

BASELINE STUDY FOR PRIMARY HEALTHCARE SERVICES THROUGH MOBILE MEDICAL UNITS (MMU), VARANASI, UTTAR PRADESH



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Introduction

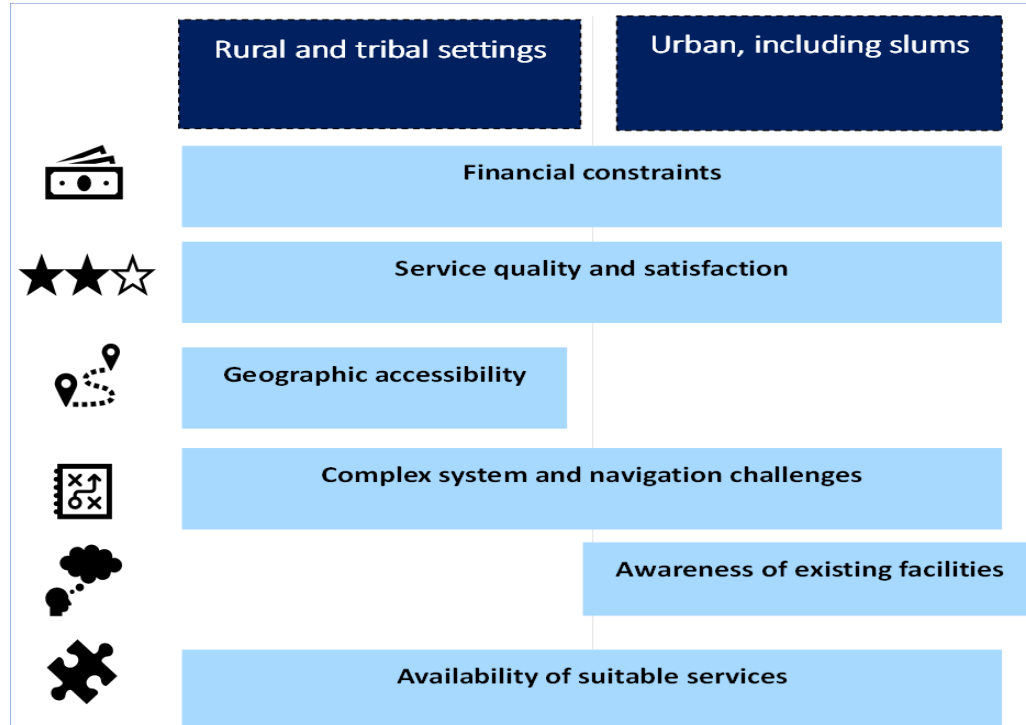
Good health is not just the absence of disease or infirmity, but it is a state of full physical, mental, and social well-being. Governments around the world are striving to expand and improve healthcare services. The Mobile Medical Unit (MMU), in which primary health care services are delivered a safely and high-quality package of primary health services to the communities. The Hans Foundation (THF) would initiate direct implementation of Mobile Medical Units in Varanasi. The operation is being done in close coordination with the health department to avoid any duplication of services and ensure complementarity of services for greater benefits for the communities and ensure complementarity of services for greater benefits for the communities. The following key services are covered in the MMU Interventions:

- Medical Check-ups, Diagnosis and Treatment in OPD.
- Prescription and dispensing of medicines.
- Conducting on-the-spot Pathological tests.
- Referral Services and conducting follow-up for the same.
- Counselling of patients and communities on preventive and healthy behavior.
- Organize special camps in the areas to cater to specific health needs focusing on eye care, women's health gynecology, dental care and other.

With this backdrop the current study will be carried out for assessing the MMU in Varanasi.

Need for Intervention:

HEALTH CARE SEEKERS FACE A RANGE OF BARRIERS IN ACCESSING AND RECEIVING THE AVAILABLE CARE. IN TERMS OF RURAL AND URBAN SETTINGS, AS MENTIONED BELOW



TO COMBAT THE BARRIERS POSSIBLE SOLUTIONS CAN BE MENTIONED AS BELOW. REDUCING THESE BARRIERS THROUGH MOBILE MEDICAL UNIT (MMU) AN INNOVATIVE MODEL OF HEALTHCARE DELIVERY BY HANS FOUNDATION.

Mapping out KAP (awareness/knowledge, attitude and practices)
Assessing whether people are able to access quality health services
Improving overall wellbeing of people through MMU (Mobile Medical Units).

KAP (awareness/ knowledge, attitude and practices)

Alleviating health disparities in vulnerable populations and individuals with illnesses and diseases in rural and remote areas.

Are effective in offering urgent care, providing preventative health screenings, and initiating chronic disease management

Medical Mobile Units (MMU)

The operation are being done in close coordination with the **health department** to avoid any duplication of services and ensure complementarity of services for greater benefits for the communities

Health Department

Intervention Area Overview: Varanasi

BASIC SOCIO-DEMOGRAPHIC INDICATORS OF VARANASI AS COMPARED WITH UTTAR PRADESH STATE. (NFHS – 5)

Indicators	Varanasi	Uttar Pradesh
Area in sq. km	1535	240928
Total Population (2011) (million)	3.67	199.8
Urban population (percent)	43.4	22.3
Decadal change (2001-2011) (percent)	17.1	20.2
Sex Ratio (per 1000)	913	912
The density of Population (persons per sq. km)	2395	829
0-6 population (percent)	13.5	15.4
Literacy rate (percent)		
Total	75.6	67.7
Male	83.8	77.3
Female	66.7	57.2
Scheduled caste population (per cent)	13.2	20.7
Scheduled tribe population (per cent)	0.8	0.6
Work participation rate (per cent)		
Total	33.2	32.9
Males	47.9	47.7
Females	17.1	16.7

KEY INDICATORS COMPARING VARANASI DISTRICT WITH UTTAR PRADESH STATE BASED ON NFHS-5

Indicators	Varanasi	Uttar Pradesh
Population living in HH with improved sanitation facility (%)	83.2	68.8
Households using clean fuel for cooking (%)	71.5	49.5
HH with family member covered under a health insurance/ financing scheme (%)	12.8	15.9
Currently married women aged 15-49 years using any modern method of family planning	60.9	44.5
Mothers who had at least 4 antenatal care visits (%)	51.4	42.4
Institutional births during the last 5 years	95.2	83.4
Children aged 12-23 months fully vaccinated (%)	79.3	69.6
Children under 5 years who are underweight (weight for age) (%)	39.0	32.1
Women whose Body Mass Index (BMI) is below normal (BMI ≤ 18.5 kg/m ²) (%)	15.7	19.0
Children aged 6-59 months who are anaemic (<11.0 g/dl) %	65.2	66.3
All women aged 15-49 years who are anaemic (<12.0 g/dl) (%)	37.6	50.4



Literature Review

Literature review:

A study named **mobile health clinics in the US** aimed for cutting-edge method of delivering health services, mobile health care delivery offers a wide range of services to disadvantaged groups. The service combinations, patient profiles, and connections to the established healthcare system differ amongst the clinics. The Affordable treatment Act has improved access to treatment recently, but obstacles still exist, especially for those living in locations with little resources. By acting as an essential conduit between the local population and medical facilities, mobile clinics can increase access. To promote the availability of this crucial resource, more effort is needed.

