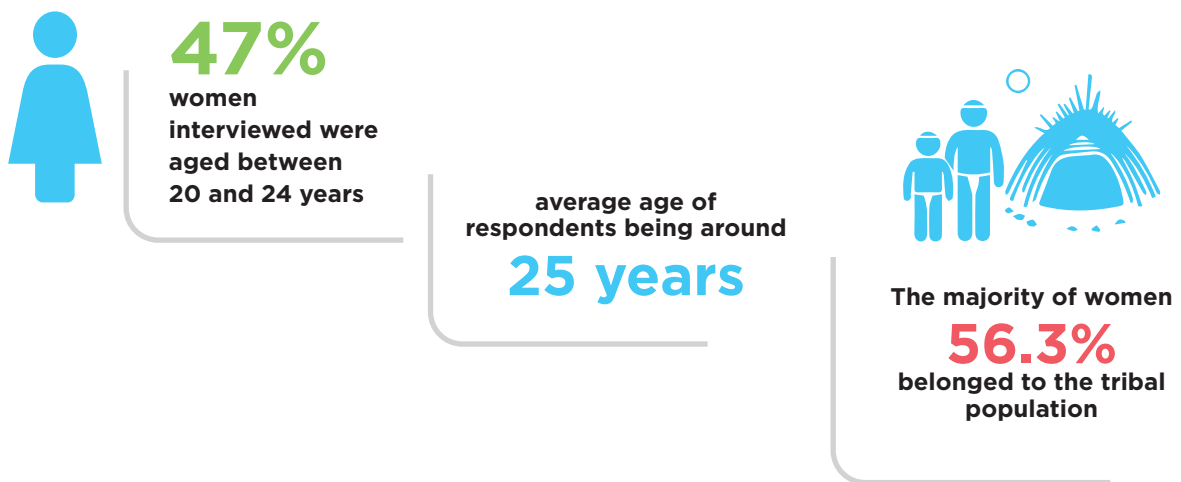


FIGURE 1: Percent distribution of women aged 15-49 years by age, education and social group

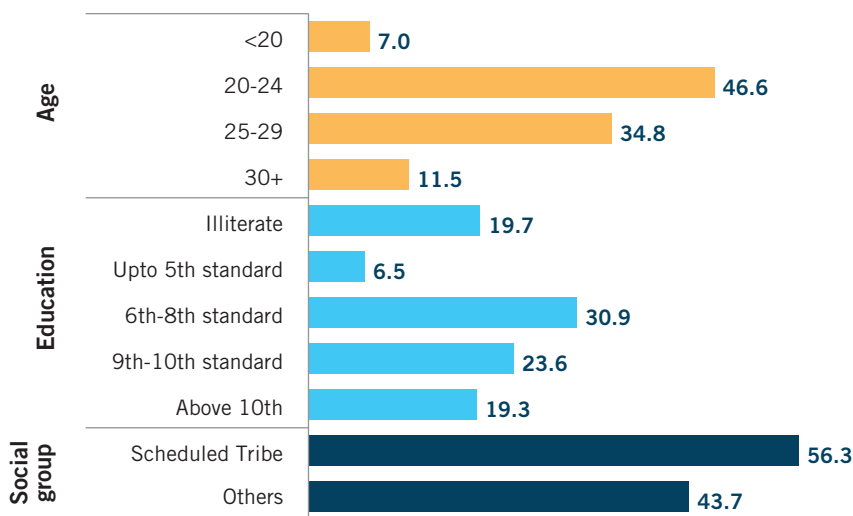


FIGURE 2A: Percent distribution of women aged 15-49 years by parity (number of children)

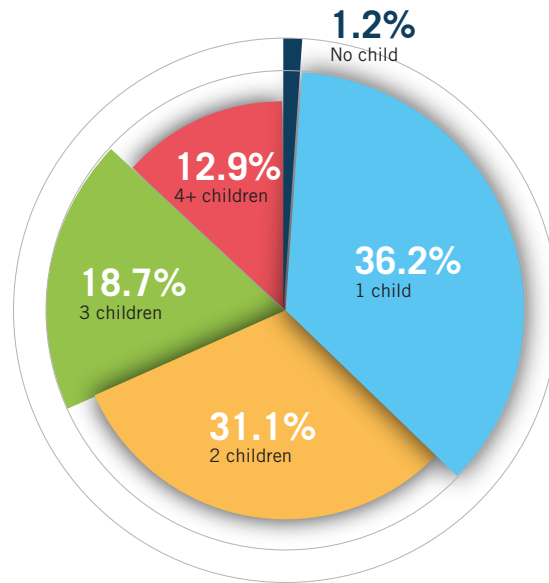


FIGURE 2B: Percent distribution of women aged 15-49 years by number of complications experienced during delivery

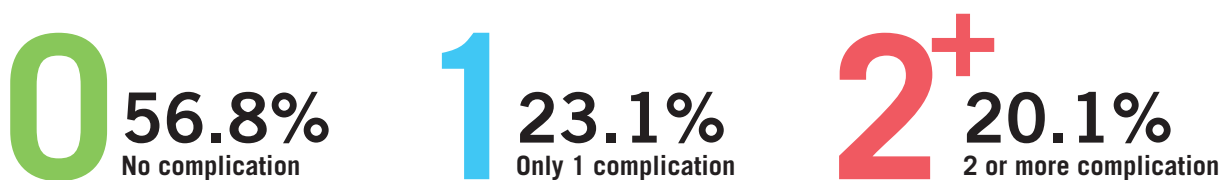
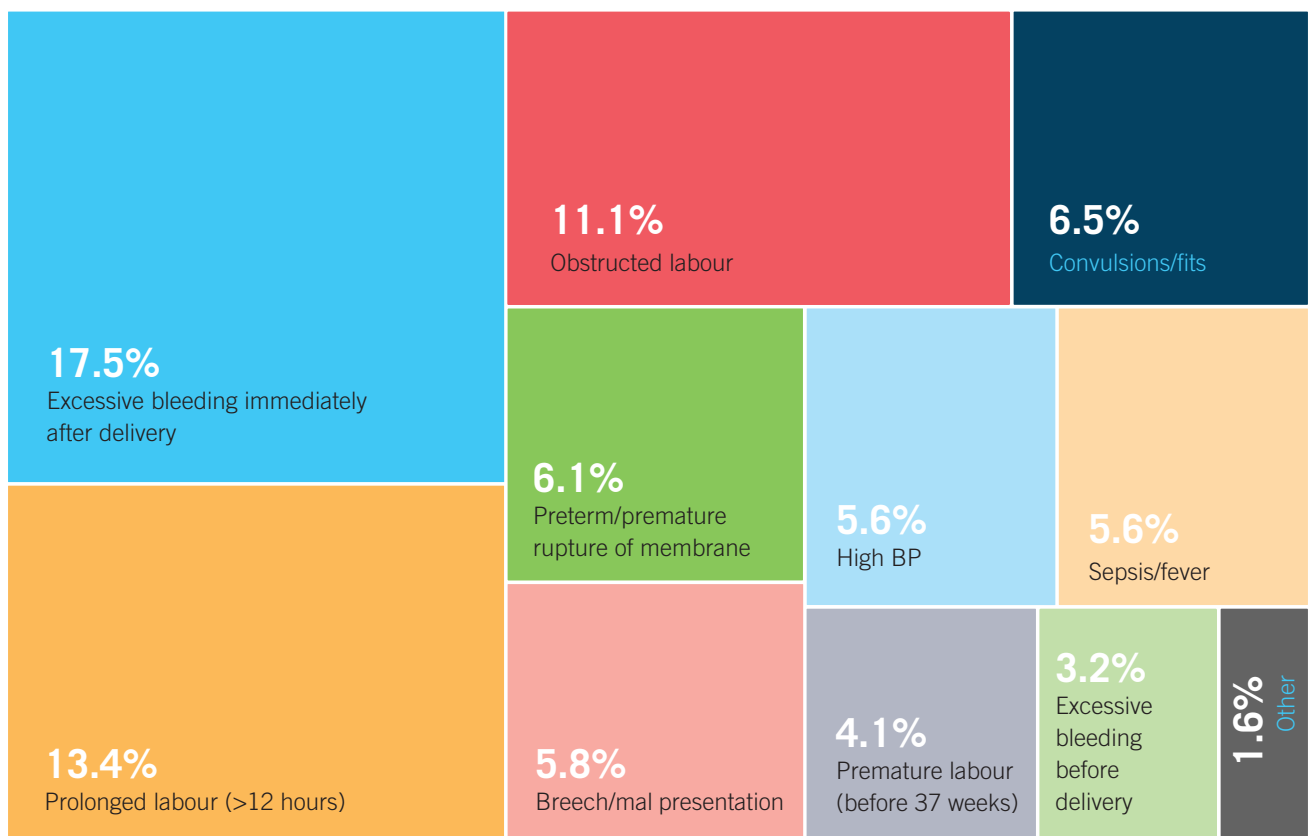


