IMPACT ASSESSMENT OF THE

MOBILE HEALTH UNITS (MHUs) IN ORISSA

On behalf of: **Health & Family Welfare Department (H&FWD), Government of Orissa**
Commissioned by: **Technical and Management Support Team (TMST), Orissa**

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CONTENTS

TABLES

ABBREVIATIONS

ADAPT	Area Development Approach for Poverty Termination
ANC	Anti-natal Check-up
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AWW	Anganwadi Worker
BCC	Behavior Change Communication
BPMU	Block Program Management Unit
BPO	Block Program Officer
CBO	Community Based Organization
CDMO	Chief District Medical Officer
CHC	Community Health Centre
DHH	District Headquarter Hospital
DMO	District Malaria Officer
DPM	District Program Manager
GoO	Government of Orissa
H&FW	Health and Family Welfare
IEC	Information Education Communication
IUD	Intra Uterine Device
LSC	Local Steering Committee
LTAP	Long Term Action Plan
MCTS	Mother and Child Tracking System
MHU	Mobile Health Unit
MOIC	Medical Officer in-Charge
NGO	Non-Government Organization
NDCP	National Disease Control Program
NRHM	National Rural Health Mission
PHC	Primary Health Centre
PPP	Public Private Partnership
RCH	Reproductive and Child Health
RDK	Rapid Diagnostic Kit
RKS	Rogi Kalyan Samiti
RRC	Regional Resource Centre
SDH	Sub-District Hospital
TE	Travel Expense
VHSP	Village Health and Sanitation Plan
ZSS	Zilla Swasthya Samiti

Executive Summary

1. Introduction

The Mobile Health Unit (MHU) is envisaged to deliver health care services to people living in the inaccessible and remote areas. In view of the large geographically difficult areas in Orissa, the MHU forms an integral part of the overall health care delivery strategy adopted by the Government of Orissa. Unlike static health facility, this is a unique model aiming to improve the access to health care of population groups residing in the difficult to reach areas.

The MHU operation in Orissa was started in the year 1995 in 8 KBK districts of Orissa under the RLTAP program which continued till late 2007. Afterwards, the Department of H&FW, GoO through NRHM has taken over the MHU operation which has been expanded to 19 Non-KBK districts as well. Currently, 194 MHUs are operating in 168 Blocks of 27 Districts in Orissa. A retrospective analysis to know the vulnerability status of these MHU operated Blocks indicates that 50 are 'Most Difficult' Blocks, 36 are 'Difficult' and the rest 82 are 'Normal' Blocks. Similar break-up of the MHUs operating in the State show that 67 MHUs are functioning in 'Most Difficult' Blocks, 40 in 'Difficult', 80 in 'Normal' Blocks and the remaining 7 are centrally operating MHUs which are also located in Normal areas.

2. Study Purpose

Most of the MHUs operating in the State have by now completed at least one year of operation in the assigned Blocks after it was brought under the ambit of NRHM. This study on assessing the impact of MHUs in Orissa was commissioned to review and assess the performance of the MHUs during this period. The key purpose behind this study was not only to assess the performance of the MHUs but also provide necessary inputs to improve the systems and operations of the existing MHUs, and facilitate decision making to scale up the MHU model to new areas of need in the State.

3. Study Methodology

A combination of comparative and exploratory study design was adopted for undertaking the study. In total, 13 MHUs and 2 AROGYA+ MHUs in five districts of Orissa namely Rayagada, Kalahandi, Mayurbhanj, Kandhmal and Bhadrak were covered under the study. The study team visited 30 MHU & AROGYA+ served villages and interviewed 595 households and 115 service providers associated with the MHU.

4. Study Findings

The study findings presented below have been structured into two parts i) Responses of the people on the services and benefits of the MHU and ii) Responses of the MHU team and other service providers on the operational and managerial effectiveness of the MHU.

4.1 Responses of the people on the services and benefits of the MHU

4.1.1 People visited the MHU for health services

In the MHU served villages, 96% of households had any health problem during past six months prior the survey. On an average, 2 persons per family or 42% family members had health problem during past six months. ***So out of those family members who had health needs, 80% of them visited the MHU. More importantly, the MHU was the first point of contact for 78% of people to get required health care services or treatment, which gives an indication about the degree of dependence of people on the MHU.*** The next health facilities that were visited by the people are the PHC/CHC (18%) and private clinic / hospital (9%). In the MHU served villages, only 3% visited to the DHH followed by 2% each to ANM / Sub-centre and traditional healer or quack.

4.1.2 Health care services received from the MHU

The study finding reveals that ***majority i.e. 89% of those who visited the MHU had minor and major ailments for which they were provided curative services by the MHU***. Among them, highest i.e. 47% had fever followed by 11% each had cough / chest infection and back / leg / joint pain, 9.2% diarrhea without blood, 8% cold, 7% headache, 5% skin rash/infection and 3% had body-ache problem. Only a few people had major illness viz. malaria (6%), diarrhea with blood (1%), rheumatism (1%), abdominal pain (1%), TB (1%) and Jaundice (0.3%). Apart from the curative services, only 8% of those visited the MHU were provided diagnostic services followed by only 6% RCH services and a negligible percentage of people i.e. 2% and 1% were provided family planning and emergency health care services. So ***there is a greater dependence of people on the MHU for curative services than the RCH, diagnostic, family planning and emergency services.***

It is also important to find that only 1% of those who had availed curative services from the MHU were referred to the higher health facilities, which is against the common perception that the MHU mostly refers patients to the higher health facilities instead of providing treatment in their village.

4.1.3 Health status of people after treatment by the MHU

Almost three fourth i.e. 75% got cured after treatment by the MHU. So, not only a larger percentage of people availing curative services but also getting cured by the MHU which justifies the usefulness and importance of the MHU program introduced by the Government.

4.1.4 Key benefits & value additions by the MHU

Further, the importance of the MHU can be understood as 69% of households residing in the remote and inaccessible villages feel that the types of health services provided by the MHU were not available in their village earlier. Health services at the nearest place and avoiding wage loss are the other values additions made by the MHU as reported by 75% and 40% of households respectively. Also, because of the visit of the MHU to the geographically difficult villages, there is a reduced distance ranging from 8kms to 65kms which majority of people (particularly those who have minor ailments) need not have to travel and incur any mobility costs for visiting the PHC/CHC. On an average, a travel cost of Rs.170/- to Rs.250/- is saved by the people which would have been spent for visiting the PHC/CHC, DHH, Private Hospital, etc.

4.1.5 Satisfaction level of beneficiaries on the MHU

There are ***71% of households who found to be satisfied and 22% somewhat satisfied with the health care services provided by the MHU.***

Availability of the health services in the village and free distribution of medicines were attributed by the majority of households as the key reasons behind their satisfaction.

4.1.6 People who did not visit the MHU & reasons

Among the sample households, only 20% of the household members did not visit the MHU in spite of their illness. The reasons shared by them are: lack of knowledge about the MHU, engagement in economic activity on the day of the MHU visit, irregular & infrequent visit of the MHUs and non-availability of the MHU at the time of illness.

4.2 Responses of the MHU team and service providers on operational effectiveness of MHU

4.2.1 Identification of difficult villages for the MHU

The first step of the MHU operation in a Block is to identify the geographically difficult villages, which was done by all the study Blocks in 4 out of 5 districts covered in the study viz. Mayurbhanj, Kandhmal, Kalahandi and Bhadrak. In the rest one district i.e. Rayagada, the district ZSS had taken the decision of covering the entire villages of a Block for which no step was taken by the Blocks for identification of the difficult villages.

Criteria e.g. 'inaccessibility of the village' was considered by maximum i.e. 9 out of 13 study Blocks followed by 'long distance of villages' was applied by the 7 Blocks for identification of the difficult villages in the Block. In fact, ***there were no uniform criteria adopted for identification of villages by the MHU operated Blocks. None of the Blocks also applied any scientific ranking or scoring method to screen & identify the vulnerable villages for the MHU visit.***

4.2.2 No. of villages identified vs. covered by the MHU

Among the 13 study Blocks, maximum number of difficult villages (that ranges from 92 to 128 villages) identified is in Lanjigarh, Thuamulrampur and M. Rampur, whereas, relatively lesser number of difficult villages (i.e. within 22 to 27 villages) identified are in Dharamgarh, Khunta and Tiring Blocks. Due to more villages, 3 MHUs have been placed in Lanjigarh and Thuamulrampur Blocks and 2 MHUs in M. Rampur Block. On an average, one MHU needs to cover a highest of 48 villages and a lowest of 22 identified villages in a month.

In 7 out of the 13 study Blocks the actual number of villages covered by the MHU is lesser than the number of villages identified for the same. ***A minimum of 4% to a maximum of 38% villages in these 7 Blocks was not covered by the MHU/s due to lack of road communication or complete inaccessibility.*** Even then, the actual number of villages covered by each MHU in a Block is found to be more given the guideline that the MHU has to visit each village once in every fortnight.