Another study, **Mobile health clinics in the era of reforms** aimed at providing affordable and high-quality care to vulnerable populations. With an estimated 1,500 mobile clinics serving around five million people annually, these clinics significantly improve accessibility for marginalized groups. They not only support chronic illness care and prevention but also help reduce overall healthcare expenses. In the post-reform climate, mobile clinics have increased opportunities for collaboration with hospitals, health systems, and insurers to enhance treatment outcomes and cost savings. With expanded coverage and delivery reform, mobile clinics can play a crucial role in improving population health management by reaching traditionally marginalized communities and ensuring they receive the care they need.

A study on **Mobile primary health care clinics for Indigenous populations in Australia, Canada, New Zealand and the United States**: a systematic scoping review aimed for the implementation of primary healthcare mobile clinics for Indigenous communities in Australia, Canada, New Zealand, and the United States has geographic gaps, according to this assessment. There are few reviews that support the use of mobile clinics for Indigenous communities, and groups that are putting such clinics into place must share their experiences. Future assessments must engage with the experiences of Indigenous people who use mobile clinic services.

Another study, **The Mobile Outreach Boomerang van taking care to the community**, aimed to successfully provide Aboriginal and Torres Strait Islander people in the Southern Darling Downs with a culturally safe space for basic healthcare services. It has met unmet needs and demonstrated the positive impact of culturally appropriate healthcare on improving the quality of life for these communities. The van continues to be utilized for community days, outreach services to schools, and as extra clinical space for COVID-19 testing and vaccination. Its flexibility allows for swift redeployment based on changing needs, ensuring ongoing accessibility and respect for the culture of Aboriginal and Torres Strait Islander people in the region. Overall, the MOB van has become a symbol of the dynamism and commitment of Carbal and the local communities in meeting the healthcare needs of their population.

A study for **Mobilizing mobile medical units for hurricane relief: the United States Public Health Service and Broward County Health Department response to hurricane Wilma, Broward County, Florida**, Mobile medical units have proven to be an effective method for syndromic monitoring and providing medical attention to communities that lack access to permanent local healthcare facilities. In a specific instance, these units reached out to 14,033 dwelling units and contacted residents. Among them, approximately 10% required medical evaluation, resulting in 3,218 patients receiving medical evaluations on the mobile vans. Most of the patients were female (62%), and the most common concerns presented were normal health maintenance (59%), upper respiratory tract illnesses (10%), and other illnesses (10%). Additionally, 9% of individuals suffered injuries, and a total of 1,531 doses of medicine were distributed during the response.

A study of **Cost analysis of a mobile medical unit programme in Andhra Pradesh: a micro costing study protocol**, aims to provide unit cost estimates for delivering primary care services, including general medicine, gynecology, and obstetrics care, through Mobile Medical Units (MMUs) in rural and tribal regions of Andhra Pradesh. By analyzing the costs and resource usage, the research will shed light on any disparities, enabling better planning for high-quality care and increasing the effectiveness of the health system. The findings of this study may contribute to justifying the expansion, reduction, or discontinuation of MMU utilization as a healthcare delivery paradigm in remote and hard-to-reach areas of India. The research will generate cost estimates for various components of the MMU program, such as capital, recurring, and overall costs, facilitating the identification of effective and ineffective services that can be scaled up, downsized, or eliminated based on their cost-effectiveness.

Another study **An assessment of functioning of mobile medical units in Jharkhand**, The Mobile Medical Unit (MMU) program has effectively provided healthcare services to underprivileged and underserved communities, offering X-ray, ultrasound, blood tests, and access to medications to more than 90% of the customers. However, a significant challenge faced by the program was the lack of prior knowledge among the customers regarding the scheduled day and hour of the MMU visits. The program also encountered practical difficulties such as generator vibrations affecting lab studies, poor road conditions, doctors' reluctance to visit remote locations, and a heavy workload. Despite these challenges, the MMU program has successfully bridged the gap in healthcare access for underprivileged communities.

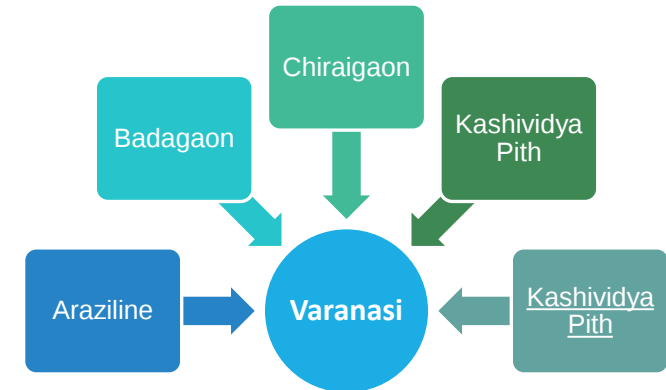
Objectives of the Study

To determine the availability of services and assess utilization and coverage of Primary Health Services in the targeted communities prior to service delivery by MMU to compare with the Mid Term and End line evaluation to measure an increase in the availability of Primary Health Care services.

To help gather or generate information as a point of reference on the health condition of the population living in the project-supported villages.

To identify factors which affect the utilization of health services in the targeted communities prior to service delivery by MMU.

The quality of health services, and health knowledge, attitudes and practices of the communities as well as their engagement, motivation and willingness for health promotion.



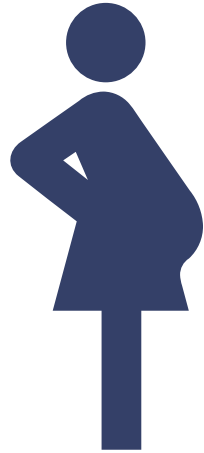
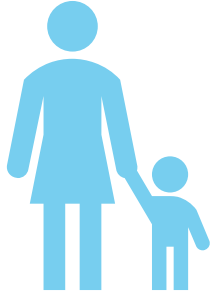
Methodology

Methodology

- **Study Design:** The mixed-method approach for the study comprised of both qualitative i.e. In-depth Interviews (IDIs), Focused Group Discussions (FGDs) as well as quantitative (structured interviews) data collection.
- **Study Population:** Pregnant women, Lactating women, Women with children 2-5 years.
- **Study duration:** 3 months
- **Sample size:** 270 (90 each category of pregnant women, Lactating women and women with children <5 years)
- **Sample Method:** Convenient sampling
- **Study tool:** The following main research tools will be developed: **The quantitative** tool would include Household questionnaire for assessing the KAP of services delivered by MMU and Semi-Structured Interview (SSI) would be conducted with health workers- service provider and Panchayat Representative. **The qualitative** tool would include community focused group discussion.