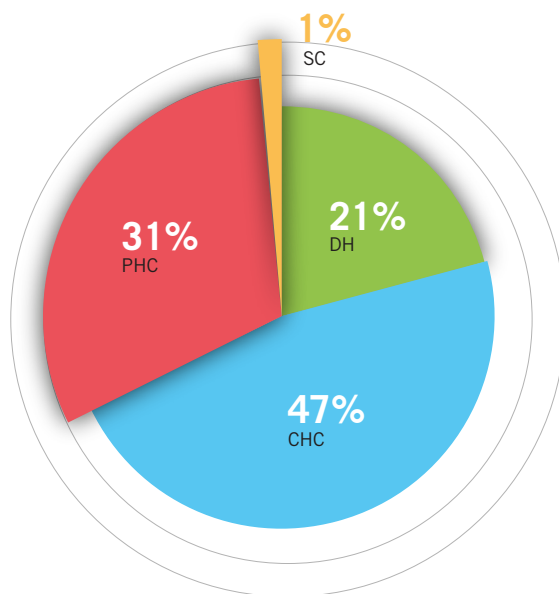
FIGURE 2C: Percent distribution of women aged 15-49 years by type of complications experienced during delivery



Facility-level Sample

For assessing knowledge and skills related to MNCH, 90 SNs/ANMs were interviewed, and 81 deliveries were observed across 20 select facilities. The twenty health facilities included one District Hospital, four CHCs, thirteen PHCs, and the remaining two were Sub Centres. Nearly half of the deliveries were observed from CHCs (47%), followed by PHCs (31%), indicating a significant proportion of maternal and child healthcare services being provided at these levels (Figure 3).

FIGURE 3: Percent distribution of deliveries observed by type of health facility

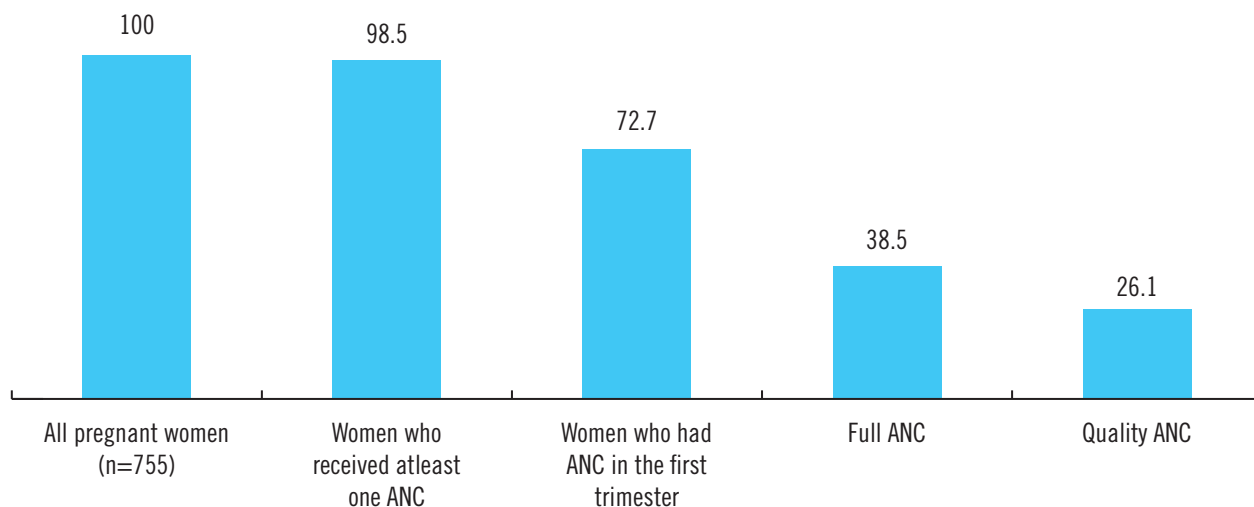


I. Antenatal Care

Uptake of Antenatal Care (ANC) services

Women receiving ANC services at least once during pregnancy was nearly universal (98.5%), and 72.7% of women received it in the first 12 weeks of pregnancy. The coverage of full¹ ANC and quality² ANC services irrespective of pregnancy trimester was 38.5% and 26.1% (Figure 4).

FIGURE 4: Effective coverage cascade for ANC



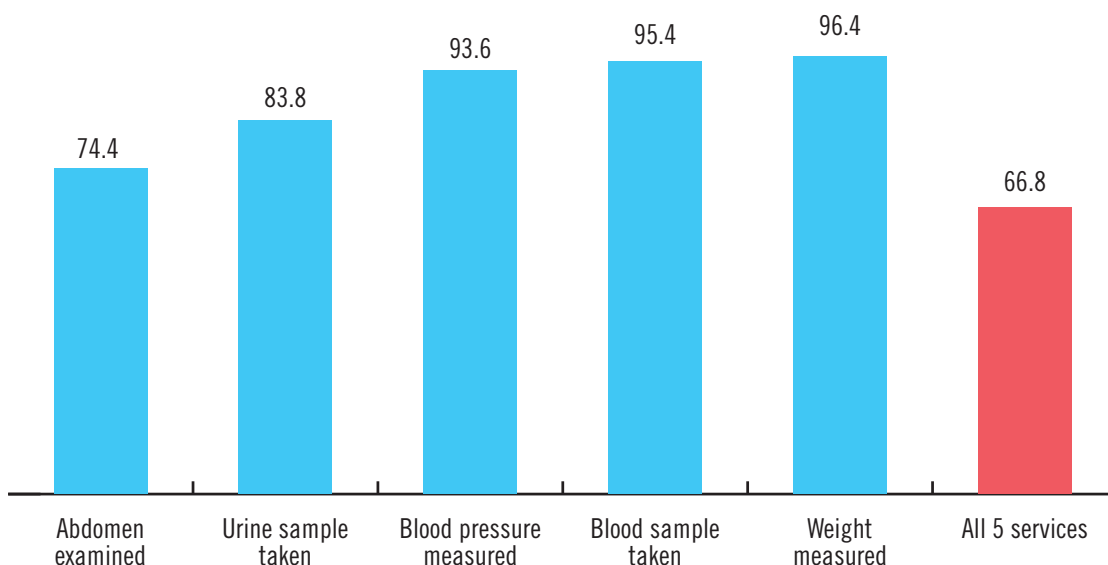
1 Full ANC: All women with - at least 4 ANC visits, IFA consumption for at least 100 days, and at least one TT injection

2 Quality ANC: All women with - at least 4 ANC visits, 1st ANC visit and registration during the first 12 weeks of pregnancy, ANC provided by skilled health care professionals, women received at least two TT injections, received all five services - blood pressure checked, haemoglobin checked, urine sample taken, weight measured and abdomen examined and consumed IFA Tablets for at least 100 days.

Services provided during ANC visits

The coverage of various components of ANC services was found to be high; however, the proportion of women receiving all five ANC services during pregnancy was sub-optimal. Even though the coverage for individual ANC services are high, not all women are receiving all the services as a result of lower proportion receiving abdominal examination and urine test (Figure 5).

