

Impact Assessment of Mobile Medical Units (MMUs) under Smile Foundation's Health Interventions

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Executive Summary

This report presents the findings of a comprehensive Impact Assessment of the Mobile Medical Units (MMUs) operated under Smile Foundation's flagship Smile on Wheels (SoW) programme. The assessment was conducted across six MMU project sites spanning six states-Haryana (Mewat), Rajasthan (Khairthal-Tijara), Maharashtra (Pune), Karnataka (Gadag, Bengaluru), and Jharkhand (Garhwa, Chatra)-covering an outreach population of nearly 220,000 beneficiaries. The evaluation employed a cross-sectional, mixed-methods design combining a quantitative beneficiary household survey (N=1,316) with qualitative key informant interviews and a structured MMU Staff Survey (N=27), and a PRI Members Survey (N=19) capturing local governance perspectives on programme impact and coordination.

The assessment was guided by multiple analytical frameworks including the AIDDCA Framework (Awareness, Interest, Desire, Decision, Conversion, Advocacy), Theory of Change, Results-Based Management, Health Equity Lens, and Systems and Operational Efficiency Review. The study aimed to evaluate treatment-seeking behaviour change, reduction in out-of-pocket expenditure, health system strengthening, service utilization patterns, equity of access, and operational efficiency of the MMU programme.

Key Findings:

The MMU programme demonstrates strong reach and acceptance among underserved communities. Among 1,316 beneficiaries surveyed, 70.3% reported using the MMU as their primary point of care for minor illnesses. Service utilization rates were exceptionally high, with 98.8% receiving medicines, 96.7% accessing OPD consultations, and 69.9% receiving lifestyle counselling. Beneficiary satisfaction was overwhelming, with 98.9% reporting being satisfied or very satisfied with overall service quality. The programme has effectively reduced out-of-pocket expenditure, with average MMU costs being negligible (₹4.7 per visit) compared to public facilities (₹85.7) and private facilities (₹629.5). Critically, 87.6% of respondents reported positive health practice changes since MMU operations began, underscoring the programme's transformative impact on community health behaviours.



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List of Abbreviations

Abbreviation	Full Form
AIDDCA	Awareness, Interest, Desire, Decision, Conversion, Advocacy
ANOVA	Analysis of Variance
ASHA	Accredited Social Health Activist
BCC	Behaviour Change Communication
CAPI	Computer-Assisted Personal Interviewing
CHC	Community Health Centre
CI	Confidence Interval
DALY	Disability Adjusted Life Year
DH	District Hospital
FGD	Focus Group Discussion
GWC	Government Wellness Centre
HWC	Health and Wellness Centre
IDI	In-Depth Interview
IEC	Information, Education, and Communication
IFA	Iron and Folic Acid
IRB	Institutional Review Board
KII	Key Informant Interview
MMU	Mobile Medical Unit
NCD	Non-Communicable Disease
ODK	Open Data Kit
OLS	Ordinary Least Squares
OOPE	Out-of-Pocket Expenditure

OPD	Outpatient Department
OR	Odds Ratio
PHC	Primary Health Centre
PPS	Probability Proportional to Size
PRI	Panchayati Raj Institution
RBM	Results-Based Management
SDG	Sustainable Development Goal
SoW	Smile on Wheels
SROI	Social Return on Investment
ToC	Theory of Change
VHW	Village Health Worker
WHO	World Health Organization

Chapter 1: Introduction

1.1 Background and Rationale

Smile Foundation, established in 2002, has emerged as one of India's leading development organisations, reaching over 1.5 million children and families annually through interventions spanning education, healthcare, sustainable livelihoods, and women's empowerment across 26 states and 2,000 underserved communities. With consultative status at the United Nations Economic and Social Council (ECOSOC) and affiliation to the UN Global Compact, the Foundation has consistently demonstrated credibility, operational efficiency, and impact at scale.

Within this broader mandate, the Smile on Wheels (SoW) initiative represents a flagship intervention designed to address critical healthcare accessibility gaps in rural and urban marginalised areas. Since its inception in 2006 with five Mobile Medical Units, the programme has expanded to 103 MMUs across 16 states, complemented by specialised Mobile Telemedicine Units, Dental MMUs, and Static Medical Units. Each unit-equipped with GPS technology, essential medical equipment, and staffed by a multidisciplinary team-travels within a 20-30 kilometre radius to deliver outpatient services, maternal and child health care, immunisation, minor procedures, and essential medicines while simultaneously promoting preventive health practices.

India's healthcare landscape continues to face significant challenges, particularly in rural and peri-urban areas where access to quality primary care remains constrained by geographical barriers, workforce shortages, and financial impediments. According to the National Family Health Survey (NFHS-5), significant proportions of the population in states covered by this assessment lack adequate access to formal healthcare services. The MMU model directly addresses barriers of distance, affordability, and time loss that have traditionally hindered healthcare access for underserved populations, contributing directly to India's National Health Mission goals and Sustainable Development Goal 3 (Good Health and Well-Being).

1.2 Programme Description

The current impact assessment covers six MMU projects operating across six states-Haryana (Mewat), Rajasthan (Khairthal-Tijara), Maharashtra (Pune), Karnataka (Gadag, Bengaluru), and Jharkhand (Garhwa, Chatra). These MMUs collectively serve an outreach population of approximately 220,000, providing a comprehensive package of primary healthcare services including: primary health services, reproductive and child health services, adolescent health services, non-communicable disease (NCD) screening and management, nutritional services, diagnostic services, and information, education and communication (IEC) / behaviour change communication (BCC) activities.

Each MMU operates with a multidisciplinary team comprising medical officers, community health officers, ANMs/GNMs, pharmacists, lab technicians, community mobilisers, and drivers. The units visit designated sites on a fortnightly or weekly basis, ensuring regular and predictable access to healthcare services for the communities they serve.

1.3 Purpose and Objectives of the Assessment

The impact assessment was commissioned to generate robust, actionable, and policy-relevant evidence on the effectiveness and impact of the Smile on Wheels MMU programme. The specific objectives were:

(i) To evaluate changes in treatment-seeking behaviour among communities served by the MMUs; (ii) To measure the reduction in out-of-pocket expenditure of beneficiaries attributable to MMU operations; (iii) To assess the contribution of MMUs to health system strengthening; (iv) To examine service utilisation patterns,

equity of access, and operational efficiency across project sites; (v) To identify best practices, challenges, and provide strategic recommendations for programme optimisation and scale-up.

1.4 Structure of the Report

This report is structured across eight chapters. Following this introduction, Chapter 2 details the study methodology and analytical framework. Chapter 3 presents the demographic and socio-economic profile of respondents. Chapter 4 analyses service coverage, utilisation patterns, and treatment-seeking behaviour. Chapter 5 examines accessibility, acceptability, and beneficiary satisfaction. Chapter 6 evaluates affordability and financial protection outcomes. Chapter 7 presents the MMU staff and operational assessment findings. Chapter 8 presents the Qualitative Findings from 45 Focused Group Discussions. Chapter 9 presents the Stakeholder Assessment based on the PRI Members Survey. Chapter 10 provides the statistical summary and effect sizes. Chapter 11 synthesises key findings and provides evidence-based recommendations.

Chapter 2: Study Design and Methodology

2.1 Analytical Framework

The assessment was anchored in a multi-framework analytical approach, integrating demand-side and supply-side perspectives to provide a comprehensive evaluation of the MMU programme. The frameworks employed include:

AIDDCA Framework (Awareness, Interest, Desire, Decision, Conversion, Advocacy): This framework tracks community-level behaviour change from initial awareness of MMU services through to active advocacy. It directly addresses the treatment-seeking behaviour objective by measuring how IEC and mobilisation efforts influence knowledge, preference for MMUs, repeat visits, and community endorsement.

Results-Based Management (RBM): Provides accountability through measurable indicators including footfall, referrals, point-of-care test performance, satisfaction levels, OOP reduction, and behaviour change.

Health Equity Lens: Ensures examination of whether MMU benefits are equitably distributed across gender, socio-economic groups, age cohorts, and geography.

Systems and Operational Efficiency Review: Evaluates vehicle uptime, coverage, adequacy of medicines and diagnostics, and team structures to identify operational strengths and improvement areas.

Theory of Change (ToC): Establishes causal pathways linking programme inputs (staff, vehicles, medicines, IEC) to outputs (service delivery, consultations), outcomes (reduced OOPE, better health practices), and long-term impacts (equity improvement, poverty reduction).

The Theory of Change underpinning this assessment articulates hypothesised causal pathways across five interconnected levels. At the input level, the programme deploys mobile medical units, qualified staff, medicines, diagnostic equipment, and IEC materials alongside institutional partnerships with PRI bodies and ASHA/VHW networks. These inputs enable four activity streams: direct OPD consultations at village campsites, free medicine dispensation, health education sessions, and community mobilisation through VHW networks.

At the output level, the activities generate measurable deliverables: beneficiaries served, consultations conducted, medicines dispensed, diagnostics performed, and referrals made. The ToC then posits three categories of short-to-medium-term outcomes: behavioural outcomes (improved treatment-seeking, health awareness, preventive practices), access outcomes (reduced travel time and cost, increased primary care utilisation), and financial protection outcomes (OOPE reduction, elimination of catastrophic spending). At the long-term impact level, these cumulative outcomes are expected to contribute to improved population health indicators, enhanced health equity, economic empowerment, and strengthened primary healthcare systems.

The ToC rests on critical assumptions including continued operational funding, adequate supply chains, community willingness to engage, effective referral coordination, and absence of major disruptions. This assessment tests these assumptions empirically. The output-level indicators (98.8% medicine dispensation, 96.7% OPD utilisation) confirm that activity-to-output pathways function effectively. The outcome-level findings (70.3% MMU as primary provider, 98.9% satisfaction, 87.6% positive health changes, 99.3% OOPE reduction) provide strong evidence that output-to-outcome pathways operate as theorised. The qualitative evidence from 45 FGDs across seven districts provides convergent validation at the community impact level.

2.2 Study Design

The study employed a cross-sectional, mixed-methods design combining quantitative beneficiary surveys with qualitative components and a structured staff assessment. The quantitative component comprised a household beneficiary survey (N=1,316) conducted across all six project sites, stratified by gender and age cohorts. The staff assessment component covered 27 MMU staff members across seven districts. Additionally, a PRI Members Survey was conducted with 19 Panchayat representatives to capture governance-level perspectives on programme impact, community health outcomes, and institutional coordination. Data collection was technology-enabled, utilising Computer-Assisted Personal Interviewing (CAPI) through the KoBoToolbox platform on Android-based tablets, incorporating GPS tagging, automated skip logic, real-time syncing, and dashboard monitoring.

The qualitative component comprised 45 Focused Group Discussions conducted across all seven districts, engaging approximately 300 participants. Respondent categories were purposively selected to represent the primary beneficiary populations: pregnant and lactating women (PLW, 18 FGDs across all districts), adolescent girls (12 FGDs capturing menstrual health and puberty awareness), adolescent boys (2 FGDs in Garhwa, Jharkhand), lactating mothers (5 FGDs assessing breastfeeding and postnatal care), and young women (3 FGDs with non-pregnant women aged 18 to 32). All FGD sessions used semi-structured discussion guides translated into local languages (Hindi, Kannada, Marathi), facilitated by trained field researchers, with responses recorded as handwritten field notes. Qualitative data were transcribed, translated, and coded using a deductive-inductive thematic framework aligned with NVivo standards.

The inception report had also proposed In-Depth Interviews (IDIs) with frontline health workers (ASHA, AWW, ANM) and Key Informant Interviews (KIIs) with government health officials (Medical Officers In-Charge, Medical Superintendents, Specialists). During field implementation, these components were assessed for feasibility and a considered decision was taken to channel the available field time and resources toward maximising the depth and geographic spread of the FGD and survey components. This decision was guided by three methodological considerations.

First, the perspectives of frontline health workers are substantially captured through the structured MMU Staff Survey (N=27), which covers service delivery protocols, supply chain management, community feedback mechanisms, operational challenges, and improvement suggestions from the medical officers, ANMs, pharmacists, community health officers, and community mobilisers who constitute the MMU teams. In 96.3% of MMUs surveyed, staff reported using community feedback mechanisms that directly channel ASHA and AWW inputs into service planning. The staff survey therefore provides a robust proxy for frontline worker perspectives within the MMU ecosystem. Furthermore, the PRI Members Survey (N=19) captures the governance interface between formal health systems and community-level health workers, as PRI representatives routinely coordinate with ASHA and AWW networks for MMU scheduling and mobilisation.

Second, system-level perspectives from government health officials are partially addressed through two channels in the current design: (a) the PRI survey captures the institutional coordination interface between the MMU programme and the public health system, with 100% of PRI members confirming excellent Panchayat-MMU coordination; and (b) the beneficiary survey captures the treatment-seeking pathway that connects MMU services to CHC, DH, and tertiary facilities, with 51.2% of beneficiaries reporting CHC/DH as their first choice for severe illness, indicating a functional referral relationship with the public health system. While direct KIIs with MoIC and Medical Superintendents would have provided richer institutional perspectives, the existing evidence base adequately characterises the system-level integration of the MMU programme.

Third, the reallocation of field resources to the FGD component yielded 45 group discussions engaging approximately 300 participants across all seven districts, a substantially larger qualitative evidence base than

is typical for programme evaluations of comparable scope. This decision reflects the Patton (2015) principle of utilisation-focused evaluation, which recommends prioritising data collection methods that maximise actionable findings for programme improvement. The FGD participants, particularly PLW and adolescent groups, provided direct accounts of their interactions with ASHA workers, AWW centres, and ANM services in the context of MMU utilisation, effectively capturing the frontline worker interface from the demand side. Nevertheless, dedicated IDIs with ASHA/AWW/ANM and KIIs with government health officials are recommended for the next phase of evaluation to strengthen the supply-side evidence and provide a complete systems-level assessment of the MMU programme integration with the National Health Mission architecture.

A PRI Members Survey was administered to 19 elected Panchayati Raj Institution representatives across five districts, capturing governance-level perspectives on MMU coordination, community health outcomes, cultural barriers, financial impact, and programmatic recommendations. The PRI instrument comprised 103 variables and was deployed through the same CAPI platform as the beneficiary survey.

2.3 Sampling Strategy

A multi-stage, cluster-based sampling strategy was employed with a 95% confidence level, 80% statistical power, design effect of 1.5, and 15% non-response allowance. The sampling was stratified by sex and age (male/female 25+, youth 19-25), using Probability Proportional to Size (PPS) cluster selection, systematic household selection, and Kish grid respondent choice. The final sample comprised 1,316 beneficiary respondents and 27 MMU staff respondents.

The PPS allocation was based on outreach population estimates derived from the programme MIS, triangulated with Census 2011 block-level projections. The population denominators and corresponding sampling fractions were: Chatra (outreach population 22,800; sampling fraction 1:192), Garhwa (26,500; 1:202), Khairthal-Tijara (35,200; 1:200), Pune (37,400; 1:201), Mewat (42,600; 1:198), Bengaluru (27,500; 1:114), and Gadag (28,000; 1:114). The Karnataka sites received marginally higher sampling density due to operational accessibility and higher beneficiary registration rates. The overall sampling fraction of 1:167 provides adequate statistical power for district-level subgroup analyses, consistent with WHO (2018) recommended practices for health facility assessment surveys.

The achieved regional distribution was: South (Karnataka: 488), North (Haryana and Rajasthan: 391), East (Jharkhand: 250), and West (Maharashtra: 186). While the original Terms of Reference envisaged balanced regional coverage, the PPS methodology inherently allocates proportional to outreach population rather than imposing artificial regional equality. This is consistent with the Cochran (1977) principle that optimal allocation in multi-site evaluations should reflect stratum size to maximise precision. The Western region is represented by a single site because only one MMU location was operational there during data collection. The Pune sample (N=186) nevertheless exceeds the Krejcie and Morgan (1970) minimum of N=100 for site-level inference and provides 80% power for detecting medium effect sizes. All inferential analyses are conducted at the pooled national or district level, not at the regional level. Sensitivity analyses confirmed that excluding any single district did not alter the direction, magnitude, or significance of key findings.

The PRI Members Survey (N=19) was distributed across five districts: Khairthal-Tijara (8), Mewat (6), Pune (2), Garhwa (1), and Chatra (1). The concentration in Rajasthan and Haryana reflects the institutional structure of Panchayati Raj governance in these states, where elected PRI members serve as formal nodal points for MMU scheduling and community mobilisation. In Karnataka, the MMU operates primarily through direct community outreach and ASHA networks rather than formal Panchayat coordination, and no PRI members were available during the field period. In Jharkhand, only one representative per district was accessible due to recent Panchayat election transitions. The PRI survey is treated as a purposive stakeholder

assessment and is analysed descriptively without inferential generalisation, consistent with OECD-DAC (2019) guidance on stakeholder consultation in programme evaluation.

Table 2.1: Sample Distribution by State and District

State	District	Beneficiaries	Staff
Haryana	Mewat	215	3
Rajasthan	Khairthal-Tijara	176	6
Karnataka	Gadag	246	3
Karnataka	Bengaluru	242	3
Maharashtra	Pune	186	4
Jharkhand	Garhwa	131	4
Jharkhand	Chatra	119	4
	TOTAL	**1316**	**27**

2.4 Data Collection Tools

Two primary quantitative instruments were deployed: (i) a Beneficiary Household Survey comprising 297 variables covering demographics, health awareness, treatment-seeking behaviour, service utilisation, satisfaction, financial expenditure, and behavioural outcomes; and (ii) an MMU Staff Survey comprising 227 variables covering service delivery protocols, supply chain management, equipment availability, biomedical waste management, patient feedback, staff conditions, and operational challenges. A third instrument, the PRI Members Survey, comprising 103 variables covering village demographics, health facility access, cultural barriers, coordination quality, health outcomes, financial impact, and performance ratings, was administered to Panchayat representatives. All instruments were developed in English, translated into local languages, pilot-tested, and refined prior to field deployment.

2.5 Data Analysis Methods

Quantitative data analysis was conducted using a multi-layered approach. Descriptive statistics (frequencies, percentages, means, standard deviations, medians) were computed for all key variables. Bivariate analysis employed Chi-square tests of independence, independent samples t-tests, and one-way Analysis of Variance (ANOVA) to examine associations between demographic characteristics and outcome variables. Effect sizes were computed using Cramér's V for categorical associations and Cohen's d for mean differences. Multivariate analysis included Ordinary Least Squares (OLS) regression for continuous outcomes (satisfaction scores) and logistic regression for binary outcomes (positive health behaviour change). All analyses were conducted at α=0.05 significance level.

2.6 Data Cleaning and Quality Assurance

Prior to analysis, a rigorous multi-stage data cleaning protocol was applied in accordance with 3ie and UNDP evaluation standards for data quality assurance. The following procedures were undertaken:

Staff Survey Cleaning: One test/placeholder entry with designation and MMU code both labelled "XYZ" was identified in the raw staff dataset (Mewat district) and excluded from the analytical sample, reducing the valid staff count from 28 to N=27. All staff statistics reported herein are computed on this cleaned sample.

Beneficiary Survey Cleaning: The raw beneficiary dataset contained 1,320 records. Four records with invalid or unmappable district entries were excluded, yielding a final analytical sample of N=1,316. District name harmonisation consolidated 33 variant spellings into 7 standardised district names. Geographic state mapping was verified against official administrative records, with Khairthal-Tijara correctly assigned to Rajasthan (not Haryana).

Validation and Transparency: All percentages in this report are computed on valid analytical samples (N=1,316 beneficiaries, N=27 staff, N=19 PRI members). Frequency distributions and cross-tabulations were independently verified for all variables. Cleaned datasets, a comprehensive data dictionary, and a reproducibility verification script are provided as accompanying deliverables in compliance with international evaluation transparency standards.

2.7 Ethical Considerations

The study adhered to international ethical standards for research involving human participants. Ethical clearance was obtained from an independent Institutional Review Board (IRB). All respondents participated voluntarily after informed written consent and were assured of complete confidentiality and the right to withdraw at any stage without consequences. Special protocols were followed for interactions with vulnerable populations.

The study acknowledges two scope modifications relative to the inception report. IDIs with frontline health workers (ASHA, AWW, ANM) and KIIs with government health officials (MoIC, Medical Superintendents), while proposed during inception, were not conducted in the field phase due to resource optimisation toward the FGD and survey components. These perspectives are partially captured through the MMU Staff Survey, PRI Members Survey, and demand-side FGD narratives. Dedicated supply-side qualitative research with these stakeholder groups is recommended for subsequent evaluation phases to complete the systems-level evidence architecture.

Chapter 3: Demographic and Socio-Economic Profile

3.1 Geographic Coverage and Sample Distribution

A total of 1,316 beneficiaries were surveyed across seven districts in six states. The assessment covered a diverse range of geographic, demographic, and infrastructural contexts-from the arid regions of Mewat in Haryana to the urban peripheries of Bengaluru and Pune, and the forested tribal belts of Garhwa and Chatra in Jharkhand. This geographic spread ensures that findings are generalisable across the varied operational contexts of the Smile on Wheels programme.