Methodology

- **Method of data collection procedure:** The data will be collected using an electronic survey tool i.e., SurveyCTO (software) which is provided by IIDM.
- **Method for data analysis:** Data has been analyzed on SPSS software and MS Excel for the quantitative data available. Qualitative data will be analyzed separately to tie up with the existing quantitative data.
- **Limitation of the study:**
 1. **Social desirability bias:** ANM and ASHA might feel compelled to give the researchers' questions socially acceptable answers, even if they aren't entirely accurate or truthful.
 2. **Time constraints:** Due to their busy schedules, ANM and ASHA have little time to participate in research studies. Even after repeated visits, the Auxiliary Nurse Midwives (ANMs) in the chosen village refused to share the health-related information that had been sought of them. One ASHA employee from the chosen village resisted sharing information and working together. As an alternative, a different village from the same Gramme Panchayat was examined.
 3. **Selection bias:** Baseline studies may suffer if the sample chosen does not adequately represent the target population. This can lead to skewed or inaccurate conclusions.

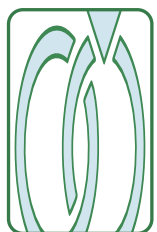


Profile of Respondents

Pregnant Women



51.9% of pregnant women were in the age group of 25 – 29 years



46.7% of Pregnant women were married at the age of 19 – 20 years.

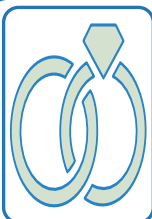


38.3% of Pregnant women were 10th / 12th passed, 31.2% were 5th / 8th passed, 12.3% were graduated and 18.2 were non-literates/ never attended school.

Lactating Women



68.9% of Lactating women were in the age group 22 to 29 years.



59.1% of Lactating women were married at the age of 19 to 22 years

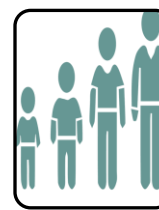


40.9% of Lactating women were 10th/ 12th pass out, 22% were graduated & only 3% had Postgraduate degrees

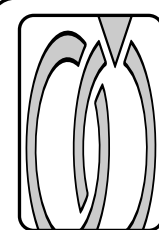


61.3% of lactating women were housewives, 22.7 % worked as agri labour, 11.4% worked in agriculture, 2.3% worked on daily wages, 1.5% had business and 0.8% were govt employees.

Mother of a child aged 25 to 59 months i.e., 2 to 5 years:



45% of the mothers (child 2-5 years) belonged to the age group 25-29 years and overall their average age was 28.4 years.



35% of these mothers got married at 18 years or less and the 19-20 age group. Overall, the average age at marriage for mothers (2-5 years) was 19.7 years.



Forty-one percent of mothers (child 2-5 years) had completed secondary/senior secondary school, followed by 35.3 percent who had completed primary/upper primary education. One-sixth (15.2 percent) of these mothers were non-literates or had never attended school.



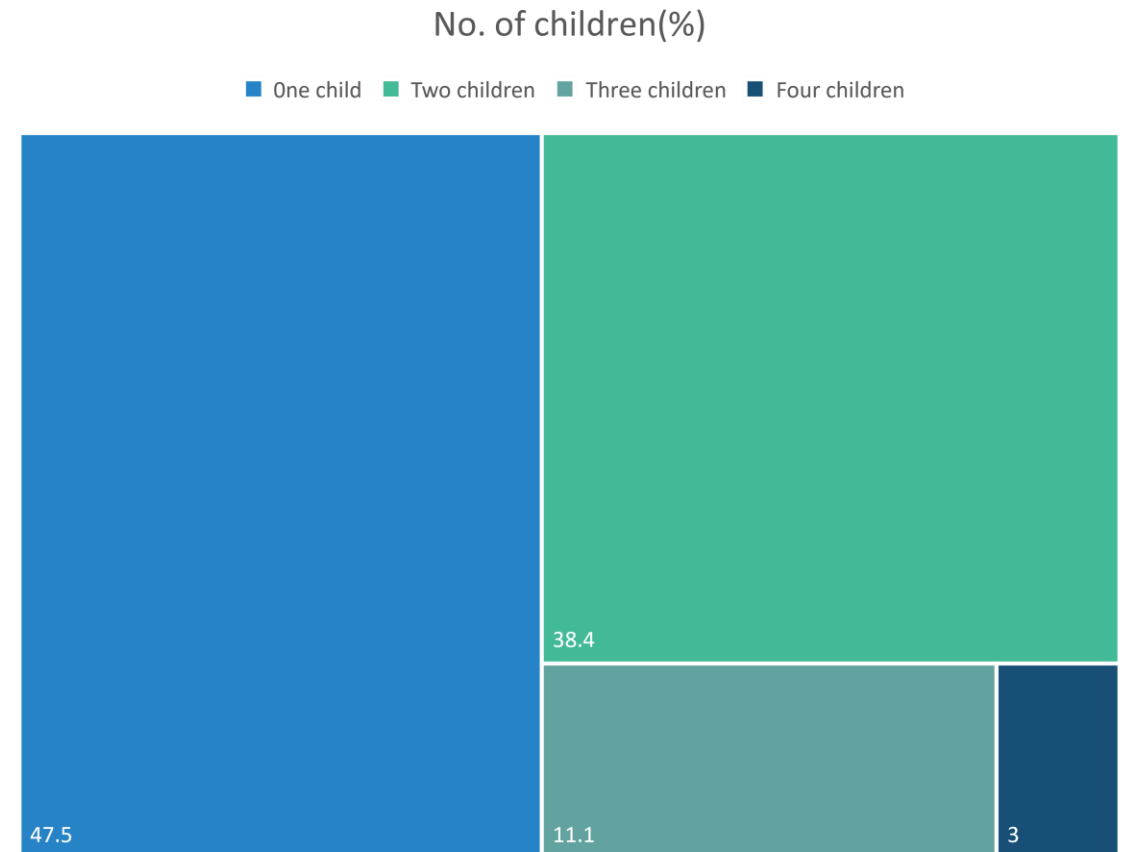
Sixty-three percent of mothers (child 2-5 years) were housewives and 18.0 percent were engaged as agricultural labourers

