

# Utilization of maternal health services in public health facilities by tribal women in Kokrajhar, Assam

## Findings from Kokrajhar, Assam



### Background

The north-eastern state of Assam has the highest maternal mortality in India. While the 'maternal mortality ratio' (MMR) has reduced from 301 to 195 per 100,000 live births<sup>1,2</sup> between 2012 and 2020, it is still more than two times the national average of 97 per 100,000 live births in 2018-20.<sup>2</sup>

Assam state, like many Indian states have implemented various initiatives of the Government of India such as the 'ASHA' program through National Health Mission,<sup>3</sup> 'Janani Suraksha Yojana' (JSY),<sup>4</sup> 'Janani Shishu Suraksha Karyakram' (JSSK)<sup>5</sup> to provide safe delivery services and increase institutional delivery in public health facilities. Additionally, the state has implemented schemes such as 'Mamoni' and 'Mamta' to improve maternal health services. As a result of these efforts, institutional deliveries has increased from 22.4% in 2005-06<sup>6</sup> to 84.1% in 2019-21.<sup>7</sup> Concurrently, complete (i.e at least four) antenatal check-up has increased from 46.4%<sup>8</sup> to 50.7%.<sup>7</sup> Although utilization of maternal health services has increased at the state and national level, maternal health continues to be a major public health issue. Moreover, large intra-state disparities remain in the utilization of maternal health services (antenatal and maternity) between various population groups within the state, especially among the groups created by socioeconomic divisions and ethnicity. These disparities are further widened due to lack of empirical evidence about utilization of maternal health services in the state.

Given this understanding, The George Institute for Global Health India, in partnership with North East Research and Social Work Networking (NERSWN) conducted a quasi-experimental study entitled "Improving the Health Care Access and Quality in the Context of Achieving Universal Health Coverage among the Scheduled tribes: An Implementation Research" between April 2020 – January 2023. The study in Kokrajhar district comprised of three phases – formative, implementation and evaluation. However, this research brief presents the findings of the evaluation phase on utilization of maternal health services (antenatal care and delivery care) in public health facilities by tribal women of Assam.

### Key Findings

**1/4** of the tribal women were married before the age of 18 years - among them, about half completed < 4 antenatal check-ups

**58.2%** tribal women sought antenatal care from primary health centres (PHC)

**90.8%** tribal women had childbirth in public health facilities

**94%** incurred out-of-pocket expenditure (OOPE) in public health facilities for delivery care

### Average expenditure incurred:

**2,000** INR  
per Normal Delivery

**5,000** INR  
per Caesarian Delivery

ONLY

**46%** of eligible tribal women received incentives under JSY

**88%** had a health worker visit at home during the post-partum period

### Methods

A cross sectional study was conducted in the tribal villages of Kokrajhar district. A total of 76 villages were selected by employing multistage random sampling method. In these villages, we covered 321 tribal households belonging to Bodo and Rabha Tribes. The households selected had a child aged 12 months and below. Fieldwork was conducted between July and December 2022.

In this brief, we present utilization of maternal health services in any of the following public health facilities and/or platforms including Sub Health Centre (SHC), Sub Health Centre-Health and Wellness Centre (SHC-HWC), Primary Health Centre (PHC), Sub Divisional Hospital/District Hospital (SDH/DH), village health and nutrition day (VHND) and home visits by a health worker. Concurrently, maternal health services comprise of antenatal care, delivery care, and post-partum home visit by a health worker.



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## Results

Of the 321 tribal women, 316 women reported utilizing a public health facility and/or its platforms for any one or more maternal health services.

**Table 1. Profile of tribal women (N=316)**

| Background characteristics                         | Values     |
|--|------------|
| Age in years (Mean, SD)                            | 25.5 (5.4) |
| Years of schooling of head of household (Mean, SD) | 5.1 (5.3)  |
| Household income up to INR 60,000 (n=176)          | 91 (51.7)  |
| Age at marriage below 18 years                     | 78 (24.7)  |
| Age at first delivery below 20 years               | 115 (36.4) |
| Number of living children (Mean, SD)               | 1.5 (0.7)  |
| Number of women                                    | 316        |