4.2.3 Coverage of more villages & its implications

As per the MHU guideline, each MHU needs to take 22 days of field visit in a month which comes to 11 days in a fortnight. If 2 villages are visited per day, then a total of 22 villages can be covered twice in a month (once in every fortnight). But as per the study finding, 7 out of the 13 study Blocks cover more than 36 villages in a month which is excluding the residential tribal schools visited by the MHU. That means almost half of the total villages cannot be visited by the MHU twice in a month. This is the reason why majority i.e. 78% of households said that the MHU visits their village once in a month and only 17.8% reported two times visit of the MHU in a month. So infrequent visit of the MHU affect the health care services provided to people in the villages that is why almost all the households interviewed in the study demand for at least 3 to 4 visits of the MHU in a month. ***So there are more difficult villages and less number of MHUs operating in the Block for which there is a need of engaging more number of MHUs in the State.*** This would enable the existing MHUs to take the required number of visits to the identified villages and maintain a fixed time & date of visit to those villages.

4.2.4 Staff positioning in the MHU team

Vacancy of the MHU staffs is the other grey area that affects the operation of the MHU. In the 13 MHUs covered by the study team, the post of Health Worker (F) and Attendant were lying vacant during the time of study in 9 and 3 MHUs respectively. Rest of the positions (e.g. Doctor and Pharmacist) was filled up in all the MHUs covered in the study. When 11 out of 13 MHUs has male doctors, the role of the Health Worker (F) is considered important in the MHU team particularly for conducting the ANC of pregnant women, PNC and providing family planning services to the women beneficiaries. So ***the vacancy of the Health Worker (F) posts adversely affected the delivery of RCH services by the MHU.***

4.2.5 Staff capacity building

The MHU team in general and the AYUSH doctors appointed in the MHU team in particular were not provided any training so far in the new MHU operated districts like Kandhmal, Mayurbhanj and Bhadrak. ***Since the AYUSH doctor has to administer allopathic medicines, it is highly essential to provide them the therapeutic training*** for administering the same, as suggested by the CDMOs and MOICs in the

study districts. Since the entire MHU team is from the clinical background, there is also need to organize a kind of induction training for them.

4.2.6 Equipments, medicines and other supplies to MHU

Like staff vacancy, lack of required diagnostic instruments prevents the MHU to conduct investigations like hemoglobin, urine examination for sugar & albumin tests. Only 2 MHUs covered in the study have micro-scope for conducting the tests whereas 3 MHUs did not have the weighing machine and 1 MHU did not have the BP instrument. More importantly, ***RDK was not supplied to 3 out of 13 MHUs since last 10 months. The supply of RDK was found to be inadequate to another 3 MHUs. As the study finding reveal that 47% of fever cases visit the MHU for treatment, it is important for the MHU to get adequate and regular supply of RDK for conducting the malaria tests of all the fever cases.***

Out of the 13 MHUs visited, the family planning products like condom was not supplied to the 7 MHUs, Oral Pills to 6 MHUs and emergency contraceptives was not provided to 10 MHUs. As a result of non-supply of Condom, Oral Pills and emergency contraceptives, the family planning services could not be properly provided by the MHU.

4.2.7 Role played by the MHU for addressing the health epidemics

Unlike the RCH, Family Planning and Diagnostic services provided by the MHU, the service providers like CDMO, DPM, MOIC and BPMU interviewed at the district and Block level appreciated the role played and contributions made by the MHU for providing health care services during the health epidemics or emergencies. Last year, across 3 out of the 5 study districts, there was diarrhea / cholera outbreak which was severe in Rayagada district. During that time, the MHU team was exclusively entrusted the responsibility of handling the affected villages. ***Week or month long camps were organized by the MHU team in the affected villages which helped to curb the epidemic in the area.***
Commendable effort was made by the MHU in both providing preventive and curative services to the affected people during the emergencies.

4.2.8 Monitoring & Supervision of the MHU activities

Since the MHU has been entrusted with some key responsibilities of delivering health care services to people residing in geographically difficult areas, it is important that the MHU activities have been monitored on regular basis. But according to the study findings the MOIC (in 4 Blocks), the BPO (in 5 Blocks), the CDMO (in 6 Blocks) and the DPM (in 8 Blocks) did not take a single visit to the MHU served villages during six months prior the study. Although the review meeting of the MHU was held regularly at the Block and District level, it is important that the supervisory staffs like the MOIC, BPO, CDMO and DPM takes field visit to the MHU areas and initiate appropriate actions for improving the service delivery by the MHU.

5. The MHU and AROGYA+: A Comparison

The AROGYA+ being piloted in Kandhmal district also focuses on delivering the health care services through the MHU. The local NGOs are being engaged for implementation of this initiative through the Public Private Partnership mode.
A comparative analysis between the responses of people in AROGYA+ and the MHU shows, 93.1% availed health care services from the AROGYA+ as against 79.6% from the MHU. The AROGYA+ was the first point of contact for 90.3% of people for availing the required health care services whereas it is 77.6% in case of the MHU. As against 70.1% availed curative services from the MHU, much higher i.e. 84.0% availed the same type of services from the AROGYA+. But both in case of the MHU and the AROGYA+, negligible percentage of people availed the RCH, family planning and diagnostic services.

Relatively a higher percentage i.e. 81% got cured after the treatment by the AROGYA+ than the MHU i.e. 75.3%. This could be one of the key reasons why majority i.e. 88.5% of households were found to be satisfied on the health care services provided by the AROGYA+ than the 70.6% on the MHU.

In almost all the indicators, the AROGYA+ run through the PPP mode has relatively done better than the MHU. This is because of the additional support provided to the AROGYA+ on community awareness generation, mobilization and engagement; formation of the Local Steering Committee (LSC); and organizing of the Jana Adalat-cum-Health Grievance Redressal Camp which have helped to create more awareness among the people about the AROGYA+.

6. Key challenges & recommendations

Key Challenges	Recommendations/Action Points
Coverage of villages not having road communication	Tagging the complete inaccessible villages with the nearest accessible village
More number of difficult villages in a Block	Engaging more number of MHUs in the Block but focusing only distant and hard to reach villages from the health facility
Maintaining fixed date and time of visit by the MHU	Adopting proper field level strategies to avoid any irregular visit
Prior information to the local providers and community	Circulation of MHU roster to local providers, signage on the MHU in the village and prior information through local providers
Engagement of the PRI and GKS members and the local service providers	Engagement of PRI and GKS to ensure logistic arrangements for MHU in the village and monitoring of MHU. Inclusion of MHU activities in the job role of local providers.
Supply of diagnostic instruments & kits and medicines	Supply of diagnostic kits like microscope, RDK, ACT, container for sputum collection, etc. to MHU
Staff vacancy & positioning in the MHU team	Filling up the post of HW (F) and engagement of MHU Driver / Attendant as Social Mobiliser
Monitoring of other health programs	MHU visit may be tied up with other health events like VHND, Immunization day, etc. undertaken in the village so that MHU team can monitor the same. MHU team may be engaged in birth/death registration, MCPT/ MCP cards.
Capacity requirement for delivery of health services	Therapeutic training to Doctor on Allopathic medicines (also training on Panchabyadhi and NDCP) and LT training to the Pharmacist
Immunization by MHU	Immunization should be administered only by ANM to avoid any over doses by the MHU
Health seeking behavior	MHU may be engaged in IEC/BCC activities for awareness generation and promoting health seeking behavior
Monitoring and Supervision of the MHU	More field visit by the CDMO, DPM, MOIC, BPO, etc. and introduce GIS based tracking system of the MHU visit to the villages.

7. Concluding Remarks

While the study findings presented above reveal some key benefits received by the beneficiaries from the MHU, there are some gaps found in the operational and managerial processes of the MHU. Not only the majority of people during illness visited the MHU but also got cured after receiving the health care services from the MHU. Although few people availed RCH, diagnostic, family planning and emergency services, the role played by the MHU in providing curative services was appreciated by almost all the beneficiaries. However certain operational gaps like more number of villages covered by the MHU, infrequent visit to the village, vacancy of Health Worker (F) & Attendant posts, non-availability of diagnostic instruments and inadequate & irregular medical supplies like RDK & family planning products requires to be addressed for enhancing the operational effectiveness and the benefits of services provided by the MHU. Apart from addressing all these operational gaps, the state may place more MHUs in the difficult Blocks which would reduce the pressure on the existing MHUs but also benefit the targeted beneficiaries to get more frequent health care services from the MHU.

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CHAPTER – I

1. STUDY SCOPE & METHODOLOGY

1.1 Study purpose

The Mobile Health Unit (MHU) is envisaged to deliver health care services to people living in the inaccessible and remote areas. In view of large geographically inaccessible and remote areas in Orissa, the MHU forms an integral part of the overall health care delivery strategy adopted by the Government of Orissa. Unlike the static health facility, this is a unique model aiming to improve the access to health care of population groups residing in the difficult to reach areas, through providing health care services in their villages or nearest villages. Apart from providing health care, the other key expectations from the MHU are to facilitate early diagnosis and timely referral of cases to the hospitals; and contribute to increasing health awareness among populations living in those hard to reach areas.

Currently, 194 MHUs are operating in 168 Blocks of 27 Districts in Orissa, which is one of the massive health care initiatives run by the department of the

H&FW, GoO under NRHM since late 2007. Before that, the MHU was part of the Long Term Action Plan (LTAP) which was implemented only in the erstwhile (undivided) KBK districts of Orissa from 1995 till late 2007.

Most of the MHUs by now have completed at least one year of operation in their assigned Blocks after it was brought under the ambit of NRHM. This study on assessing the impact of MHUs in Orissa was commissioned to review and assess the performance of MHUs during this period. The key purpose behind this study was not only to assess the performance of MHUs but also provide necessary inputs to improve the systems and operations of the existing MHUs, and facilitate decision making to scale up the MHU model to new areas of need in the State.