Findings of Women



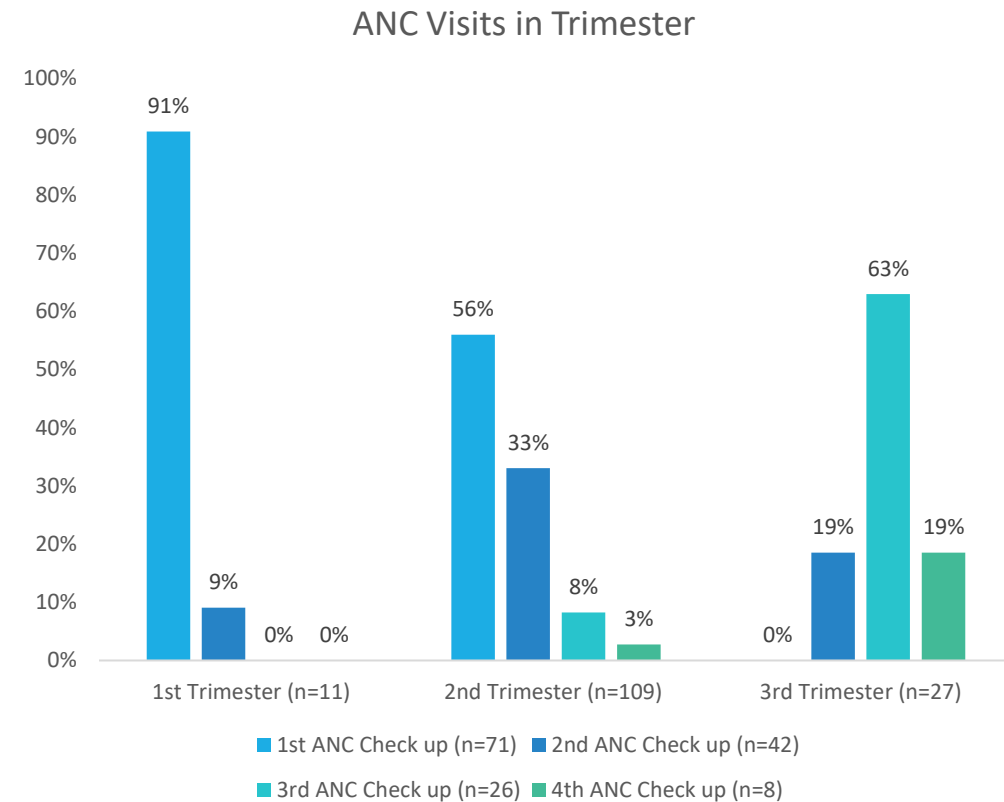
Pregnant woman

- **First Pregnancy** : 86.9% of women get pregnant at the age of more than 20 years.
- **Loss of Child** : 4% of pregnant women reported losing (ever) their baby that was born alive but later died while 2% of them had experienced a miscarriage, abortion or stillbirth
- **Counselling** : 91.8% of counselled pregnant women had received counselling from ASHA or AWW, and 15.5 of them had received counselling from ANM/LHV. Less than 5% of them were counselled by a staff nurse or medical doctor.
- **Family Planning** : 52.6 percent of pregnant women used (ever) family planning methods. Among contraceptive users' condom (67.9%) reported condom as the most common method. The other popular contraceptive popular choices include injectables (33.3%) female condoms and oral pills (17.3% each)



ANC Check-ups for pregnant women:

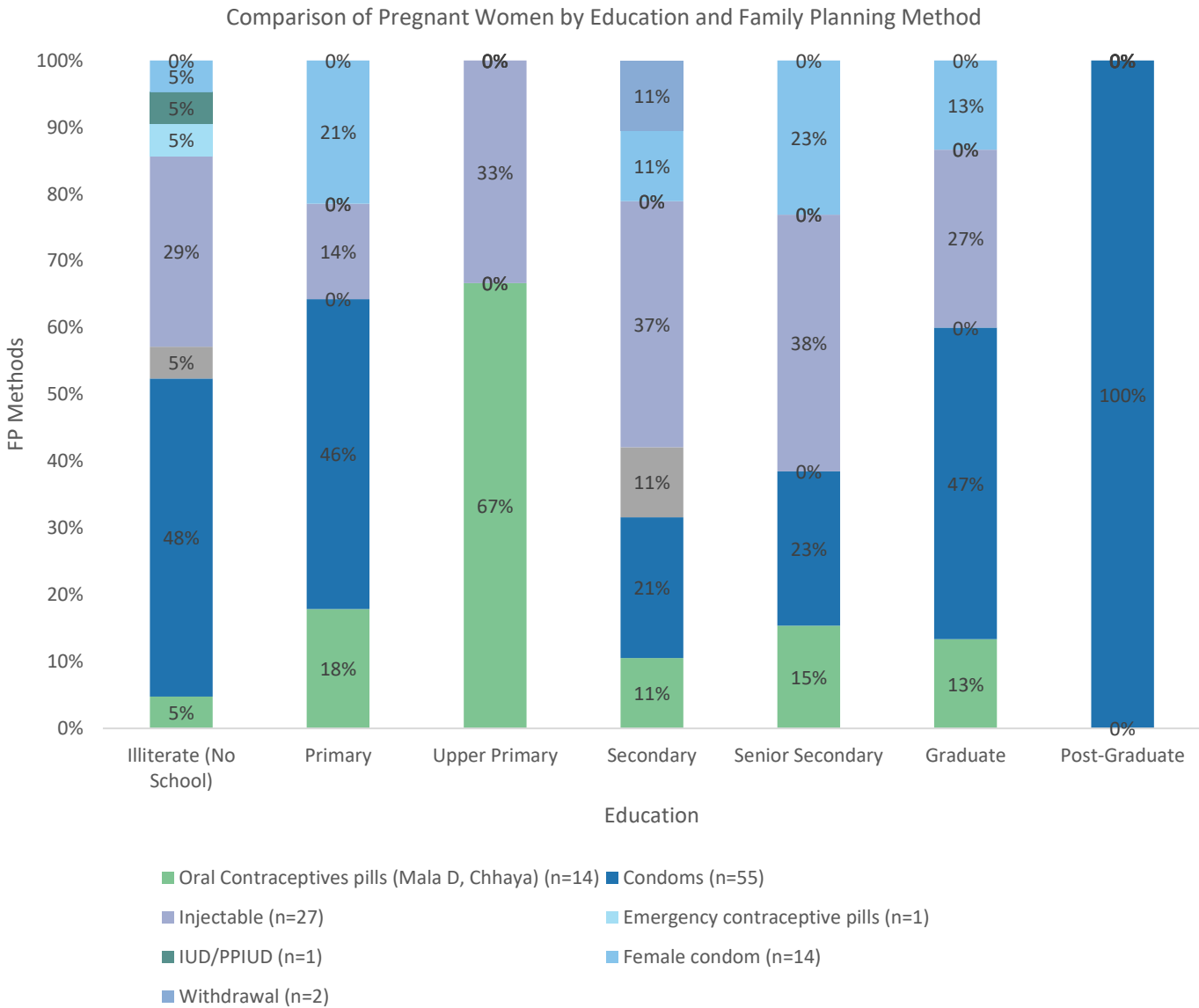
- In the 1st trimester, among the 11 respondents in the sample, 91 percent had their 1st ANC check-up.
- During the 2nd trimester, out of the 109 respondents, only 56 percent had their 1st ANC check-up.
- This suggests that pregnant women in the first trimester tend to delay their initial ANC check-up until the 4th month.
- During the FGD, it was discussed that some families have cultural beliefs that lead them to announce the pregnancy only after completing the first three months.
- Furthermore, 44.0 percent of pregnant women in the second trimester had at least their 2nd ANC check-up (comprising 33 percent 2nd ANC Check-up, 8 percent 3rd ANC check-up, and 3 percent during the 4th check-up).
- However, 19 percent of women in their third trimester delayed their 2nd ANC check-up by getting it done in the third trimester.
- This highlights the importance of promoting early initiation of ANC and ensuring consistent check-ups throughout the pregnancy to support the health of both the mother and the foetus.