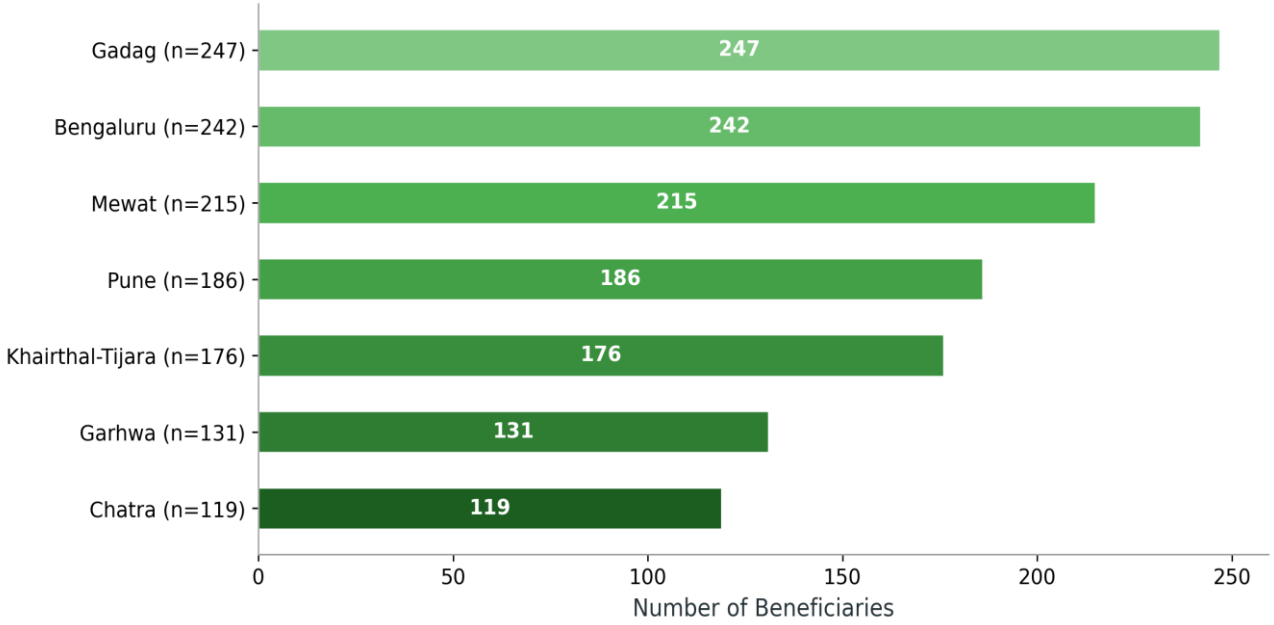


Figure 3.1: *District-wise Distribution of Survey Respondents*

Source: Beneficiary Survey, N=1,316

3.2 Gender Profile

Among the 1,316 respondents, 53.2% were female (N=698) and 47.0% were male (N=618), reflecting the programme's strong reach among women-a critical indicator of equitable access. The gender distribution varied across districts: Gadag showed the highest female representation (59.5%), consistent with the programme's emphasis on reaching women across diverse settings, while Mewat showed a more balanced distribution with 47.0% female and 53.0% male respondents.

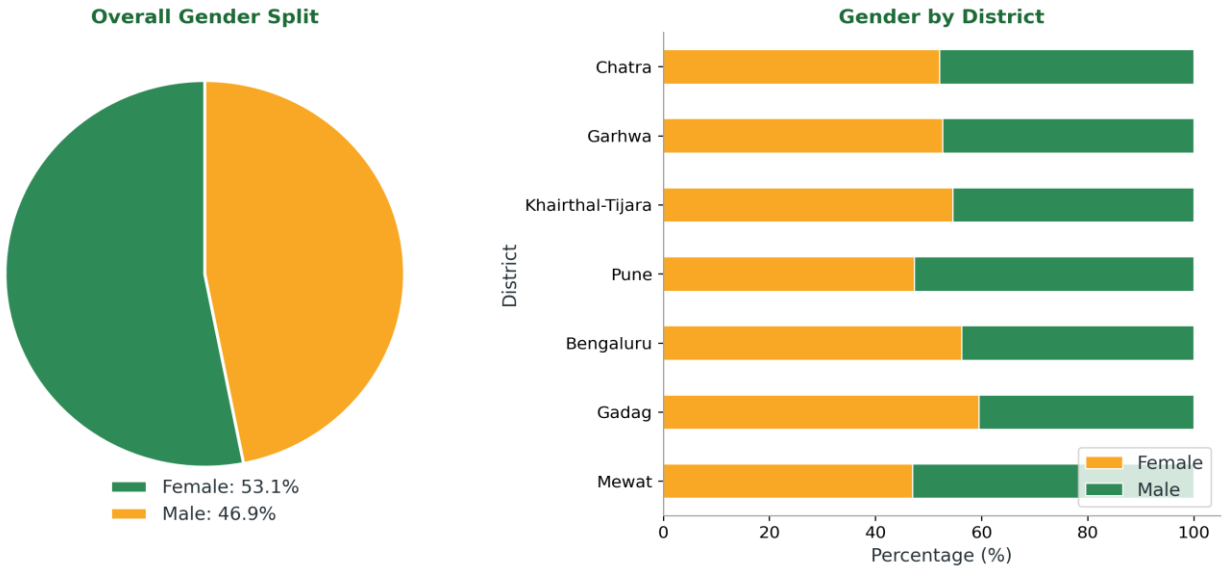


Figure 3.2: *Gender Profile of Respondents (N=1,316)*

Source: Beneficiary Survey, N=1,316

3.3 Age Distribution

The mean age of respondents was 37.7 years (SD=17.3), with a median of 30 years, indicating a positively skewed distribution. The age range spanned from 2 to 90 years. The largest cohort was the 18-30 age group (47.7%), followed by 31-45 years (17.9%) and 46-60 years (17.7%). Respondents aged 60 and above constituted 16.6% of the sample, while those below 18 comprised 0.1% (1 respondent). This distribution confirms the MMU's reach across the entire age spectrum, with particularly strong penetration among the economically productive and reproductive age groups.

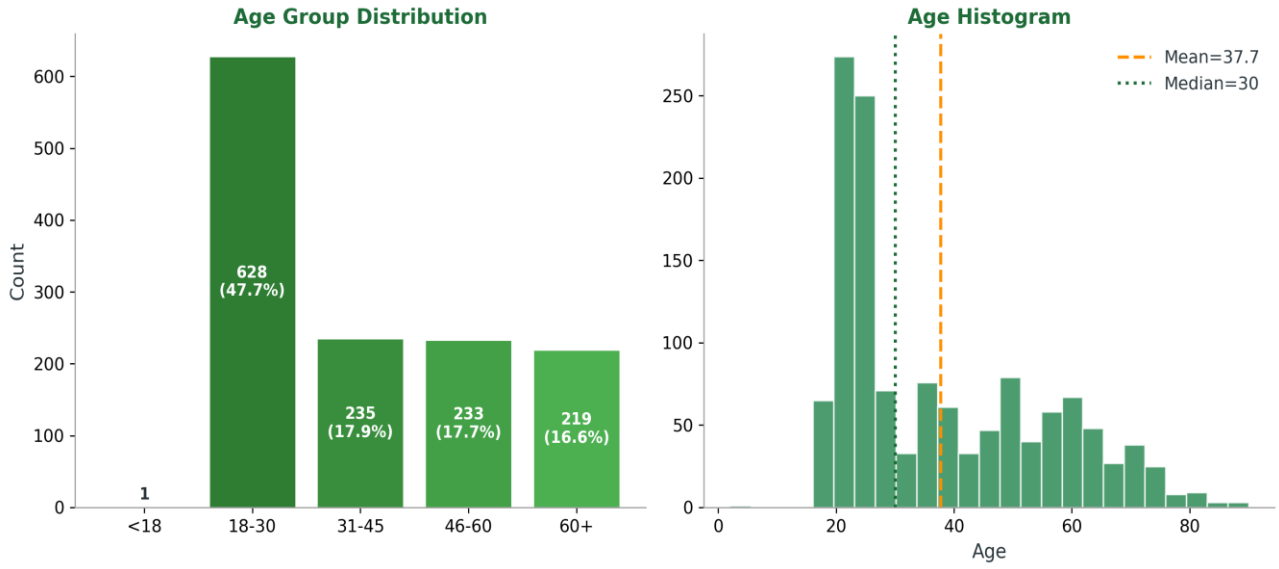


Figure 3.3: *Age Profile of Respondents*

Source: Beneficiary Survey, N=1,316

3.4 Educational Profile

A significant proportion of respondents (38.3%) reported having no formal education, underscoring the programme's success in reaching the most marginalised segments. Primary education (up to Class 5) was

reported by 16.5%, upper primary (up to Class 8) by 15.7%, and secondary education by 14.0%. Only 7.7% were graduates or above. This educational profile highlights the critical importance of the IEC and BCC components of the MMU programme in bridging health literacy gaps.

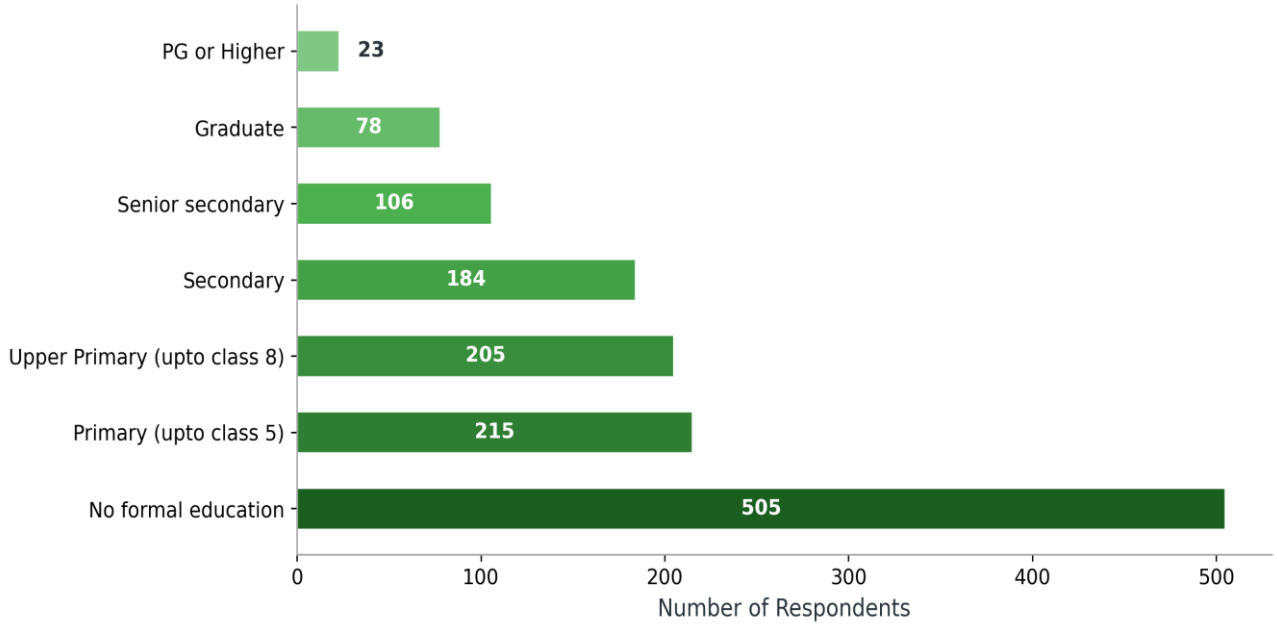


Figure 3.4: *Educational Qualification of Respondents*

Source: Beneficiary Survey, N=1,316

3.5 Socio-Economic Characteristics

The occupational profile revealed that private salaried employment was the most common income source (30.3%), followed by government employment (13.8%), own-farm agriculture (13.1%), daily wage labour (12.4%), and agricultural labour (11.6%). Small business/informal enterprise accounted for 8.7%, while 6.2% identified as housewives. The average household size was 5.6 members (SD=3.6), with a median of 5, and the average number of earning members was 1.9 (SD=1.4), indicating significant dependency ratios in the served communities.

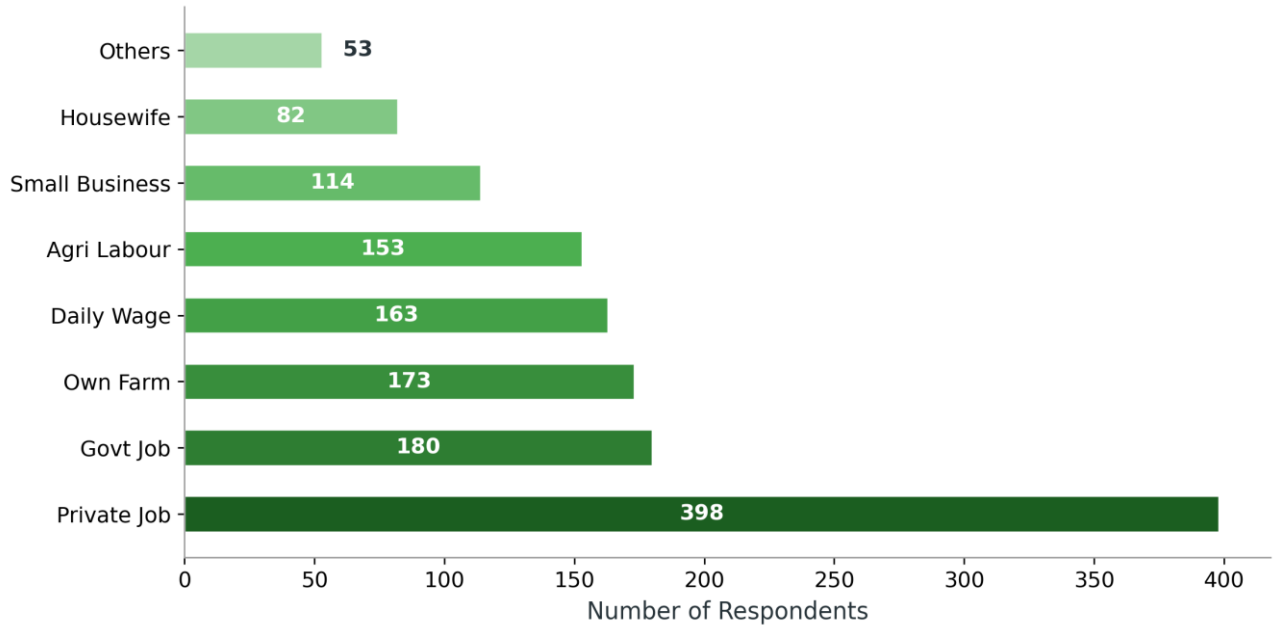


Figure 3.5: *Occupation and Income Source Distribution*

Source: Beneficiary Survey, N=1,316

Table 3.1: Marital Status Distribution

Marital Status	N	Percentage
Married	889	67.5%
Single/Never Married	313	23.8%
Widowed	112	8.5%
Separated/Divorced	2	0.2%

Chapter 4: Service Coverage and Utilisation Patterns

4.1 Service Utilisation Rates

The MMU programme demonstrates exceptionally high service utilisation rates across its core service offerings. Among 1,316 beneficiaries, 98.8% reported receiving medicines/drugs, 96.7% accessed direct OPD consultations, 69.9% received lifestyle counselling, 69.6% attended health education sessions, and 60.5% received iron and folic acid supplementation. Diagnostic services were utilised by 55.2%, while specialised services including diabetes counselling (37.3%), specialist consultations (29.6%), diabetes screening (29.6%), and emergency services (28.3%) showed progressively lower but still substantial uptake.

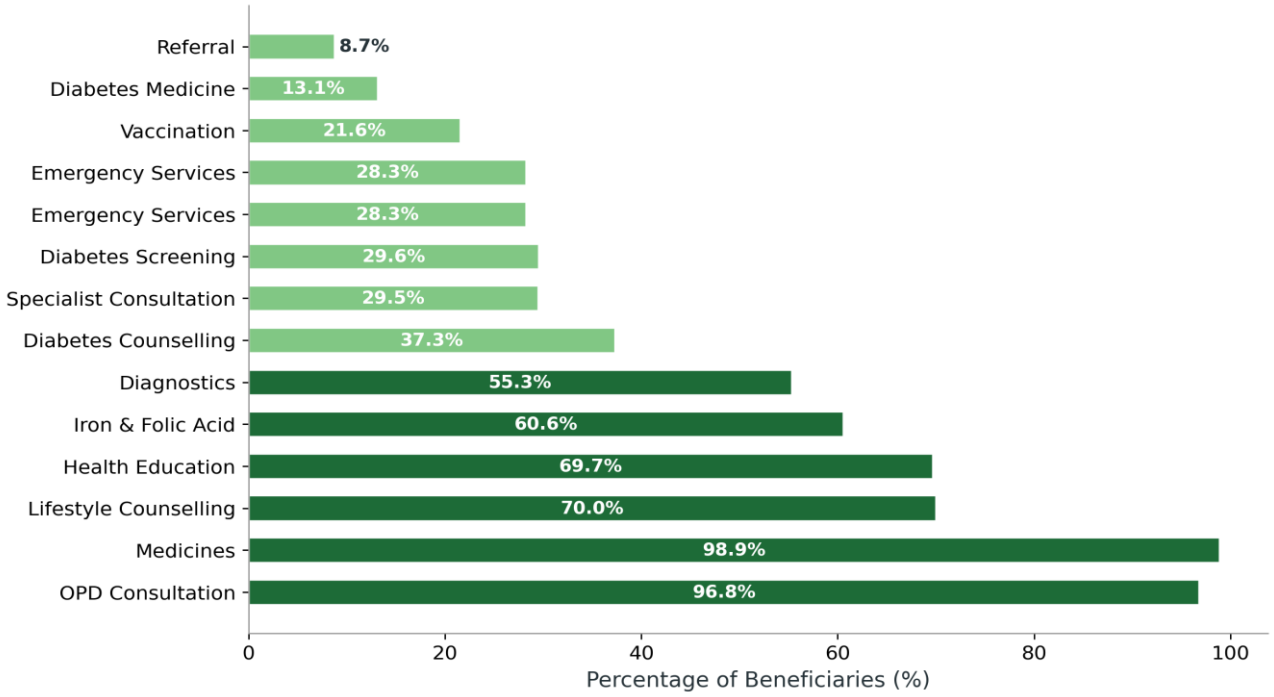


Figure 4.1: *MMU Service Utilisation by Type of Service*

Source: Beneficiary Survey, N=1,316

4.2 Treatment-Seeking Behaviour

A critical finding of this assessment is the significant shift in treatment-seeking behaviour attributable to the MMU programme. For minor illnesses (cold, cough, fever), 70.3% of respondents reported the Smile Foundation MMU as their first point of care, followed by CHC/District Hospital (13.3%) and private hospitals/clinics (12.8%). This demonstrates that the MMU has successfully established itself as the primary healthcare provider for routine ailments in the communities it serves.

For severe illnesses (trauma, prolonged fever, serious infections), the treatment-seeking pattern shifts appropriately, with CHC/District Hospitals becoming the primary destination (41.5%), followed by private facilities (32.0%) and the MMU (21.8%). This appropriate referral pattern suggests that the MMU is functioning effectively as a primary care gatekeeper, managing routine conditions while ensuring timely referral for serious cases.

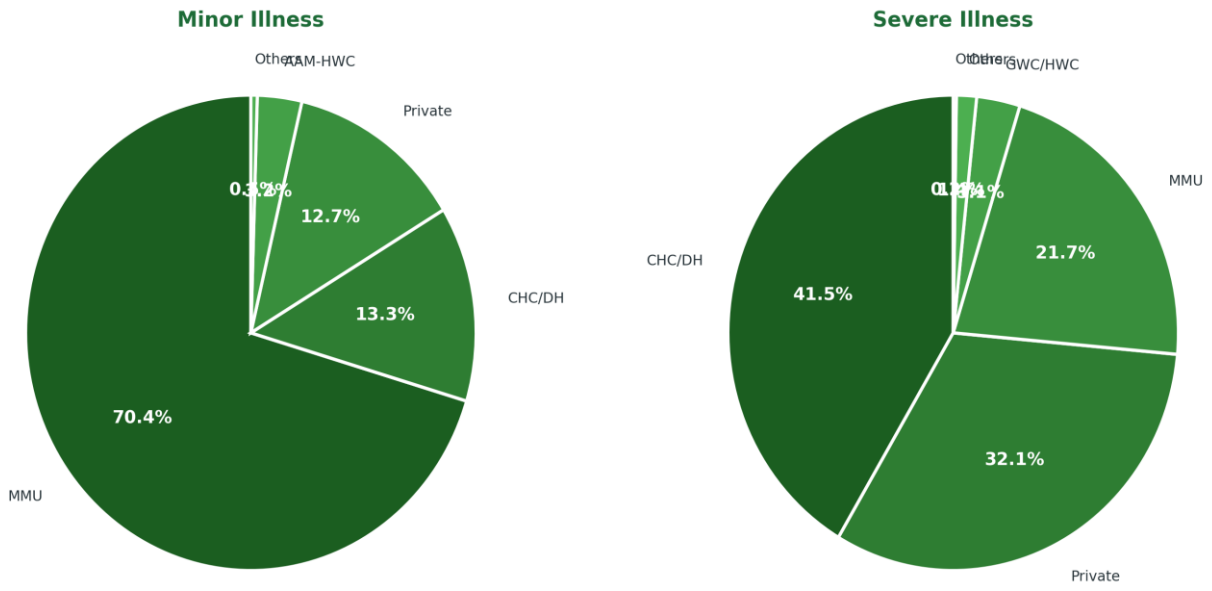


Figure 4.2: *Treatment-Seeking Behaviour by Illness Severity*

Source: Beneficiary Survey, N=1,316

4.3 Health Awareness and Information Sources

Health awareness levels among beneficiaries were high, with 82.9% reporting awareness of common health issues such as hypertension, diabetes, respiratory infections, and malnutrition, while an additional 7.7% reported partial awareness. Community health workers emerged as the primary channel through which beneficiaries learned about MMU services (41.9%), followed by word of mouth (36.2%) and PRI members (12.9%).