FIGURE 5: Services provided during ANC visits

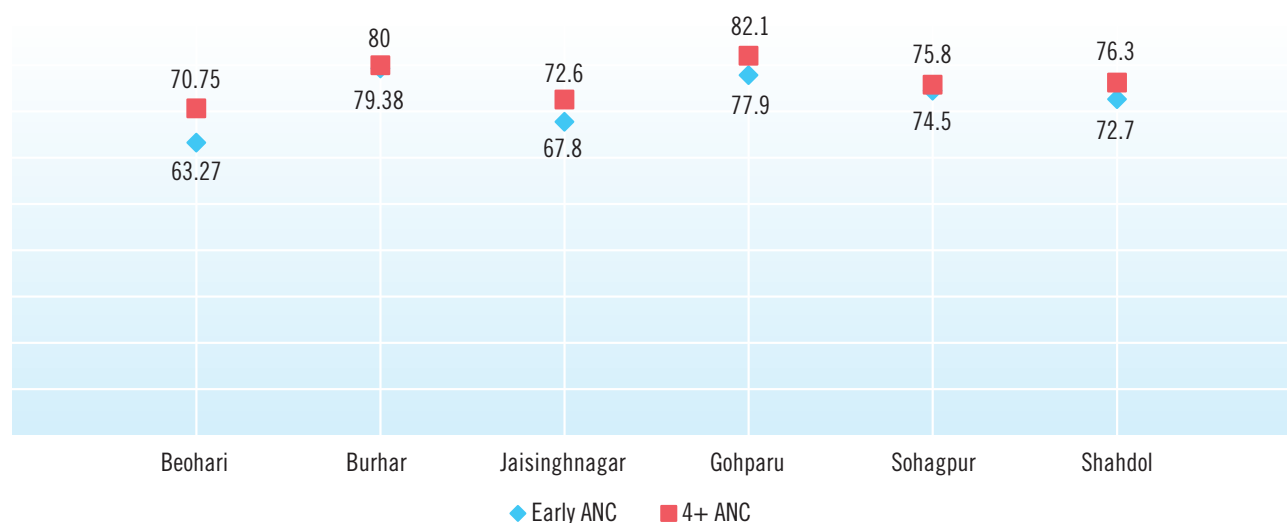


Inequality between ANC services

1. Early ANC and 4+ ANC

Over three-fourth (76.3%) women have received four or more ANC services and 72.7% women accessed ANC services during the first trimester of pregnancy in Shahdol. A moderate heterogeneity in early ANC and 4+ANC is found across the blocks. While Burhar and Sohagpur blocks had a minimal difference between early ANC and 4+ANC, Beohari and Jaisinghnagar blocks showed marginal difference between the two (Figure 6).

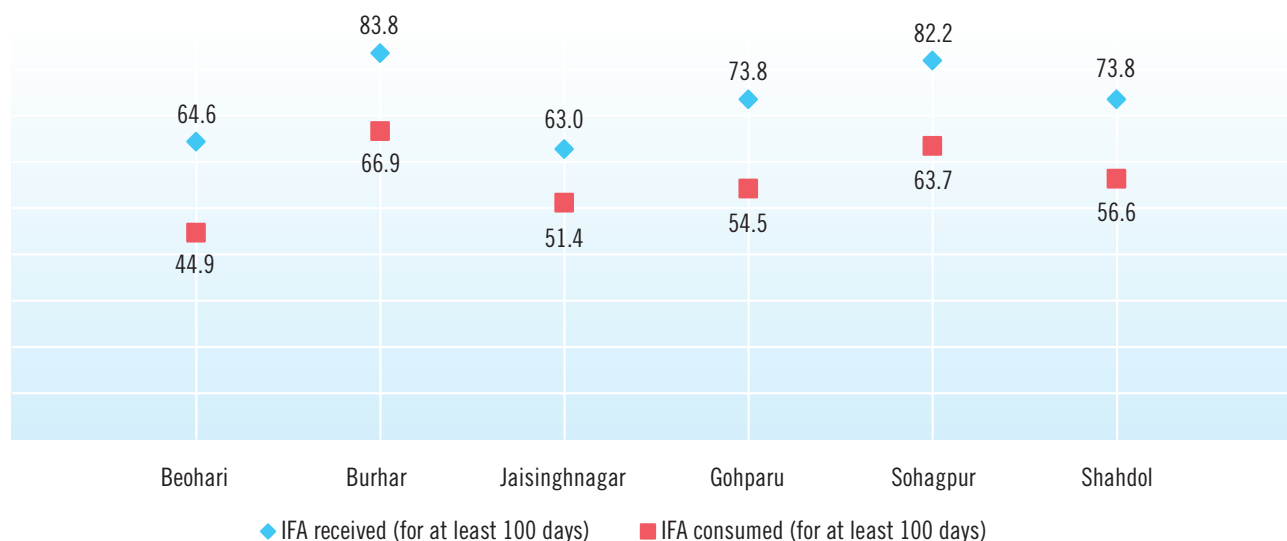
FIGURE 6: Early ANC and 4+ ANC visits across blocks in Shahdol



2. Iron and Folic Acid (IFA) supplements received and IFA consumed

73.8% of women received IFA tablets for at least 100 days but only 56.6% of them consumed IFA tablets for at least 100 days. Less than two-thirds of the women in Beohari and Jaisinghnagar blocks received IFA tablets for 100 days; consumption was also less. In contrast, in Burhar and Sohagpur, a substantial percentage of women received IFA tablets, but fewer women consumed them (Figure 7).

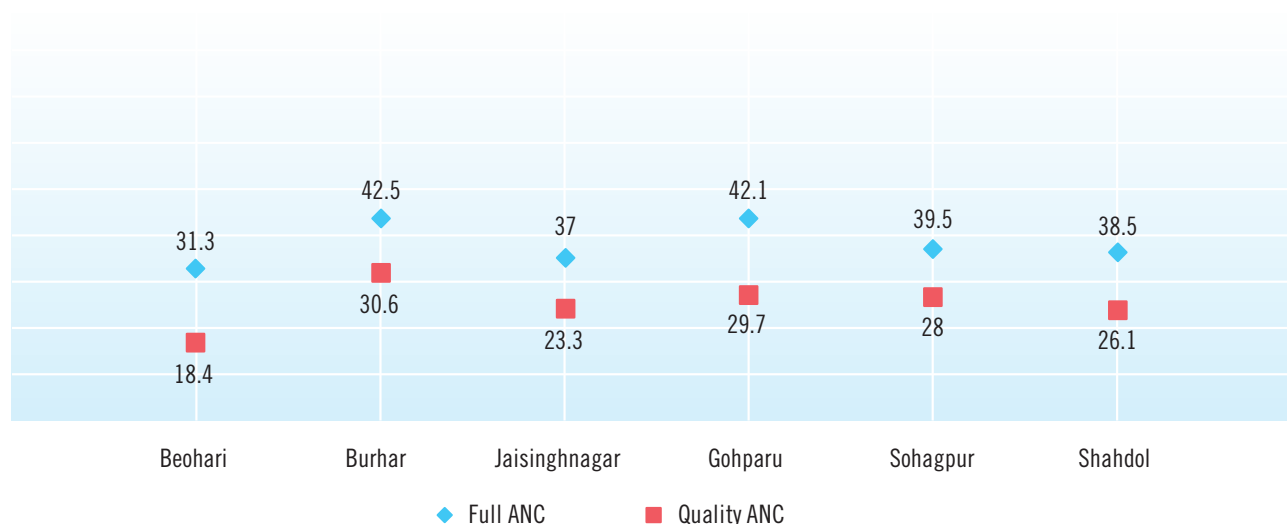
FIGURE 7: IFA (for at least 100 days) received and consumed across blocks in Shahdol



3. Full ANC and Quality ANC

Much difference has been observed between full ANC and quality ANC across the blocks. Beohari and Jaisinghnagar blocks had low coverage for full ANC as well as quality ANC (Figure 8).