1.2 Objectives of the study

i) Review the performance of MHUs in remote and inaccessible areas, and assess their effectiveness in different aspects such as operations, finance and impact level and compare it with AROGYA+; and

ii) Based on study findings, recommend measures which would help in operations improvement for the existing MHUs and decision making to scale up the MHU model to new areas of need.

1.3 Scope of work

The study scope focused on assessing the services provided by the MHUs and their techno-managerial-operational effectiveness in delivering those services to the targeted population. In the absence of any baseline data and matching control Block, the study scope did not include 'Pre-Post' or 'Case-Control' comparative analysis for bringing out the impact level changes on the targeted beneficiaries, as normally done in an impact assessment study. The study scope emphasized more on reviewing the operations, cost effectiveness and the performance outputs of MHUs so that steps can be taken to improve and strengthen the MHU service in the State.

An outline on the study scope of work is presented hereunder:

i) Conduct desk review of secondary data about achievements of the MHUs and their role and efficiency in improving service delivery; improvements in the take up of services by disadvantaged communities in the inaccessible areas; and reported challenges faced by MHUs;

ii) Assess the effectiveness of Medical Aspects provided through MHUs viz. MHUs adequately equipped with drugs and supplies; monthly average no. of camps per MHU; type health problems and treatment given & referral; linkages with ANM, ASHA & AWW; BCC/IEC conducted; etc.;

iii) Review management practices for efficient operation of the MHU viz. preparation of MHU micro plan; maintaining fixed date & time; awareness of people on the date & time of visit; staff positions in MHU; condition of vehicle used by MHU; average distance covered and people treated by MHU;

iv) Review social-economic and geographic equity objectives fulfilled by MHU;

v) Find out providers' perspective in terms of usefulness of MHUs;

vi) Assess the community response and their confidence level, and opinions of different social groups in the target villages e.g. satisfaction with MHU treatment/services; knowledge of the MHU schedule and feedback on reliability, timeliness, availability of drugs/supplies; preferred source of care for primary level of ailments and reasons; staff attitude; etc.

vii) Assess costs to department for providing MHU; and cost saving by users; and

viii) Compare the performance of the MHU with AROGYA+ initiative piloted in Kandhmal district *(AROGYA+ also focuses on providing health care through MHU in the most difficult and remotest areas through PPP mode)*.

1.4 Study Methodology

1.4.1 Study Design

A combination of 'exploratory' and 'comparative (analytical)' study design was adopted for undertaking the study.

i) **Exploratory Study Design**: This particular study design was applied to explore into the various services provided by MHUs and the processes followed in delivering those services. It also helped to assess the managerial, operational and financial effectiveness of the MHUs.

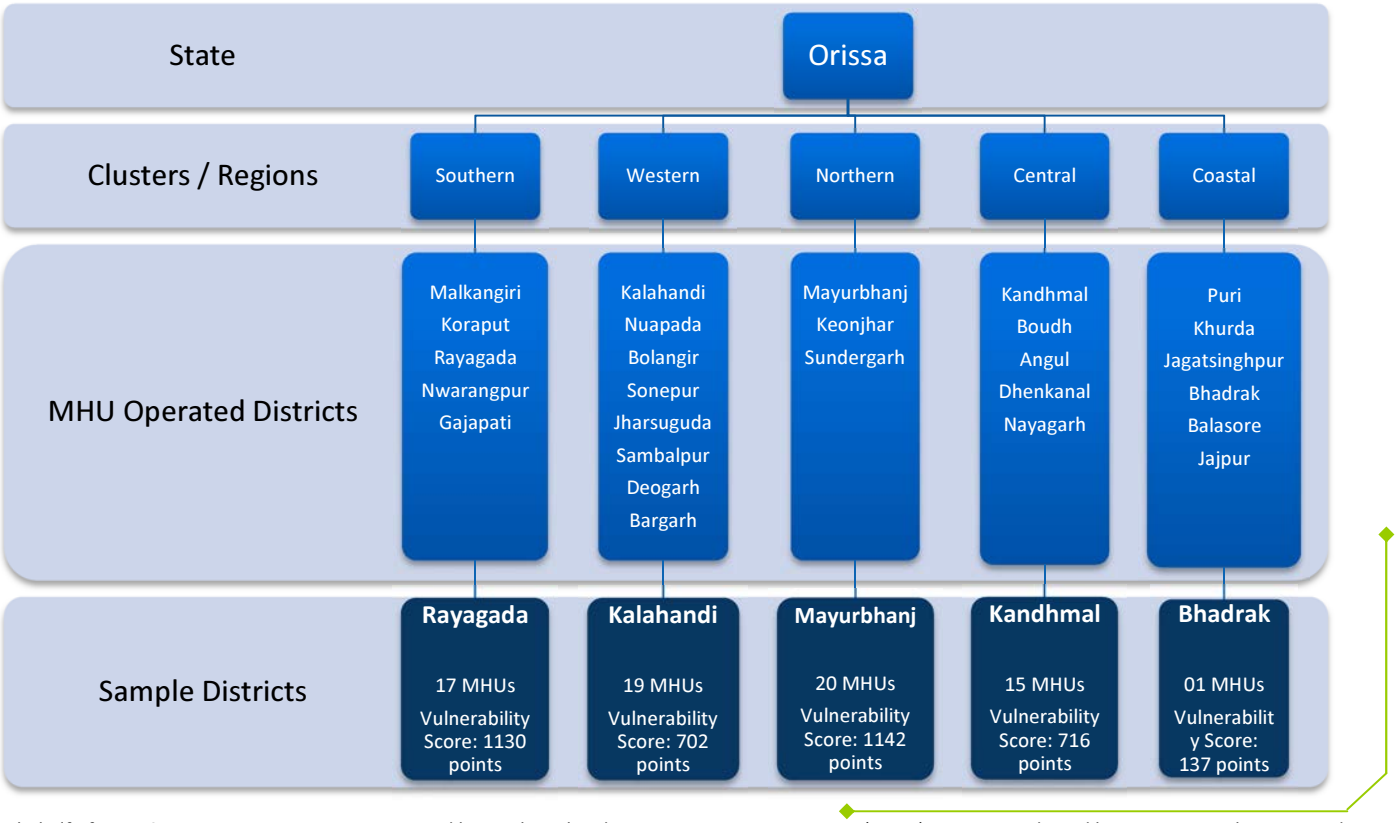
ii) **Comparative (analytical) Study Design**: The study adopted this design for making a comparative assessment of the performance between the 'MHU' and 'AROGYA+'.

1.4.2 Primary Data Collection

1.4.2.1 Sampling

Multi-stage sampling method was used for selection of districts, MHU focused villages, targeted households, service providers and community level key informants. The detailed sample selection strategy used in the study is presented below:

i) Selection of districts: The selection of study districts was done by applying cluster sampling method. Since Orissa has wide regional diversity in terms of geo-physical set-up and cultural & socio-economic attributes, it was important for the study to select sample districts from each region of the State so that the selected sample districts are more representative of the entire State.



Accordingly, the 27 MHU operated districts were divided into five clusters / regions of Orissa viz. i) Southern, ii) Western, iii) Northern, iv) Central and v) Coastal and then, one district having highest vulnerability score (based on composite vulnerability ranking of districts done by NRHM) from each cluster / region was selected for the study. The vulnerability ranking of districts enabled the study to include the most difficult or vulnerable district from each region. More importantly, it provided an opportunity for the study to assess the performance of the MHUs in those Districts where the MHU operation was most needed or required because of the larger percentage of vulnerable areas.

The five districts selected are Rayagada, Kandhmal, Kalahandi, Mayurbhanj and Balasore. However, due to non-functioning of the MHU in the selected Block of Balasore district the study had to replace the same with another similar Block in the neighboring district i.e. Bhadrak. ***The districts where the study was carried out are Rayagada from southern, Kalahandi from western, Mayurbhanj from Northern, Kandhmal from central and Bhadrak from the coastal region of Orissa.***

A brief socio-economic and demographic profile of the sample districts is presented in Table 1.

ii) Selection of MHUs in the district: As per the sampling plan, 20% of MHUs in each of the selected district (which comes to a total of 15 MHUs from 5 sample districts) were covered in the study. This includes selection of 2 MHUs run under AROGYA+ scheme in Kandhmal district.