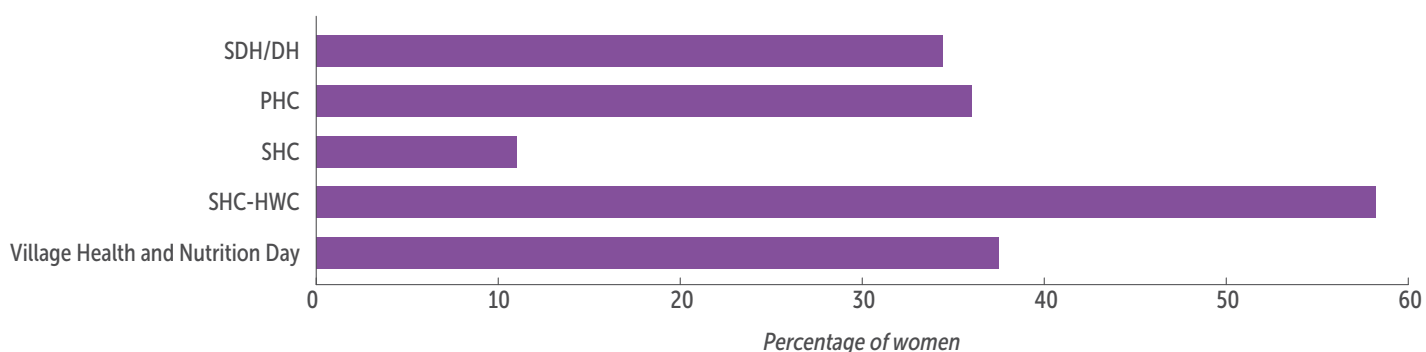
## 2. Antenatal care

Of the 316 tribal women, a total of 299 women (94.6%) reported seeking antenatal care (ANC) from a public health facility and/or VHND

### 2.1. Place of seeking antenatal care

More than half (58.2%) of the tribal women accessed a PHC for ANC, and only 37.5% visited a SDH/DH. About one-third (34.4%) of the women received ANC during the 'Village Health & Nutrition Day' (VHND) (Fig 2.1).

**Fig.2.1. Place of Antenatal care availed by tribal women (N= 299)\***



\*Multiple response hence total may not add upto 100 percent

Abbreviation: ANC- Antenatal care, SHC-Sub Health Centre, SHC-HWC- Sub Health Centre-Health and Wellness Centre, PHC- Primary Health Centre, SDH/SH- Sub Divisional Hospital/District Hospital

#Village Health & Nutrition Day- organized once every month at the Anganwadi centre in the village by the ASHAs, ANMs and Anganwadi workers(AWW) providing basic health services and health related information



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### 2.2. Age at marriage and antenatal care visits

Around one-fourth of the tribal women (24.8%, n=72) who received antenatal care from public health facilities told that they got married before 18 years. Table.2.2 shows the number of visits paid to public health facility for availing antenatal care and the age at marriage.

Among the women who got married before 18 years, about half (48.6%, n=32) had fewer than four visits to the public health facility for antenatal care. Concurrently, majority (70%, n=159) of the women with age at marriage more than 18 years paid more than four visits for antenatal care.

Table. 2.2. Number of visits paid to public health facility by tribal women for availing antenatal care by the age at marriage (N =299)

| Age at Marriage | Number of ANC visits   |                        |                |
|-----------------|------------------------|------------------------|----------------|
|                 | <4 ANC visits<br>n (%) | ≥4 ANC visits<br>n (%) | Total<br>n (%) |
| <18 years       | 35 (48.6)              | 37 (51.4)              | 72 (100)       |
| ≥18 years       | 68 (30.0)              | 159 (70.0)             | 227 (100)      |
| Total           | 103 (34.5)             | 196 (65.5)             | 299 (100)      |