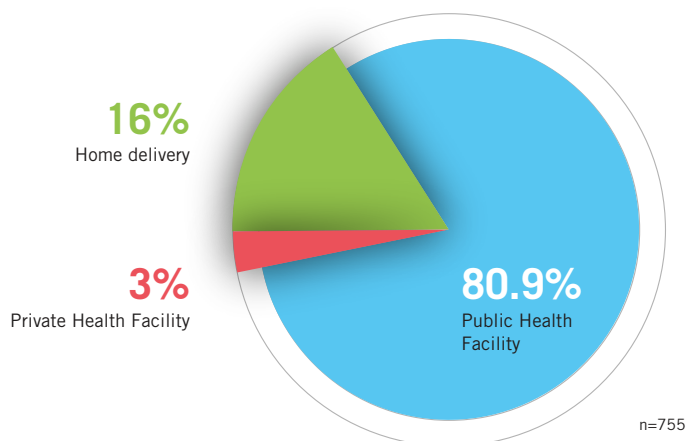
FIGURE 8: Full ANC and quality ANC across blocks in Shahdol



II. Intrapartum and Immediate Post-Partum Care

The study found that 97.5% of pregnancies resulted in live births, whereas the other 2.5% were stillbirths. The percentage of stillbirths was a little high in the Burhar block (3.1%). 84% of women reported delivering in a health facility (Figure 9), and 90% of these deliveries were conducted by a skilled birth attendant (doctor/staff nurse/ANM).

FIGURE 9: Place of delivery



In the critical phase of immediate post-partum care, a notable 76.1% of mothers embraced the practice of skin-to-skin contact also known as Kangaroo Mother Care (KMC), fostering a strong connection to their newborns. 55% of mothers initiated breastfeeding within just one hour of giving birth, and 92.7% of mothers refrained from providing pre-lacteal feeds.

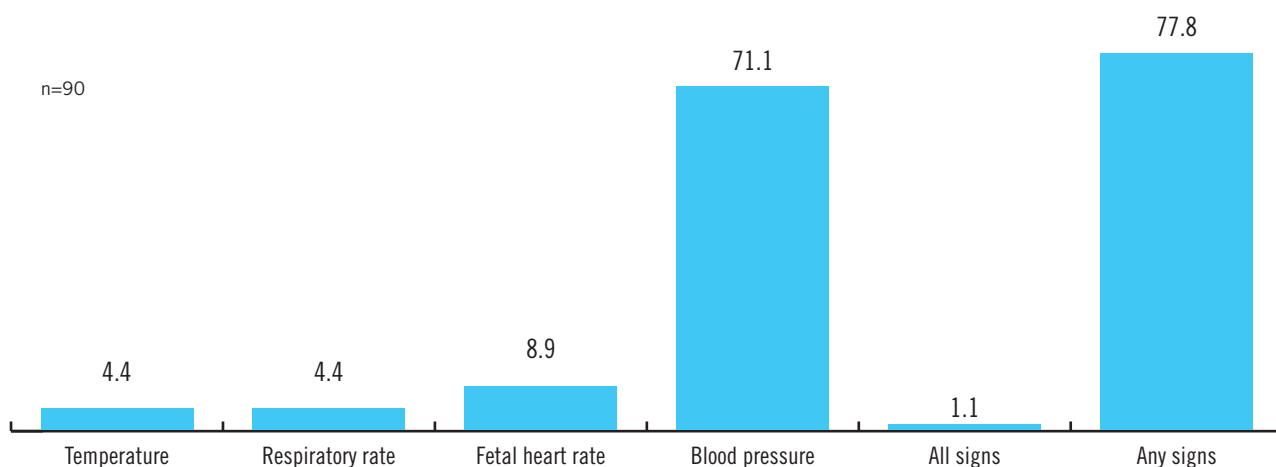
As a part of immediate post-partum services within the community, only one-third of the home births received visits from ASHA/Anganwadi Worker (AWW) within the crucial 24 hours following delivery. This highlights the need for increased attention and support for new mothers in the community, ensuring timely and essential care during this sensitive period.

Quality of health services received at the facility: Initial Assessment

Accurate measurement of vital signs upon arrival is crucial for identifying potential complications and ensuring immediate intervention. However, the findings indicate a concerning lack of knowledge and skill among SNs/ANMs regarding the vital signs that should be measured during admission.

About 78% of SNs/ANMs were aware of any vital signs to be measured during admission, and merely 1% knew about all vital signs (Figure 10). Very few SNs/ANMs mentioned about measuring temperature, respiratory rate and fetal heart rate of pregnant women while admission in facility, approximately 71% of SNs/ANMs acknowledged the importance of measuring blood pressure (Figure 10).

FIGURE 10: Percent of SNs/ANMs who know the vital signs to be measured during admission of a pregnant women



When assessing the demonstration of vital signs among the healthcare providers, concerning temperature measurement (29 SNs/ANMs), none of them correctly performed the procedure, and only 24% showed proficiency in the critical steps of temperature measurement. Similarly, for blood pressure measurement, a

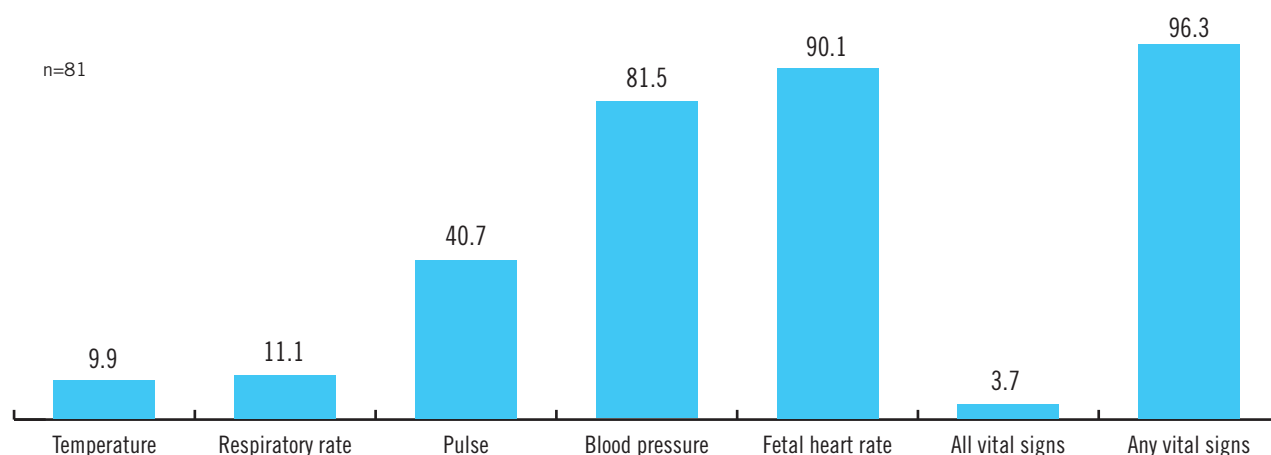
mere 2% of the providers (out of 64 SNs/ANMs) were able to demonstrate all the necessary steps, and only 12% of them correctly demonstrated the critical steps. As for haemoglobin measurement, just 1.3% of the providers (out of 79 SNs/ANMs) successfully demonstrated all the steps involved, while 27% managed to correctly demonstrate all the critical steps. Percentage of SNs/ANMs who could demonstrate all and critical steps for abdominal examination was low (Table 1).

TABLE 1: Percent of SNs/ANMs who performed specific steps related to vital measurements in a skill demonstration session

Steps taken	Vital Measurements			
	Temperature	Blood Pressure	Haemoglobin	Abdominal examination
Any step demonstrated	100.0	96.9	98.7	82.4
All steps demonstrated	0.0	1.6	1.3	2.9
Critical steps demonstrated	24.1	12.5	26.6	7.4
Number of SNs/ANMs demonstrated skill related to specific vital measure	29	64	79	68

A total of 81 cases were observed where women had arrived in the first stage of labour. Less than 4% of deliveries were attended to measure all five vital signs. Furthermore, most women who came in for delivery were not checked for body temperature, respiratory rate, and pulse (Figure 11).