The following conditions were applied for selection of the required number of sample

Table 1 Socio-Economic and Demographic Profile of the Sample Districts

Indicators	Raygada	Kalahandi	Mayurbhanj	Kandhmal	Bhadrak	Orissa
Total inhabited villages*	2,467	2,099	3 ,748	2 ,379	1 ,243	46989
C.D Block*	11	13	26	12	7	314
Number of households*	190,381	320,624	472,123	145,676	238,888	7,738,065
Population*	831,109	1,335,494	2,223,456	648,201	1,333,749	36,804,660
Males*	409,792	667,526	1,123,200	322,799	675,642	18,612,340
Females*	421,317	667,968	1,100,256	325,402	658,107	18,094,580
Sex ratio (females per 1000 males)*	1 ,028	1 ,001	9 80	1 ,008	974	972
% of Scheduled Caste to total population*	13.92	17.67	7.68	16.89	21.50	16.53
% of Scheduled Tribe to total population*	55.76	28.65	56.60	51.96	1 .88	22.13
Literacy rate*	36.15	45.94	51.91	52.68	73.86	63.08
Males*	48.18	62.66	65.76	69.79	84.65	75.35
Females*	24.56	29.28	37.84	35.86	62.85	50.51
No. & percentage of BPL Family **	135785 (72.03)	193054 (62.71)	374867 (77.74)	113970 (78.42)	136849 (66.70)	4,502,809 (66.37)
Health Index***	0.25	0.763	0.782	0.006	0.673	0.468
Life expectancy at Birth****	56	61	63	59	65	61
IMR*****	102	76	62	85	54	66*

*Census of India 2001 **BPL Census, 1997 ***SHDR, Orissa, 2004 ****RCH, 2001 *****IIPS, 2001

Table 2 Sample Districts, Blocks and Villages covered in the study

Regions	Sample Districts	Total No. of MHUs in the District	No. of Sample MHUs Covered (20% of total MHUs in the district)	Type of Blocks								No. of Villages Covered
				Most Dif. Block		Difficult Block		Normal Block		Total		
				No. of MHU operated Blocks	No. of MHU operated Blocks covered in the study	No. of MHU operated Blocks	No. of MHU operated Blocks covered in the study	No. of MHU operated Blocks	No. of MHU operated Blocks covered in the study	No. of MHU operated Blocks	No. of MHU operated Blocks covered in the study	
Southern	Rayagada	17	3	8	2	3	1	-	-	11	3	6
Western	Kalahandi	19	4	2	2	-	-	11	2	13	4	8
Northern	Mayurbhanj	20	4	-	-	14	3	6	1	20	4	8
Central	Kandhmal	15	3 (1 MHU + 2 Arogya+)	3	1	5	2	4	-	12	3	6
Coastal	Bhadrak	01	1	-	-	-	-	1	1	1	1	2
	Total	**72**	**15**	**13**	**5**	**22**	**6**	**22**	**4**	**57**	**15**	**30**

MHUs (as given in the above table) in each of the selected district:

- Selecting the MHUs from different parts of the district (avoided selection of the MHUs from only one side of the district)
- Selecting the MHU covering different category of Blocks viz. 'Most Difficult', 'Difficult' and 'Normal' Blocks in a district
- Selecting only one MHU per Block (avoided selection of more than one MHU per Block if two or three MHUs are functioning in a Block)
- Listing of Blocks as per the above criteria and selecting the required number of MHUs by applying simple random sampling

Out of the 15 MHUs covered in the study, 5 were selected from the 'Most Difficult' Blocks, 6 from 'Difficult' Blocks and the rest 4 were taken from the Normal Blocks (Table 2).

iii) Selection of MHU covered villages: 2 villages from each MHU were randomly selected for the survey of households, community level service providers and key informants. A total of 30 MHU focused villages of 15 sample MHUs were covered in the study (Table 2). This includes the 4 villages of 2 AROGYA+ piloted in Kandhmal district.

iv) Selection of Households: A total of 595 households in 30 sample villages (approximately 20 Households per village) were interviewed in the study. Out of them, 80 households were interviewed in the villages of AROGYA+ (Table 3).

During the time of selection of households, effort was made to select households covering all the

Table 3 Number of sample households, service providers and key informants interviewed in the study

Regions	Sample Districts	No. of Sample MHUs Covered	No. of Households Covered	Service Providers / Key Informants						
				MHU Team (MO, Pharmacist, Heath Worker-Female)	ASHA /Other Provider in the community	MOIC	BPO & BADA	CDMO	DPM	Key Informants from the village
Southern	Rayagada	3	120	3	6	3	3	1	1	6
Western	Kalahandi	4	160	4	8	4	4	1	1	8
Northern	Mayurbhanj	4	160	4	8	4	4	1	1	8
Central	Kandhmal	3	120	3	6	3	3	1	1	6
Coastal	Bhadrak	1	35	1	1	1		1	1	1
	Total	**15**	**595**	**15**	**30**	**15**	**15**	**5**	**5**	**30**

hamlets in the village. So, proportionate random sampling method was applied for selection of the same. Proportion of the required number of sample households was taken from the total households residing in a particular hamlet in order to know the exact number of households to be interviewed in a hamlet. Accordingly, required number of households in each hamlet were randomly visited and interviewed in the study.

v) Interview of Service Providers and Key Informants: The study interviewed a total of 85 health service providers (including the 15 MHU team) in 5 sample districts (Table 3).

Different service providers associated with the MHU at district, Block and village level were interviewed in the study. At the village level, the study in addition to interviewing the service provider who is actively involved with MHU (ASHA/AWW) also interviewed one key informant (e.g. Ward Member / Sarpanch / other key person) in each sample village to know their views and perceptions about the MHU. A total of 30 key informants were interviewed in the study (Table 3).

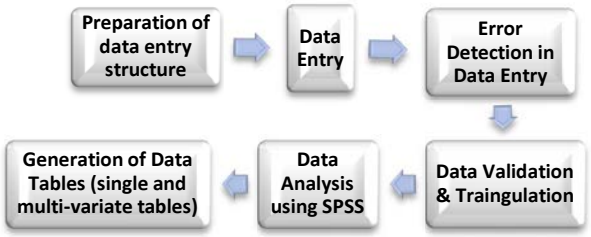
1.4.2.2 Tools & techniques of data collection

Table 4 Tools & techniques of data collection

Study Respondents	Techniques of Data Collection	Tools for Data Collection
Households	Household Interview Method	Structured Household Interview Schedule
Service Providers (MHU Team, ASHA / AWW, BPO/BADA, MOIC, CDMO & DPM)	One to one Interview Method	In-depth Interview (IDI) Schedule
Community Level key Informants	One to one Interview Method	Key Informant Interview (KII) Schedule

1.4.2.3 Data computerization, analysis and reporting

The study used various quantitative and qualitative data analysis methods. The software packages like SPSS and Excel were used for computerization and analysis of quantitative data. Single and multivariate



tables were generated from the data analysis, which are presented in the report with frequencies, percentages and averages. Apart from the quantitative analysis, the study also prepared qualitative data tables / matrixes for reporting the open-ended responses.

***

CHAPTER – II

2. Mobile health unit in Orissa: An overview

2.1 Context of MHU operation in Orissa

Orissa, located on the east coast of India is largely covered with forests, hills and mountains. The areas covered with forests accounts to be 37.4% (i.e. 58,135 sq. km.) of the State's geographical area which makes Orissa 4th among the Indian states in terms of forest coverage. The mountainous portions having undulating topography and rolling uplands cover about three-fourths of the entire state. Except the coastal plains in the eastern part of the State, the southern, central, western and northern parts of Orissa (which form 82% of the State's geographical area) have large hilly tracts, mountains and forest covered areas. Many of the human habitats in these parts, mostly inhabited by Scheduled Tribes and Scheduled Castes do not have road connectivity and transportation facilities which make them inaccessible and highly vulnerable. Both provisioning as well as accessing of basic amenities and services like health, education, public supplies, etc. are found to be difficult in these regions of Orissa. Similar challenges are also faced in some pockets of the

coastal plains which remain cutoff in most part of the year due to formation of deltas by major rivers, frequent floods, water logging, etc.

The location based difficulties (e.g. remoteness and inaccessibility) of people coupled with their socio-economic constraints (e.g. low income, low education, etc.) present them as the most vulnerable or disadvantaged population with regard to accessing and availing various development programs run by the government. Of late, the increasing Maoist insurgence in some of these naturally difficult areas, which provides a safer or secured home for them, has increased the difficulties of the State for development of people in those areas.

Health, one such important development sector is adversely affected by these natural and socio-economic barriers in Orissa. Due to remoteness and inaccessibility of large areas, accessing and provisioning of the health services are difficult in those naturally constrained areas, resulting in low health status of people. So, the location based difficulties have an inextricable link with the low health status of people. Therefore, greater emphasis has been laid by the State on addressing location based health inequities in terms of allocating more resources and introducing special health initiatives. Recognizing the importance of this, the Health and Family Welfare (H&FW) department of the State under National Rural Health Mission (NRHM) has taken up the steps to identify all those areas which are remote and inaccessible and introduced various health measures keeping the location based difficulties in mind. Introduction of the Mobile Health Unit (MHU) is one such initiative taken up by the State for addressing the location based barriers in health care delivery.

2.2 Rationale behind introduction of Mobile Health Unit (MHU)

The health system of Orissa relies on two basic models of catering to the health care needs of people in the State viz. i) Static health facility model and ii) MHU model. The MHU model is a recent introduction which has been adopted keeping into view the geographically disadvantaged sections in the State. The following are some key location based factors which have adversely influenced the effectiveness of health care delivery through static health facility model, thereby, propelled the State to introduce MHU as an alternative model for delivering health care[1].