Comparison of Pregnant Women by Education and Family Planning Method

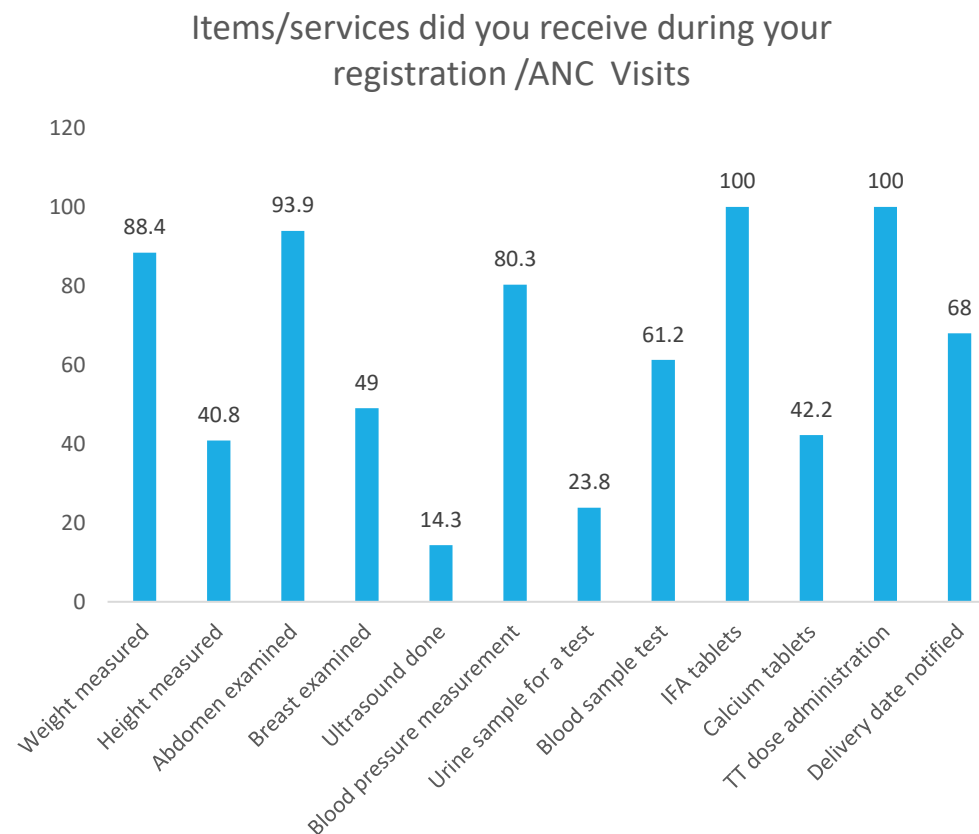
Regarding family planning methods, Condoms are more popular among Graduates and post-graduates than in any other category. Similarly, Upper primary educated is more reliant on oral contraceptives. Whereas most of the illiterate population is following either sterilization, injectable, or IUDs.





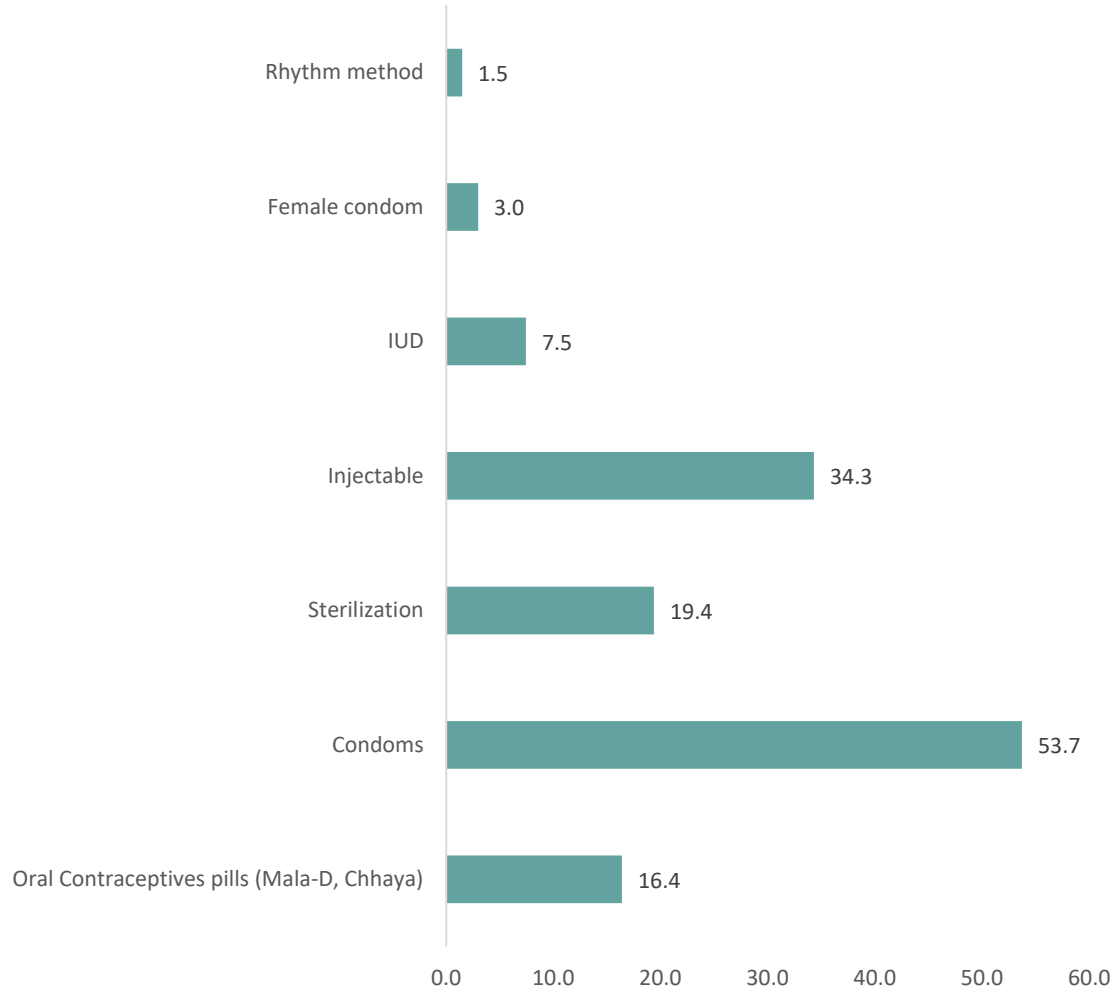
Pregnant woman : Health Services

- **Counselling** : 70.8% of contacted pregnant women were in their second trimester (4-6 months), 17.5% in their third trimester (7-9 months) and 11.7% in the first trimester (1-3 months).
- **Registered Pregnancy** : 95.5% of total pregnant women, had registered their pregnancy. More than two-thirds of pregnant women had completed ANC registration at the sub-centre, followed by 13.6% at PHC and Arogya Kendra/AWC (10.2%).
- **MCP Cards** 99.3% of pregnant women had received Mother and Child Protection Cards during ANC registration.
- **Health facility Visit** : Around 95.5% of interviewed pregnant women reported visiting PHC/CHC/Sub-centre /VHSND/other facilities during the first trimester for ANC check-ups. 48.3 had undertaken one ANC visit followed by 27.2% reporting 2 ANC visits and 24.5% reporting 3 or more ANC visits.
- 75% of pregnant women reported ANC check-ups at health facilities carried out by ANM or LHV, 55.1% by ASHA/AWW, and 13.6% by the nurse. 19% of respondents stated having ANC check-ups conducted by medical doctors.