FIGURE 11: Percent of pregnant women whose vitals were assessed during admission by SNs/ANMs

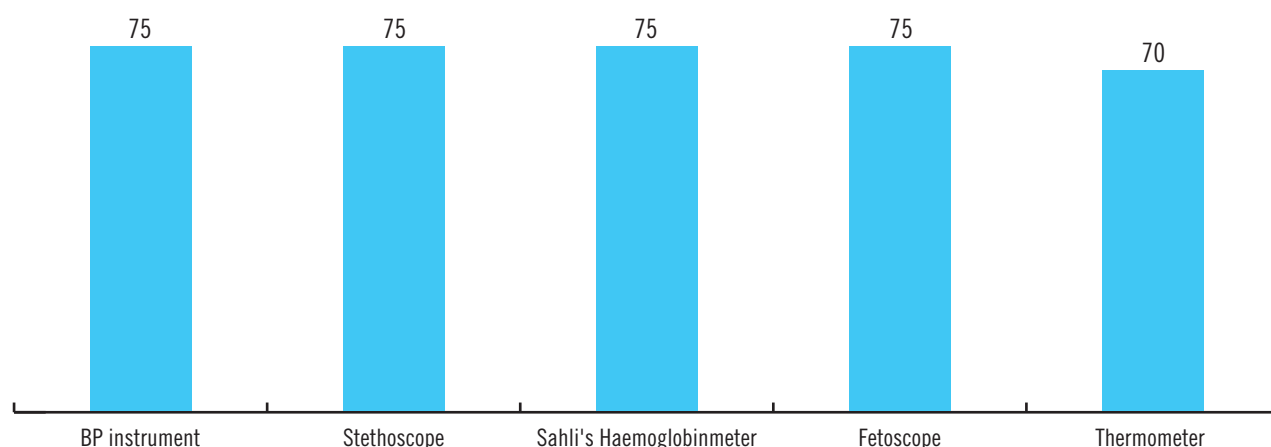


These findings highlight the urgent need for training and education to improve the knowledge and skills of SNs/ANMs in accurately measuring vital signs during admission. Proper measurement and documentation of vital signs are essential for ensuring the well-being of pregnant women and identifying any potential complications that may arise.

The facility assessment revealed that a significant majority, approximately 75%, of the assessed facilities had all the necessary and functional equipment for measuring vitals - such as blood pressure measuring instruments, stethoscopes, Sahli's haemoglobin meter, and foetoscopes. This indicates a positive picture in terms of equipment availability. Furthermore, 70% of the assessed facilities had functional thermometers (Figure 12).

79%
of deliveries
case sheet was
initiated by the
provider

FIGURE 12: Percent of facilities with functional equipment available for measuring vitals



Quality of health services received at the facility: Labour Monitoring

The meticulous observation and continuous monitoring of women using a partograph during the first stage of labour are paramount for the timely identification and management of potential complications.

The findings indicate that a substantial 90% of SNs/ANMs were aware of when to initiate the partograph (at 4cm cervical dilatation), and most of them were knowledgeable about the correct frequency with which the specific vital sign should be plotted on the partograph (Table 2).

TABLE 2: Percent of SNs/ANMs who knew when to initiate partograph and how frequently vitals should be measured for plotting on the partograph

Partograph initiation – 4cm cervical dilatation	90.0
Specific components of partograph	
FHR (every 1/2 hr)	83.3
Amniotic fluid (every 1/2 hr)	67.8
Cervical dilatation (every 4 hr)	75.6
Contraction (every 1/2 hr)	74.4
Pulse (every 1/2 hr)	72.2
Blood Pressure (every 4 hr)	60.0
Temperature (every 4 hr)	58.9
Number of SNs/ANMs whose knowledge of partograph was assessed	
	90

Regarding the identification of prolonged labour through partograph readings, 70% of the SNs/ANMs could correctly identify at least one of the seven indications of prolonged labour. However, it is worth noting that none of them were able to identify all seven indications (Table 3a).

Similarly, when asked about identifying obstructed labour through partograph readings, only 47% of the SNs/ANMs could correctly identify any of the nine indications, and none could mention all nine indications (Table 3b).

TABLE 3A: Percent of SNs/ANMs who knew when to initiate partograph and how frequently vitals should be measured for plotting on the partograph in case of prolonged labour

Signs of prolonged labour from partograph	%
Plotted cervical dilation line crossing the alert line	45.6
Contractions do not increase in frequency and duration	18.9
Cervix not dilated >4 cm after 8 hours of regular contraction	30.0
Cervix not dilating at least 1 cm an hour in active	13.3
No cervical change with repeat PV	0.0
Full dilation of cervix but no descent of fetal head	3.3
Two or less contraction in 10 minutes lasting less than 40 seconds when in active labour	2.2
Any signs of prolonged labour	70.0
All signs of prolonged labour	0.0
Number of SNs/ANMs	90

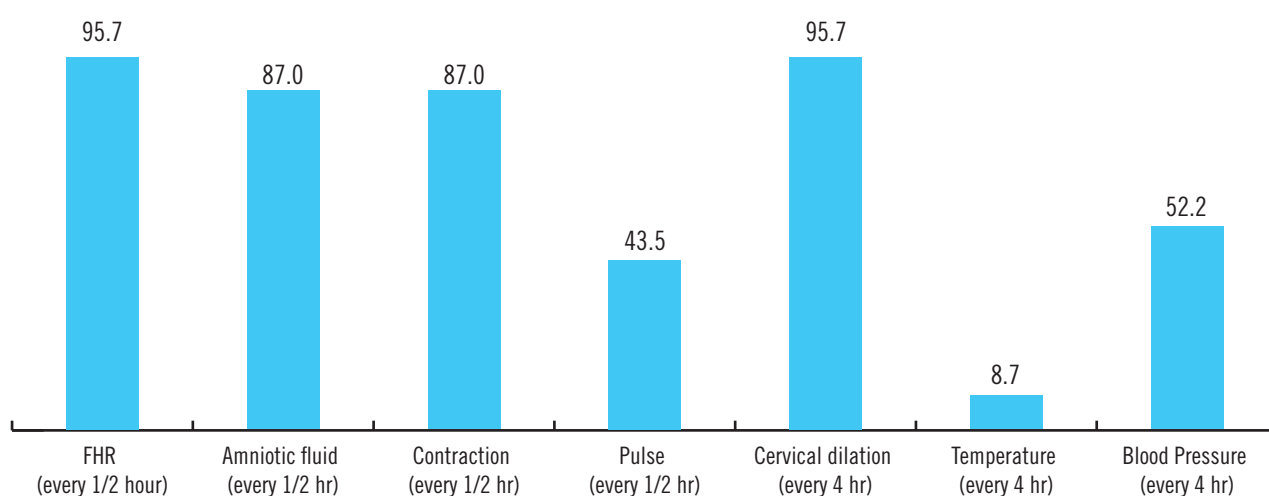
TABLE 3B: Percent of SNs/ANMs who knew when to initiate partograph and how frequently vitals should be measured for plotting on the partograph in case of obstructed labour

Signs of obstructed labour from partograph	%
Plotted cervical dilation line is to the right of the alert line	21.1
No cervical change with repeat PV after 4 hrs in active phase of labour	22.2
Significant caput and moulding	1.1
Cervix that not well applied to presenting part	1.1
Swollen, oedematous cervix	0.0
Ballooning lower uterine segment	0.0
Formation of reaction band felt over abdomen	1.1
Fetal or maternal distress	14.4
Active labour for more than 24 hours duration	3.3
Any signs of obstructed labour	46.7
All signs of obstructed labour	0.0
Number of SNs/ANMs	90

In two separate case studies presented to SNs/ANMs, they were asked to plot the partograph. In the first case study, 34.8% of the participating SNs/ANMs (out of 46) were able to demonstrate accurately all the steps of partograph plotting. In the second case study, 71.4% of the participating SNs/ANMs (out of 21) were able to perform the same.

The initiation of the partograph was observed in only one-third of deliveries, and labour monitoring using a partograph was conducted in 23 out of 27 deliveries. Temperature, blood pressure and pulse were recorded on a partograph in a limited number of deliveries (Figure 13). Out of all the partographs used for labour monitoring, only one was found to be complete, with all seven indications correctly marked.

FIGURE 13: Percent of deliveries where specific indications were marked on partograph, n=23



It is also important to note that in 16% of deliveries, healthcare providers administered Oxytocin before the delivery, indicating a potential deviation from the best practices.

These findings underscore the need for comprehensive training and ongoing education for SNs/ANMs in the proper utilization of the partograph, accurate identification of indications, and consistent monitoring of labour progress. Ensuring widespread adherence to these practices will greatly contribute to improved maternal and neonatal outcomes.