- Distance of remote villages from public health institution
- Geographical barriers to reach out to such pockets / villages
- Inadequacy in public transportation network & difficult terrain like, Hill / Ghat sections isolating the vulnerable sections of the society
- Lack of health awareness & health consciousness among people, hinders in accessing health services on their own
- No exclusive medical team to reach out to these disadvantaged sections

[1] MHU Guideline, NRHM, Orissa

In the backdrop of above geo-physical constraints, the need of introducing MHU has emerged for providing health care in a specified area with earmarked team of health professionals with supporting equipments & drugs. ***The MHU is envisaged to provide preventive, promotive & curative health services in the inaccessible areas & difficult terrains which are un-served / underserved under usual circumstances***[2]***.***

2.3 Initiation of MHU in Orissa: A historical backdrop

The MHUs have been used as early as 1951 in tribal areas of India with the purpose of improving access to and utilization of health services for people living in the underserved and inaccessible areas[3]. In the State of Orissa, the initiation of MHU can be traced back to the year 1988-89 with the launching of the then Area Development Approach for Poverty Termination (ADAPT) program in the erstwhile Kalahandi and Koraput districts. Subsequently, from 1995-96, through the process of implementation of the centrally sponsored Long Term Action Plan (LTAP) and then, through the Revised Long Term Action Plan (LTAP) from 1998-99, a total of 90 MHUs were introduced in the 8 KBK districts (namely Rayagada, Koraput, Nawarangpur, Malkangiri, Kalahandi, Nuapada, Bolangir and Sonepur districts) of Orissa[4]. All the 80 Blocks in these 8 KBK districts were provided with MHU service in addition to other development programs run under RLTAP. The objectives behind the MHU under RLTAP are as follows:

i) Ensuring adequate access of the local people to health care services,
ii) Improved access of the disadvantaged groups to health services,
iii) Availability of adequate staff in health care institutions,
iv) Effective and prompt treatment of TB, Panchbyadhi and minor ailments, and
v) Extension, awareness and acceptance of availability medical facilities and its popularization

The MHU under the RLTAP was continued till late 2007. Afterwards the Central Government winded up the RLTAP program. But considering the need & importance of the MHU in Orissa, the State decided to continue the same under the Department of H&FW through NRHM. Now funded under NRHM, the MHU operation which was earlier functioning in the KBK districts only has been extended to the Non-KBK districts of Orissa as well, vide sanction order no. - KBK-10/06 - 25017/ H dt. 7/11/08 and order no. - KBK-10/06 - 1117/ H dt. 22/01/09. New operational guideline has been also issued by the Department of H&FW through NRHM for functioning of the MHU in the State.

2.4 Operational Guideline of MHU

The operational guideline of the MHU issued by the H&FW Department of Government of Orissa has following key components:

i) Monthly work plan & preparation of visit schedule
ii) MHU team composition
iii) Mode of transportation
iv) Health care services by MHU
v) Monitoring of MHU
vi) Budget

A brief outline on each of the above components of the MHU guideline is presented hereunder.

[2] MHU Guideline, NRHM, Orissa
[3] CREHS Policy Brief, July 2009
[4] Mobile Health Unit and Primary Health Delivery System under RLTAP in KBK districts: An Evaluation Study, Government of Orissa, 2007

2.4.1 Monthly work plan & preparation of visit schedule

- 26 working days for MHU team in a month (22 days of camp / field visit, 1 day of district level monthly meeting and 1 day for preparation of monthly report)
- Preparation of fortnightly camp program of MHU by MOIC, PHC/CHC in consultation with MOIC, MHU and other functionaries
- Ensuring visit to difficult villages in the camp program on a fixed day in each fortnight
- Approval of program schedule by RKS
- Intimating fixed day-fixed time schedule to all concerned villages in advance & maintaining regularity in these camps as per the schedule

2.4.2 MHU Team Composition

- Five persons team for MHU (viz. 1 Medical Officer – AYUSH, 1 Pharmacist, 1 Health Worker Female, 1 Driver and 1 Attendant)

2.4.3 Mode of transportation

- Provision of hiring private vehicle or engaging institutional vehicle (if available)
- ZSS is responsible for maintenance of institutional vehicle whereas hired vehicles to be maintained by the vehicle owner if the repairing cost is above Rs.50/-
- Exclusive use of vehicle for scheduled camp
- Provision of Travel Expense (TE) to MHU staffs visiting above 8kms from the Block / MHU headquarter

2.4.4 Health care services by MHU

a) Curative
- Treatment of minor ailments
- Referral of complicated Cases
- Early detection of TB, Malaria, Leprosy & other locally endemic communicable & non-communicable diseases such as hypertension, diabetes &cataract cases
- Minor surgical procedures &suturing

b) Reproductive & Child Health Services
- Antenatal check up & related services e.g. Providing TT, IFA, basic Lab services such as hemoglobin, urine for sugar& albumin &referral of other tests as may be required
- Referral of complicated pregnancies
- Promotion of Institutional Services
- Immunization (to be coordinated with local Sub centre & PHC)
- Treatment of childhood illness
- Adolescent care such as life style education, counseling, treatment of minor ailments & anemia, etc.

c) Family Planning Services
- Counseling for spacing & permanent method
- Distribution of condom, oral pill, emergency contraceptives
- IUD insertion

d) Diagnostic Services
- Investigation facilities like hemoglobin, urine examination for sugar & albumin
- Rapid Diagnostic Kit (RDK) test for malaria
- Fixation of slide for diagnosis of TB

e) Emergency services & care in times of disasters / epidemic / public health emergencies / accidents

f) IEC/BCC campaign on different health issues

2.4.5 Monitoring of MHU

- Monitoring of MHU to be undertaken under overall supervision of CDMO
- Monitoring of MHU to be carried out by all wing officers of district along with the staffs of DPMU (NRHM) as well as the Block MOIC and BPO as per the proposed tour schedule
- State level officers from NRHM, RRC, NGO Cell & Directorate are to also monitor MHU while their visit to districts
- Performance indicators for assessment of MHU are as follows:
  - No. of tour days with date and time of attending camps
  - No. of villages visited

- Approximate patients treated basing on local population
- Preventive measures undertaken
- No. of schools covered
- Achievement in National Program
- Engaged for management of any other sudden situations likes epidemic, natural calamities etc.

2.4.6 Budget

- Different costs have been earmarked for MHU operation in KBK and Non-KBK districts.
- Considering the geographic difficulties, more budget is provisioned for MHU in KBK than Non-KBK districts
- Total Budget for the MHU in KBK: Rs. 86,130/- per month that includes:
  - Rs. 37,630/- for personnel cost (including the hardship allowance)
  - Rs. 24,000/- to Rs.28,000/- for transportation cost (including the fuel)
  - Rs. 24,000/- for medicine cost
  - Rs. 500/- for other expenses
- Total Budget for MHU in Non-KBK: Rs. 81,110/- per month that includes:
  - Rs. 33,610/- for personnel cost (including the hardship allowance)
  - Rs. 23,000/- to Rs. 27,000/- for transportation cost (including the fuel)
  - Rs. 24,000/- for medicine cost
  - Rs. 500/- for other expenses

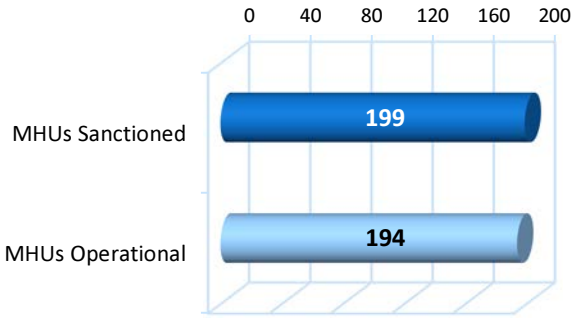
2.5 Number of MHUs operating in Orissa

As on February 2011 there are 194 MHUs functioning in Orissa out of 199 sanctioned by the H&FW Department of the State.

2.6 Geographic coverage: Districts & Blocks covered by MHU

Except 3 coastal districts viz. Cuttack, Kendrapara and Ganjam, the MHU is operational in rest of the 27 districts of Orissa.

Chart 1 No. of MHUs Functioning in Orissa (as on February 2011)



As presented in Table 5, the number of MHUs assigned to a district varies from the district to district. Out of the 314 Blocks in the State, 168 i.e. 54% of the Blocks were provided with a total of 194 MHUs. That means there are Blocks which has provision of more than one MHU.

Table 5 District wise no. of MHUs operational (as on February 2011)

Sl. No.	District	No. of Blocks	No. of Blocks Covered by MHU	No. of MHUs Sanctioned	No. of MHUs Operating
1	Angul	8	1	1	1
2	Balasore	12	2	2	2
3	Bargarh	12	5	5	5
4	Bhadrak	7	1	1	1
5	Bolangir	14	13	15	14
6	Boudh	3	2	2	2
7	Cuttack	14	-	-	-
8	Deogarh	3	1	1	1
9	Dhenkanal	8	5	5	5
10	Gajapati	7	7	8	8
11	Ganjam	22	-	-	-
12	Jagatsinghpur	8	1	1	1

Table 5 District wise no. of MHUs operational (as on February 2011)

Sl. No.	District	No. of Blocks	No. of Blocks Covered by MHU	No. of MHUs Sanctioned	No. of MHUs Operating
13	Jajpur	10	1	1	1
14	Jharsuguda	5	1	1	1
15	Kalahandi	13	13	19	19
16	Kandhamal	12	12	17	15
17	Kendrapada	9	-	-	-
18	Keonjhar	13	10	12	12
19	Khurda	10	1	1	1
20	Koraput	14	14	15	15
21	Malkangiri	7	7	10	10
22	Mayurbhanj	26	20	20	20
23	Nawarangpur	10	9	11	10
24	Nayagarh	8	1	1	1
25	Nuapada	5	5	7	7
26	Puri	11	1	1	1
27	Rayagada	11	11	17	17
28	Sambalpur	9	4	4	4
29	Sonepur	6	6	7	6
30	Sundargarh	17	14	14	14
Total		**314**	**168**	**199**	**194**

The selection of the Blocks for MHU operation was done by the respective district health administration both in the KBK and Non-KBK districts. Factors such as remoteness and inaccessibility were primarily considered for selection of the same. But there was no such scientific and systematic procedures adopted by the districts for categorization and vulnerability ranking of the Blocks.