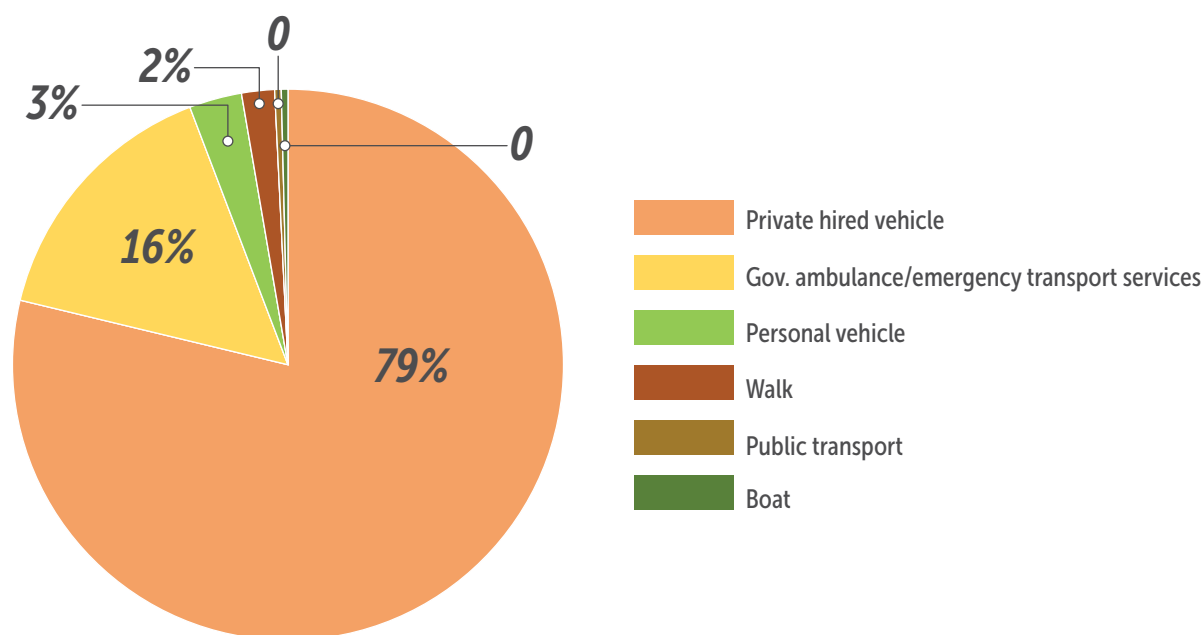
### 3. Delivery

Of the 316 tribal women, a total of 287 (90.8%) women utilized a public health facility for childbirth.

#### 3.1. Access

Only 16% women reported utilizing a government ambulance or 108 emergency transport services (Fig.3.1), whereas 89.2% reported that they were aware of the provision of free emergency transport facilities by the Government.

Fig.3.1. Mode of transport chosen by tribal women for travel to the public health facilities for delivery (n=287)



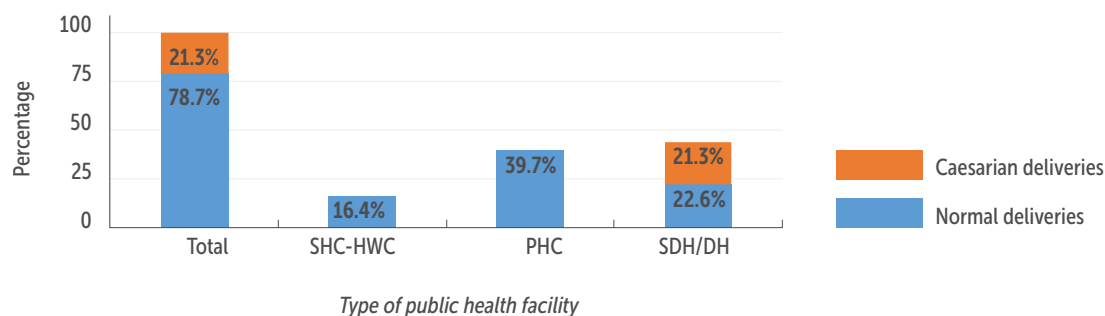


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### 3.2. Place of delivery

Forty-four percent of the tribal women chose SDH/DH for childbirth (Fig 3.2). Concurrently, PHC and SC-HWC were utilized by 40% and 16% women respectively for childbirth.

Fig.3.2. Type of health facility chosen by tribal women for seeking care for delivery (N=287)