Quality of health services received during the Third Stage of Labour

Active Management of the Third Stage of Labour (AMTSL) is a proactive approach taken by healthcare providers to facilitate the safe and efficient delivery of the placenta. It is a procedure which should be done for all deliveries. It involves three key components: administration of a uterotonic drug, controlled cord traction, and uterine massage.

Approximately 84% of the SNs/ANMs were aware that the third stage of labour commences with the delivery of the foetus and continues till the expulsion of the placenta. Only 29% of SNs/ANMs had the knowledge about all three steps involved in the active management of the third stage of labour (Table 4).

Notably, a significant proportion of nurses accurately mentioned the correct dosage (84.4%) and administration route (92.2%) of oxytocin. Less than half of the nurses (46.7%) correctly identified the appropriate timing for administering oxytocin (Table 4).

TABLE 4: Percent of SNs/ANMs who had correct knowledge of various aspects of AMTSL

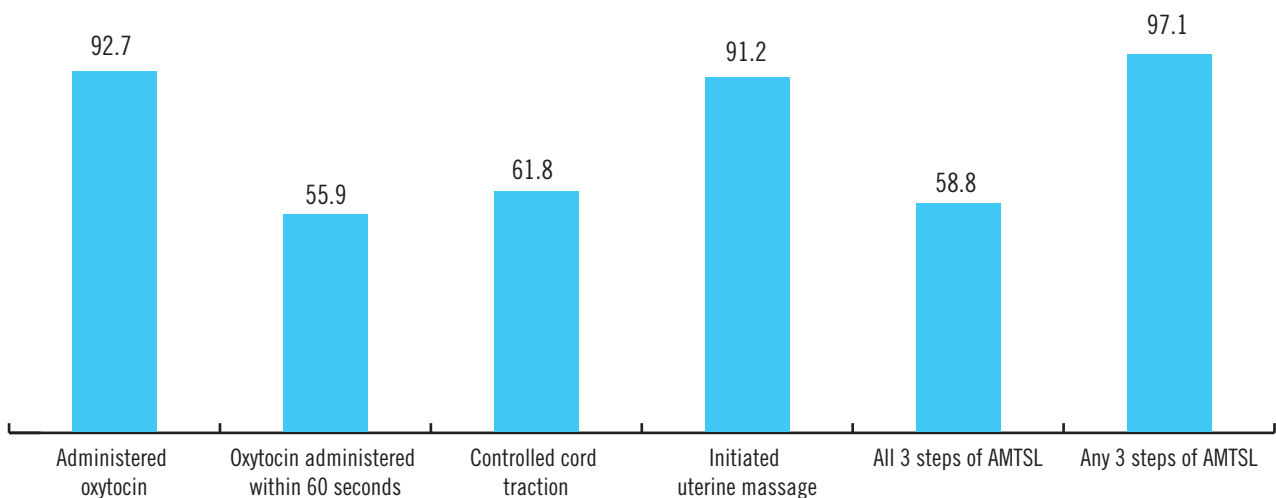
Definition of 3rd stage of labour	
Starts from expulsion of foetus	84.4
Ends after delivery of placenta	84.4
Steps in AMTSL	
Give uterotonics	70.0
Controlled cord traction	41.1

Uterine massage	53.3
Any of the 3 steps	83.3
All the 3 steps	28.9
Timing, dose, route and storage of oxytocin	
Should be given within 60 seconds after delivery	46.7
10 IU is the appropriate dose	84.4
Should be administered intramuscular	92.2
Should be stored in temperature between 2° and 8° C	48.9
Number of SNs/ANMs	90.0

Among the 29 participating SNs/ANMs for skill demonstration of AMTSL, none were able to demonstrate all the steps involved in AMTSL and only 24% of them could demonstrate critical steps of AMTSL.

In 59% of deliveries (out of 68 live births), all three components of AMTSL were performed as per the protocol. In 56% of the deliveries, the administration of Oxytocin within the critical 60-second window was promptly carried out. The uterine massage was initiated in 91% of deliveries, while 62% of mothers received controlled cord traction (Figure 14).

FIGURE 14: Percentage of directly observed deliveries where the SNs/ANMs performed AMTSL



The uterotonic drug Oxytocin was available in 70% of the facilities assessed.

These findings highlight the need for comprehensive training and education to enhance the understanding and implementation of active management of the third stage of labour. Adhering to the recommended procedures can significantly contribute to safer deliveries and improved maternal outcomes.

III. Post-natal care (PNC)

Postnatal care refers to the support and medical attention provided to a mother after childbirth. It involves monitoring the mother's and newborn's health, managing any postpartum complications, and providing guidance on breastfeeding, nutrition, and self-care.

Approximately 44% of mothers did not receive any home visits from ASHA/AWW during the first week after delivery (Figure 15). During the first month after delivery, ASHAs conducted home visits and weighed the majority of the infants (80.9%), while measuring the temperature for just over half of the infants (55.3%). ASHAs checked breastfeeding for about 32% of the infants. As far as counselling mothers are concerned, about half of the mothers (49.6%) discussed breastfeeding, and only 3% of mothers were asked about vaginal bleeding by ASHA (Figure 16).

FIGURE 15: Percent distribution of women who received home visits by ASHA/AWW during the first week after delivery, n=755

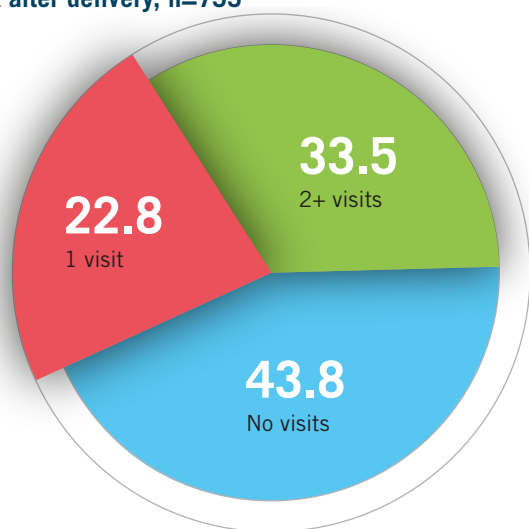
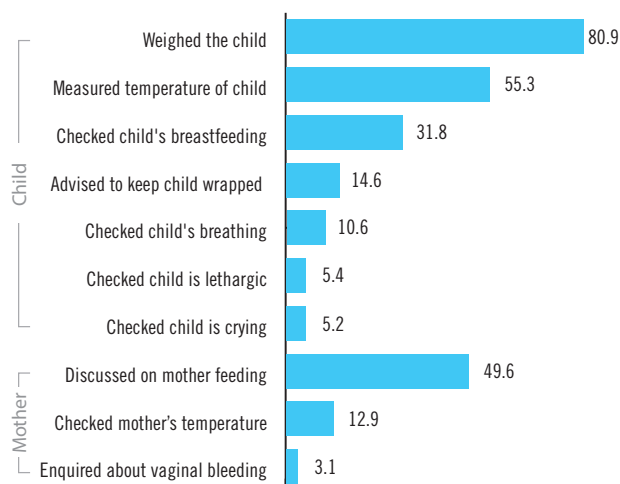
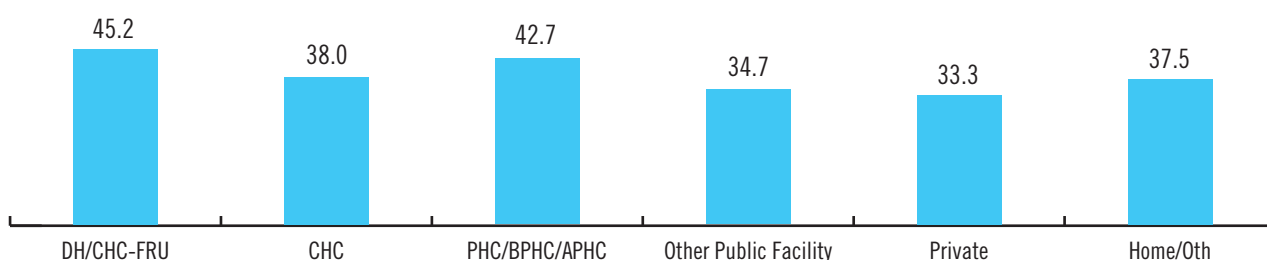


FIGURE 16: Percent distribution of women who received services/advice given by ASHA during home visits in the first month after delivery, n=575



Regarding exclusive breastfeeding, 40.5% of newborns were exclusively breastfed within the 24 hours. The distribution of exclusive breastfeeding by place of birth is presented in Figure 17. Furthermore, 47.3% of women received breastfeeding counselling by FLWs within seven days of delivery.