But to know the vulnerability status of Blocks covered by MHU, the study has made retrospective classification using the composite vulnerability ranking of Blocks done by the State NRHM. The indicators used for the composite vulnerability ranking are as follows:

i) Geographic inaccessibility (large areas of hilly tracts, forests, remoteness, etc.)
ii) Affected by Maoists / Leftwing extremism
iii) Affected by flood
iv) Blocks coming under KBK+ zone
v) Blocks dominated by Tribal

Each Block in the State was assessed against the said indicators and then based on the assessment each Block was given a vulnerability score. As per the score, all the 314 Blocks in Orissa have been classified into i) Most Difficult Blocks (>=50% vulnerability score), ii) Difficult Blocks (50% to 30% vulnerability score) and iii) Normal Blocks (<=30% vulnerability score). Applying the same method, 50 Blocks have been identified as 'Most Difficult' Blocks followed by 47 as 'Difficult' and the rest 217 Blocks of Orissa have been identified as 'Normal' Blocks.

Chart 2 Status of MHU Operation in 'Most Difficult', 'Difficult' and 'Normal' Blocks of Orissa

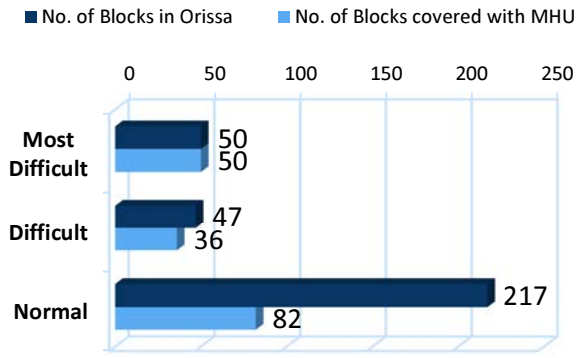


Chart 2 presented above gives the status of the MHU operation in the Blocks identified as 'Most Difficult', 'Difficult' and 'Normal' Blocks. As shown in the chart, all the 50 'Most Difficult Blocks' have the MHU facility whereas 36 out of the 47 Difficult Blocks have same provision. Amongst the 217 Normal Blocks, 82 have the MHU facility.

Due to large inaccessible areas, some of the 'Most Difficult' and 'Difficult' Blocks have provision of more than one MHU. As per the statistics provided by the State NRHM, there are 67 MHUs operating in the 50 'Most Difficult' Blocks identified in the State. Similarly, there are 40 MHUs functioning in the 36 'Difficult' Blocks. And 82 out of 217 'Normal' Blocks

has the provision of one MHU each. In addition, there is provision of 7 centrally operating MHUs functioning from the District Headquarter Hospitals.

Further analysis of the number of MHUs operating in the Blocks shows that there are 4 'Most Difficult' Blocks in the State which has provision of at least three MHUs. In 11 of the 'Most Difficult' and 4 of the 'Difficult' Blocks of the State, there is provision of two MHUs per Block. The remaining 150 Blocks (35 'Most Difficult', 32 'Difficult' and 80 'Normal' Blocks) have single MHU each.

2.7 AROGYA+: A similar initiative through PPP mode

AROGYA+, being piloted in Kandhmal district of Orissa, also focuses on providing health care through the MHU in the most difficult and remotest areas. Lack of focus on community engagement or demand side factors under the MHU has propelled the State to launch this pilot initiative with additional components like strengthening of GKS, community mobilization and establishment of community based monitoring system. While the health services provided by the AROGYA+ is same as that of MHU, this pilot initiative follows a different approach and mode of implementation. Unlike the MHU, the AROGYA+ is being implemented through Public-Private Partnership (PPP) mode. Private organization e.g. NGO / CBO in coordination with the ZSS and Block Health Administration implement the AROGYA+ initiative, whereas, the MHU is only dealt by the Public Health system. More than the mode of implementation, there are some additional program components which make the AROGYA+ different to that of the MHUs. Following are some additional components focused under the AROGYA+, which are not part of the MHU:

i) Strengthening of Gaon Kalyan Samiti

- Training of GKS members in the 'Service Area' on identification of health needs, preparation of health plan, implementation of plan of action, maintenance of accounts and records, co-ordination with different stakeholders etc.
- Ensuring Regular monthly meetings of GKS, Development & implementation of Village Health and Sanitation Plan (VHSP), community based response to health challenges, utilization of funds by GKS, implementing Community Based Monitoring of various health services being provided at the village / Panchayat level
- Capacity building and incentive to ASHA for community awareness

ii) Community Based Monitoring System

- Formation and strengthen capacities of Local Steering Committee (LSC), Gram Panchayat and GKS to monitor the performance and achievement under various health programs
- Organise Jana Adalat-cum-Health Grievance Redressal Camp, involving GKS, ASHA, AWW, ANM, LSC and block health functionaries for redressal of grievances related to health, sanitation, and nutritional services provided by Government, monitoring & auditing of services provided by NGO, etc.

The AROGYA+ initiative is being experimented in 7 clusters covering the 4 out of 12 Blocks in Kandhmal district.

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CHAPTER – III

3. STUDY FINDINGS

This chapter brings out an assessment of the health services & benefits provided by the MHU and also it reviews the operational and managerial effectiveness of the MHUs in delivering those services to the people. Findings of the interviews conducted with the targeted households / beneficiaries, key village level informants and health service providers associated with the MHU are presented in this chapter. Both primary and secondary data collected by the study team were analyzed and are reported in this chapter. This chapter has been structured into the following important sections. The Section II, III, IV and V present the responses of the beneficiaries and Section VI analyses the responses of various service providers interviewed in the study.

i) Background information about the study respondents
ii) Health needs & problems of people vs. health facilities / providers visited
iii) Knowledge of people about the MHU services

iv) Health services availed from the MHU
v) Effectiveness and achievements of the MHU
vi) Operational & managerial effectiveness of the MHUs
vii) Comparative analysis between the MHU and AROGYA+

3.1 Background information about the study respondents

3.1.1 Profile of the households

The study interviewed a total of 595 households of them 515 are in the MHU served villages and 80 are in the AROGYA+ villages. The responses of the 80 households interviewed in the AROGYA+ villages are dealt in a separate section of this chapter (Section 3.8). A brief demographic and socio-economic profile of the 515 households interviewed in the MHU served villages is presented below.

Table 6 Demographic profile of the households interviewed in the MHU served villages

Sl. No.	Demographic Indicators	No.	%
1	Total households	515	
2	Total family members	2563	
3	Average family size per household	5	
4	Male Family Members	1329	51.9
5	Female Family Members	1234	48.1
6	Male to Female sex ratio	1000 / 929	
7	Children family members <5yrs	340	13.3
8	Women family members in the reproductive age group (15-49yrs)	649	23.5
9	Pregnant & lactating woman	34	5.2
10	Aged family members above >60yrs	161	6.3

The 515 households have a total of 2563 family members with an average size of 5 members per family. Their sex ratio is 929 females per 1000 males. Among the family members, 340 (13.3%) are the children below five years and 649 (23.5%) are women within the reproductive age group of 15 to 49 years. Out of those women in the reproductive age group, 34 (5.2%) were in pregnancy and lactating stage during the time of survey. Only 6.3% i.e. 161 are aged people above 60 years of age.

Table 7 Socio-economic profile of the households interviewed in the MHU served villages

Sl. No.	Demographic Indicators	No.	%
1	Total households	515	100.0
2	Total family members	2563	100.0
3	Total Illiterate family members (out of those who are above 5yrs of age)	902	40.6
4	Scheduled Tribe households	341	66.2
5	Scheduled Caste households	87	16.9
7	Other Backward Caste households	78	15.2
8	General caste households	9	1.7
9	Households having BPL Card	361	70.1
10	Average family income	Rs. 21,153/-	
11	Modal range of income (Rs.10,000/- to 19,999/- per annum)	243	47.2
12	Major source of income of households – Daily Wage earning	420	38.6
13	Households living in Kuccha house	386	75.0
14	Households living without electricity connection	419	81.4

Majority i.e. 40.6% of the family members (out of those who are above 5yrs of age) are illiterate. Maximum of the households i.e. 341 (66.2%) interviewed in the study belong to Scheduled Tribe (ST) communities followed by 87 (16.9%) are from Scheduled Castes.

The average income of families stands at Rs.21,153/- per annum and the modal range of income of majority i.e. 243 (47.2%) families is within Rs. 10,000/- to 19,999/- per annum. As many as 70.1% i.e. 361 out of 515 households have BPL Card provided by the Government. Among the earning family members, maximum i.e. 420 (38.6%) members draw their income from daily wages. Housing pattern of these households suggests that highest i.e. 386 (75%) stay in Kuchha houses and 419 (81.4%) live without electricity connection.

In brief, the households living in the MHU served villages are mostly from the backward castes and have low educational and economic status.