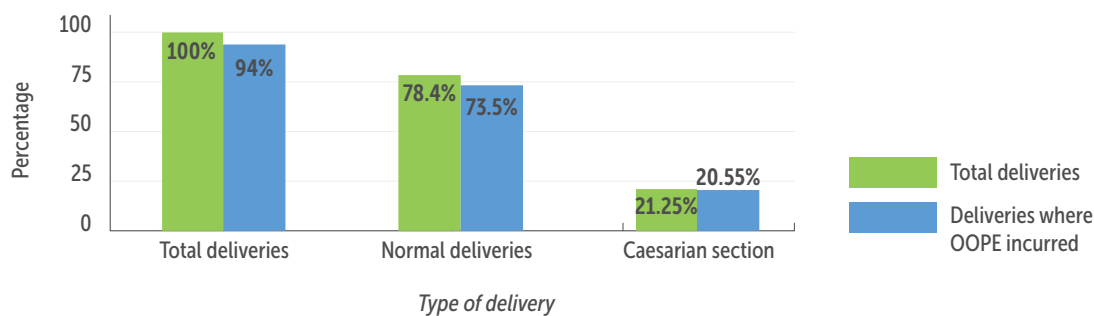


SHC-HWC- Sub Health Centre-Health and Wellness Centre, PHC- Primary Health Centre, SDH/SH- Sub Divisional Hospital/District Hospital  
 \*cesarean delivery service is not provided in SHC-HWC and PHC in Assam

### 3.3. Out of Pocket Expenditure (OOPE)

A total of 270 tribal women (94%) reported spending out-of-pocket for childbirth in a public health facility (Fig 3.3).

Fig.3.3. Institutional deliveries and OOPE incurred for delivery care in public health facilities by tribal women



The median OOPE of INR 2,500 was incurred by women for childbirth at the public health facility (Table 3.3). However, there was a wide variation in OOPE for normal delivery within and between health facilities, and it ranged from INR 1,000 to INR 5,000. This difference was notably higher between PHC and SDH/DH. It is also noteworthy to mention that women were paying more for normal delivery in HWC- Sub Centre (SC) than PHC, even though HWC-SC is closer to their home and have fewer health provider than a PHC. Concurrently, cesarean delivery at SDH/DH had higher OOPE with wide variation in amount paid by women for childbirth. The median OOPE incurred for cesarean delivery was 5,000 that ranged from INR 4,000 to INR 12,000.



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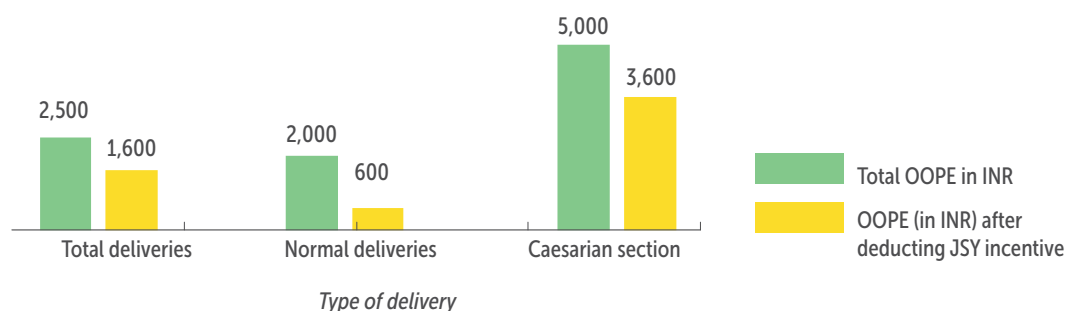
Table 3.3: Health facility wise expenditure (in INR) for delivery care (N=270)

| Place of delivery                       | Women reported OOPE for institutional delivery (N=270) n (%) | Median expenditure in INR (IQR) |                             |                            |
|---|--|---------------------------------|-----------------------------|----------------------------|
|   |  | Normal n=211                    | Cesarean n=59               | Total N=270                |
| Health and Wellness Centre – sub-center | 43 (15.9)  | 2,500 (1,500-3,000)             | NA                          | 2,500 (1,500-3,000)        |
| Primary Health Centre                   | 106 (39.3)   | 1,500 (1,000-2,500)             | NA                          | 1,500 (1,000-2,500)        |
| Sub-Division Hospital/District Hospital | 121 (44.8)   | 3,000 (1,900-5,000)             | 5,000 (4,000-12,000)        | 4,000 (2,500-7,000)        |
| <b>Total</b>                            | <b>270 (100)</b>   | <b>2,000 (1,200-3,000)</b>      | <b>5,000 (4,000-12,000)</b> | <b>2,500 (1,500-4,000)</b> |

NA-Not Applicable as cesarean section mode of delivery service is not provided at Health and Wellness Centre and Primary Health Centre. INR-Indian Rupee; 1 US\$ = INR 78.5344 of year 2022

Of the tribal women who incurred OOPE for childbirth, only 125 (46%) women reported JSY incentives at the time of interview. The average OOPE in public health facility was INR 2,000 and INR 5,000 in public health facilities for normal and cesarean delivery respectively. After deducting the JSY incentive received for institution delivery, OOPE per delivery was INR 600 for normal and INR 3,600 for cesarean deliveries. Figure 3.4 provides median average cost of delivery including OOPE and after deducting JSY incentives per delivery in public health facilities.