FIGURE 17: Percent of newborns exclusively breastfed in first 24 hours by place of delivery, n=713



These findings highlight that a significant percentage of women did not receive home visits from ASHA/AWW during the crucial first-week post-delivery. However, for the babies who did receive home visits, the majority were weighed, and temperature measurements were taken by ASHAs. There is room for improvement in terms of improving exclusive breastfeeding rates both at the facility and community level by providing comprehensive counselling to mothers, including discussions on breastfeeding and addressing post-delivery concerns. Enhancing the coverage and quality of home visits by ASHA/AWW can contribute to better support and care for mothers and newborns during the postpartum period.

Quality of health services provided as immediate postpartum care at the facility: Newborn care

A comprehensive evaluation of routine newborn care practices was carried out at the selected facilities, aiming to assess newborn care knowledge, skills, and practices. When queried about the various elements comprising essential newborn care, a significant number of nurses (96%) acknowledged at least one component. However, it was observed that merely 9% of the nurses were able to recall all six essential components (Table 5).

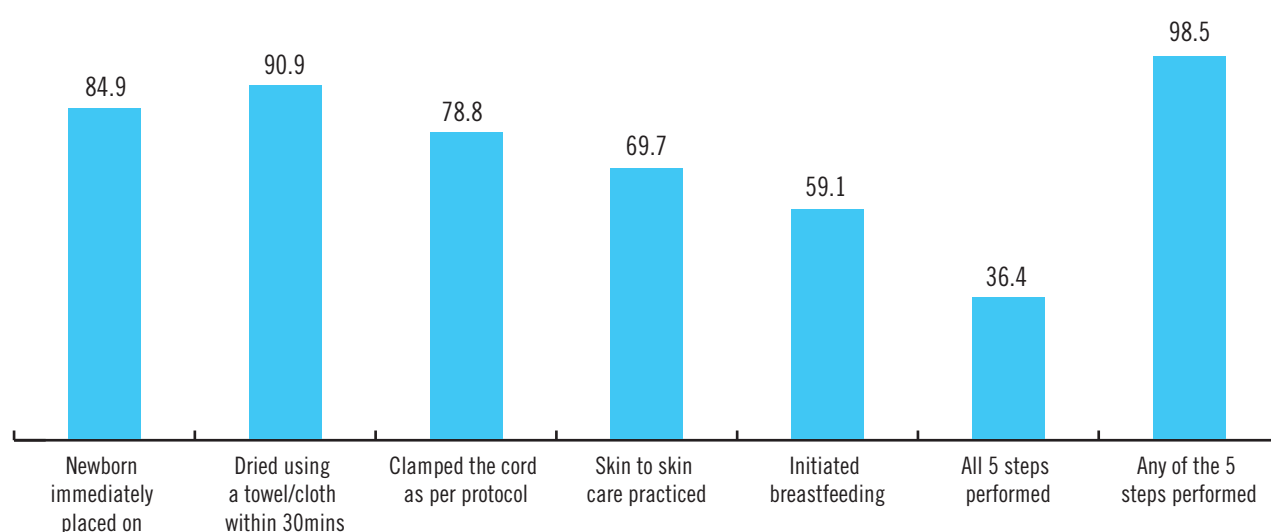
TABLE 5: Percent of SNs/ANMs who know the components of routine newborn care

Components of routine newborn care	%
Place the baby on the mother's abdomen	53.3
Dry and cover the newborn	78.9
Clamp and cut the cord after 1 minute	53.3
Provide warmth	43.3
Watch for colour and vital signs	35.6
Initiate breastfeeding with skin to skin contact	60.0
Any component of routine newborn care	95.6
All components of routine newborn care	8.9
Number of SNs/ANMs	90

All nurses could demonstrate any step of routine newborn care, while only 2% (out of 85 SNs/ANMs participated) of them could demonstrate all the steps.

Only 36% of newborns (out of 66 live births) received immediate placement on the mother's abdomen, drying, clamping the cord, skin-to-skin care, and breastfeeding initiation (Figure 18).

FIGURE 18: Percent of deliveries/live births where specific routine newborn care practices were observed by SNs/ANMs, n=66



Management of the Fourth Stage of Labour

The fourth stage of labour occurs immediately after the baby's birth and extends for about two hours. It is a critical time for the mother and newborn as they undergo important physiological changes. During this stage, healthcare providers monitor the mother's vital signs, assess for any complications, and support the initiation of breastfeeding.

Approximately 74% of the SNs/ANMs were aware that the fourth stage of labour starts from the delivery of placenta and 49% were aware that it ends 2 hours after the expulsion of placenta.

The majority of the nurses were not aware of the recommended frequency of measurement of vital signs of the mother and the newborn during the fourth stage of labour (Table 6).

TABLE 6: Percent of SNs/ANMs who had knowledge about the recommended frequency of measuring vital signs in mothers and newborns during the fourth stage of labour

Signs/Symptoms	%
Maternal, during the Fourth stage of labour	
Temperature every hour	17.8
Pulse every 15 minutes	11.1
BP every 15 minutes	10.0
Uterine contractions every 15 minutes	13.3
Check bleeding PV every 15 minutes	11.1
Urination every 15 minutes	6.7
Newborn, during the First hour	
Breastfeeding every 15 minutes	7.8
Newborn colour every 15 minutes	13.3
Nasal flaring every 15 minutes	11.1
Grunting every 15 minutes	12.2
Chest reaction every 15 minutes	15.6
Respiratory rate every 15 minutes	12.2
Heart rate every 15 minutes	11.1
Temperature every 15 minutes	8.9
Cord bleeding every 15 minutes	10.0
Number of SNs/ANMs	90

Nearly 98% of the nurses (out of 63 SNs/ANMs participated) were found correctly demonstrating at least one step/task related to postpartum haemorrhage (PPH) management. None could correctly demonstrate all the steps/tasks involved in the management of PPH. Only 22% of the nurses could tell the major cause of PPH.

TABLE 7: Percent of SNs/ANMs who performed specific steps/tasks related to PPH management in a skill demonstration session

Steps in management of PPH	%
Shout for help	33.3
Measure and record pulse	34.9
Measure and record BP	39.7
Measure and record respiration rate	17.5
Measure and record temperature	25.4
Establish two I.V lines	71.4
Could tell the correct size gauge that will be used	64.4
Gave IV normal saline or Ringer's lactate or 5% dextrose normal saline	54.0
Could tell the rate of flow of IV fluids	49.2
Gave Oxytocin	79.4
Could tell the dose of Oxytocin given via infusion	81.0
Could tell the rate of flow for next 500ml of IV fluids	30.2
Elevated woman's feet	12.7
Gave oxygen	7.9
Insert a Foley's catheter	27.0
Could tell major cause of PPH	22.2
All steps related to PPH management	0.0
Any steps related to PPH management	98.4

The practices concerning vital observations of mothers during the fourth stage of labour were inadequate. Merely 4% of mothers received proper monitoring for essential parameters such as temperature, blood pressure, vaginal examination, abdominal examination, and breast examination at least once within 2 hours after delivery. 22% of mothers received no vital examination post-birth. Likewise, the practices related to newborn observation during the fourth stage of labour fell far short of satisfactory. Less than 15% of newborns were adequately assessed for crucial indicators like temperature, heart rate, respiratory rate, and cord bleeding at least once within 2 hours after delivery. Over half of the newborns received no vital observations post-delivery (Table 8).