3.1.2 Profile of key village level informants

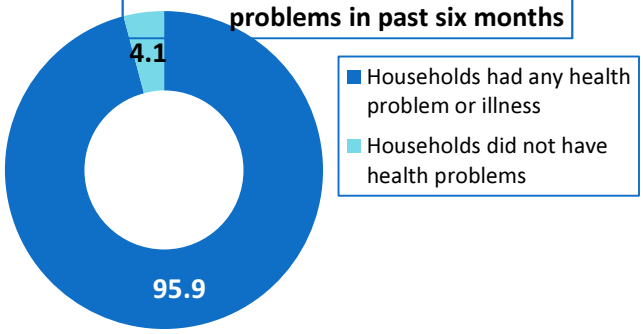
The study interviewed a total of 30 key informants of them 26 are from the MHU served villages. Out of these 26 key informants, 7 are PRI members and the rest 19 are key influential persons of the villages.

3.1.3 Profile of the key service providers interviewed in the study

- All the 13 MHUs covered in the study have AYUSH doctors. Of them, the doctors or Medical Officer (MOs) of 8 MHUs have Bachelor in Ayurvedic and Medicine in Surgery (BAMS) degree and the rest 5 have Bachelor in Homeopathy and Medicine in Surgery (BHMS) degree.
- None of the doctors engaged in the MHU are from allopathic background.
- The work experience of doctors engaged with MHU varies from 1 to 9 years.
- The Pharmacists engaged in majority i.e. 10 out of 13 MHUs are Diploma holders in Pharmacy. In the rest 3 MHUs, the Pharmacists have Bachelor Degree qualification in Pharmacy.
- The Health Worker (Female) appointed in 4 out of 13 MHUs have undergone special course / training on Nursing.
- All the 13 MOICs of PHC/CHC interviewed in the study are from allopathic background and have MBBS degree. Only 2 of them have specialization, one in Pediatric and other one in Gynecology.
- The study interviewed 20 ASHAs and 4 AWWs, of them only 8 ASHAs and 2 AWWs have educational qualification of 8th Standard or above.

3.2 Illness / health problems of family members during past six months

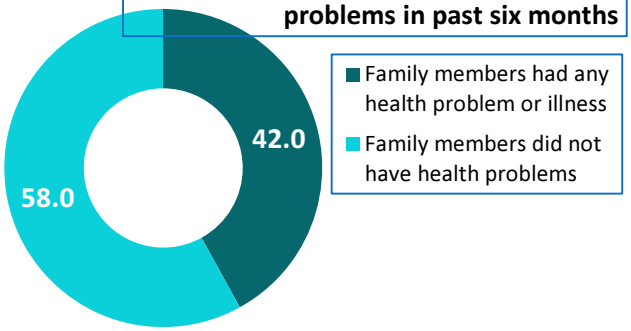
Chart 3, % of Households had health problems in past six months



Except 21 (4.1%) households, the family member/s of remaining 494 (95.9%) households had health problem during six months prior the survey (Chart 3).

These 494 households have 2465 family members, of them 1035 (42.0%) fell sick during past six months prior the survey (Chart 4). On an average, ***approximately 2 persons per family had health problem during past six months.***

Chart 4, % of family members had health problems in past six months



In the MHU served villages which are located mostly in the remote and inaccessible areas, as high as 96% of households and 42% of their family members had health problems during six months prior the survey. This not only gives an idea about the extent of health needs of people staying in the

remote or inaccessible areas but also justifies the need of health care support provided by the Government through the MHU.

A list of various health problems or illness suffered by people during last six months is given in Table 8.

Table 8 Type of health problems suffered by people in the MHU served villages

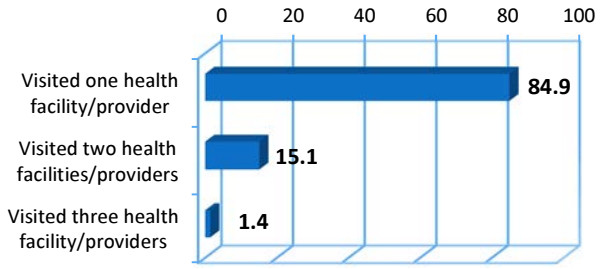
Illness	%	Illness	%
Fever	43.0	Toothache	0.4
Back/leg/joint pain	8.1	Menstrual problem	0.4
Cough/Chest infection	7.9	Foot Crack	0.4
Diarrhea without blood	7.0	Injury	0.4
Malaria	6.6	Allergy	0.4
Cold	5.6	Piles	0.3
Headache	4.6	Worm Infection	0.3
Skin rash/infection	3.7	Hypertension/BP	0.2
Body ache	2.7	Glottises	0.2
Wound	1.2	Accident	0.2
Gastric/Acidity	1.2	Sickle Cell	0.2
Diarrhea/vomiting	1.1	Measles	0.1
Eye/Ear infection	1.1	Color blindness	0.1
Vomiting	1.1	Night fall	0.1
Diarrhea with blood	1.0	Blood in Urine	0.1
Tuberculosis/TB	0.8	Dumb & deaf	0.1
Rheumatism	0.8	Small pox	0.1
Stomach Problem	0.8	Liver Problem	0.1
Abdominal pain	0.8	Asthma	0.1
Anemia	0.4	Chest Pain	0.1
Jaundice/Yellow fever	0.4	Isunfulia	0.1

Note: Multiple incidences of illnesses were reported by some of the households interviewed

Out of the 1035 family members who had illness, 43.0% suffered from fever and 6.6% had malaria. It is important to note here that most of the inaccessible and remote villages in Orissa are prone to Malaria, which could be one of the key reasons behind people suffering from fever. Although, the study finds only 6.6% of malaria cases reported by people during the course of interview, the actual percentage of malaria cases might be more.

Followed by fever and malaria, the other common health problems suffered by the people are: Back / Leg / Joint pain (8.1% cases); Cough / Chest infection (7.9% cases); Diarrhea without blood (7.0% cases); Cold (5.6% cases) and Skin rash / infection (3.7% cases); etc.

Chart 5 No. of health facilities /providers visited for treatment of illness

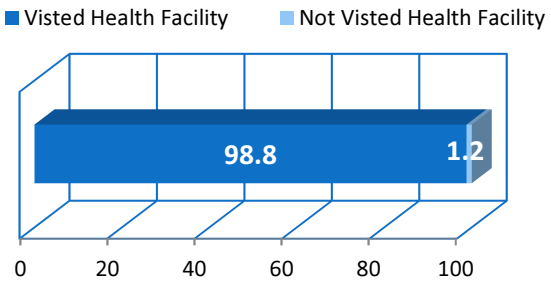


The major illness that were found in the MHU served villages are: Diarrhea with Blood / Vomiting (1.0% cases); TB (0.8% cases); Rheumatism (0.8% cases); Abdominal Pain (0.8% cases); Jaundice (0.4% cases); Hypertension / BP (0.2% cases); etc.

3.3 Health facilities/providers visited by the people for treatment of their illness

Out of the 1035 persons who had illness, 1023 (98.8%) visited different health facilities or providers for treatment.

Chart 6 % of people visited health facilities / providers during illness



Again of those who visited any health facility / providers, ***majority i.e. 871 (85.1%) visited to one single health facility for treatment of their illness.*** There are 13.5% i.e. 138 out of 1023 visited to two different health facilities and 1.4% i.e. 14 visited as many as three health facilities for treatment of their illness. In total, 16.5% had to visit more than one facility for treatment of their same illness. People visited more than one health facility is because of either not got cured by the treatment provided by the first facility / provider or they were referred to higher health facility for proper diagnosis and treatment of their illness.

Among the various health facilities / providers visited by the people, highest i.e. 813 (79.5%) out of 1023 persons availed treatment from the MHU followed by 186 (18.2%) visited the PHC/CHC and 94 (9.2%) visited the private clinic / hospital. The next highest number of people i.e. 34 (3.3%) visited to the DHH followed by 23 (2.2%) to the ANM / Sub-centre and 23 (2.2%) availed treatment from the traditional healer and quack.

Table 9 % of people visited to different health facilities / providers during illness

Health Facilities	No.	%
MHU	813	79.5
PHC/CHC	186	18.2
Private clinic/Hospital	94	9.2
DHH	34	3.3
ANM/sub-centre	23	2.2
Traditional healer	16	1.6
Quack	7	0.7
ASHA	5	0.5
AWW	5	0.5
SDH	4	0.4
Drugs shop	1	0.1
Faith/Church healer	1	0.1
Total	**1023**	

Note: Multiple facilities visited by people

Almost 80% of people (those who had illness and visited any health facility) availed treatment from the MHU which clearly gives an indication about the degree of dependence of people on the MHU.

Table 10 District wise % of people visited to major health facilities / providers during illness

District Name	PHC/CHC	DHH	ANM/sub-centre	Private Hospital	MHU	Total
	%	%	%	%	%	Count
Mayurbhanj	11.5	1.1	2.7	11.0	85.3	374
Kalahandi	20.0	2.9	3.8	6.7	76.2	315
Rayagada	18.8	1.7	0.0	4.4	87.3	181
Kandhamal	46.1	21.1	1.3	6.6	46.1	76
Bhadrak	14.3	0.0	0.0	22.1	79.2	77
Total	**18.2**	**3.1**	**2.2**	**9.0**	**79.5**	**1,023**

The district wise segregation of the people visited different facilities presented in Table 10 shows that except Kandhmal district more than 75% of people in rest of the four districts namely Mayurbhanj, Kalahandi, Rayagada and Bhadrak visited the MHU for availing the health care services. In Kandhmal, only 46.1% of people visited the MHU whereas exactly the same percentage of people visited the PHC/CHC for the treatment. Lack of prior information and irregular visit by the MHU was reported by the people as the reason for the same.