Ever use of Family Planning(%)

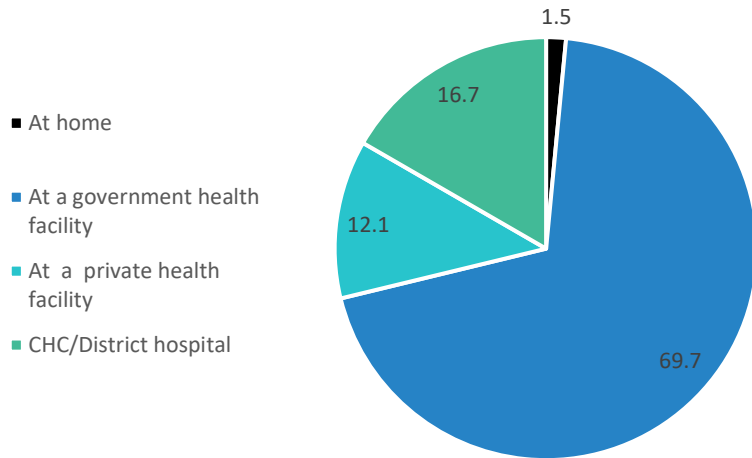


Lactating women: Health Care Services

- **Counselling Family Planning** : 53% received after marriage.
- **Counselling Received From** : 95.7% of counselled lactating women had received counselling from ASHA or AWW. Less than 8.6% each had received counselling from ANM/LHV and staff nurse.
- 50.8% of the mother with 0-to-2-year children used (ever) family planning methods. Condom (53.7%) was the most common method used. Other popular contraceptive methods include injectables (34.3%), sterilization (19.4%) and oral pills (16.4%).



Place of birth

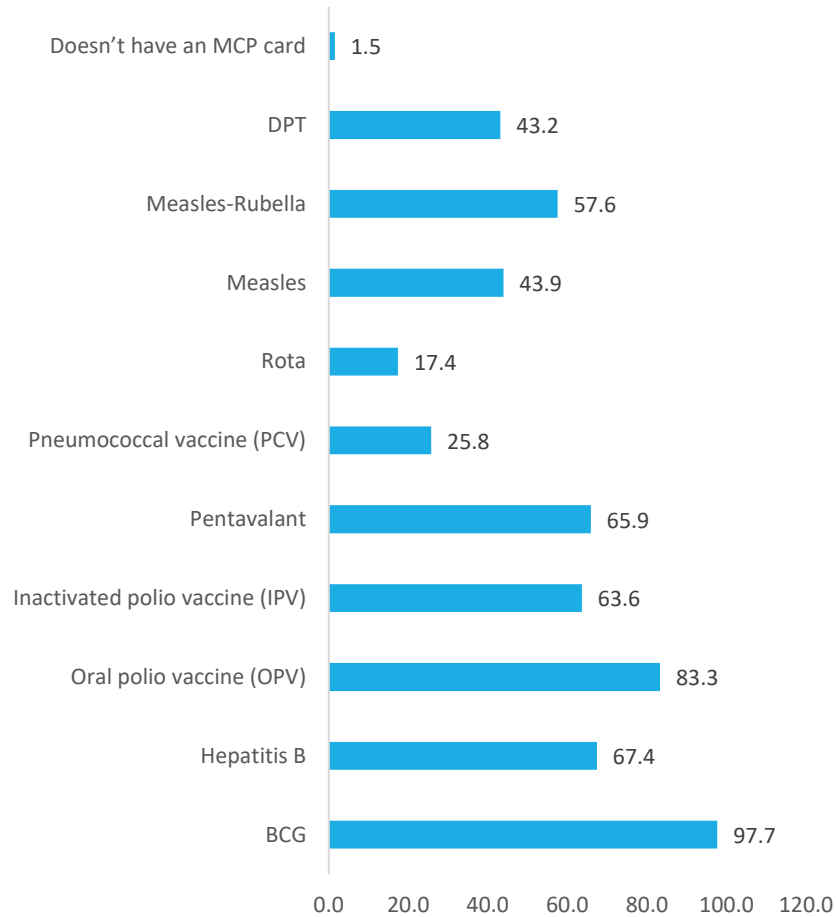


Delivery : Lactating Mother and Mother of 2-years-old Child

- 60% of infants born were full-term (9 or more month's months) and 22.0% moderate to later preterm (8-9 months). While 18.9% of women reported low birth weight (below 2.5 kg) and out of them 52% were referred to a health facility.
- Around 85.0% of births were conducted by ANM/LHV, staff nurses and medical doctors.