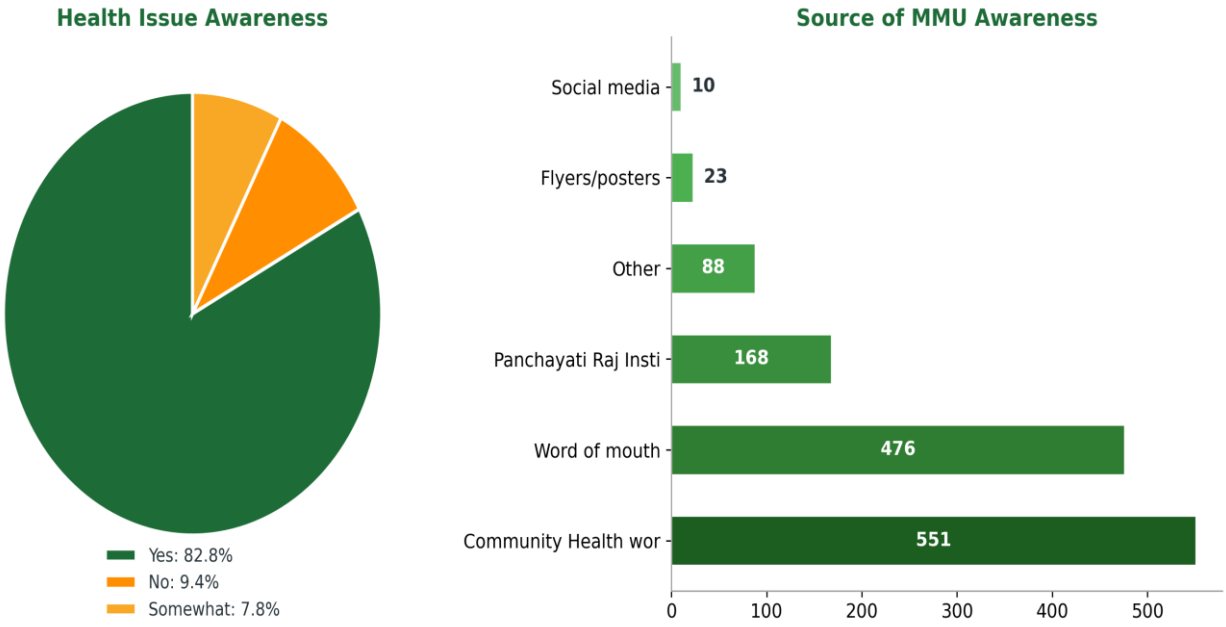


Figure 4.3: *Health Awareness and Information Sources*

Source: Beneficiary Survey, N=1,316

4.4 District-wise Service Utilisation Analysis

The service utilisation heatmap reveals significant inter-district variation in the uptake of specific services. While OPD consultations and medicine provision showed universally high utilisation (>90% across all districts), services such as diagnostics, diabetes counselling, and lifestyle counselling exhibited substantial geographic variation. Mewat showed high utilisation of lifestyle counselling (88.8%) and health education (74.4%), while Garhwa recorded the highest lifestyle counselling rate (90.1%) and Bengaluru led health education uptake (84.7%), while Bengaluru demonstrated strong diagnostic service uptake.



Figure 4.4: *Service Utilisation Heatmap by District*

Source: Beneficiary Survey, N=1,316; Percentage values represent district-level utilisation rates

4.5 Visit Frequency and MMU Awareness

The frequency of MMU visits demonstrates strong community engagement and sustained demand. An overwhelming 79.3% of beneficiaries reported visiting the MMU twice a month, while 13.6% visited weekly. Only 6.2% reported visits every 2-3 months, and negligible proportions visited less frequently. This high frequency of utilisation indicates strong community trust, consistent service quality, and effective mobilisation.

Regarding knowledge of available services, 93.6% of respondents confirmed awareness of the health services available at the MMU, indicating effective communication and community engagement strategies.

4.6 Bivariate Analysis: Treatment-Seeking by Education

A Chi-square test of independence was conducted to examine the association between education level and choice of MMU as primary care provider for minor illnesses. The analysis revealed a statistically significant association (χ^2=7.960, df=1, p=0.005), indicating that individuals with no formal education were significantly more likely to rely on the MMU as their primary healthcare provider. This finding validates the programme's

success in reaching the most educationally disadvantaged populations and underscores the importance of the MMU model in areas with low health literacy.

Chapter 5: Accessibility, Acceptability and Satisfaction

5.1 Physical Accessibility

The MMU programme demonstrates excellent physical accessibility. A substantial 75.2% of beneficiaries reported travel times of less than 15 minutes to the MMU campsite, with an additional 23.8% reaching within 16-30 minutes. Only 1.1% reported travel times exceeding 30 minutes. This proximity is a critical strength of the mobile healthcare model, effectively eliminating geographic barriers that typically impede healthcare access in underserved areas.

Treatment cycle times were equally efficient: 42.7% completed the entire treatment cycle (registration, consultation, drug dispensing) within 10 minutes, 49.8% within 10-15 minutes, and only 7.6% required 15-30 minutes. These short turnaround times minimise opportunity costs for beneficiaries, particularly those engaged in daily wage labour.

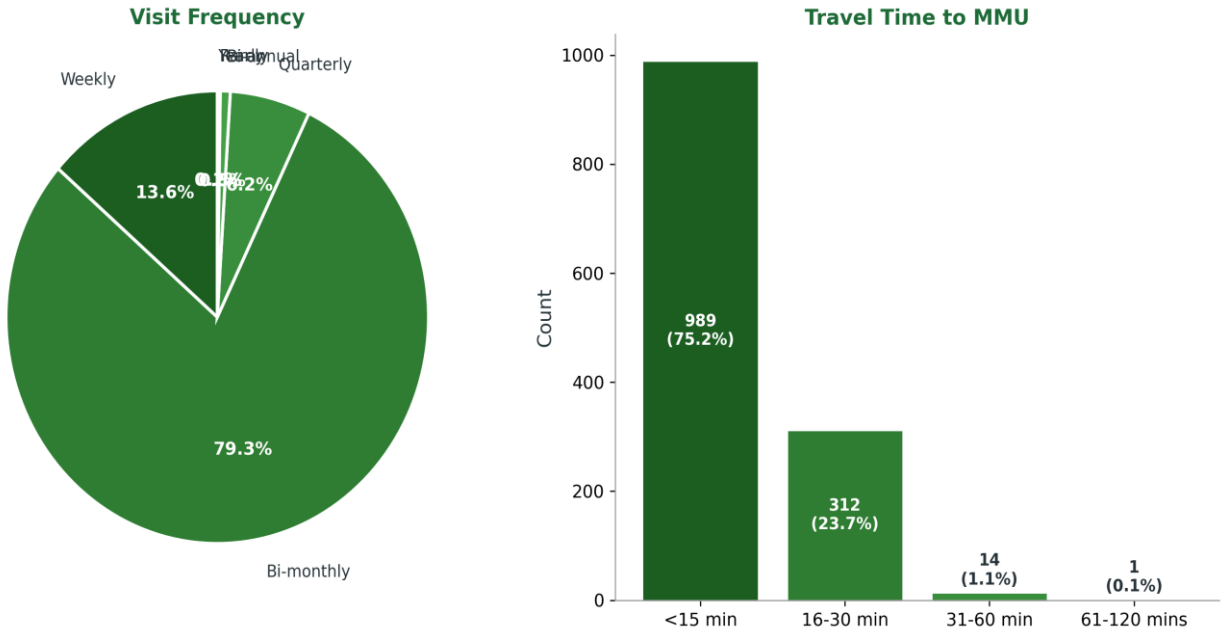


Figure 5.1: *Accessibility Indicators: Visit Frequency and Travel Time*

Source: Beneficiary Survey, N=1,316

5.2 Overall Satisfaction

Beneficiary satisfaction with MMU services was overwhelmingly positive. Among 1,316 respondents, 55.0% reported being 'Very Satisfied' and 43.9% 'Satisfied', yielding a combined satisfaction rate of 98.9%. Only 1.0% expressed neutral sentiments, and dissatisfaction was negligible (0.15%). The mean satisfaction score was 4.54 on a 5-point Likert scale (SD=0.52), confirming exceptionally high service quality perceptions across the programme.

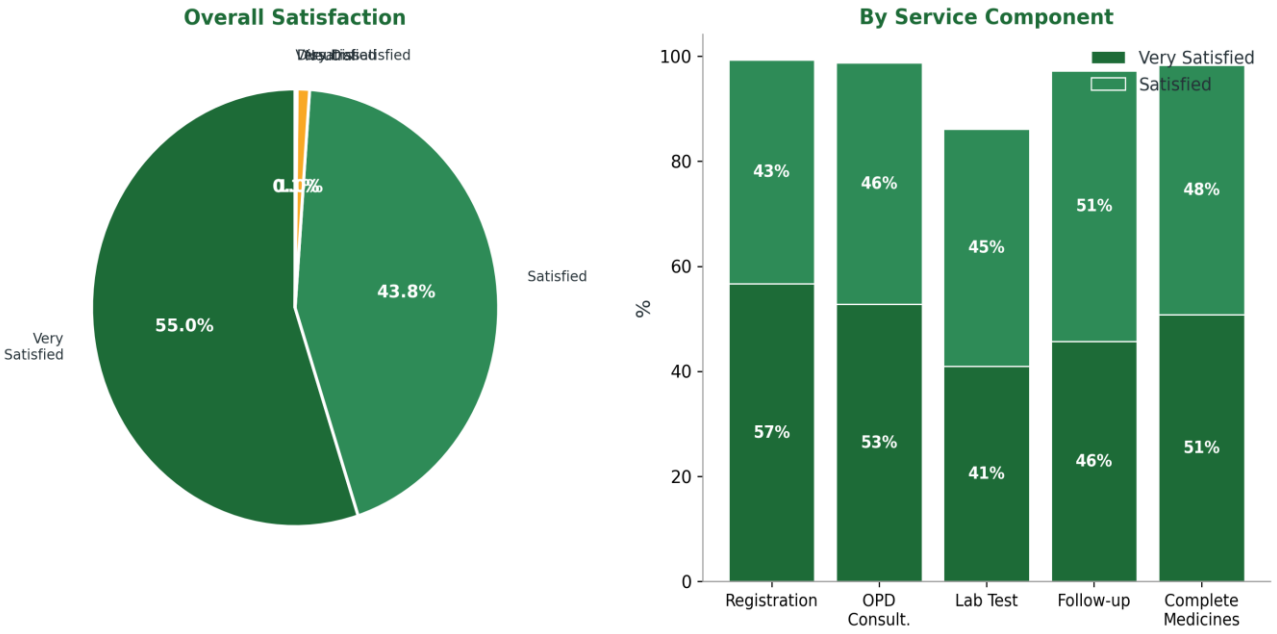


Figure 5.2: *Beneficiary Satisfaction with MMU Services*

Source: Beneficiary Survey, N=1,316

5.3 Satisfaction by Service Component

Disaggregated satisfaction analysis across five service components revealed consistently high ratings:

Table 5.1: Satisfaction Ratings by Service Component (%)

Component	Very Satisfied	Satisfied	Neutral	Dissat.
Registration Process	56.7%	42.6%	0.6%	0.2%
OPD Consultation	52.9%	45.9%	1.1%	0.2%
Lab Test Availability	41.1%	45.2%	4.0%	1.0%
Drug & Test Follow-up	45.8%	51.4%	2.7%	0.2%
Complete Medicines	50.8%	47.6%	1.4%	0.3%

5.4 Bivariate and Multivariate Analysis of Satisfaction

5.4.1 Satisfaction by Gender

An independent samples t-test comparing satisfaction scores between male (M=4.52, SD=0.51) and female (M=4.55, SD=0.53) respondents found no statistically significant difference (t=-1.115, p=0.265, Cohen's d=-0.06). This indicates equitable satisfaction levels across genders, suggesting that the MMU model serves both men and women with comparable quality.

5.4.2 Satisfaction by District (ANOVA)

A one-way Analysis of Variance (ANOVA) revealed highly significant differences in satisfaction scores across districts ($F(6,1290)=106.64$, $p<0.001$). Post-hoc analysis confirmed that geographic location is a strong predictor of satisfaction, with Cramér's $V=0.30$ indicating a medium-to-large effect size. This finding underscores the importance of district-level programme management and context-specific quality improvement initiatives.

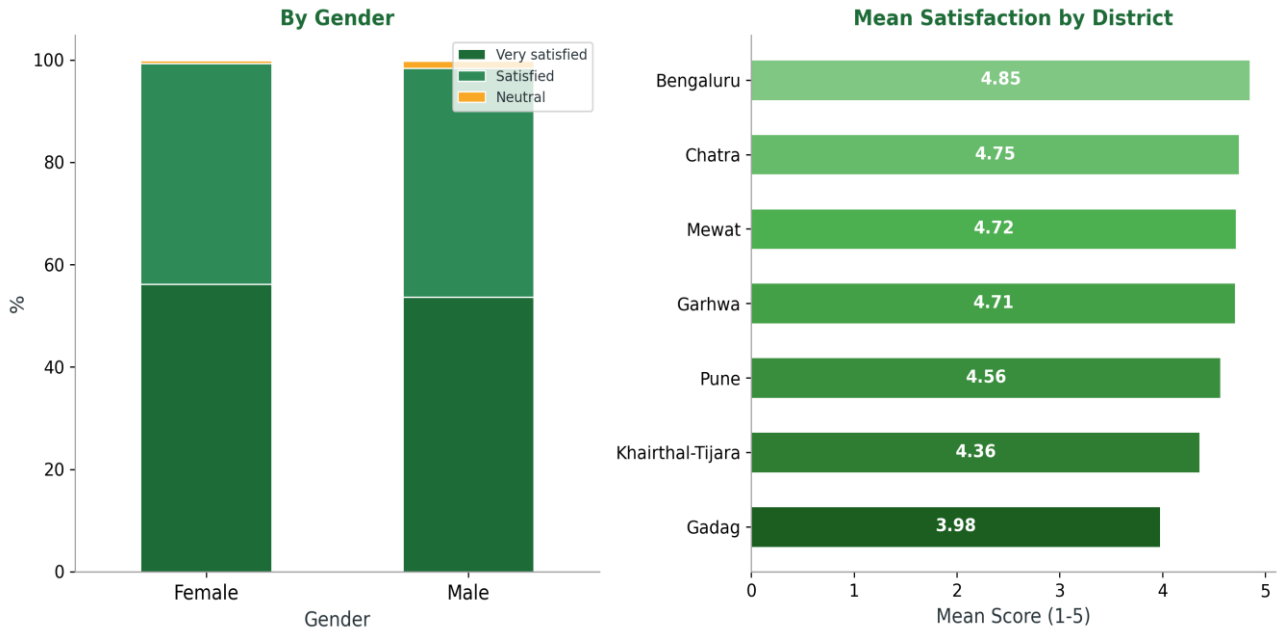


Figure 5.3: *Bivariate Analysis of Satisfaction Determinants*

Source: Beneficiary Survey, N=1,316; Bivariate analysis of satisfaction determinants

5.4.3 OLS Regression: Determinants of Satisfaction

An Ordinary Least Squares (OLS) regression model was estimated to identify the determinants of beneficiary satisfaction scores. The model was statistically significant ($F=5.883$, $p<0.001$) with $R^2=0.026$. The results revealed that health awareness ($\beta=-0.167$, $p<0.001$) and VHW interaction ($\beta=-0.094$, $p=0.003$) were significant predictors of satisfaction. The negative coefficients suggest that more health-aware beneficiaries and those interacting with VHWs had slightly more nuanced (and marginally lower) satisfaction ratings, potentially reflecting higher expectations and more critical evaluation of services-a finding consistent with the literature on health literacy and patient expectations.

Table 5.2: OLS Regression Results - Determinants of Satisfaction Score

Variable	Coeff.	Std.Err.	t-stat	p-value	Sig.
Constant	4.748	0.102	46.50	<0.001	***
Female	0.036	0.030	1.19	0.233	
Age	-0.001	0.001	-1.05	0.295	
No Education	0.042	0.036	1.19	0.235	

VHW Interaction	-0.094	0.032	-2.94	0.003	**
Health Awareness	-0.167	0.039	-4.26	<0.001	***
Visit Frequency	-0.001	0.029	-0.04	0.964	

*Note: ***p<0.001, **p<0.01, *p<0.05. Dependent variable: Satisfaction Score (1-5 Likert scale). R^2=0.026, Adj. R^2=0.022, F(6,1290)=5.883, p<0.001.*

5.5 Positive Health Behaviour Changes

A striking 87.6% of respondents reported observing positive changes in health practices since MMU operations began, demonstrating the programme's transformative impact beyond clinical service delivery. The most frequently reported changes included improved handwashing and hygiene practices, better awareness of nutrition, increased vaccination participation, regular health check-ups, and improved menstrual hygiene practices.

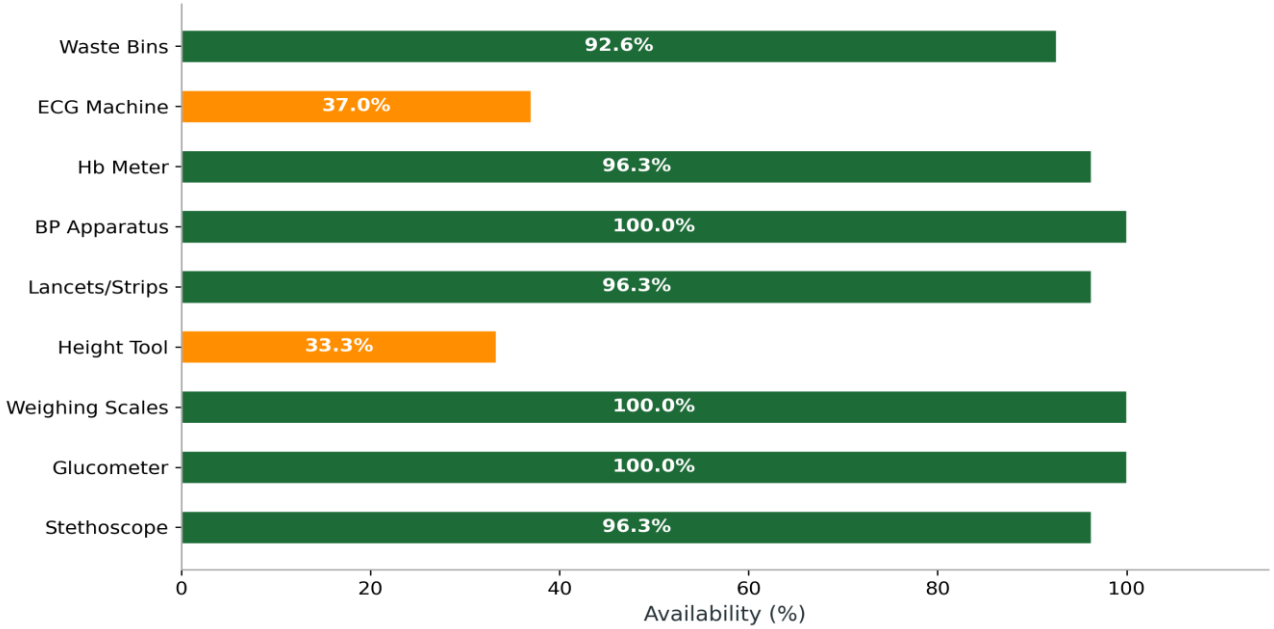


Figure 5.4: *Positive Health Practice Changes Since MMU Operation*

Source: Beneficiary Survey, N=1,316

5.5.1 Logistic Regression: Predictors of Positive Health Change

A binary logistic regression model was estimated to identify predictors of positive health behaviour change (outcome: 1=positive change observed, 0=no change). The model revealed that no individual predictor achieved conventional statistical significance at α=0.05, suggesting that positive health changes were broadly distributed across all demographic subgroups rather than concentrated in specific populations. The pseudo-R^2 of 0.006 indicates that demographic characteristics explain minimal variance in health behaviour change, which is actually a positive finding-it suggests the programme's health promotion impact is universal rather than limited to specific subgroups.

Table 5.3: Logistic Regression Results - Predictors of Positive Health Change

Variable	Coeff.	Std.Err.	z-stat	p-value	Odds Ratio

Constant	1.650	0.295	5.60	<0.001	5.21
Female	0.051	0.173	0.30	0.766	1.05
Age	0.010	0.006	1.76	0.079	1.01
No Education	-0.341	0.202	-1.69	0.092	0.71
VHW Interaction	-0.157	0.190	-0.83	0.408	0.85
Health Awareness	0.179	0.218	0.82	0.410	1.20

Note: Pseudo R^2=0.006, Log-Likelihood=-489.97, AIC=991.94. N=1,316.

Chapter 6: Affordability and Financial Protection

6.1 Comparative Out-of-Pocket Expenditure Analysis

The most compelling evidence of the MMU programme's impact lies in its dramatic reduction of out-of-pocket healthcare expenditure for beneficiaries. A comparative analysis across three healthcare facility types reveals the magnitude of financial protection provided by the MMU model:

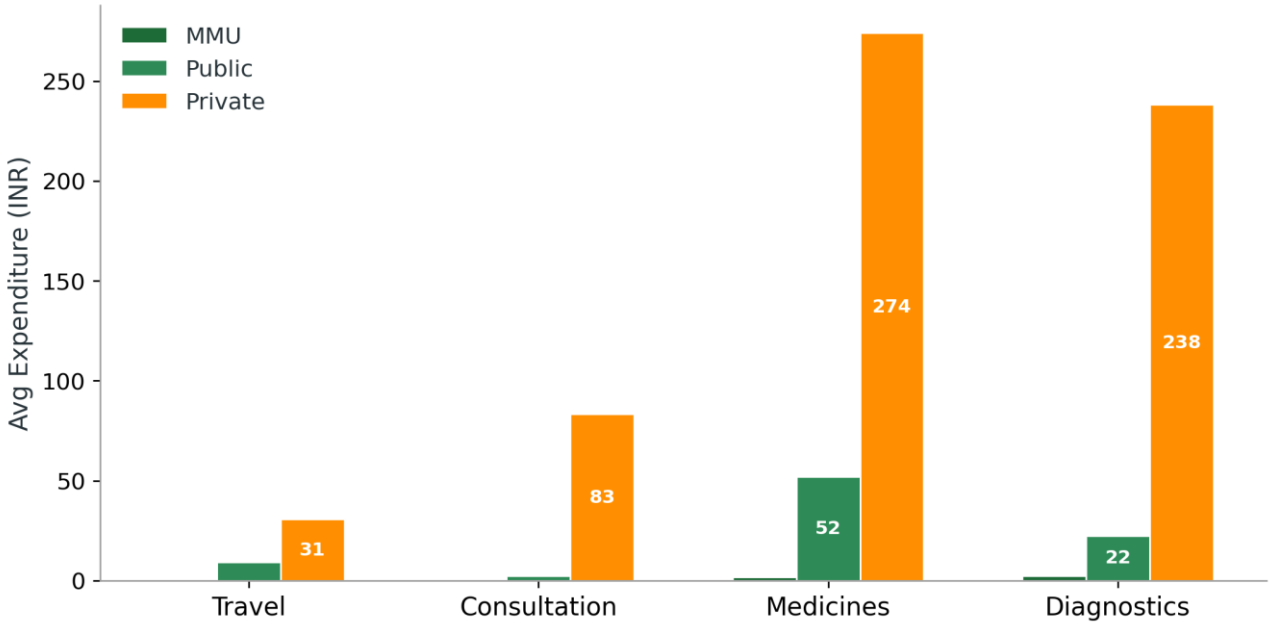


Figure 6.1: *Comparative Out-of-Pocket Expenditure by Facility Type*

Source: Beneficiary Survey, N=1,316; Values in Indian Rupees (₹)

Table 6.1: Average Out-of-Pocket Expenditure by Facility Type (₹)

Cost Component	MMU	Public Facility	Private Facility	Reduction vs Private
Travel	₹0.2	₹9.1	₹30.8	99.4%
Consultation	₹0.5	₹2.4	₹83.8	99.4%
Medicines	₹1.6	₹51.8	₹275.5	99.4%
Diagnostics	₹2.4	₹22.4	₹239.4	99.0%
Total (per visit)	**₹4.7**	**₹85.7**	**₹629.5**	**99.3%**

The data demonstrates that the MMU effectively provides near-zero-cost healthcare to beneficiaries. The average total expenditure per MMU visit was ₹4.7, compared to ₹85.7 at public facilities and ₹629.5 at private facilities. This represents a 94.5% reduction compared to public facilities and 99.3% reduction compared to private providers. The near-elimination of out-of-pocket expenditure is particularly significant given that 38.3% of beneficiaries have no formal education and many belong to economically vulnerable households.