TABLE 8: Percent of the mothers who stayed at the facility for at least 2 hours after delivery and the percent of the newborns where the SN/ANM performed the specific observations of the mother and the newborn during the 4th stage of labour

Observation	%
Maternal, during the Fourth stage of labour	
Temperature	4.4
Blood Pressure (BP)	32.4
Vaginal examination	57.4

Observation	%
Abdominal examination	54.4
Breast examination	26.5
All vitals checked	4.4
No vital checked	22.1
Newborn, during the Fourth stage of labour	
Temperature	19.1
Heart rate	45.5
Respiratory rate	44.1
Cord bleeding	32.4
All vitals checked	14.7
No vital checked	51.5
Number of mothers/newborns observed	68

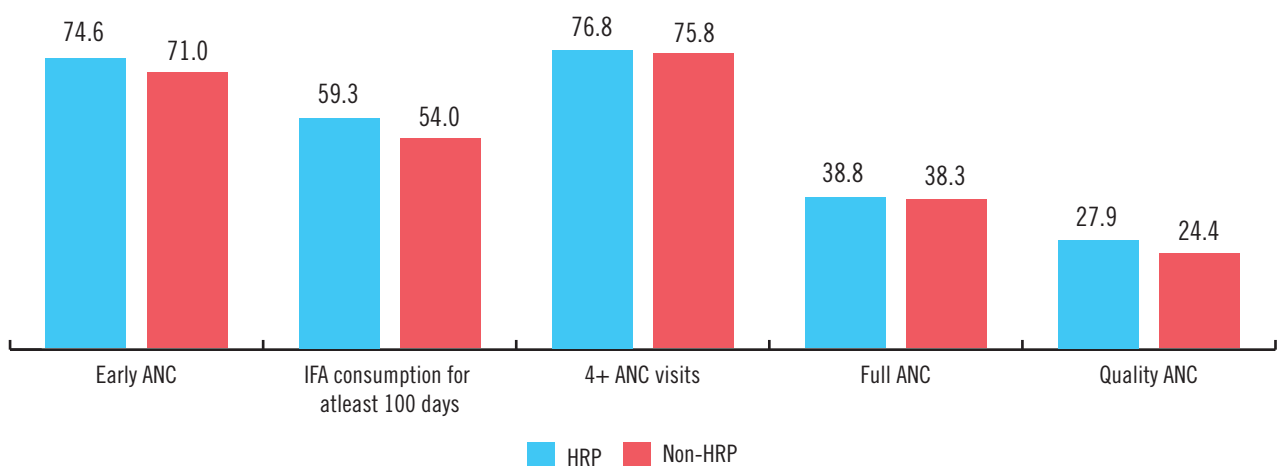
These findings highlight the urgent need for improvement in the practices and knowledge of healthcare providers during the fourth stage of labour. Adequate monitoring and assessment of both the mother and newborn are crucial during this critical period to ensure their well-being and promptly identify any potential complications. Enhanced training and mentoring can play a vital role in addressing these gaps and improving the quality of care provided during the fourth stage of labour.

IV High Risk Pregnancies

Approximately 49% of women were identified as high risk pregnancies (HRPs⁴), with 37% being diagnosed with anaemia and 10% with hypertension. The high prevalence of anaemia contributes significantly to the high proportion of HRPs.

There is little disparity in ANC coverage indicators between HRP and non-HRP women except for early ANC and IFA consumption for 100 days (Figure 19).

FIGURE 19: ANC coverage among HRP and Non-HRP women



During delivery, 53% of HRPs experienced no complications, 24% of HRPs experienced one complication and rest of them experienced two or more complications. The proportion of HRPs who experienced complications (47%) at the time of delivery is higher than the proportion among whom no high-risk factor (40%) was

4. A pregnancy is categorised as high risk pregnancy (HRP) if a woman is anaemic, hypertensive, or having parity >4

detected. This is especially true for bleeding before or after pregnancy, convulsions/fits or high BP, sepsis and prolonged labour. The higher proportion of breech/mal presentation among non-HRP is an indication of missed detection as abdominal examination or ultrasound have not been performed. Similarly, pre-term labour and premature rupture of membranes are almost equal among HRP and non-HRP is an indication of missed detection, either because blood pressure was not measured accurately or previous obstetric history was not covered (Table 9). It is well known that non-HRP too may have complications at the time of delivery, but detection of HRP, especially those at risk of bleeding, high BP, prolonged or obstructed labour and mal-presentation can ensure that the women are taken directly to the First Referral Unit (FRU) or higher level of care.

TABLE 9: Type of complications among HRP and non-HRP women

Type of complications expressed as %	HRP	Non-HRP
Premature labour (before 37 weeks)	3.3	4.9
Preterm/premature rupture of membrane	5.7	6.4
Excessive bleeding before delivery	3.8	2.6
Prolonged labour (>12 hours)	15.3	11.6
Obstructed labour	10.9	11.3
Breech/mal presentation	4.1	7.5
Excessive bleeding immediately after delivery*	21.0	14.1
Convulsions/fits*	9.6	3.6
High BP	6.8	4.4
Sepsis/fever	6.3	4.9
Other	1.9	1.3
Total % of women with complications	47	40
*differences are statistically significant		

Limitations

- Sample size for the facility assessments and observations could not be achieved. The results are therefore indicative of areas for programmatic intervention, but cannot be generalised to the entire district and to all facilities.
- The study was done immediately post Covid-19 second wave. Health staff could have been distracted by other priorities.
- Facility observations were done by staff of the project. There could be internal bias in their assessments and observations.
- Time constraint was one of the limitations of the study, due to which we could only include 6 percent of the total estimated pregnant woman in the study. The data is not robust enough to explain complex issues.
- The community level findings are subject to recall bias of the respondent. However, this was minimised by using respondents who had recently delivered (<6 months).

Recommendations

- Need to increase the coverage of key community interventions and improve the quality of care in healthcare facilities, prioritizing the following aspects:
 - Improving the quality of antenatal care services to ensure that no HRP is missed from detection, and promoting the uptake of IFA supplements, either IFA tablets or IV Iron Sucrose, among pregnant women. It would be useful to also ensure at least one ultrasound examination for all pregnant women.
 - Improving the quality of postnatal care services, with a specific emphasis on home visits by frontline workers to assess the health of both mother and child, especially during the first week after birth.
 - Reducing the prevalence of home deliveries by ensuring adequate birth preparedness measures are taken in a timely manner.
- Improve the quality of care during each stage of labour to ensure prompt identification and management of complications and adequate coverage and quality of services in the post-partum/post-natal period.
- Enhance the knowledge, skills and practice of service providers (SNs/ANMs) through the development of a mentoring plan. Regular mentoring sessions should be conducted using various methodologies, including the use of audio-visual aids, on-site mentoring, mentoring in mini skills lab and group training.
- Establish a tracking system for identified HRPs to facilitate appropriate management and planning. Additionally, ensure that deliveries for HRP women take place at the FRU level.
- The tracking of high risk pregnancies should extend beyond delivery for at least two years. Similarly, efforts to improve the tracking of small and sick newborns should be implemented.

Conclusion

While the contact coverage indicators for ANC, intra-partum care, and post-partum care are at acceptable levels, the progress of maternal and newborn health is hindered by the lack of quality coverage indicators in all three phases. To minimize the risk of maternal and neonatal mortality, greater emphasis should be placed on improving the coverage and quality of ANC and PNC services at the community level, as well as the quality of care in the pre-delivery and post-delivery periods. Since a significant proportion of ANC takes place at the Village Health and Nutrition Day (VHND), it is crucial to strengthen the quality of ANC provided at VHNDs. There is a significant gap in both knowledge and practice across all components of postnatal and postpartum care within the facility setting. The quality of postnatal care in the community too is currently insufficient. To address these concerns, it is recommended to roll-out training on Home-Based Newborn (HBNC)/Home Based Young Infant Care (HBYC) and supplement this through continuous mentoring sessions, which can effectively bridge the gap and improve the quality of care in postnatal services. Even at the facility, the nurse mentors would need to increase their focus on pre-assessment, labour monitoring and immediate post-partum and postnatal care in order to increase both the coverage and quality of care. The coverage and quality of care received by HRP is no different from that received by those with no complications and a number of women with high-risk conditions were probably undetected. At least one visit to a clinician and assessment via ultrasound may be encouraged. As well, HRP may be identified by a red-stamp and transported directly to a comprehensive emergency obstetric and newborn care (CEmONC) facility that can handle complications during delivery.

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