Immunisation doses administered to the child



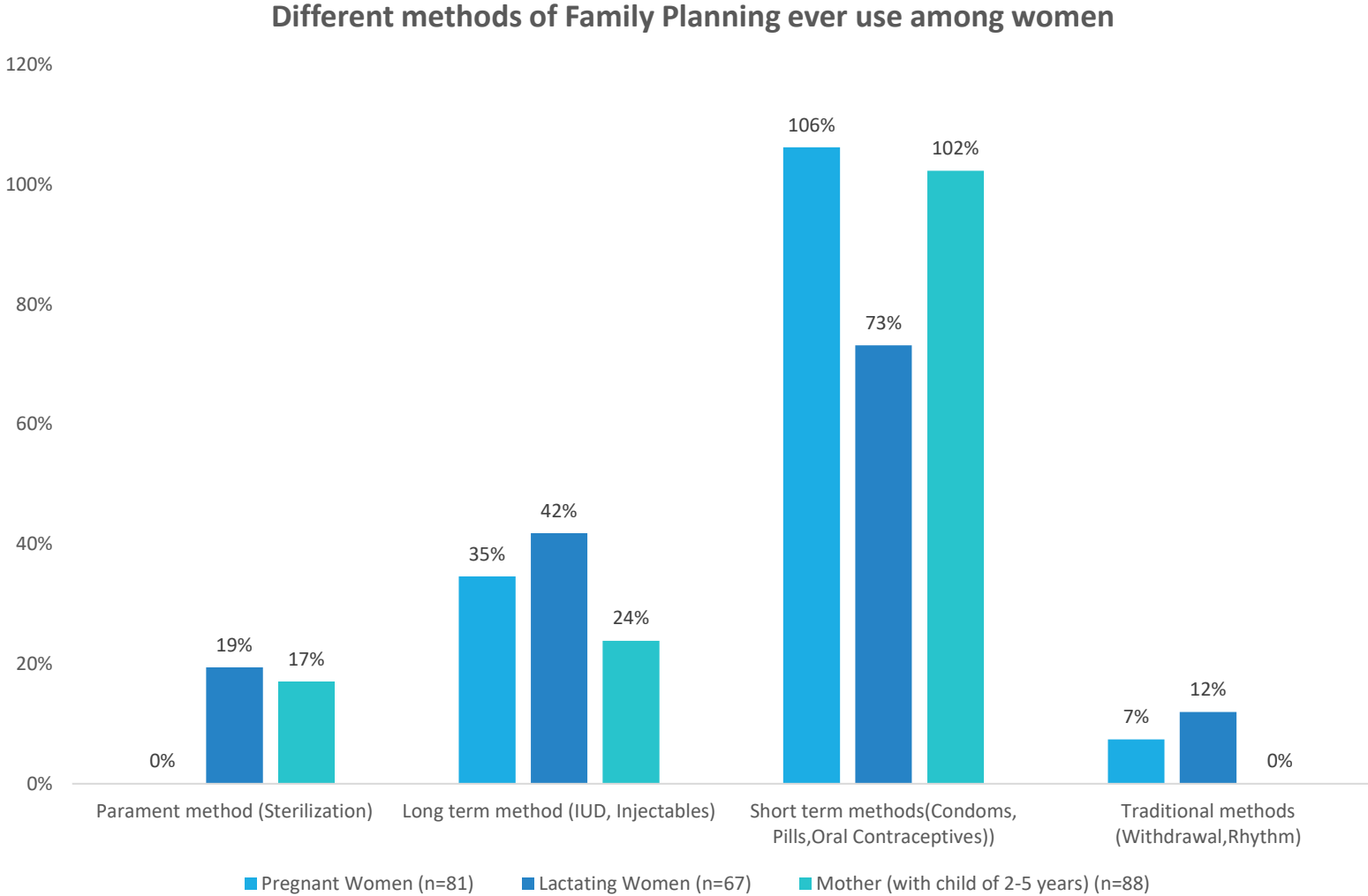
Childcare Practices Feeding & Vaccination : 2-5 Years

- **Exclusive Breastfeeding** : 56.8% of infants were exclusively breastfed for 6 months. Less than four-fifth (78.8%) of mothers reported that other mothers in the community only breastfed their newborns immediately after birth. Almost 17%, reported that mothers gave honey to newborns.
- **Complimentary Feeding** : Around 42% of the mothers with children (up to 2 years) reported starting complementary feeding at 6 months and 17.8% between 7-9 months.
- 87.5% of the mothers received counselling on adequate diet for children.

Acceptance of Methods of Family Planning Among Women

- Approximately 75 percent of the women included in the sample have utilized temporary methods (such as condoms and oral pills) for family planning purposes, at least once.
- Around 19 percent of women who are breastfeeding have chosen permanent methods like sterilization, while the remaining women depend on long-term methods for spacing their children.
- Very few women preferred traditional methods.

Figure 4 Family Planning Methods Ever used among the Pregnant, Lactating and Mother (2-5 years)