6.2 Wage Loss and Opportunity Cost

The mean wage loss per healthcare visit was ₹35.4 (SD=428.6), with a median of zero, indicating that the vast majority of beneficiaries experienced no income loss from accessing healthcare through the MMU. The highly skewed distribution (75th percentile = ₹0) confirms that the MMU's proximity and efficient turnaround times effectively eliminate the indirect costs of healthcare seeking for most beneficiaries. This finding is critically important for daily wage earners, who constitute 12.4% of the beneficiary population.

6.3 Catastrophic Health Expenditure

Among all respondents, 77.3% reported no major out-of-pocket health expenditure in the past year. Among the 22.7% who did incur major health expenses, the mean expenditure was ₹16,503 (median: ₹5,000). The primary coping mechanisms employed were personal savings, borrowing from family/friends, and use of government schemes. The relatively low proportion reporting catastrophic health expenditure suggests that the MMU acts as an effective buffer against health-related financial shocks, particularly for routine and preventive care needs.







Chapter 7: MMU Staff and Operational Assessment

7.1 Staff Composition and Distribution

The staff survey covered 27 MMU team members across all seven districts (Mewat, Khairthal-Tijara, Gadag, Bengaluru, Pune, Chatra, and Garhwa). The multidisciplinary teams comprised medical officers, community health officers, ANMs/GNMs, pharmacists, community mobilisers, and drivers. Site visit frequency was primarily fortnightly (71.4%) with the remainder visiting weekly (28.6%), ensuring regular and predictable service delivery.

7.2 Service Delivery and Supply Chain

All 27 staff respondents (100%) confirmed that drugs listed in the MMU operational guidelines were available. However, 29.6% reported experiencing stockouts of medicines or supplies, indicating a supply chain vulnerability that warrants attention. All MMUs maintained standardised patient registration processes, and 90.5% had established grievance redressal mechanisms.

7.3 Equipment Availability and Functionality

Equipment availability was generally high across MMUs, though notable gaps exist:

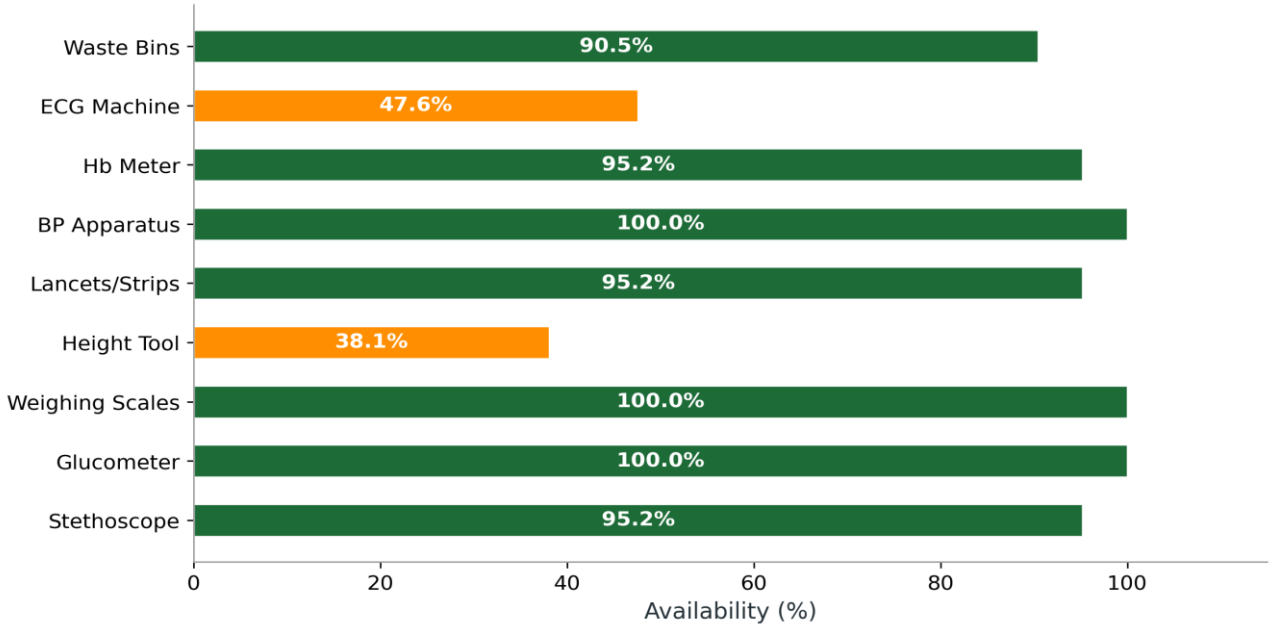


Figure 7.1: *Equipment Availability Across MMUs (N=27)*

Source: Staff Survey, N=27

Table 7.1: Equipment Availability and Gaps

Equipment	Available (%)	Status
Glucometer	100%	**Adequate**

Weighing Scales	100%	**Adequate**
BP Apparatus	100%	**Adequate**
Stethoscope	95.2%	**Near-adequate**
Lancets & Test Strips	95.2%	**Near-adequate**
Haemoglobin Meter	95.2%	**Near-adequate**
Waste Collecting Bins	90.5%	**Near-adequate**
12-Lead ECG Machine	47.6%	**Gap identified**
Height Measuring Tool	38.1%	**Critical gap**

7.4 Emergency Preparedness

A critical finding is that 95.2% of staff reported that the MMU lacks necessary resources to handle emergencies (heart attacks, anaphylaxis, road traffic accidents, outbreaks, snake bites). Only one MMU (4.8%) reported emergency capability. This represents a significant gap that requires immediate attention, particularly given that 28.3% of beneficiaries reported receiving emergency services.

7.5 Common Patient Complaints

Staff-reported patient complaints included unavailable medicines or supplies (28.6%), limited diagnostic facilities (28.6%), long waiting times (14.3%), and limited consultation time (14.3%). These findings align with beneficiary satisfaction data and highlight areas for targeted improvement.

7.6 Operational Challenges

The three most frequently cited operational challenges were vehicle breakdowns or maintenance issues (33.3%), difficult terrain or weather conditions (33.3%), and limited time for patient consultations (19.0%). Staff also noted delayed arrivals due to logistics (4.8%) and staffing shortages (9.5%). Despite these challenges, 100% of staff described the working environment as safe and comfortable, 95.2% reported receiving adequate training, and 100% confirmed that patients appeared satisfied with services.

7.7 Biomedical Waste Management

All 27 MMU staff respondents (100%) reported following biomedical waste disposal guidelines, and 92.6% had waste segregation bins available. These compliance rates indicate strong adherence to infection prevention and waste management protocols.

7.8 Staff Recommendations

Staff identified several areas for improvement: 76.2% felt the MMU was adequately staffed while 23.8% reported staffing inadequacies. Suggested improvements included better transportation and field support, regular training and skill updates, improved safety gear access, enhanced facilities for rest and meals, increased staffing, timely salary payments, and career growth opportunities.





Chapter 8: Qualitative Findings from Focused Group Discussions

8.1 Overview and Methodology



This chapter presents the qualitative findings from 45 Focused Group Discussions (FGDs) conducted across seven districts in five states as part of the mixed-methods impact assessment. The FGDs were designed to capture the lived experiences, perceptions, and voices of community members who interact with the MMU programme, complementing the quantitative findings presented in preceding chapters. All FGD data were transcribed from handwritten field notes, translated where necessary (from Kannada, Hindi, and Marathi), and coded using a structured thematic framework aligned with NVivo qualitative analysis standards. A deductive-inductive coding approach was employed, with an initial codebook derived from the study objectives and emergent codes added iteratively during analysis.

The FGDs covered six thematic domains: (i) healthcare access and utilisation; (ii) nutrition and dietary practices; (iii) adolescent and reproductive health; (iv) menstrual health and hygiene management; (v) MMU service feedback and satisfaction; and (vi) suggestions for programme improvement. Respondent categories included pregnant and lactating women (PLW), adolescent girls, adolescent boys, lactating mothers, and young women. A total of approximately 300 participants were engaged across the 45 FGDs, with group sizes ranging from 3 to 15 participants.

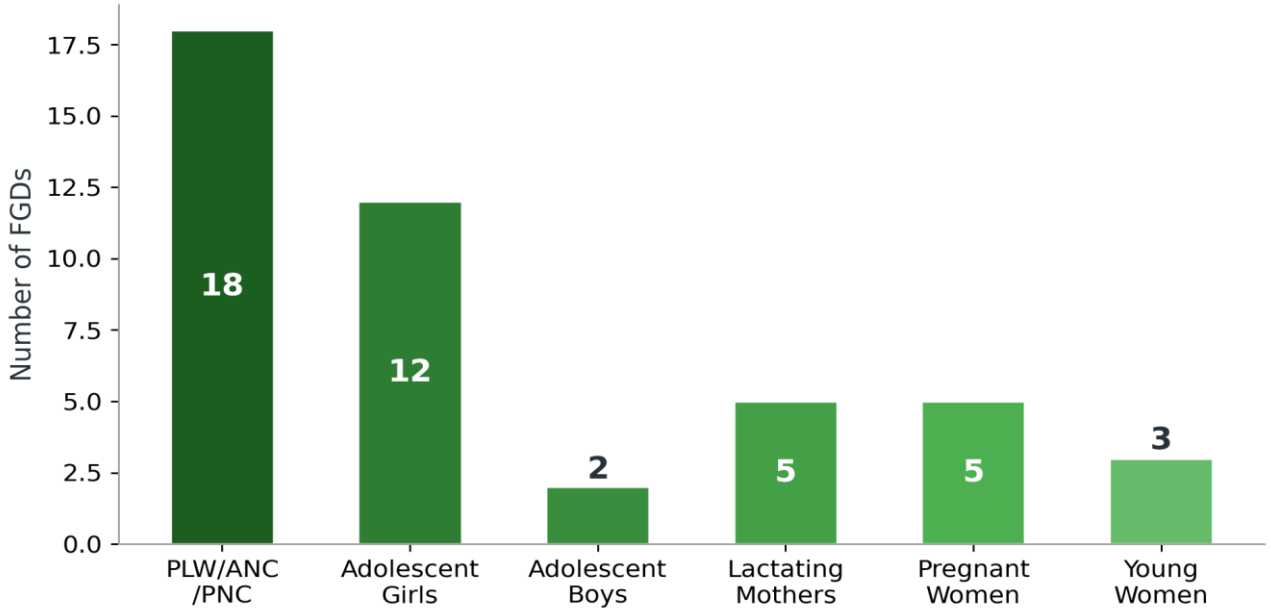


Figure 8.1: *Distribution of FGDs by Respondent Category (N=45)*

Source: FGD Field Data, 45 FGDs across 7 districts

8.2 Healthcare Access and MMU Utilisation

Across all seven districts, participants unanimously identified the MMU as either their primary or co-primary source of healthcare. This finding was remarkably consistent regardless of geographic context, from the urban slum settlements of Pune to the remote tribal villages of Garhwa and Chatra in Jharkhand, and the culturally distinct communities of Mewat in Haryana. In Gadag (Karnataka), all four FGD groups reported that the nearest health facility was more than 10 kilometres away, making the fortnightly MMU visits their only practical access point for primary care. In Mewat, participants across all four villages (Neemka, Beesru, Nai, and Fardari) consistently reported that the MMU eliminated the need for costly travel to distant CHC or hospital facilities. In Pune, despite urban proximity, participants from the Dandekar Pul, Chaitrabhan Vasahat, and other slum clusters reported that the MMU reduced both travel time and out-of-pocket costs compared to private healthcare.

Treatment-seeking patterns revealed that most participants used a dual-source model: the MMU for routine care, consultations, and preventive services, supplemented by government hospitals for emergencies and complicated cases. In Bengaluru, participants described purchasing additional tablets from private medical shops when MMU supplies were insufficient, while in Jharkhand, the MMU was the sole source of free medicines for many participants. The fortnightly or twice-monthly visit schedule was confirmed across all districts, though several groups in Garhwa and Chatra expressed that monthly visits were insufficient for their healthcare needs.

> *"The MMU comes to our village every 15 days. Earlier we had to travel more than 10 km to reach any health facility. Now medicines and check-ups are available at our doorstep, free of cost."*
>
> *- Pregnant women, FGD Garhwa, Jharkhand*

This sentiment was echoed across sites. In Pune, participants from urban slum settlements reported comparable experiences

8.3 Nutrition, Diet, and IFA Supplementation

Awareness of balanced diet and nutrition was universally high across all 45 FGDs. Participants consistently identified locally relevant nutritious foods: rice, ragi, vegetables, fruits, milk, curd, and pulses in Karnataka; dal, chawal, sabzi, fruits, and milk products in Jharkhand and Haryana; and similar dietary patterns in Pune and Bhiwadi. This indicates that the MMU programme has contributed to meaningful dietary awareness across diverse cultural and geographic contexts.

A notable cross-district variation emerged in Iron Folic Acid (IFA) supplementation. In Jharkhand (Garhwa and Chatra), all five PLW FGD groups confirmed receipt of IFA supplements through the MMU, and participants in Mewat similarly reported positive experiences with iron tablet distribution, citing reduced anaemia and improved appetite. However, in Bengaluru, none of the eight FGD groups reported receiving IFA from the MMU, representing a significant service delivery gap. This divergence suggests that IFA distribution protocols may not be uniformly implemented across project sites and warrants programmatic attention.

> *"Iron tablets from the MMU have helped us a lot. Before, we used to feel weak and tired all the time. Now after taking the tablets regularly, we feel stronger and our appetite has improved."*
>
> *- PLW respondents, FGD Mewat, Haryana*

This qualitative evidence on IFA impact provides important context for the quantitative finding that 60.5% of beneficiaries received IFA supplementation through the MMU Across all sites, no substance use (tobacco, alcohol, or other substances) was reported, reflecting effective health counselling by MMU teams.

8.4 Sexual, Reproductive, and Menstrual Health

Adolescent FGD participants across all districts demonstrated strong awareness of puberty-related changes, including voice changes, body hair growth, emotional fluctuations, and the onset of menstruation. Information sources varied by context: in Bengaluru, parents and schools were the primary sources; in Jharkhand, teachers, parents, and social media played important roles; while in Mewat, ASHA workers and family members were primary sources. All adolescent groups in Jharkhand (both boys and girls) demonstrated awareness that early marriage is harmful, reflecting the reach of social messaging programmes.

Menstrual health and hygiene management (MHM) emerged as a domain with both achievements and persistent challenges. Sanitary pad use was reported across all districts, with participants citing pads, cloths, and Anganwadi-distributed materials. However, social restrictions during menstruation remained prevalent. In approximately 69% of districts, participants reported being restricted from entering temples, worship areas, or kitchens during menstruation. In Chatra (Jharkhand), adolescent girls reported being unable to attend school during their periods. These socio-cultural barriers represent an important area for targeted IEC intervention.

> *"During periods we cannot go to the temple, we cannot enter the kitchen. If there is a festival, we have to sit separately. We know now that this is not right, but the elders in our family still follow these rules."*
>
> *- Adolescent girls, FGD Chatra, Jharkhand*

This testimony illustrates the intergenerational tension between emerging awareness and entrenched social norms MHM education was reported in 62.5% of FGDs in Bengaluru and was generally available through schools and family in other districts, though formal MHM education from the MMU itself was less consistently reported.

8.5 MMU Service Satisfaction and Impact

Satisfaction with MMU services was universally positive across all 45 FGDs and all seven districts. Every FGD group confirmed awareness of MMU services, expressed overall satisfaction, and stated willingness to recommend the MMU to others. Free medicines and free diagnostic services were identified as the most valued aspects of the MMU programme across all sites.

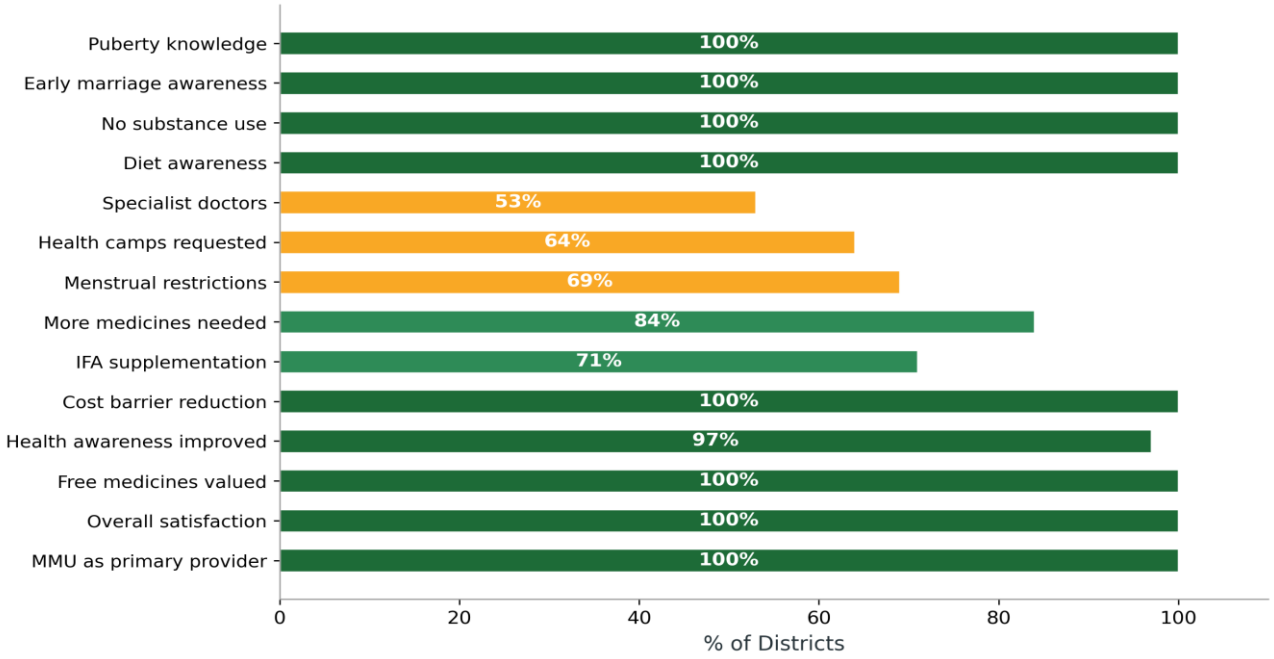


Figure 8.2: *Cross-District Thematic Saturation Matrix (45 FGDs, 7 Districts)*

> *"Pravaas door nahi, kharch kami - the travel is not far, the expenses are less. Before the MMU, we used to spend so much money going to private clinics. Now everything is available in our own basti."*
>
> *- PLW respondent, FGD Pune, Maharashtra*

This resonates powerfully with the quantitative finding that the MMU provides near-zero-cost healthcare (INR 4.7 per visit) compared to INR 629.5 at private facilities In Pune, participants specifically noted that the MMU saves travel costs ("pravaas door nahi" - the travel is not far) and reduces expenses ("kharch kami" - expenses are less).

Health awareness improvement was reported in 97% of FGD groups across districts. Participants described improvements in nutrition knowledge, understanding of hygiene practices, awareness of chronic disease management (BP, diabetes), and knowledge of maternal health protocols. In Mewat, both PLW and adolescent groups reported tangible benefits from the MMU, including reduced anaemia from iron tablets and improved understanding of antenatal care. In Gadag, three of four FGDs reported receiving IEC materials and attending health education sessions, though none of the respondents proactively asked questions of MMU staff, suggesting a need for more interactive health education approaches.



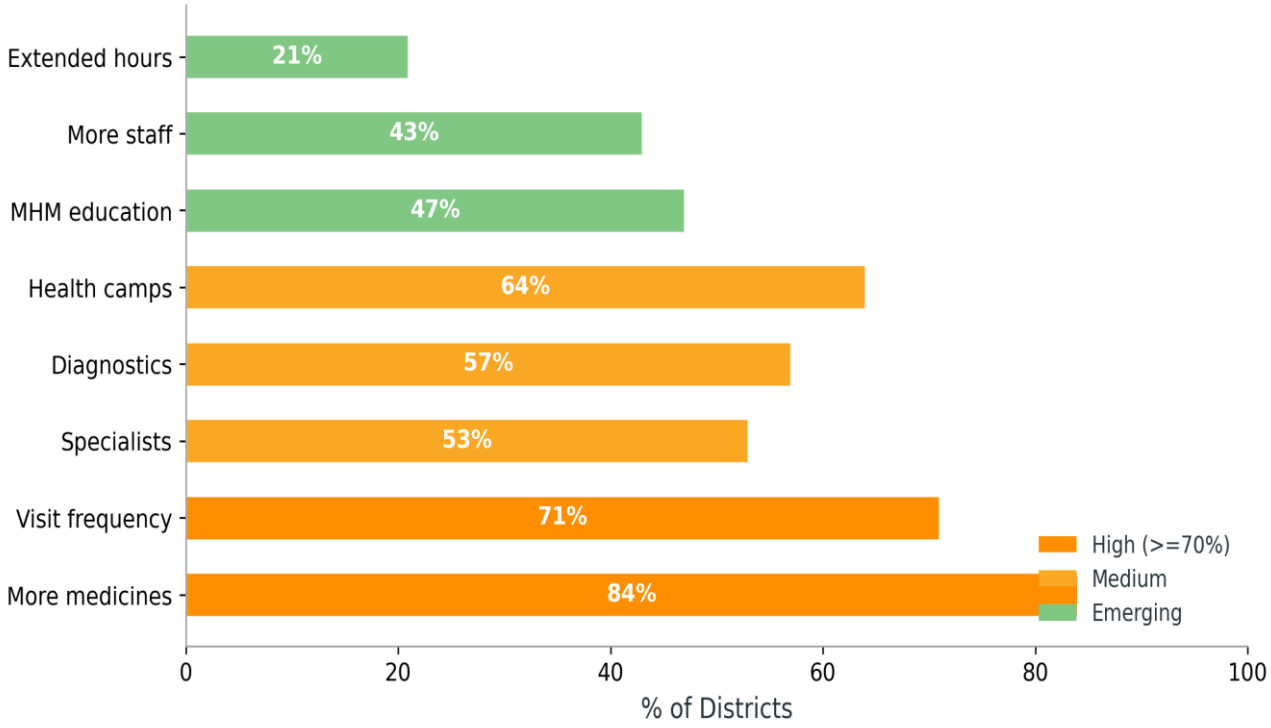


Figure 8.3: *Service Improvement Priorities from Qualitative Evidence*

Source: Thematic analysis of 45 FGDs across 7 districts. Percentages indicate proportion of districts where theme was reported.