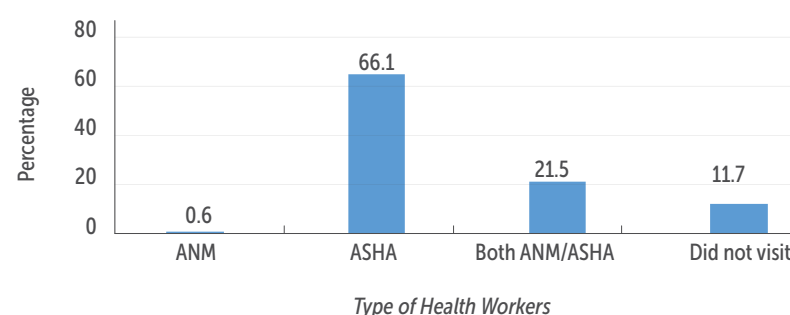
Fig.3.4. Average cost (in INR) per delivery (OOPE and after deducting JSY incentives) in public health facilities



### 4. Post-partum home visits

Of the 316 tribal women, 88.3% reported home visits by either ASHA or ANM or both after 42 days of delivery (Fig 4.1). It is noteworthy to mention ASHAs were primarily visiting homes for post-partum care, as reported by 66% of the tribal women.

Fig.4.1. Home visits by Health worker (ASHA/ANM) within 42 days of delivery (N=316)



(ASHA- Accredited Social Health Activist, ANM- Auxiliary Nurse/ Midwife)



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### Recommendations

- Targeted initiatives for health promotion and awareness to ensure that every pregnant woman completes minimum four antenatal visits as stipulated by the guidelines.
- Strengthen emergency transport services by the Government (increase the number of 108 Ambulances, improve its coverage and extend the timing into the nights also).
- Strengthening drugs and supplies, laboratory, and diagnostic services or increase JSY incentives to reduce OOPE in public health facilities.
- Even though we could not look at the quality of care in health facilities in this study, we recommend further research on monitoring and evaluation to ensure quality of care and reduction in OOPE.

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### References

1. Office of the Registrar General & Census Commissioner, India (ORGI). Annual Health Survey, 2012-13. New Delhi: Government of India; 2013.
2. Office of the Registrar General & Census Commissioner India. SPECIAL BULLETIN ON MATERNAL MORTALITY IN INDIA 2018-20. Sample Registration System; 2022.
3. National Health Mission. About Accredited Social Health Activist (ASHA) [Internet]. Ministry of Health and Family Welfare, Government of India. 2023 [cited 2023 Dec 14]. Available from: <https://nhm.gov.in/index1.php?lang=1&level=1&sublinkid=150&lid=226>
4. National Health Mission. Janani Suraksha Yojana [Internet]. Ministry of Health and Family Welfare, Government of India. 2005 [cited 2023 May 8]. Available from: <https://nhm.gov.in/index1.php?lang=1&level=3&lid=309&sublinkid=841>
5. National Health Mission. Janani-Shishu Suraksha Karyakram [Internet]. Ministry of Health and Family Welfare, Government of India. 2011 [cited 2023 Aug 9]. Available from: <https://nhm.gov.in/index1.php?lang=1&level=3&sublinkid=842&lid=308>
6. International Institute for Population Sciences (IIPS) and Macro International. National Family Health Survey (NFHS-3), 2005–06: India. Mumbai: IIPS; 2007. Report No.: Volume 1.
7. International Institute for Population Sciences. National Family Health Survey-5 2019-21 [Internet]. Mumbai: International Institute of Population Sciences; 2021 [cited 2021 Dec 18]. Available from: [http://rchiips.org/nfhs/NFHS-5\\_FCTS/India.pdf](http://rchiips.org/nfhs/NFHS-5_FCTS/India.pdf)
8. International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-4), 2015–2016 [Internet]. Mumbai: IIPS; 2017 [cited 2021 Nov 10]. Available from: <http://rchiips.org/nfhs/nfhs-4Reports/India.pdf>

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