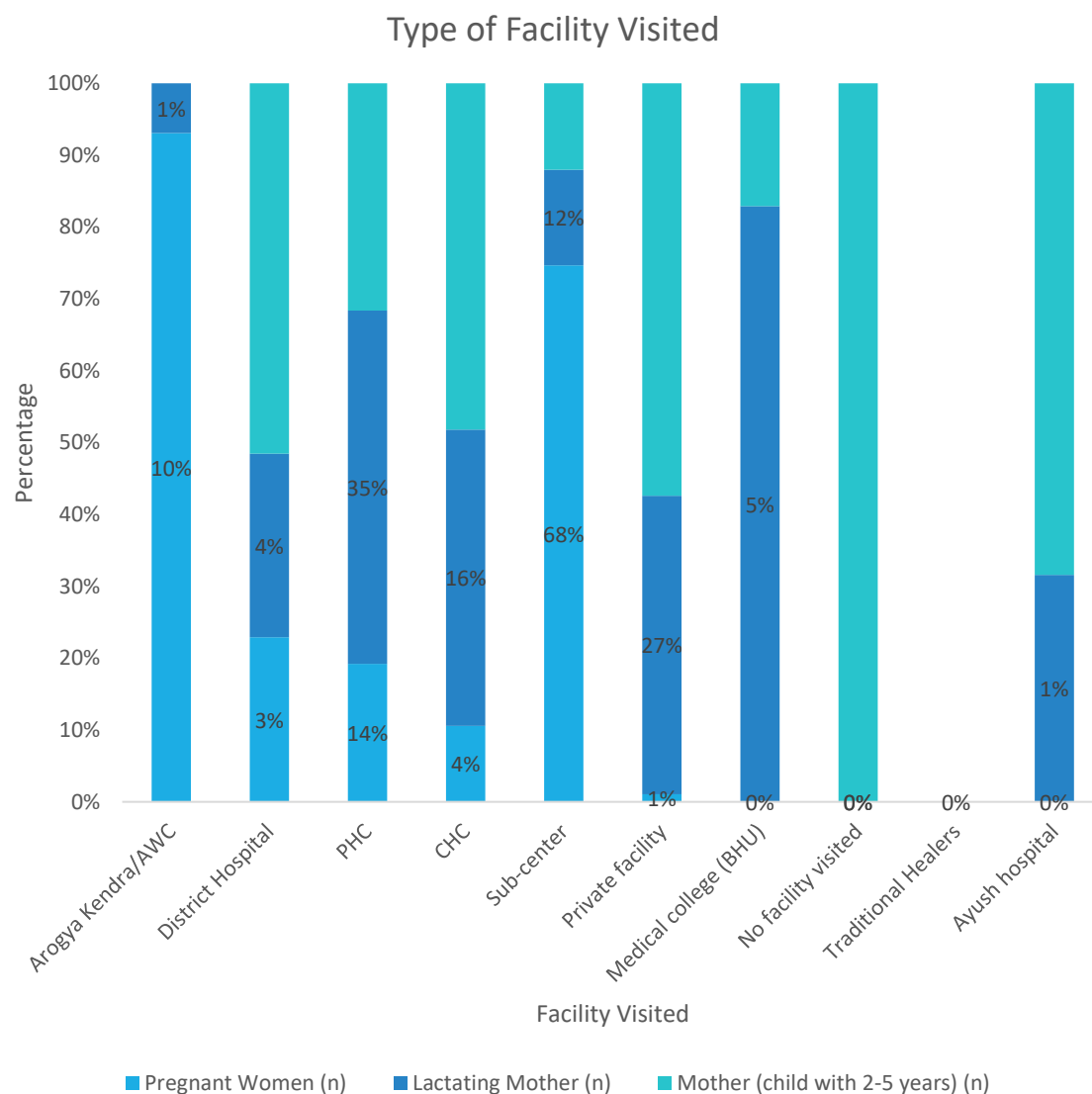




Availability of Services and Access to Utilization

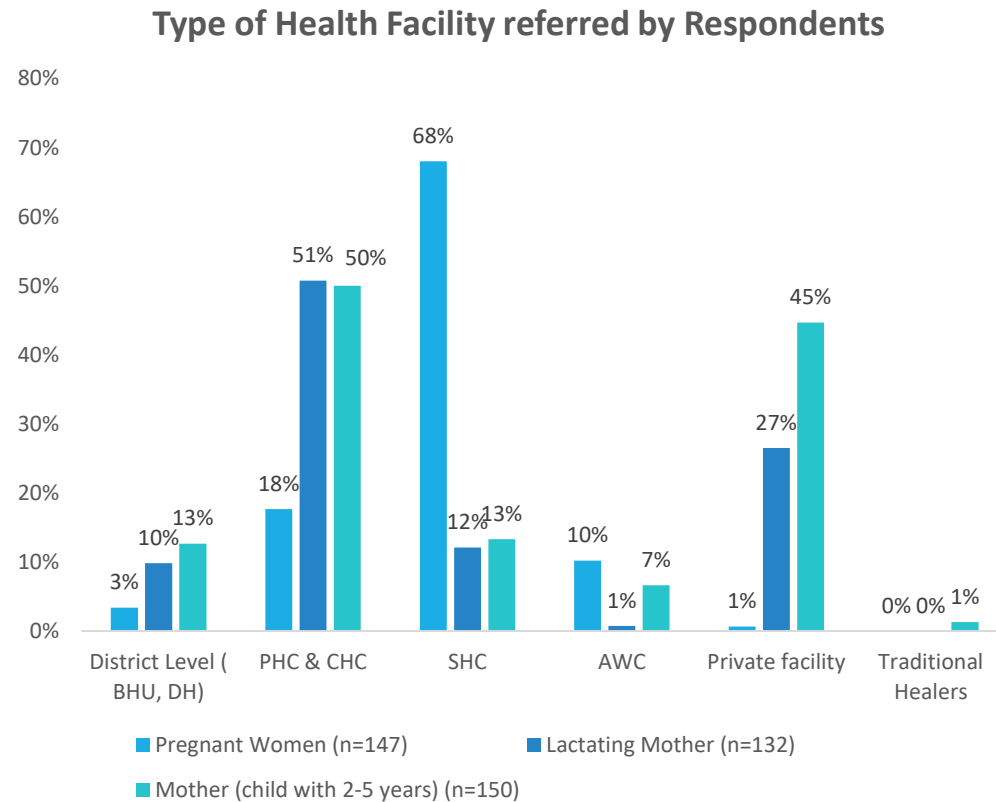
To ascertain the enablers and barriers to access to health services.

Health Facility Visited By All



- The percentage of pregnant women who registered their pregnancy reached 95.5%. More than two-thirds (68%) of pregnant women at the sub-centre had finished their ANC registration, followed by 13.6 per cent at the PHC and 10.2 per cent at the Arogya Kendra/AWC.
- PHC (34.8%), private facilities (26.5%), and CHC (15.9%) are the three main facilities where children are treated during lactating period.
- Children between the ages of 2 and 5 receiving medical care in facilities, of which 60% visited private health facilities out of 78.2%

Health Facility Usage/Preference among the Population



- Pregnant women predominantly utilized SHCs (68 percent) as their primary healthcare facility, followed by PHCs and CHCs (18 percent) and district-level facilities (3 percent).
- Lactating mothers had a higher preference for private facilities (27 percent), followed by PHCs and CHCs (51 percent) and SHCs (12 percent).
- Mothers with children aged 2-5 years also preferred private facilities (45 percent) as their primary healthcare option, with PHCs and CHCs (50 percent) being the second most utilized facility type.
- A small percentage of pregnant women, lactating mothers, and mothers of children 2-5 years of age utilized AWCs (Anganwadi Centres) for healthcare services.

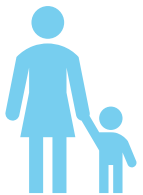
Family Planning Services



52.6% of the pregnant women confessed that they had used family planning method. The most often used method was the condom (67.9%). Other widely used methods of birth control includes oral tablets (17.3%), injectable (33.3%) and Female condom (17.3%). Least used family planning method includes sterilization (3.7%), emergency contraceptive pills (1.2%), IUD (1.2%), and withdrawal (2.5%).



50.8 % of the lactating mother confessed that they had used family planning method. The most often used method was the condom (53.7%). Other widely used methods of birth control includes oral tablets (16.4%), sterilisation (19.4%), and injectable (34.3%). Least used family planning method includes IUD (7.5%), Female condom (3%) and Rhythm method (1.5%).



58.7% of the mother (with child 2-5 years) confessed that they had used family planning method. The most often used method was the condom (68.2%). Other widely used methods of birth control includes oral tablets (29.5%), sterilisation (17%), and injectable (23.9%). Least used family planning method includes Female condom (4.5%)

Conclusion:

To sum up, mobile health services in rural areas effectively meet the needs of the beneficiaries. In other rural regions, mobile health services are highly favored due to high beneficiary satisfaction and trust. To cover the final mile, a mobile medical unit may be a better option. This study assists us in evaluating the availability of services and figuring out how effectively they are utilized and covered before MMU provides services to the targeted communities. In order to determine whether there has been an increase in the accessibility of primary healthcare services, we compare these findings to the mid-term and end-line evaluations. Prior to MMU starting to provide its services, it helps identify factors that affect how health services are used in the targeted communities and assists in establishing district-level key performance indicators for the MMU project against which the project's advancement will be examined.

Recommendations

- **Limited awareness** of family planning services, breast feeding, and NCDs it is suggested to develop a holistic behavior change communication programmed to generate awareness on basic understanding, services available and lifestyle changes.
- Awareness generation on the need for basic diagnostic tests, regular communication to establish health-seeking behavior backed by appropriate screening and diagnostics, and regular follow-ups on various communicable and non-communicable diseases.
- Develop a strong communication programmed to generate awareness regarding symptoms, prevention lifestyle changes, of both communicable and non-communicable diseases.
- **Complete immunization of children** needs to be given focus as there is poor coverage of several vaccines. Promoting the newly added vaccines needs to be focused on.

Recommendation

- A proper mapping of both private and public health care services will help community accessing care at a lower travel cost and time.
- A set of basic indicators for each village need to be developed. Need to be tracked for a period and once set targets are achieved, phase out plans can be developed.
- Various services at the Anganwadi level center and various initiatives like “Poshan Month”, “Breastfeed Week”, “nutritious recipe competitions” need to be promoted.
- Findings from the baseline survey, suggest that a mobile medical unit can fill in the gaps for many primary health care services and community can access easily available, health check-ups, basic diagnostic tests and medicines in their own village.