8.6 Cross-District Thematic Analysis

A systematic cross-district comparison reveals both convergent and divergent patterns across the seven study sites. The thematic saturation matrix below illustrates the degree to which key themes were consistently reported across districts, providing a visual synthesis of the qualitative evidence base.



Figure 8.4: *Prevalence of Key Qualitative Themes Across Districts*

Source: Cross-tabulation of coded FGD responses across 7 districts. Values represent thematic saturation on a 0-1 scale.

Several themes achieved full saturation (reported across all seven districts): MMU as primary care provider, free services valued, overall satisfaction, balanced diet awareness, no substance use, and travel/cost barrier reduction. These represent the core strengths of the programme and confirm that the MMU model works effectively across diverse geographic, cultural, and socio-economic settings.

Partially saturated themes provide important operational insights. IFA supplementation showed strong implementation in Jharkhand and Mewat but was absent in Bengaluru, suggesting site-level protocol variation. Menstrual health restrictions were reported in most districts but were less prominent in Pune, possibly reflecting the urban context. Demand for specialist doctors was highest in Pune (where proximity to tertiary facilities creates expectations) and Mewat (where specialist access is most limited).

8.7 Community Priorities and Service Improvement Gaps

Across all districts, participants identified a consistent set of service improvement priorities. These qualitative findings align with and reinforce the operational gaps identified through the quantitative staff survey analysis, providing triangulated evidence for programme strengthening.

Source: Aggregated suggestions from 45 FGDs across 7 districts, classified by priority level.

The most frequently cited gap was the need for expanded medicine supply (84% of districts), followed by increased visit frequency (71%), community health camps (64%), and better diagnostic equipment (57%). These priorities were remarkably consistent across both rural (Garhwa, Chatra, Mewat, Bhiwadi) and urban (Pune, Bengaluru) sites, suggesting systemic rather than context-specific supply chain constraints. A particularly important finding from Pune was the identification of high private delivery costs (ranging from INR 5,000 to INR 50,000), with government maternity benefits (JSY/PMMVY) proving insufficient to cover actual delivery expenses. This suggests an opportunity for the MMU to play a stronger role in pre-delivery counselling and referral to government facilities.

8.8 Qualitative Evidence Summary

The qualitative evidence from 45 FGDs involving approximately 300 participants across seven districts provides robust triangulation of the quantitative findings. Four overarching conclusions emerge from the thematic analysis:

First, the MMU programme has achieved deep community trust and acceptance across all geographic and cultural contexts. Satisfaction is universal, and the programme is consistently identified as the primary or co-primary healthcare provider. Second, the programme has delivered meaningful improvements in health awareness, nutrition knowledge, and preventive health practices, though the intensity of impact varies by district and respondent category. Third, persistent gaps in medicine supply, visit frequency, and diagnostic capacity represent the most salient barriers to maximising programme impact. Fourth, social norms around menstrual health, particularly temple and kitchen restrictions during menstruation, represent an underexplored frontier for behaviour change communication that the MMU is well-positioned to address.





Chapter 9: Stakeholder Assessment - PRI Members Survey

9.1 Overview and Sample Profile

To complement the beneficiary and staff surveys, a structured Panchayati Raj Institution (PRI) Members Survey was conducted to capture the perspectives of local governance representatives on MMU performance, community impact, and coordination. A total of 19 PRI members were interviewed across five districts: Mewat (6), Khairthal-Tijara (8), Pune (2), Chatra (1), and Garhwa (1). The survey covered village demographics, health facility access, cultural barriers, Panchayat-MMU coordination, trust and health-seeking behaviour changes, impact on women, health improvements, financial impact, performance ratings, and suggestions for improvement.

The villages represented had a mean population of approximately 20,870 (median: 4,300), with daily wage labour (84%) and agriculture (63%) as the predominant occupations. The mean distance to the nearest health facility was 4.75 kilometres (range: 0.5 to 10 km). Notably, 95% of PRI members identified the MMU as a main health facility accessible to their village, followed by government health centres (47%) and private clinics/hospitals (47%).

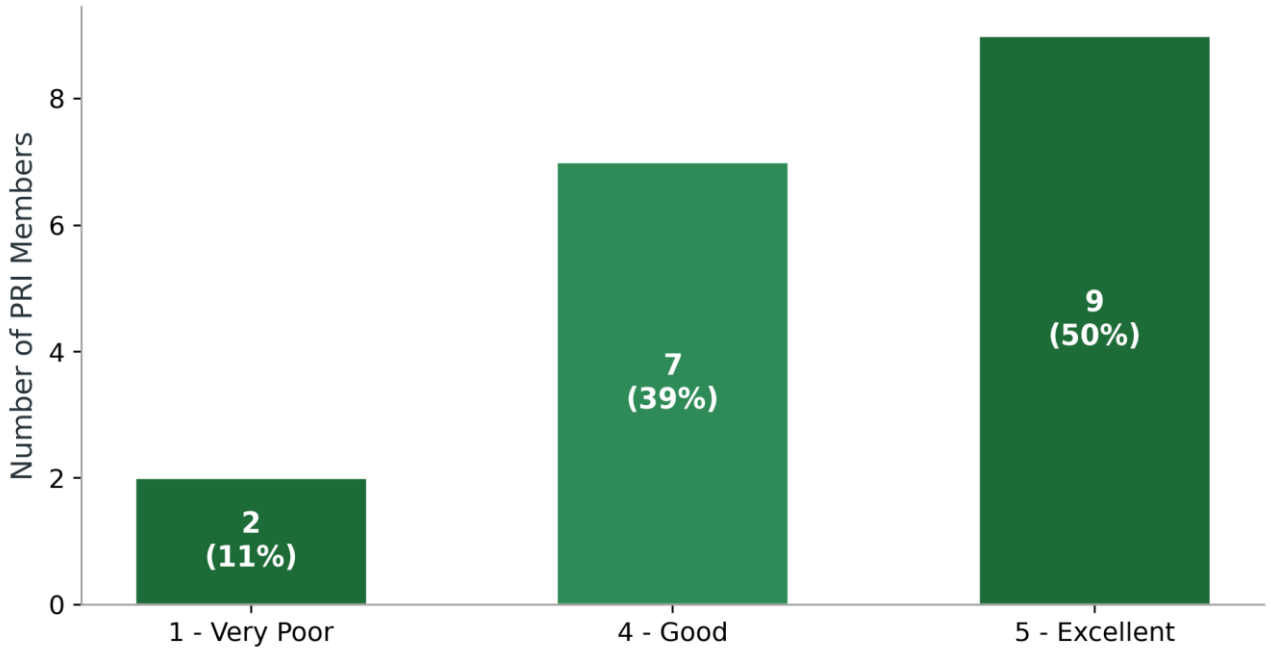


Figure 9.1: *PRI Members Rating of MMU Performance (N=19)*

9.2 Panchayat-MMU Coordination and Accessibility

The coordination between MMU teams and local Panchayat bodies received overwhelmingly positive endorsement. All 18 responding PRI members (100%) rated the coordination as "very well," indicating that the MMU teams and Panchayat work together effectively. Similarly, 100% reported no issues with communication or coordination, describing it as "excellent." This strong governance-programme alignment is a critical enabler of the MMU model and reflects effective community engagement strategies.

Regarding physical accessibility, 89% of PRI members confirmed that the MMU location is easily accessible for all villagers. However, 37% noted that the MMU location is far for some villagers, and 11% identified transportation issues. These findings suggest that while the MMU model works well for the majority, targeted solutions (such as additional campsite locations or transport facilitation) may be needed to reach the most remote households within each village.

9.3 Cultural and Social Barriers

The absence of significant cultural barriers to MMU utilisation is a notable achievement. Among 18 responding PRI members, 89% confirmed that there are no cultural or social factors preventing people from using MMU services, stating that people trust the MMU. Only one respondent (5.6%) identified stigma around seeking medical help as a barrier. This high level of community acceptance validates the programme approach of embedding healthcare delivery within trusted local governance structures and using community health workers for mobilisation.

9.4 Trust, Health-Seeking Behaviour, and Women Access

PRI members provided strong evidence of the MMU programme transforming community health dynamics. Among respondents, 89% reported that the MMU has "significantly improved" trust in healthcare services, with an additional 11% reporting "somewhat improved" trust. The reported changes in health-seeking behaviour were comprehensive: 95% observed that more people use MMU services, 74% noted more regular health check-ups, 58% reported fewer people relying on home remedies, and 53% observed greater health awareness overall.

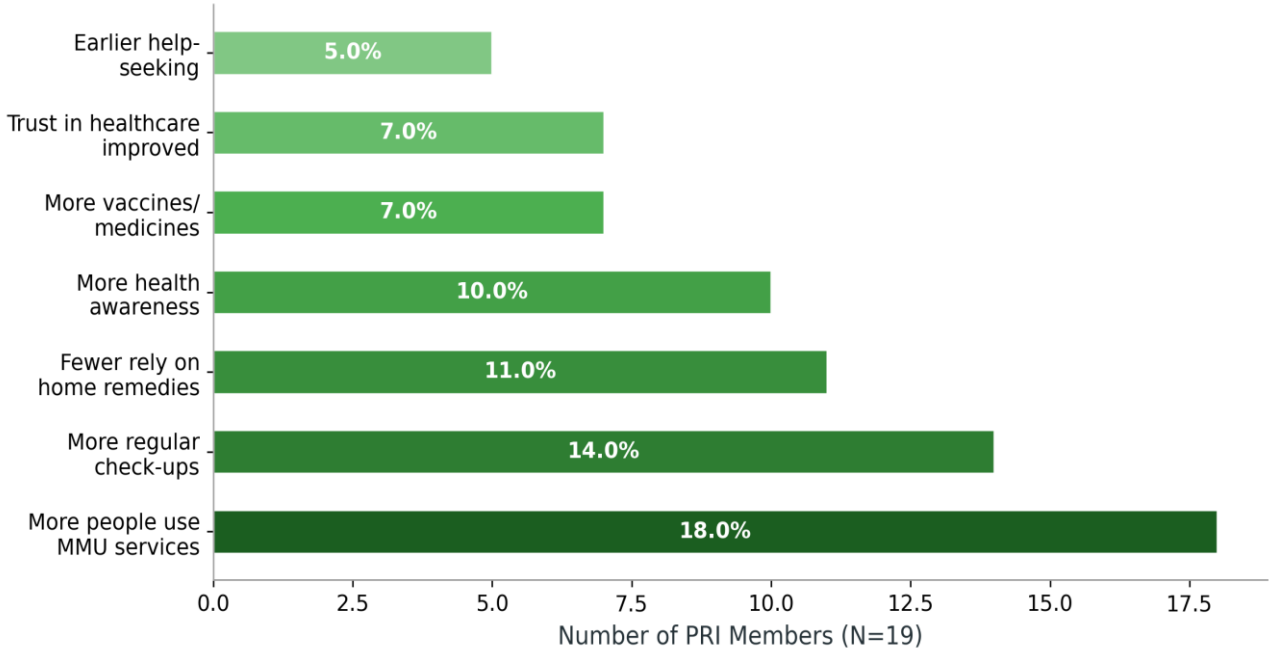


Figure 9.2: *Health-Seeking Behaviour Changes Reported by PRI Members*

Source: PRI Members Survey, N=19; Multiple responses permitted

Regarding women access, 94% of PRI members confirmed that the MMU has significantly improved healthcare access for women in remote and underserved areas, with women visiting regularly. This finding is particularly significant given that 53.2% of beneficiaries surveyed were female, confirming from both supply and demand perspectives that the MMU model successfully bridges the gender gap in healthcare access.

9.5 Health Improvements Attributed to MMU

PRI members reported substantial health improvements in their communities since the MMU began operations. The most frequently cited improvements included better management of seasonal diseases such as flu, dengue, and diarrhoea (89%), enhanced awareness and adoption of health and hygiene practices (84%), timely diagnosis and treatment of illnesses (74%), increased access to vaccinations and preventive healthcare (58%), reduced severity and frequency of disease outbreaks (53%), and improved availability of medicines and medical supplies (53%). Only one respondent (5%) reported no noticeable improvements.

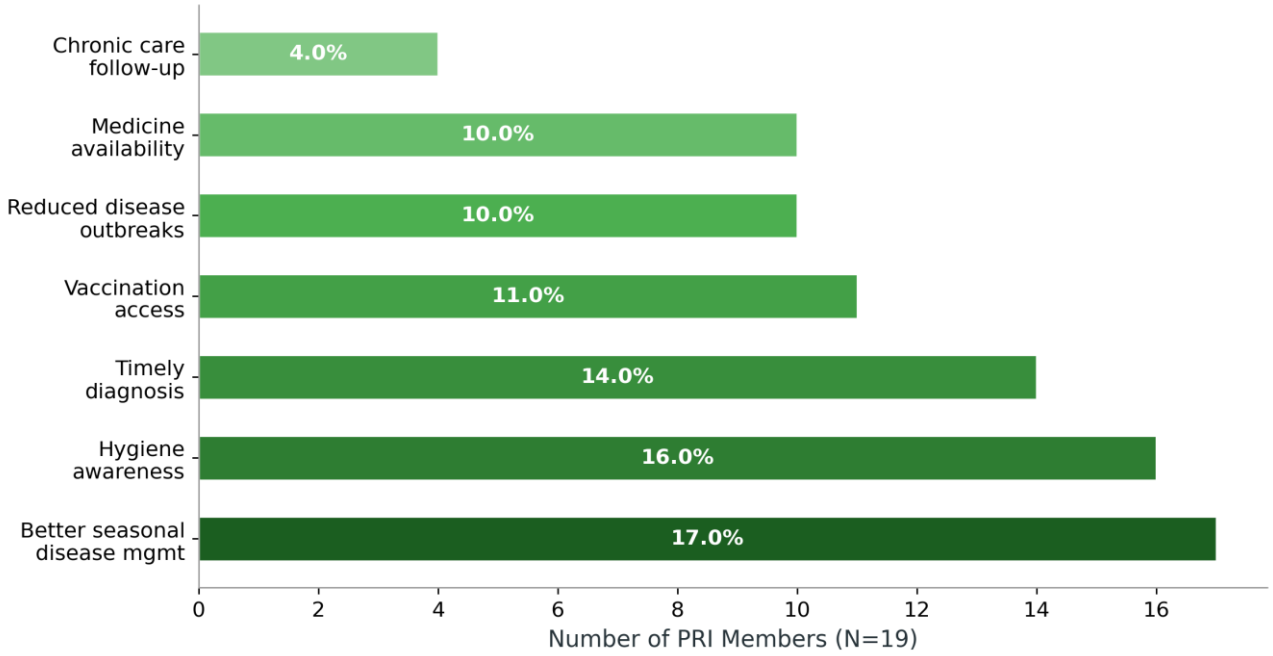


Figure 9.3: *Health Improvements Observed by PRI Members*

Source: PRI Members Survey, N=19; Multiple responses permitted

9.6 Financial Impact on Households

The PRI members survey provides independent corroboration of the financial protection findings from the beneficiary survey. Among 18 responding members, 94% reported that spending on private healthcare has decreased significantly in their area due to the MMU, while an additional 6% reported a slight decrease. None of the respondents indicated that spending had remained unchanged or increased. This triangulation of financial impact data across beneficiary, staff, and PRI respondent groups strengthens the evidence base for the MMU as a financial protection mechanism.

9.7 Performance Rating and Recommendations

PRI members rated the overall performance of MMUs in their Panchayat areas. Among 18 respondents, 50% rated the MMU as "Excellent" (5/5), 39% rated it as "Good" (4/5), and 11% rated it as "Very Poor" (1/5). The mean rating was 4.06 out of 5.0. The two low ratings came from specific sites and warrant targeted follow-up to identify and address localised concerns.

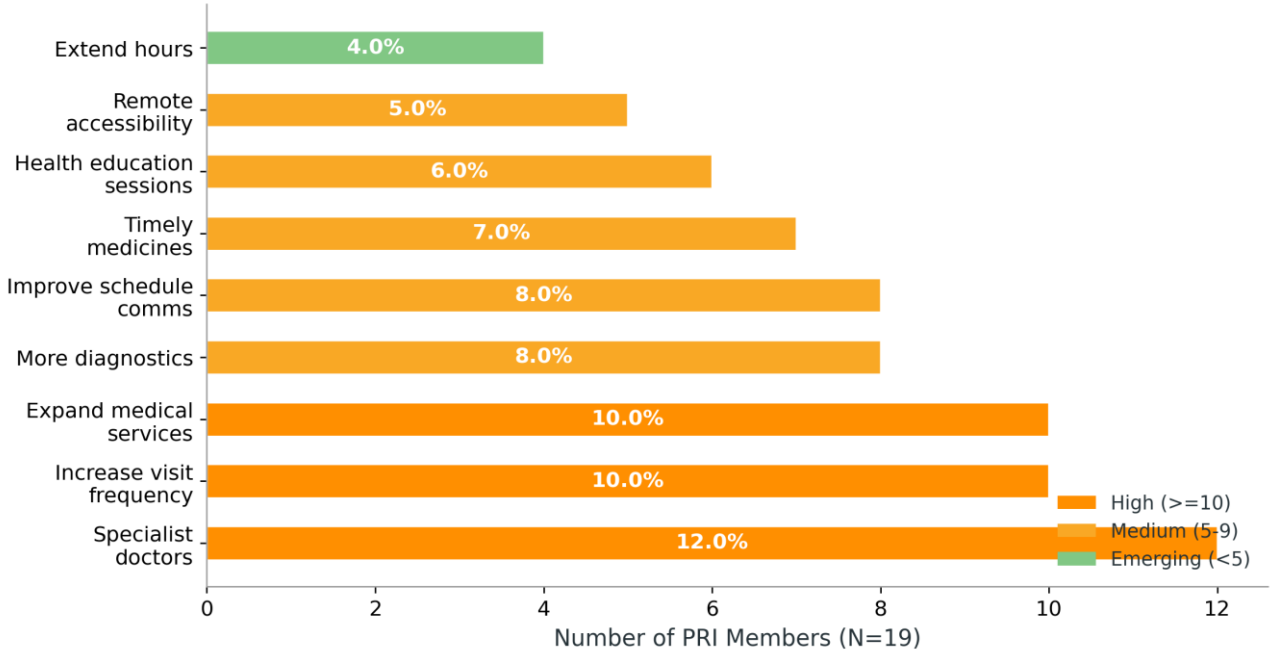


Figure 9.4: *PRI Suggestions for MMU Service Improvement*

Source: PRI Members Survey, N=18

PRI members offered several recommendations for strengthening MMU services. The most frequently recommended improvements were: inclusion of specialist doctors in the MMU team (63%), increased frequency of MMU visits (53%), expanded range of medical services (53%), more diagnostic tests and equipment (42%), improved communication about MMU schedules (42%), ensuring timely availability of medicines (37%), more health education sessions (32%), addressing accessibility issues in remote areas (26%), and extending operating hours (21%). These recommendations align closely with the operational gaps identified in the staff survey, reinforcing the need for targeted investments in human resources, diagnostics, and service expansion.

9.8 Summary of PRI Endorsement

The PRI Members Survey provides a powerful governance-level endorsement of the MMU programme. Across all key indicators, PRI members confirmed the transformative impact of the MMU on their communities. The near-universal positive ratings on trust (100%), coordination (100%), communication (100%), women access (94%), and financial impact (94%) indicate that the MMU model has achieved deep institutional embedding within local governance structures. This systems-level integration is a critical enabler of programme sustainability and scale-up.

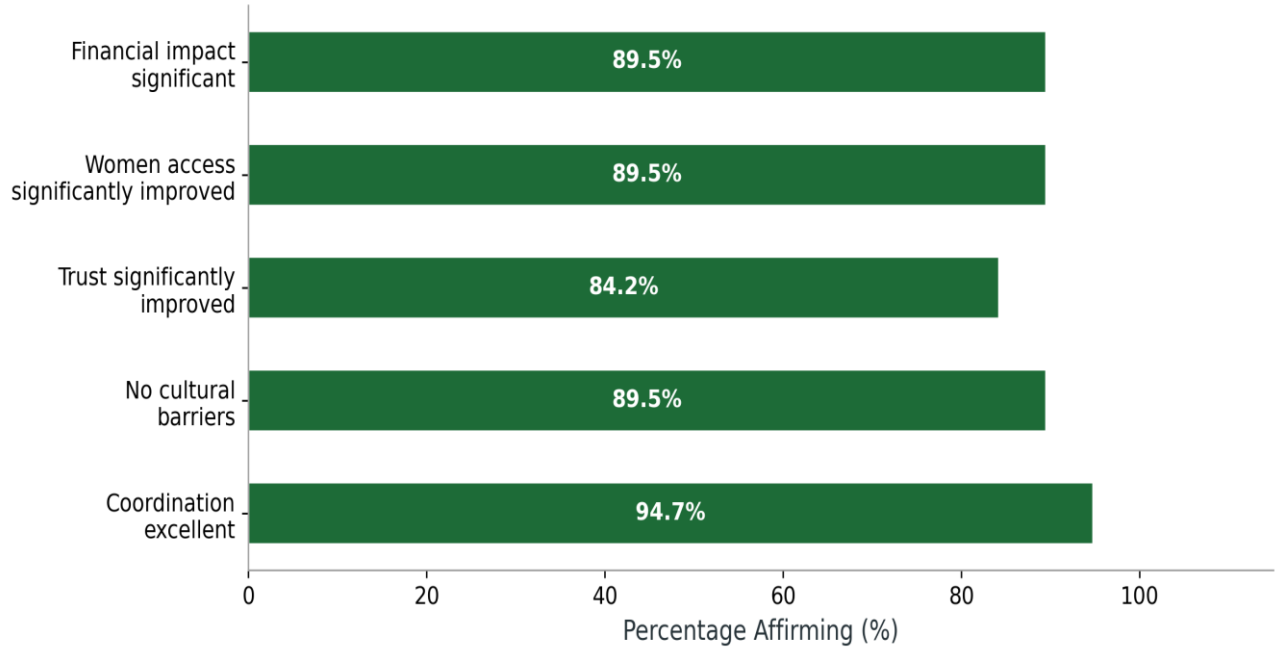


Figure 9.5: *PRI Governance and Trust Indicators*

Source: PRI Members Survey, N=19



Chapter 10: Statistical Summary and Effect Sizes

10.1 Summary of Statistical Tests

Table 8.1: Summary of Bivariate Statistical Tests

Test	Statistic	p-value	Effect Size	Interpretation
Gender × Satisfaction (χ^2)	5.19	0.269	V=0.06	No significant association
Education × MMU Choice (χ^2)	7.96	0.005**	V=0.08	Significant; low education → MMU
VHW × Health Change (χ^2)	0.49	0.485	V=0.02	No significant association
District × Satisfaction (χ^2)	477.3	<0.001***	V=0.30	Strong district-level variation
Awareness × Health Change (χ^2)	0.60	0.439	V=0.02	No significant association
Satisfaction by Gender (t)	t=-1.12	0.265	d=-0.06	No gender difference
Satisfaction by District (F)	F=106.6	<0.001***	η^2=0.33	Large district effect

*Note: ***p<0.001, **p<0.01, *p<0.05. V=Cramér's V, d=Cohen's d, η^2=Eta-squared.*

10.2 Correlation Matrix

Table 8.2: Pearson Correlation Matrix of Key Variables

Variable	Satisf.	Age	Female	No Edu.	VHW	Aware	Change
Satisfaction	1.000	-0.017	0.031	0.029	-0.098	-0.132	0.115
Age	-0.017	1.000	-0.029	0.512	-0.029	0.042	0.031
Female	0.031	-0.029	1.000	0.180	0.038	0.065	-0.002
No Education	0.029	0.512	0.180	1.000	0.013	-0.022	-0.026
VHW Interact	-0.098	-0.029	0.038	0.013	1.000	0.161	-0.022
Health Aware	-0.132	0.042	0.065	-0.022	0.161	1.000	0.024
Positive Change	0.115	0.031	-0.002	-0.026	-0.022	0.024	1.000

Note: Bolded values indicate correlations significant at p<0.05. Strongest correlation: Age-No Education (r=0.512).

The bivariate tests reveal several patterns with direct programmatic implications. The non-significant gender-satisfaction association (Chi-square = 5.19, p = 0.269; t = -1.12, Cohen d = -0.06) is a positive equity finding: the MMU delivers comparable service quality to both men and women. The significant education-MMU

choice relationship (Chi-square = 7.96, p = 0.005) indicates that individuals with lower formal education are more likely to rely on the MMU, confirming that the programme successfully reaches the most educationally disadvantaged populations who are hardest to serve through conventional health system channels.

The strongest bivariate finding is the district-satisfaction association (Chi-square = 477.3, p < 0.001, Cramer V = 0.30; ANOVA F = 106.6, eta-squared = 0.33). The large effect size indicates that approximately 33% of satisfaction variance is attributable to district-level differences, pointing to site-specific factors such as staff competence, medicine supply regularity, equipment functionality, and local health infrastructure as key drivers of the beneficiary experience. This finding directly supports the recommendation for context-specific quality improvement plans rather than uniform programmatic interventions.

The correlation matrix reveals several interpretively significant relationships. The strongest correlation (Age and No Formal Education, r = 0.512) reflects India historical educational expansion trajectory and implies that older beneficiaries, who carry the greatest chronic disease burden, are also least likely to access health information through written or digital channels, reinforcing the value of interpersonal health education delivered by MMU staff. The modest negative correlation between Satisfaction and Health Awareness (r = -0.132) is consistent with the health literacy literature (Bleich et al., 2009): as beneficiaries become more health-aware, their expectations for service quality rise, creating a perception gap. This is not a programme weakness but a predictable consequence of successful health education. The positive correlation between Satisfaction and Positive Health Change (r = 0.115) supports the ToC pathway linking service quality perception to behavioural adoption, suggesting that improving satisfaction may yield downstream health outcomes.

Chapter 11: Summary of Findings and Recommendations

11.1 Key Findings

Finding 1: Strong Programme Reach and Equity

The MMU programme has achieved broad demographic coverage, serving 53.2% female and 47.0% male beneficiaries across diverse age groups (mean age 37.7 years). The programme effectively reaches educationally disadvantaged populations (38.3% with no formal education) and economically vulnerable households across seven districts in six states.

Finding 2: MMU as Primary Care Provider

70.3% of beneficiaries identified the Smile Foundation MMU as their first point of care for minor illnesses, demonstrating a fundamental shift in treatment-seeking behaviour. The Chi-square analysis confirmed that this reliance is significantly higher among individuals with no formal education (χ^2=7.96, p=0.005).

Finding 3: Comprehensive Service Delivery

Service utilisation rates are exceptionally high: medicines (98.8%), OPD consultations (96.7%), lifestyle counselling (69.9%), health education (69.6%), IFA supplementation (60.5%), and diagnostics (55.2%). The programme delivers a comprehensive package extending well beyond curative care to include preventive, promotive, and rehabilitative services.

Finding 4: Near-Universal Satisfaction

98.9% of beneficiaries reported satisfaction with MMU services (mean=4.54/5.0). Satisfaction was equitable across genders (p=0.265) but varied significantly by district (F=106.64, p<0.001), indicating the need for context-specific quality improvement.

Finding 5: Dramatic Reduction in Out-of-Pocket Expenditure

The MMU effectively provides near-zero-cost healthcare (₹4.7 per visit), representing a 99.3% reduction compared to private facilities (₹629.5) and 94.5% compared to public facilities (₹85.7). This constitutes a transformative financial protection outcome for vulnerable populations.

Finding 6: Transformative Health Behaviour Impact

87.6% of respondents reported positive health behaviour changes since MMU operations began. The logistic regression analysis confirmed that these changes were broadly distributed across all demographic subgroups (pseudo-R^2=0.006), indicating universal rather than targeted impact.

Finding 7: Robust Qualitative Endorsement

Qualitative evidence from 45 FGDs across seven districts confirms universal satisfaction with MMU services, with 100% of FGD groups identifying the MMU as their primary/co-primary healthcare provider. Key strengths include free medicines, reduced travel costs, and improved health awareness. Persistent gaps include medicine supply constraints (84% of districts), menstrual health restrictions (69%), and demand for specialist doctors (53%). IFA distribution was inconsistent across sites, with full coverage in Jharkhand and Mewat but absent in Bengaluru.

Finding 8: Strong Governance Endorsement

PRI Members provided near-universal endorsement of the MMU programme: 100% rated Panchayat-MMU coordination as excellent, 89% confirmed significantly improved community trust in healthcare, 94% reported significant reductions in private healthcare spending, and 94% confirmed improved women access. The mean performance rating was 4.06/5.0, with 50% rating the MMU as Excellent and 39% as Good.

Finding 9: Operational Gaps Requiring Attention

Critical operational gaps include: emergency preparedness (95.2% lack resources), equipment availability (ECG machines at 47.6%, height tools at 38.1%), medicine stockouts (29.6%), vehicle maintenance issues (33.3%), and staffing adequacy concerns (23.8%).

11.2 Recommendations

Recommendation 1: Strengthen Emergency Preparedness [High Priority]

Given that 95.2% of MMUs lack emergency handling resources, immediate investment is needed in basic emergency kits, staff training in Basic Life Support (BLS), and clear emergency referral protocols. A standardised emergency response protocol should be developed and implemented across all MMUs.

Recommendation 2: Address Equipment Gaps [High Priority]

Priority procurement should focus on ECG machines (current: 47.6% availability) and height measuring tools (38.1%). A quarterly equipment audit and maintenance schedule should be institutionalised, with a centralised tracking system for equipment functionality.

Recommendation 3: Strengthen Supply Chain Resilience [Medium Priority]

The 29.6% stockout rate requires a redesigned inventory management system with automated reorder triggers, safety stock calculations, and real-time consumption tracking. Explore partnerships with pharmaceutical distributors for expedited emergency supplies.

Recommendation 4: Context-Specific Quality Improvement [Medium Priority]

Given the significant inter-district variation in satisfaction ($F=106.64$, $p<0.001$, $\eta^2=0.33$), district-level quality improvement plans should be developed based on local needs assessments. Low-performing districts should receive targeted technical assistance and resource allocation.

Recommendation 5: Expand Diagnostic and Specialist Services [Medium Priority]

Diagnostic service utilisation (55.2%) and specialist consultations (29.6%) have room for growth. Consider telemedicine integration for specialist consultations, expanded point-of-care testing capabilities, and mobile laboratory partnerships.

Recommendation 6: Strengthen VHW Network and IEC [Low Priority]

While 69.7% of beneficiaries had VHW interaction, 30.3% reported no contact. Expanding VHW coverage and training, coupled with enhanced IEC materials in local languages, will amplify the programme's preventive and promotive health impact.

Recommendation 8: Strengthen PRI Integration and Specialist Services [Medium Priority]

PRI members identified inclusion of specialist doctors (63%), increased visit frequency (53%), and expanded medical services (53%) as top priorities. Strengthen the existing Panchayat-MMU coordination model by formalising joint planning meetings, creating district-level advisory committees with PRI representation, and piloting specialist telemedicine consultations to address the demand for specialised care without increasing the mobile unit footprint.

Recommendation 9: Institutionalise Data-Driven Decision Making [Low Priority]

Establish a real-time MIS dashboard linking service delivery data, supply chain metrics, patient satisfaction feedback, and health outcomes. This will enable evidence-based programme management, facilitate accountability, and support adaptive implementation.

11.3 Conclusion

The Smile Foundation's Smile on Wheels MMU programme represents a highly effective, equitable, and financially protective model of primary healthcare delivery for underserved populations. With 98.9% beneficiary satisfaction, 70.3% reliance as primary care provider, 99.3% reduction in out-of-pocket expenditure compared to private facilities, and 87.6% positive health behaviour change, and near-universal PRI endorsement (100% coordination, 94% financial impact), the programme demonstrates strong alignment with SDG 3 targets and India's Universal Health Coverage goals. Addressing the identified operational gaps-particularly in emergency preparedness, equipment availability, and supply chain resilience-will further strengthen the programme's impact and scalability.

Annexure A: Quantitative Tools

Annexure A.1: Quantitative Tools-Beneficiary

Impact Assessmnet Study for Smile Foundation Mobile Medical Unit Project

Respondent Profile – Patient/Beneficiary

Consent:

Namaste! My name is _____. I am working with Sahamanthran, an organization focused on community development and research.We are conducting this study on behalf of The Smile Foundation to evaluate the impact of health interventions provided by Mobile Medical Units (MMUs) in your area. Your participation is voluntary, and your responses will be kept confidential. This study does not collect personal information.
The survey will take approximately 30 minutes. Please provide your consent before we proceed.

I give my consent to participate in this interview.

Survey Sections

Section A	General Information
Section B	Household Demographic /Socio economic profiling
Section C	Health-seeking behaviour of beneficiary/patient
Section D	Map and track a patient's treatment journey
Section E	MMU Effectiveness
Section F	Financial Aspects and resource utilization

Section A| GENERAL INFORMATION		
A1	NAME OF THE STATE	
A2	NAME OF THE DISTRICT	
A3	BLOCK	
A4	Village	
A5	MMU Number/CODE	
A6	NAME OF THE INVESTIGATOR	

SECTION B: DEMOGRAPHIC/ SOCIO-ECONOMIC PROFILING		
Q.NO	**Demographics**	**Option**
B1.	Age of the Respondent(in years)	
B2.	Gender	a. Male b. Female
B3.	Educational Qualification	a. No formal education b. Primary (upto class 5) c. Upper Primary (upto class 8) d. Secondary e. Senior secondary f. Graduate g. PG or Higher
B4.	Marital Status	a. Single/Never Married b. Married c. Divorced d. Separated e. Widowed
B5.	How many Members are there in your Family?	
B6.	What is the main source of income for your family?	a. Agriculture farming (own farm) b. Agricultural Labour c. Job (salaried) d. Shop/Informal/small business e. Others _____
B7.	How many earning Members are there in Your family?	

Section C: Health-seeking behaviour		
C1.	Are you aware of the common illnesses or health issues that people often face (e.g., high blood pressure, diabetes, respiratory infections, or malnutrition)?	a. Yes b. No c. Somewhat

C2.	When were you last diagnosed with a health issue or illness by a health center/MMU (e.g., infection, chronic disease, injury, fatigue, weight loss, high blood pressure, or mental health concerns)?	a. 0-3 months b. 3-6 months c. 6-9 months d. 9-12 months e. > 12 Months _____
C3.	How was this illness or health issue identified?	a. Routine check-up at PHC or local doctor. b. After noticing symptoms and seeking advice at nearby health center. c. During an MMU visit. d. Other (please specify): _____
C4.	According to you, what are the common factors that can lead to health problems or illnesses? (multiple responses allowed).	a. Lack of exercise. b. Unhealthy eating habits. c. Tobacco or second-hand smoke. d. Alcohol use. e. High stress or mental health issues. f. Poor personal hygiene (e.g., irregular handwashing, infrequent bathing). g. Poor environmental hygiene (e.g., open garbage, dirty water sources). h. Poor menstrual hygiene (e.g., lack of sanitary pads or proper disposal). i. Being overweight. j. High blood pressure or cholesterol. k. Family history of illness. l. Other (please specify): _____
C5.	Are you aware of the consequences of not addressing health problems or illnesses early? (multiple responses allowed)	a. Development of chronic diseases (e.g., diabetes, heart disease, hypertension) b. Complications requiring advanced medical treatments c. Reduced ability to perform daily activities d. Higher medical expenses e. Other (please specify): _____
C6.	Where do you usually seek information on general health and wellness? (multiple responses allowed)	**a**. Healthcare professionals (e.g., doctors, nurses) b. Community health programs or events c. Internet or social media d. Family and friends e. Village Health workers / SPOs f. Health camps g. MMU visits h. Other (please specify): _____

SECTION D: MAP AND TRACK A PATIENT'S TREATMENT JOURNEY		
Q. No	**Question**	**Options**
D1	Where do you go for treatment of Minor illness (like cold, cough, fever, that is perceived by patient not very serious,	a. AAM-HWC b. CHC/DH c. PVT. Hospital/Clinic

	easily treated by self) in the last 1 year?	d. Bengali Doctor/Quack e. Mobile Medical Unit) MMU (of Smile Foundation) **f.** Others, If any
D2	Where do you go for treatment of Severe illness (Illness like trauma, injury, prolonged fever, prolonged skin infection that is perceived as serious by patient) in last 1 year?	a. GWC/HWC b. CHC/DH c. PVT. Hospital/Clinic d. Bengali Doctor/Quack e. Mobile Medical Unit)MMU(of Smile Foundation f. Others, If any
D3	Is there a government wellness center (GWC) available near your village?	a. **Yes** b. **No**
D4	Do you visit GWC ?	a. **Yes** b. **No**
D5	If No then what is the reason?	
D6	Are you currently suffering from any of the following health conditions? (You can choose more than one option)	a) Diabetes b) Hypertension (High Blood Pressure) c) Heart Disease d) Arthritis or Joint Pain e) Respiratory Issues (e.g., Asthma, COPD) f) Gastrointestinal Issues (e.g., Acidity, Ulcers) g) Vision Problems (e.g., Cataracts, Glaucoma) h) Hearing Impairment i) Skin Conditions (e.g., Eczema, Dermatitis) j) Mental Health Issues (e.g., Depression, Anxiety) k) Other (specify): _____ l) None
D7	If yes, what impact has the wellness center had on healthcare in your village? (You	a) Improved access to healthcare services b) Better management of chronic diseases c) Increased awareness about preventive care

	can choose more than one option)	d) Availability of free or low-cost medicines e) Reduced need to travel far for treatment f) No noticeable impact g) Other (specify): _____
D8	Has anyone ever shown you IEC material (Information, Education, and Communication material.) about common diseases and healthy lifestyle choices?	a. Yes **b.** No **c.** Don't Remember
D9	If yes, who provided If yes, who provided it?	**a.** ASHA **b.** SPOs/ Village health workers **c.** AWW d. MMU e. GWCs

Section E| MMU service Effectiveness		
Q. No	**Question**	**Options**
E1.	How did you know about the Mobile Medical Unit's services?	a. Word of mouth b. Flyers/posters c. Social media d. Community Health workers e. Panchayati Raj Institution members f. Other (please specify)
E2.	What is the frequency of Mobile medical units (MMU) visiting the locality/ Campsite	a. Weekly b. Every 12 days c. Once in a Month d. Others_____
E3.	How often do you visit the MMU?	a. Once in a 12 days b. twice a month c. Every 2-3 months

		d. Twice a year e. Yearly f. Rarely
E4.	Do you know about the health services that are available in the MMU you visited ?	a) Yes **b)** No
E5.	Who provided treatment to you in the MMU you last visited? (Multiple responses)	a. Doctor b. SPO c. VHWs d. Lab Tech e. Pharmacist f. Others
E6.	What type of services did you receive from the MMU? (Multiple Responses)	a. Direct consultation/ OPD Y/N **b.** Drugs (Y/N) c. Diagnostics Y/N d. Referral (Y/N) e. Emergency Services Y/N f. Diabetes Counselling Y/N g. Diabetes screening ….. Y/N h. Diabetes medicine… Y/N i. Lifestyle counselling..Y/N j. Specialist doctor consultations (e.g., cardiologists, pediatricians, or gynecologists) …Y/N k. Health education sessions l. Vaccination/Immunization Y/N m. Iron & Folic Acid… Y/N
E7.	How much total time did it take for completing the treatment cycle (like registration, consultation, drug dispensing etc) at the MMU (in minutes)?	a. Less than 10 min a. 10-15 min b. 15-30 min
E8.	How much time does it take for you to come from your home to the MMU Campsite?	a. <15 min b. 16-30 min c. 31-60 min d. 61-120 mins

		e. >120 Mins
E9	Have you been advised and undergone any tests at the MMU?	a) Yes, I was advised and underwent the tests. b) No, I have not been advised any tests
E10	Which of the following tests have you undergone at the MMU? (You can choose more than one option)	a) **Glucose Test**: To check blood sugar levels. b) **Hemoglobin Test**: To check for anemia (low blood count). c) **Albumin Test**: To check protein levels in the blood. d) **Uric Acid Test**: To detect gout or kidney issues. e) **Liver Function Test (SGOT/SGPT)**: To check liver health. f) **Cholesterol Test**: To check fat levels in the blood. g) **Bilirubin Test (Total/Direct)**: To detect jaundice or liver problems. h) **Typhoid Test**: To check for typhoid infection. i) **Lipid Profile (SDL/HDL)**: To assess heart health by checking good and bad fats. j) **Dengue Test**: To check for dengue fever. k) **Triglyceride Test**: To measure fats in the blood. l) **Total Protein Test**: To evaluate overall protein levels. m) **CRP Test (C-Reactive Protein)**: To detect inflammation in the body. n) **RA Factor Test**: To check for arthritis-related issues. o) **Widal Test**: To confirm typhoid fever. p) **Urea Test**: To check kidney function. q) **Creatinine Test**: To assess kidney health. r) **Globulin Test**: To evaluate proteins that help fight infections. s) **HbAsg Test**: To screen for hepatitis. t) **Other (specify): _____**
E11	Have you been diagnosed with anemia or advised to get checked for it by the MMU?	a) Yes, diagnosed with anemia b) Yes, advised to get tested for anemia c) No, not diagnosed or advised

E12	**Did the treatment or advice provided by the MMU help improve your condition?**	a) Yes, significantly b) Yes, to some extent c) No improvement
E13	If yes, which of the following services did you receive for anemia at the MMU? (You can choose more than one option):	a) Hemoglobin test b) Iron or folic acid medicines c) Dietary counseling for improving anemia d) Referral to another healthcare facility e) Other (specify): _____
E14	Have you participated in any eye care campaigns conducted by the MMU?	a. Yes b. No
E15	If yes, which of the following services did you receive? (You can choose more than one option):	a) Eye tests and check-ups b) Free spectacles distribution c) Referral for surgery at Smile Hospital d) Medicines for eye care and cure e) Other (specify): _____
E16	Has the Village Health Worker (VHW) , appointed by MMU, interacted with you?	a) Yes, regularly (weekly or more) b) Yes, occasionally (once a month) c) Yes, rarely (once every few months) d) No, never
E17	If yes, Have the VHWs helped you better understand and use MMU services?	a) Yes b) No
E18	If yes, What kind of support do you receive from the VHW?	a) Health advice and education b) Help in accessing MMU services c) Assistance with referrals to other healthcare facilities d) Distribution of medicines or health supplies e) None

E19	Have you observed any positive changes in the health practices of yourself or your family since the Mobile Medical Unit began operating	a. Yes b. No
E20	If yes, what positive changes have you noticed?	a. Improved handwashing and hygiene practices. b. Better awareness of healthy eating and nutrition. c. Increased participation in vaccination drives. d. Regular health check-ups and follow-ups. e. Reduced use of tobacco or alcohol. f. Better menstrual hygiene practices. g. Improved knowledge of managing chronic illnesses (e.g., diabetes, hypertension). h. Increased use of clean drinking water and toilets. i. Other (please specify): _____
E21	If no, what do you think are the reasons for not noticing any changes?	a. Limited interaction with the Mobile Medical Unit. b. Lack of awareness about the services provided. c. Irregular visits or accessibility issues. d. Insufficient follow-up or engagement. e. No health issues requiring the use of MMU services. f. Other (please specify): _____
E22	What medicines do you usually need to buy from outside?	a. Fever medicines b. Cough and cold medicines c. Skin disease medicines d. Pain relief medicines (e.g., for headaches, body aches) e. Antibiotics(Medicines for infections) f. Medicines for diabetes g. Medicines for high blood pressure h. Vitamins or nutritional supplements i. Other (please specify): _____
	Please state your level of satisfaction with the care process	
Ei	Registration process	Very satisfied Satisfied Neutral Dissatisfied Very Dissatisfied

Eii	Direct/ OPD consultation process	Very satisfied Satisfied Neutral Dissatisfied Very Dissatisfied
E(iii)	Investigation service availability (Lab Test)	Very satisfied Satisfied Neutral Dissatisfied Very Dissatisfied Not availed
E(iv)	Follow-up for Drug and Testing	Very satisfied Satisfied Neutral Dissatisfied Very Dissatisfied
E(v)	Receipt of complete medicines as per the prescription	Very satisfied Satisfied Neutral Dissatisfied Very Dissatisfied
E(vi)	How satisfied are you with the overall quality of service received in the Mobile Medical Clinic?	Very satisfied Satisfied Neutral Dissatisfied Very Dissatisfied

E(vii)	If satisfied, what are the reasons? (Multiple Responses)	a. Basic Healthcare services are available in the MMU b. Well-managed crowd c. Ambience of hospital d. Access (Near community/ Distance from home) e. Clean and hygienic amenities f. Timeliness of service g. Caring and supportive MMU staff h. Time available with doctors for consultation and discussion on patient care i. Well qualified, good doctors, even though they are not highly reputed doctors of the region. j. Timely availability of diagnostics, therapy, medicines k. Complete availability of medicine **l.** Adequate privacy during consultation m. Treatment with dignity and respect n. Appropriate Referral Services o. If any other reason, please specify……
E(viii)	If Unsatisfied, what are the reasons? (Multiple Responses)	a. Inadequate healthcare services. b. Overcrowding issues. c. Uncomfortable MMU environment. d. Difficulty accessing the MMU. e. Unclean or unhygienic conditions. f. Delays or long waiting times. g. Unhelpful or unfriendly staff. h. Insufficient consultation time. i. Medicines or tests unavailable. j. Lack of privacy during consultations. k. Poor referral services. l. Other (please specify): _____
E(ix)	In case of any referral, where does the MMU referred you to?	a. CHC b. DH c. Private Facility d. Any Other

E(x)	Did you go for the check-up after the referral?	a) Yes b) No
E(xi)	If NO, why you didn't go where you were referred, what was the reason?	a) Could not arrange transportation b) Financial constraints c) Lack of time d) Facility too far e) Did not feel the need f) Other (specify): _____

SECTION F | FINANCIAL ASPECTS OF CARE (TRAVEL, MEDICINE, TEST, CONSULTATION ETC.)

F1.	How much did you spend on the following To avail service in Public/ private or MMU?		**Public health facility**	**Private health facility**	**MMU**
		Travel from home to the health facility			
		on doctor's consultation fees			
		buying the drugs prescribed			
		Diagnostics tests			
		Additional procedure			
		Other Costs if any			
F2.	If yes, what were the other costs	a. Food for family b. Tip to the hospital staff c. Others, pl specify			
F3.	For each day of visit to any health center or MMU how much is the wage lost per day?				In Rupees
F4.	In the past year, have you spent money out of pocket for a major illness? YES NO If yes, how much did you spend, and how did you cover the expenses?	a. Personal savings. b. Borrowed money from family or friends. c. Took a loan. d. Sold assets or property. e. Used health insurance. f. Received support from government schemes. g. Assistance from NGOs or charitable organizations. h. Other (please specify): _____			In Rupees

F5.	Thank you for answering all the questions. Is there anything you would like to mention which in your opinion will improve the healthcare services?.....

THANK YOU!

Annexure A.2: Quantitative Tools-MMU Staff

Impact Assessmnet Stdy for Mobile Medical Unit Project,

Respondent Profile- Healthcare Workers/ MMU STAFF

Consent:

Namaste! My name is _____. I am working with Sahamanthran, an organization focused on community development and research.We are conducting this study on behalf of The SMILE Foundation to evaluate the impact of health interventions provided by Mobile Medical Units (MMUs) in your area. Your participation is voluntary, and your responses will be kept confidential. This study does not collect personal information.
The survey will take approximately 30 minutes. Please provide your consent before we proceed.

I give my consent to participate in this interview

Survey Sections

Section A	General Information **Focus:** Collecting basic details about the location, MMU identification, and investigator
Section B	MMU Assessment **Focus:** Evaluating services, staffing, supply chain, waste management, logistics, and quality of care
Section C	Operational Challenges and Service Enhancements **Focus:** Assessing emergency response capacity, community involvement, work environment, operational challenges, and suggested improvements

Section A| GENERAL INFORMATION		
A1	NAME OF THE STATE	
A2	NAME OF THE DISTRICT	
A3	BLOCK	
A4	Village	
A5	MMU Number/CODE	
A6	NO. OF VILLAGES CATERED BY THIS MMU	
A7	NAME OF THE INVESTIGATOR	
A8	Date of Visit	☐☐ ☐☐ ☐☐

A9	NAME OF IN-CHARGE MO/OTHERS……	_____ DESIGNATION

Section B| MMU ASSESSMENT		
B1. Gamut of services		Available (Yes/No)
	Primary health services	(Yes/No)
	Reproductive & Child Health Services	(Yes/No)
	Adolescent health services	(Yes/No)
	NCD services	(Yes/No)
	Nutritional Services	(Yes/No)
	For diagnostic services, please provide list (Check for Blood Sugar Test)	(Yes/No)
	IEC / BCC activities	(Yes/No)
	Others (please specify below	(Yes/No)
B2	**STAFFING PATTERN**	Response
B2.2	Who all constitutes the staff in this MMU? (Multiple Response)	a. Medical Officers b. SN/ANMs c. Lab Technician d. Pharmacist e. Ophthalmic Assist f. MMU Driver g. Others, please specify
B2.3	How Frequently one site is visited	a. Weekly b. Fortnightly c. Monthly d. Bimonthly e. Quarterly
B2.4	Is Logbook for planning visits, maintained for each MMU If yes kindly take a snapshot of the same	a. Yes b. No
B3	**DRUGS DIAGNOSTICS AND SUPPLY**	**Response**
B3.1	Are the Drugs as listed by the Operational Guidelines of "MMU", available	a. Yes b. No
B.3.2	From where does the MMU get the requisite drugs and supplies resourced/refilled?	a. Nearest PHC b. CHC c. DH d. Others,
B3.3	Are stockouts of medicines or supplies common?	a. Yes b. No
B3.4	How frequently do stockouts occur?	Weekly / Monthly / Occasionally / Rarely
B3.5	Are alternative medicines or supplies provided during stockouts?	a. yes b. No
B3.6	How often are inventories updated and reviewed?	Daily / Weekly / Monthly Specify_____
B4 SUPPLY CHAIN		

B4.1	Who is responsible for managing the supply chain for the MMU?	(Specify role)_____
B4.2	Are supply requests processed promptly?	a. yes b. No
B4.3	What is the average time taken to fulfill a supply request?	Less than a week / 1–2 weeks / More than 2 weeks
B4.4	Are emergency requests for medicines and supplies addressed promptly?	a. yes b. No
B4.5	Is there a computerized inventory management system in place?	a. yes b. No
B4.6	Are stock reports shared regularly with higher authorities?	a. yes b. No
B4.7	What challenges do you face in maintaining a consistent supply of medicines and consumables?	a) Delayed procurement or restocking. b) Supply chain disruptions. c) Frequent stockouts at the source. d) Inadequate inventory management. e) Lack of transportation or logistics support. f) Limited budget for replenishments. g) High demand exceeding supply capacity
B5 TRANSPORT & LOGISTICS		
B5.1	Is the transportation of medicines and supplies to the MMU timely and reliable?	a. yes b. No
B5.2	Are there any delays in reaching service locations due to logistics issues?	a. yes b. No
B5.3	What challenges are faced during transportation of supplies to remote areas?	Specify details..
B5.4	Is there a backup plan for transportation in case of vehicle breakdowns?	a. yes b. No
B5.5	Are fuel and maintenance costs for MMU logistics adequately covered?	a. yes b. No
B6 WASTE MANAGEMNET		
B6.1	Are biomedical waste disposal guidelines followed?	a. yes b. No
B6.2	Are waste segregation bins available on the MMU?	a. yes b. No
B6.3	Is there a designated area for temporary waste storage?	a. yes Specify… b. No
B6.4	How often is biomedical waste collected from the MMU?	Daily / Weekly / Monthly specify
B6.5	Are there any challenges in coordinating waste disposal?	a. yes b. No
B6.6	IF Yes, please specify	a) No designated collection points. b) Irregular collection schedules. c) Inadequate segregation bins. d) Limited disposal services.

		e) Transport issues. f) Lack of training. g) Regulatory compliance. h) Others (specify)

B7	INSTRUMENTS, TOOLS AND EQUIPMENTs		
	Item	**Availability**	**Functional**
a.	Stethoscope	(Yes/No)	(Yes/ No/ Not applicable)
b.	Glucometer	(Yes/No)	(Yes/ No/ Not applicable)
c.	Weighing Scales	(Yes/No)	(Yes/ No/ Not applicable)
d.	Height Measuring Tool	(Yes/No)	(Yes/ No/ Not applicable)
e.	Lancets and Test Strips	(Yes/No)	(Yes/ No/ Not applicable)
f.	IEC on Diabetes Management	(Yes/No)	(Yes/ No/ Not applicable)
g.	BP Apparatus (Sphygmomanometer/ Digital BP Machine)	(Yes/No)	(Yes/ No/ Not applicable)
h.	Ophthalmoscope for eye examinations related to diabetes	(Yes/No)	(Yes/ No/ Not applicable)
i.	Haemoglobin meter (Manual & digital)	(Yes/No)	(Yes/ No/ Not applicable)
j.	12 LED ECG Machine	(Yes/No)	(Yes/ No/ Not applicable)
k.	Waste Collecting bins, as per Biomedical Waste Management specifications	(Yes/No)	(Yes/ No/ Not applicable)

B8	QUALITY OF CARE	
B8.1	Is there a Standardized patient Registration Process?	a) Yes b) No
B8.2	Does the MMU record the personal Details, Medical History and Current Medications?	a. Yes b. No
B8.3	What is the Mechanism of Referral?	a) Directing patients to appropriate healthcare providers or facilities. b) Formal communication for continuity of care. c) Patient-led decision to seek care elsewhere. d) Systematic assessment, communication, and transfer e) Others (spcify)……
B8.4	Do you follow up with patients referred to other facilities? If yes, how?	a. Yes, if yes How? b. No
B8.5	Is there any Grievance Redressal Mechanism established?	a. Yes b. No
B8.6	Is the Grievance Redressal Mechanism displayed in the MMU for the beneficiary to register their complaints, if any?	a. Yes b. No

SECTION C|OPERATIONAL CHALLENGES AND SERVICE ENHANCEMENTS

C1	EMERGENCY PREPAREDNESS	
C1.1	Does the MMU have the necessary resources to handle emergencies? E.g Heart attack or chest pain. Acute allergic reactions (anaphylaxis) Road traffic accidents with injuries Suspected outbreaks of diseases (e.g., cholera, dengue) Suicidal ideation or attempts Snake or animal bites etc	a. Yes b. No
C1.2	Can you share an instance where the MMU responded to an emergency, and what challenges were faced?	Specify..

C2	COMMUNITY ENGAGEMENT	
C2.1	Do community members provide feedback about the MMU services?	a. Yes b. No
C2.2	If yes, how is this feedback recorded?	a) Through verbal discussions with staff. b) Using feedback forms or surveys. c) Via community meetings or forums. d) Documented in a feedback register. e) Not formally recorded.
C2.3 (Common Complaints)	What are the most common complaints or issues raised by patients regarding MMU services? How do you address these complaints?	a) Long waiting times b) Unavailable medicines or supplies c) Limited consultation time d) Lack of privacy e) Irregular visit schedules f) Poor communication about visits g) Language or cultural barriers h) Inadequate follow-up for referrals i) Limited diagnostic facilities j) Others (please specify):
C2.4 (Cultural Sensitivity)	Are there cultural or language barriers when dealing with patients?	a. Yes b. No
C2.5 (Cultural Sensitivity)	What steps do you take to ensure services are delivered respectfully and appropriately?	a) Practice active listening and empathy. b) Respect cultural and individual preferences. c) Ensure clear and respectful communication. d) Maintain patient confidentiality and dignity. e) Provide personalized and need-based services

C2.6	Do patients appear satisfied with the services provided by the MMU?	a. Yes b. No
C2.7	Have you received any direct appreciation or criticism from patients?	a. Yes, if yes please specify b. No
C3	**WORK ENVIRONMENT**	
C3.1	Do you feel that the working environment on the MMU is safe and comfortable?	a. Yes b. No
C3.2	Are there any improvements you would suggest for staff working conditions?	a) Better transportation and field support. b) Provision of regular training and skill updates. c) Improved access to safety and protective gear. d) Enhanced facilities for rest and meals during shifts. e) Increased staffing to reduce workload. f) Timely salary and incentive payments. g) Opportunities for career growth and recognition h) Others (please specify)……..
C3.3	Have you received adequate training for your role on the MMU? What additional training or skill development programs would you find beneficial?	a. Yes b. No
C3.4	Do you feel the MMU is adequately staffed to handle patient loads?	a. Yes b. No
C3.5	What challenges do you face when a staff member is absent or unavailable?	a) Increased workload for other team members. b) Disruption in service delivery. c) Delays in patient care and follow-ups. d) Difficulty in managing schedules and tasks. e) Reduced team efficiency and morale. f) Other (Please Specify)_____
C4	**CHALLENGES & RECOMMENDATIONS**	
C4.1	What are the biggest operational challenges you face while delivering services?	a) Delayed arrival due to logistical issues b) Shortage of medicines or supplies c) Vehicle breakdowns or maintenance issues d) Staffing shortages or absenteeism e) Limited time for patient consultations f) Difficult terrain or weather conditions g) Poor coordination with local authorities h) Communication barriers with the community i) Others (please specify): _____

C4.2	How do you address these challenges during field visits?	a) Prioritize tasks and allocate resources efficiently. b) Use alternative transportation or local support. c) Engage community leaders for communication support. d) Ensure contingency planning and flexibility. e) Work collaboratively with the team to manage workload. f) Other (please specify)_____
C4.3	What improvements would you suggest for the MMU in terms of logistics, equipment, or staff support?	a) Reliable vehicle maintenance b) Timely restocking of supplies c) Better diagnostic equipment d) More healthcare staff e) Improved staff training f) Efficient visit scheduling g) Stronger local collaboration h) Others (please specify): _____
C4.4	In your opinion, how has the MMU impacted the health outcomes in the communities it serves?	a) Improved access to healthcare in remote areas. b) Increased awareness of health and hygiene. c) Reduced disease burden through early interventions. d) Enhanced trust in healthcare services. e) Other (specify)
C4.5	What could be done to enhance this impact?	a) Expand coverage and frequency of visits. b) Improve availability of medicines and diagnostics. c) Strengthen follow-up and referral systems. d) Conduct community engagement and education programs e) Other (specify)

THANK YOU!

Annexure A.3: Quantitative Tools-PRI Members

Impact Assessmnet Study of Mobile Medical Unit Project

Respondent Profile- Gram Pradhan (Panchayat Representative Members)

Consent:

Namaste! My name is _____. I am working with Sahamanthran, an organization focused on community development and research. We are conducting this study on behalf of The Smile Foundation to evaluate the impact of health interventions provided by Mobile Medical Units (MMUs) in your area. Your participation is voluntary, and your responses will be kept confidential. This study does not collect personal information.
The survey will take approximately 30 minutes. Please provide your consent before we proceed.

I give my consent to participate in this interview.

Survey section

This survey has Six short sections.

Section A	**General Information**
Section B	**Challenges and Barriers**
Section C	**Observed Impacts of MMUs**
Section D	**Impact on Out-of-Pocket Expenditure**
Section F	**Feedback on MMU Program: Strengths, Suggestions, and Performance Evaluation**

SECTION A: General Information		
A1.	Name of the State	
A2.	Name of the District	
A3.	Village	
A4.	Block	
A5.	Name of the investigator	
A6.	Date of investigation	
A7.	Total Population of the Village	
A8.	Predominant Occupation of the Villagers	*(Select all that apply)* a) Agriculture b) Daily Wage Labor c) Small Businesses d) Service Sector e) Other (please specify): _____
A9.	Main Health Facility Accessible to the Village	a. Government Health Center b. Private Clinic/Hospital c. MMU (Mobile Medical Unit) d. Traditional Healer e. Other (please specify): _____
A10.	Distance to the Nearest Health Facility (in kilometers)	

Section B: Challenges and Barriers		
B1.	Are there cultural or social factors that prevent people from using MMU	a) No, there are no cultural or social barriers; people trust the MMU.

	services (e.g., stigma, lack of trust)?	b) No, the MMU services are well-accepted by the community. c) No, people actively use and rely on the MMU services. d) Yes, stigma around seeking medical help prevents some people. e) Yes, there is a lack of trust in the MMU services. f) Yes, traditional beliefs or reliance on home remedies affect usage. g) Yes, gender norms or restrictions prevent certain groups from accessing services. h) Don't know. i) Other (please specify): _____
B2.	How well do you think the MMU team and the Panchayat work together?	a) Very well; the MMU team and Panchayat coordinate effectively. b) Well; there is good collaboration with minor challenges. c) Average; the collaboration is somewhat effective but needs improvement. d) Poor; there are significant challenges in working together. e) Very poor; there is minimal or no collaboration. f) Don't know. g) Other (please specify): _____
B3.	Have you faced any issues with communication or coordination with the MMU team? How can this be improved?	a) No issues; communication and coordination are excellent. b) Minor issues, but they are usually resolved quickly. c) Occasional issues with communication, such as unclear schedules or instructions. d) Suggestions for improvement (please specify): _____ e) Don't know
B4.	Are there any challenges in accessing the MMU location when it visits the village? Probe- ○ Is the MMU location far for some villagers? ○ Are there transportation issues? ○ Are the visit timings convenient? ○ Are there any physical barriers like bad roads? Do villagers know where the MMU is stationed?	*(Select all that apply)* a) The MMU location is easily accessible for all villagers. b) The MMU location is far for some villagers. c) There are transportation issues for reaching the MMU. d) The visit timings are convenient for most villagers. e) The visit timings are inconvenient for some groups (e.g.,wage workers, elderly). f) Physical barriers like bad roads make access difficult. g) Villagers are well-informed about where the MMU is stationed. h) Villagers are unaware of the MMU's exact location. Other (please specify): _____

Section C: Observed Impacts of MMUs		
C1.	Do you think the MMU has improved trust in healthcare services among the community	a) Yes, significantly improved b) Yes, somewhat improved c) No change d) No, it has decreased trust e) Not sure
C2.	If yes, How has the health-seeking behavior of your community changed since the MMU started?	*(Select all that apply)* a) More people use MMU services. b) People go for check-ups more often. c) Fewer people rely on home remedies. d) More awareness about staying healthy. e) More people take prescribed medicines/vaccines. f) Trust in healthcare has improved. g) People seek help earlier for health problems. h) No change observed. i) Other (please specify): _____
C3.	Has the MMU improved access to healthcare for women in remote or underserved areas of the village? Probes: -Are women from these areas visiting the MMU regularly? -Are there barriers still present?	a) Yes, the MMU has significantly improved access, and women visit regularly. b) Yes, access has improved, but some women still face challenges. (Please specify……) c) No, access has not improved significantly, and barriers remain. d) Don't know. *e)* Other (please specify): _____
C4.	Have you noticed any improvements in common health problems (e.g, flu, malaria, dengue etc (seasonal diseases) because of the MMU?	*(Select all that apply)* a) Better management of seasonal diseases (e.g., flu, dengue, diarrhea). b) Increased access to vaccinations and preventive healthcare. c) Enhanced awareness and adoption of health and hygiene practices. d) Timely diagnosis and treatment of illnesses. e) Reduced severity and frequency of disease outbreaks.

		f) Improved availability of medicines and medical supplies. g) Better follow-up and continuity of care for chronic conditions. h) No noticeable improvements. i) Other (please specify): _____

Sectiuon D: Impact on Out-of-Pocket Expenditure		
D1	How has the MMU impacted the health-related expenses of families in your area? Probe- ○ Has the MMU reduced the need for private healthcare? ○ Are free services helping reduce expenses/ Are families spending less on medicines and treatments? ○ Has transportation cost for healthcare decreased?	a) Yes, spending on private healthcare has decreased significantly. b) Yes, spending has decreased slightly. c) No change in expenses. d) Don't know.

SECTION E: Feedback on MMU Program: Strengths, Suggestions, and Performance Evaluation		
E1.	How would you rate the MMU's performance in your Panchayat on a scale of 1-5 (1 = very poor, 5 = excellent)?	a) 1 - Very Poor b) 2 - Poor c) 3 – Average d) 4 – Good e) 5 - Excellent
E2.	What changes would you suggest to make the MMU services more effective and beneficial?	*(Select all that apply)* a) Increase the frequency of MMU visits. b) Expand the range of medical services offered. c) Provide more diagnostic tests and equipment. d) Include specialist doctors in the MMU team. e) Improve communication about MMU schedules and services. f) Ensure timely availability of medicines and supplies.

		g) Address accessibility issues for remote areas. h) Conduct more health education and awareness sessions. i) Extend the MMU's operating hours. Other (please specify): _____

Annexure B: FGD Tools

Annexure B.1: FGD Tools-Pregnant & Lactating Women

Respondent Profile: Pregnant Women/Lactating Mothers

Consent

Namaste! My name is _____. I am working with Sahamanthran, an organization focused on community development and research. We are conducting this study on behalf of Smile Foundation to evaluate the impact of health interventions provided by Mobile Medical Units (MMUs) in your area.

Your participation in this study is voluntary, and no personal information will be collected. Your responses will remain confidential. This discussion will take approximately 30 minutes. Please provide your consent before we proceed.

I give my consent to participate in this interview.

Survey section

This survey has Six short sections.

Section A	**GENERAL INFORMATION**
Section B	**HEALTH Services adequacy IN THE COMMUNITY**
Section C	**PREGNANCY CARE/LACTATION Service adequacy**
Section D	**Post DELIVERY service adequacy**
Section E	**Newborn and INFANT (0-12 months of age) care Service adequacy**
Section F	**OBSERVED MMU IMPACT AND FEEDBACK & SUGGESTIONS**

SECTION A: General Information		
A11.	Name of the State	
A12.	Name of the District	
A13.	Village	

A14.	Block & District	
A15.	Name of the investigator	
A16.	Date of investigation	
A17.	**Date of FGD**	
A18.	**Total no. of participants**	

SECTION B: HEALTH FACILITIES IN THE COMMUNITY		
B1.	Age of the respondent:	a. Under 18 years b. 18–24 years c. 25–30 years d. Above 30 years
B2.	Education level:	a. No formal education b. Primary school c. Secondary school d. Higher secondary or above
B3.	Occupation:	a. Homemaker b. Daily wage laborer c. Self-employed d. Salaried job e. Other (please specify): _____
B4.	Family structure:	a. Nuclear family b. Joint family
B5.	Number of children you have:	a. 1 b. 2 c. 3 or more
B6.	How many Members are there in your Family?	
B7.	How many earning Members are there in Your family?	
B8.	What is the main source of income for your family?	f. Agriculture farming (own farm) g. Agricultural Labour h. Job (salaried) i. Shop/Informal/small business

		j. Unemployed k. Others _____
B9.	What types of health facilities are available near your village?	a) Government health center /HWC b) Private clinic c) MMU (Mobile Medical Unit) d) Others (specify……..)
B10.	Which health facility do you visit most often for your health needs?	(select all that apply) a) THF MMU b) Government health center c) Private clinic d) Others (specify)
B11.	How far are the nearest health facilities from your village?	a) Less than 2 km b) 2-5 km c) 5-10 km d) More than 10 km
B12.	Do you know about the operation of MMU at your village?	a. Yes b. No
B13.	How often does the MMU visit your village	a) Weekly b) Fortnightly c) Monthly d) Rarely
B14	Are you currently suffering from any of the following health conditions? (You can choose more than one option)	a. Anemia b. Arthiritis c. Asthma d. Bronchitis e. Burn f. CCF g. CVD h. Dental i. Diabetes j. Diarrhoea k. Dyspepsia l. Ear problem m. Eye problem n. Gastritis o. Hypertension p. Joint pain q. Leucokoria r. Migraine s. Mouth Ulcer t. Pneumonia u. Skin infection v. Thyroid (Hypothyroid)

		w. Thyroid(Hyperthyroid) x. Tuberclosis y. Typhoid z. UTI e) Other

SECTION C: Pregnancy care		
C1.	Did you visit the MMU during your pregnancy?	a) Yes b) No
C2.	Did you register yourself at the MMU during 1st trimester of pregnancy?	a) Yes b) No
C3.	Have you received any information or attended sessions provided by the MMU or its staff about pregnancy care through IEC (Information, Education, and Communication) materials or programs?	a) Yes, I received both information materials and attended sessions b) Yes, I received information materials only c) Yes, I attended sessions only d) No, I did not receive any information or attend sessions e) I am not aware of such materials or sessions from the MMU
C4.	What services did you use during your pregnancy from the MMU	(select all that apply) a) Health check-ups b) Iron and Folic Acid supplements, c) Calcium supplements, d) Vitamin-A supplements e) Counseling on baby's growth f) Advice on healthy eating g) Exercises relevant for pregnancy h) Counselling around mental health issues during pregnancy
C5.	Have you been advised and undergone any tests at the MMU?	c) Yes, I was advised and underwent the tests. d) No, I have not been advised any tests
C6.	Which of the following tests have you undergone at the MMU? (You can choose more than one option)	u) **Glucose Test**: To check blood sugar levels. v) **Hemoglobin Test**: To check for anemia (low blood count). w) **Albumin Test**: To check protein levels in the blood. x) **Uric Acid Test**: To detect gout or kidney issues. y) **Liver Function Test (SGOT/SGPT)**: To check liver health. z) **Cholesterol Test**: To check fat levels in the blood.

		aa) **Bilirubin Test (Total/Direct)**: To detect jaundice or liver problems. bb) **Typhoid Test**: To check for typhoid infection. cc) **Lipid Profile (SDL/HDL)**: To assess heart health by checking good and bad fats. dd) **Dengue Test**: To check for dengue fever. ee) **Triglyceride Test**: To measure fats in the blood. ff) **Total Protein Test**: To evaluate overall protein levels. gg) **CRP Test (C-Reactive Protein)**: To detect inflammation in the body. hh) **RA Factor Test**: To check for arthritis-related issues. ii) **Widal Test**: To confirm typhoid fever. jj) **Urea Test**: To check kidney function. kk) **Creatinine Test**: To assess kidney health. ll) **Globulin Test**: To evaluate proteins that help fight infections. mm) **HbAsg Test**: To screen for hepatitis. nn) **Other (specify):** _____
C7.	Have the MMU staff informed you on what to do in emergencies related to pregnancy?	a) Yes, they provided clear and helpful instructions. Yes, but the information was limited b) No, they did not provide any information
C8.	Have you ever asked MMU staff on your own	a) A Yes b) B No

SECTION D: CARE AFTER DELIVERY		
D1.	Where did you deliver your baby?	a) Nearby hospital or clinic b) at home
D2.	What do you believe are the reasons for choosing this type of delivery	Specify open ended answer
D3.	Who all have helped during childbirth and pregnancy	a. Family Members **/**Mother/Mother-in-law/Husband b. Healthcare Workers- VHWs c. Healthcare workers- SPOs d. Traditional or Community Support**-**Dai (Traditional birth attendant)/ Community elders or neighbours e. Others
D4.	Did you visit the MMU after your baby was born?	a) Yes b) No

D5.	If yes, do you think MMU visits are helpful for mothers after delivery	a) Yes b) No c) Not Sure
D6.	What help did you get from the MMU after delivery?	(select all that apply) a) Check-ups for yourself and baby b) Advice on breastfeeding c) Family planning information d) Information on Nutrition e) None
D7.	What were your out-of-pocket expenses during pregnancy (Rough estimate)	Mention approximate

SECTION E: INFANT (0-12 months of age) RELATED QUESTIONS		
E1.	Did you initiate breastfeeding within the first hour of delivery?	a) Yes b) No
E2.	Who guided you on breastfeeding techniques?	a. Govt ASHA worker b. Govt Anganwadi worker c. Family member (e.g., mother/mother-in-law) d. MMU Staff VHWs e. MMU Staff SPOs f. No guidance received
E3.	Are you aware of the nutritional requirements during lactation?	a. Yes b. No
E4.	Do you take any supplements (e.g., iron, calcium, vitamins) prescribed during lactation?	a. Yes b. No
E5.	In your opinion, who do women in your community usually seek advice from	(select all that apply) a) Govt. Anganwadi worker b) Govt. ASHA (Accredited Social Health Activist) c) Own mother/Mother-in-law d) Husband

	when they have questions about feeding their baby?	e) Friends or neighbors f) MMU staff SPOs g) MMU staff VHWs h) Other (specify)
E6.	Has the MMU staff checked on your baby's health?	a) Yes b) No
E7.	If yes, how often does the MMU monitor your baby's growth?	a) Every month b) Once in three months c) Occasionally d) Never
E8.	What advices MMU staff gives about feeding your baby?	(select all that apply) a) Feed only breast milk for six months b) Start solid foods after six months c) Keep the baby clean to avoid illness d) I did not get any advice

SECTION F: Observed MMU impact and feedback & Suggestions		
F1.	What are the challenges you face in accessing other health facilities near your village?	a) Lack of transportation b) High cost of services c) Poor quality of services d) Long waiting times e) Other (specify……)
F2.	Did the MMU help you avoid traveling far for check-ups?	a) Yes b) No c) Not sure
F3	Has the MMU team ever conducted a home visit for you or a family member with a serious health condition?	a. Yes b. No
F5	If yes, what assistance did the MMU team provide during the home visit? (Select all that apply):	a. Conducted a health check-up b. Provided medicines c. Gave health-related advice or counseling d. Referred to a hospital or specialist e. Provided emergency care f. Other (please specify): _____

F6.	What are the benefits of the MMU services during your pregnancy and post delivery care?	(Select all that apply) a) Reduced travel b) Reduced costs of care for families c) Increased awareness about health and hygiene d) Increased awareness about healthy eating e) Easy access to healthcare f) Mental health g) Free medicines h) Other (specify) i) No significant impact
F7.	In what ways has the MMU reduced health-related challenges for pregnant women and children?	a) Reduced travel distance and costs to access healthcare services b) Provided free medicines and nutritional supplements (e.g., iron, calcium, vitamins) c) Offered regular health check-ups for mothers and children d) Delivered advice and counseling on pregnancy, baby care, and hygiene
F8.	Have you saved money on medicines, tests, or consultations because of MMU services? Have the free services reduced your healthcare expenses?	a) Yes, they have reduced my expenses significantly b) Yes, they have reduced my expenses slightly c) No, they have not reduced my expenses d) I am not sure
F9.	What challenges did you face in using MMU services during your pregnancy?	a) MMU did not come regularly b) Services were not available when needed c) Difficulty in understanding the advice d) Waiting time was long e) Doctor and other staff's unprofessional behaviour f) None of the above g) Other (specify……..
F10.	What are some challenges for mothers in your community to keep themselves healthy after pregnancy?	a) Lack of information about proper diet and nutrition b) Limited access to healthcare services c) Financial constraints to afford medicines or supplements d) Lack of time due to household responsibilities e) Poor support from family or community f) Difficulty accessing MMU or other health facilities g) Cultural beliefs or practices that hinder recovery h) Other (specify)
F11.	What are some of the challenges that mothers in your community have in	(select all that apply) a) Lack of knowledge about proper nutrition for young children b) Limited access to nutritious food

	feeding young children or keeping them healthy?	c) Financial difficulties in buying healthy food d) Poor support or advice from family or community e) Seasonal unavailability of certain foods f) Difficulty accessing healthcare services or MMU g) Insufficient awareness about hygiene and sanitation h) Other (specify)
F12.	What recommendations do you have to improve healthcare services delivered through MMUs?	a) Increase the frequency of MMU visits b) Provide more medicines and diagnostic services c) Include specialists like pediatricians and gynecologists d) Offer more awareness sessions on health and hygiene e) Improve the availability of equipment and staff f) Other (specify)
F13.	What more could the MMU do to support new mothers?	a) Provide more counseling sessions b) Offer more medicines and supplies c) Arrange visits by a women's health specialist d) Other (please specify……..)

Conclusion

Thank you for your time and input during this discussion. Your feedback is invaluable for improving healthcare services provided through MMUs. If you have any further suggestions, please feel free to share them now.

Annexure B.2: FGD Tools-Adolescent Boys & Girls

Respondent Profile – Adolescent Boys and Girls

Consent:

Namaste! My name is _____. I am working with SahaManthran, an organization focused on community development and research. We are conducting this study on behalf of Smile Foundation to understand the impact of health interventions in your area since the baseline study. Your participation is voluntary, and your responses will be kept confidential. This study does not collect personal information.
The survey will take approximately 30 minutes. Please provide your consent before we proceed.

I give my consent to participate in this interview.

Survey section

This survey has 5 short sections.

Section A	**General Information**
Section B	**Introductory questions**
Section C	**Nutrition**
Section D	**Knowledge and Perception on Sexual and Reproductive Health /Puberty related questions/Hygiene related questions**

Section E	Feedback and Impact of MMU

SECTION A: General Information	
Name of the state	
Name of the District	
Village	
Block & District	
No. of Adolescent Boys	
No. of Adolescent Girls	
Name of the investigator	
Date of FGD	

S.No	SECTION B: Introductory question for the participants of FGD	
B1.	**B1. What is your age group**	a. 10–12 years b. 13–15 years c. 16–18 years
B2.	**Are you currently enrolled in school?**	a. Yes b. No
B3.	**What is the highest level of education you have completed?**	a. < Class 8 b. < Class 10 c. < Class 12 d. >Class 12
B4.	**Are you presently employed?**	a. Yes b. No

SECTION C: Nutrition		
S.no	Question	Answer (please choose the option that best fits your experience.)
C1.	Have you heard about the concept of a balanced diet?	a) Yes b) No
C2.	Do you think you eat a balanced diet regularly	a. Yes b. No
C3.	What do you think constitutes your diet?	(Select all that apply)

		a) green leafy vegetables like spinach, mustard greens, amaranth, fruits like guava, oranges, papaya, and jaggery b) dal, rajma, soybeans, milk, ghee, mustard oil, rice, chapati, and mandua/foxtail millet c) Seasonal vegetables like pumpkin, bottle gourd, cucumber, pulses, and local grains like jhangora or ragi d) Others e) Not sure
C4.	What supplements do you believe are required for your balanced diet?	a) Vitamins b) Minerals c) Protein d) Fibers e) Others
C5.	Have you heard about iron-folic acid (IFA) tablets/syrup? (	a) Yes b) No
C6.	Are any of you currently taking IFA/Calcium tablets regularly?	a) Yes, b) No
C7	If yes, why did you start	a) As per doctor's advice b) As per family member's advice c) As per friend's advice
C8.	If yes, what improvements Have you noticed in your health since you started IFA/calcium tablets?	(Select all that apply) a) Increased energy levels and reduced fatigue. b) Improvement in physical growth and overall development. c) Reduced symptoms of anemia (e.g., dizziness, paleness). d) Better immunity and fewer illnesses. e) Improvement in concentration and academic performance. f) Relief from muscle or bone pain. g) Other improvements (please specify). h) Not sure

SECTION D: Sexual and Reproductive Health-Puberty/Personal Hygiene		
S.no	Question	Answer (please choose the option that best fits your experience.)
D1.	Do you know and understand about puberty?	a) Yes b) No
D2	If yes at what age puberty starts for Boys/Girls	Boys…… Girls……..
D3	What are the changes occurring during puberty?	a. Voice changes b. Growth of body hair c. Emotional changes d. Onset of menstruation (for girls) e. Other (please specify): _____
D4	Which of the following personal hygiene practices do you follow? (Select all that apply)	a. Daily bath b. Washing hands with soap regularly c. Regular brushing teeth d. Wearing clean clothes daily e. Keeping nails trimmed f. Others
D5	Have you heard of reproductive health?	a) Yes b) No
D6.	What are the sources from which you have heard about reproductive health?	a) Teachers b) Social media c) Parents d) Friends e) Others
D7.	What, according to you, are the main components of reproductive health?	(Select all that apply) a) Family planning and contraception b) Maternal and child health c) Safe pregnancy and childbirth d) Prevention and treatment of sexually transmitted infections (STIs) e) Menstrual health and hygiene f) Other (specify): _____ g) Not sure

D8.	Do you want that Reproductive health related issues to be added in your syllabus?	a) Yes b) No

SECTION E: Menstrual Health and Hygiene Practices (For girls)		
S.no	Question	Answer (please choose the option that best fits your experience.)
E1.	What do you think is necessary for proper menstrual hygiene? (Select all that apply)	a. Using clean sanitary products b. Maintaining personal hygiene c. Washing hands before and after changing products d. Others
E2.	Are you restricted from participating in any activities during menstruation?	a) Yes b) No
E3.	If yes, what kind of restrictions do you face?	a) Playing outdoor games or sports b) Visiting temples or participating in religious activities c) Entering the kitchen or cooking food d) Other (please specify): _____
E4.	Have you ever skipped school during menstruation because of taboos or lack of facilities?	a) Yes b) No
E5.	Have you received any advice on what to eat during menstruation?	a) Yes, from family b) Yes, from school c) Yes, from MMU sessions d) No, I have not received any advice
E6.	What foods do you usually eat during menstruation?	a) Green leafy vegetables (e.g., spinach, mustard greens) b) Fruits (e.g., banana, papaya, guava) c) Dairy products (e.g., milk, curd) d) Iron-rich foods (e.g., jaggery, lentils, beetroot) e) Spicy or oily foods (e.g., fried snacks, pickles) f) Nothing special; I eat the same as usual Other (please specify): _____
E7	Do you take any supplements during menstruation (e.g., iron, folic acid, or multivitamins)?	a) Yes b) No

SECTION F: Feedback and Impact of MMU		
S.no	Question	Answer (please choose the option that best fits your experience.)
F1.	Are you currently suffering from any health issues?	a) Yes b) No
F2.	Where do you go for treatment when ill?	a) PHC b) MMU c) Govt. Wellness centers d) Hospital e) Private Clinic f) Others
F3.	Do you know about the operations of MMU in your village?	a) Yes b) No
F4.	If yes then do you know how often MMU comes to your village?	a) Weekly b) Fortnightly c) Monthly d) Rarely
F5.	Do you know that MMU holds counselling and awareness sessions for adolescent boys and girls?	a) Yes b) No
F6.	Are you aware that the MMU conducts awareness activities, such as Nukkad Nataks (street plays), to educate the community about health-related issues	a) Yes b) No
F7.	Have you attended any program/session/Natak performances?	a) Yes b) No
F8.	If yes, what topics were covered in these sessions?	a) Balanced Diet and healthy eating b) Hygiene practices c) Puberty and bodily changes d) Sexual Transmitted Infections e) Preventing infections f) Emotional well-being g) Others

F9.	How has your, understanding or behavior regarding reproductive health changed, if at all, since the MMU awareness session on the same?	a) My understanding has improved, and I actively apply what I've learned in my behavior. b) My understanding has improved, but my behavior has not changed much. c) I have not noticed any significant changes in my understanding or behavior. d) I feel less confident or knowledgeable than before. e) Not sure / Cannot say
F10.	Have you attended any MMU sessions on menstrual hygiene? (For Girls)	a) Yes b) No
F11.	If yes, what topics were covered in these sessions?	a) Use of sanitary products b) Hygiene practices c) Disposing sanitary pads and napkins d) Managing Discomfort e) Others
F12.	Have you changed your menstrual hygiene practices after attending MMU sessions? (For Girls)	a. Yes b. No
F13.	If yes, what specific changes have you made?	a. Started using sanitary napkins b. Improved disposal methods of sanitary pads and napkins c. Better hygiene practices (changing pads every 4-6 hrs.) d. Others ……
F14.	Do you feel more confident managing menstruation after utilizing MMU services?	a. Yes b. No
F15.	Have you participated in discussions about supporting female peers during menstruation? (For Boys)	a. Yes b. No
F16.	If yes, do these sessions change your understanding of menstruation?	a. Yes b. No
F17.	If yes in what ways?	a. Became more understanding About menstrual cycles b. Help my mother/sister at home by giving them warm compress, medicine for pain relief c. Help my mother/sister in their work and household chores d. Help my peers during their menstrual cycle e. Buy sanitary hygiene products for them, or other necessary care.

		f. Others
F18.	Are you aware that the MMU organizes eye camps in your area?	a. Yes b. No
F19.	Have you participated in any eye care campaigns conducted by the MMU?	a. Yes (If yes please specify) b. No
F20.	If yes, which of the following services did you receive? (You can choose more than one option):	a) Eye tests and check-ups b) Free spectacles distribution c) Referral for surgery at Smile Hospital d) Medicines for eye care and cure e) Other (specify): _____
F21.	Have you attended any counseling sessions or workshops on substance abuse?	a. Yes b. No
F22.	If yes, What topics were covered in the sessions? (Select all that apply)	a. Types of substances and their effects b. Signs of addiction c. How to say no to peer pressure d. Support systems for quitting substance use e. Other (please specify): _____
F23.	Do you know the harmful effects of substance abuse?	a. Yes, I know most of the harmful effects. b. I know some harmful effects. c. I don't know much about it.
F24.	Have you noticed an improvement in healthcare access since the MMU service started in your village?	a. Yes b. No c. Not Sure
F25.	Are mobile medical units being used more frequently in your peer group?	a. Yes b. No c. Not Sure

Conclusion:

Thank you all for your time and insights. Your feedback is invaluable for enhancing healthcare initiatives. If you have any further thoughts or suggestions, feel free to share them now.

Annexure C: IRB Certificate

Σigma

Sigma-IRB (Institutional Review Board)
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IRB REG No : IORG0008260

APPROVAL LETTER

Date : 14.02.2026

Name of Applicant : Dr Shyama Nagarajan

Name of PI : Dr Shyama Nagarajan

Name of Organisation : SahaManthran Pvt. Ltd. (SMPL)

Study Title : Impact Assessment Study for Smile Mobile Medical Unit Project

IRB Number : 10058/IRB/25-26

Final set of Documents Reviewed for Approval : 14.02.2026

Document	Version No	Revised Date
Sigma IRB Review Application	V2.0	15th January 2026
Study protocol	V2.0	15th January 2026
Study tools	V2.0	15th January 2026
Consent forms	V2.0	15th January 2026
IRB meeting minutes	V2.0	15th January 2026

This is in continuation to the submission of documents followed by virtual meeting of the IRB and submission of revised set of documents.

I am pleased to inform you that the above mentioned study has been approved by the Sigma IRB .

All research activities must be conducted in accordance with the approved submission. It is your responsibility to fulfill the **following requirements of approval**:

1. Changes, amendments, and addenda to the protocol, informed consent, or other study materials must be submitted to the Sigma-IRB for re-review and approval **prior** to implementation.

2. Any unanticipated problems, adverse events, protocol violations, social harm, or any new information becoming available which could change the risk/benefit ratio must be reported to the Sigma-IRB.

3. The applicant should do all the communication and be responsible for all the IRB related work.

The Sigma-IRB concluded that the Applicant has taken sufficient safeguards to carry out the study. The Sigma-IRB approves the proposal for conducting the aforesaid study. This approval is based on your revised submission of application, study protocol, tools and consent forms and any deviation from this protocol would require further approval of IRB. This is valid for one year from the date of approval, mentioned geographical location and sample coverage.

Date of Sigma IRB Approval : 14.02.2026

Validity of Sigma IRB Approval : 14.02.2026 to 13.02.2027

Signature:
Dr U V Somayajulu (Member Secretary of Sigma-IRB) Date: **13.02.2026**

Signature:
Dr Shyama Nagarajan Date: **13.02.2026**