3.4 Knowledge of the households about the MHU and its services

3.4.1 Knowledge of the households regarding the visit of MHU to their village / neighboring village

Although the Government has provisioned MHU services in the remote and inaccessible areas, the knowledge of people about the MHU is one of the important prerequisites for maximizing its outreach and benefits. Keeping this in mind, the study assessed the knowledge and awareness of households regarding the visit of the MHU and services provided.

As per the assessment made, ***almost all i.e. 500 (97.1%) out of 515 households interviewed in the***

study know about the MHU visiting their area for providing the health care services.

Table 11 Source of information to households about the MHU visiting their villages		
Source	**Count**	**Column N %**
MHU	18	3.6%
ASHA	300	60.0%
ANM	30	6.0%
AWW	188	37.6%
PHC/CHC	3	0.6%
Villagers / Neighbors	9	1.8%
Nobody (saw MHU in the village)	102	20.4%
No. of households aware about MHU	**500**	
Note: Households received information from multiple sources		

Highest i.e. 300 (60%) households got the information about the MHU first time from the ASHA followed by 188 (37.6%) were informed by the AWW (Table 11), which shows the involvement of local providers like ASHA and AWW in informing people about the visit of the MHU to their villages.

Next highest i.e. 102 (20.4%) came to know about the MHU after seeing it in the village. The table also shows that 18 (3.6%) households were directly informed by the MHU itself. There are also households who received information from multiple sources about the visit of MHU.

3.4.2 Knowledge of the households about the date & timing of the MHU visit

Out of the 500 households aware of the MHU visit, almost three fourth i.e. 363 (72.6%) could correctly tell the fixed date and time of the MHU visit to their village. The remaining 137 (27.4%) either could not correctly tell the same or are completely ignorant about the fixed date and timing of the MHU visit to the village.

While almost all knows about the MHU visit to their village, relatively lesser i.e. three fourth of them are aware of the date and timing of the MHU visit. This could be due to irregular or un-planned visit of the MHU to the village. More details on the same are discussed in the subsequent sections.

3.4.3 Knowledge of the households about the number of times that the MHU supposed to visit vs. actual frequency of visit made by the MHU

As per the guideline, the MHU is mandated to visit once in every fortnight or twice in every month. But this fact is known to only 42% i.e. 210 households. According to more than half i.e. 259 (51.8%), the MHU is supposed to take 3 to 5 visits in a month. It means they are unaware of the actual number of times that the MHU supposed to visit a village in a month.

It is important that the people in the beneficiary villages are aware about the mandated number of trips the MHU must make in a month, so that they can demand whenever there is shortfall in the frequency of visits.

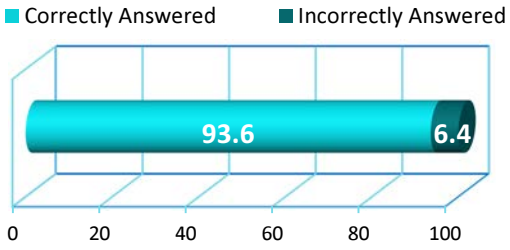
Table 12 Knowledge of the households about the number of times MHU supposed to visit vs. actual frequency of visit made by the MHU				
Frequency of visit	**No. of times MHU supposed to visit p.m.**		**Actual frequency of visit made by the MHU p.m.**	
	Count	**Column N %**	**Count**	**Column N %**
1	22	4.4%	389	77.8%
2	210	42.0%	97	19.4%
3	167	33.4%	-	-
4	88	17.6%	-	-
5	4	0.8%	-	-
Can't say	9	1.8%	14	2.8%
No. of HH aware about MHU	**500**	**100.0%**	**500**	**100.0%**

Apart from assessing the knowledge of people on the number of times that the MHU is supposed to visit, the study also made an attempt to know from the beneficiaries on the actual number of times that the MHU visiting their village in a month. In this regard, majority i.e. 77.8% (389 out of 500) of

households reported only one visit per month made by the MHU in general. ***Only 19.4% informed that the MHU visited two times in a month to their village.*** This could be either due to less frequent visit made by MHU in a month to the village or people were unaware of the visit/s made by the MHU due to their absence in the village at the time of visit. This has been examined in the operational assessment of the MHU made in the later part of the report.

3.4.4 Knowledge of the households about the location of the MHU camp in the village

Chart 7 % of households aware of the location of the MHU camp



As against the three fourth of households know about the date and timing of the MHU visit, much higher i.e. 93.6% (468 out of 500) of households have knowledge about the exact place or point where the MHU holds its camp in the village.

3.4.5 Knowledge of the households about the various health personnel required to visit with the MHU

Table 13 Knowledge about the different health personnel require to visits with MHU

Health Personnel	Count	Column N %
Doctor	478	95.6%
Pharmacist	420	84.0%
Health worker (Female)	182	36.4%
Attendant	287	57.4%
Don't know	21	4.2%
No. of Household Aware about MHU	**500**	
Note: Households received information from multiple sources		

Among the various health personnel required to visit with the MHU, Doctor was mentioned by majority of the households i.e. 478 (95.6%) followed by Pharmacist informed by 420 (84%) households. Only 57.4% and 36.4% know about the provision of Attendant and Health Worker (F) in the MHU team respectively.

In the 13 MHUs covered in the study, the post of Health Worker (F) and Attendant were lying vacant in 9 and 3 MHUs respectively which could be the reason why a major percentage of households are unaware of their provision in the MHU.

3.4.6 Knowledge of the households about the services provided by the MHU

Except few services, people are unaware of most of the services that the MHU is required to provide them (Table 14). Highest i.e. 477 (95.4%) households are aware of the treatment of minor ailments followed by 311 (62.2%) know about the detection of Malaria (using RDK) & treatment done by the MHU. Next highest i.e. 296 (59.2%) know regarding the MHU service in referring the complicated cases to the higher health facility.

Treatment provided by the MHU during epidemics is known to 102 (23.6%) followed by 91 (18.2%) knows about the detection of TB done by the MHU. Only 62 (12.4%) are aware of the ANC done by the MHU. Other services which are outlined in the guidelines of the MHU e.g. family planning services, diagnostic services, minor surgical, detection of diabetes and cataracts, etc. are hardly known to the households.

Table 14 Knowledge of households about the various services provided by MHU

Services	Count	Column N %
Treatment of minor ailments	477	95.4%
Detection & treatment of Malaria	311	62.2%
Referral of complicated cases	296	59.2%
Epidemic Cases	119	23.6%

Table 14 Knowledge of households about the various services provided by MHU		
Services	**Count**	**Column N %**
Detection of TB	91	18.2%
Treatment of childhood illness	70	14.0%
ANC related services	62	12.4%
Detection of Leprosy	57	11.4%
Detection of Hypertension	54	10.8%
Referral of complicated pregnancy	33	6.6%
Detection of Diabetes	11	2.2%
Detection of Cataract	9	1.8%
Minor Surgical/suturing	9	1.8%
Distribution of condom	9	1.8%
Counseling on spacing/permanent method	8	1.6%
Oral/pill/emergency contraceptive	7	1.4%
Immunization	6	1.2%
Adolescent care	6	1.2%
Slide for diagnostic of TB	3	0.6%
Promotion of Institutional delivery	2	0.4%
Investigation facilities like hemoglobin	1	0.2%
Urine Examination	1	0.2%
Cannot Say	19	3.8%
No. of Household Aware about MHU	500	100.0%
Note: Households received information from multiple sources		

3.5 Health services availed by people from the MHU

Apart from assessing the knowledge of households about the MHU, one of the important tasks before the study was to understand and know the actual health care services received by people from the MHU.

During six months prior the study the family members of 494 out of 515 households had health problems/needs, of them 418 (84.6%) households availed health care services from the MHU. The remaining 76 (15.4%) availed treatment from the other health facilities / providers. In these 494 families, 1035 family members had illness and 1023 of them visited any health facility. Out of these 1023, 813 (79.5%) visited the MHU. The rest who did not avail services from the MHU are due to various demand as well as supply side factors. The following are some of the key reasons why people did not or could not avail the services from the MHU:

- Lack of knowledge about the MHU
- Engagement in other economic activity on the day of MHU visit
- Irregular visit of the MHU and lack of information prior to the visit of the MHU
- Visit of the MHU only once or twice in a month on fixed days (people falling ill on different days during which MHU does not come to the village force them to visit the other health facilities / providers for treatment)

Prior information about the MHU visit was given to 340 (81.3%) families either on the same day or previous day of visit of the MHU. The rest 18.7% (i.e. 78 out of 418) visited the MHU after seeing the arrival of it in the village.

Table 15 Prior information to households before the MHU visit		
Source	**Responses**	**Column N %**
ASHA	246	58.9%
ANM	11	2.6%
AWW	112	26.8%
PHC/CHC	7	1.7%
Villagers/Neighbors	21	5.0%
AWW helper	1	0.2%
Visited after seeing MHU in the village	78	18.7%
Total	**418**	
Note: Information received by households from multiple sources		

Those who were informed prior to the MHU visit, highest i.e. 246 (58.9%) of them came to know the same from ASHA followed by 112 (26.8%) from the AWW. Since the prior information / reminder to people regarding the MHU visit is required, it is necessary that the local service providers like the ASHA and AWW in all the MHU served villages play the role of informing people on the same.

Various health services received by the people from the MHU are presented hereunder. The following

five broad categories of services which are supposed to be provided by the MHU are analyzed here.

i) Curative services
ii) Reproductive and child health services
iii) Family Planning services
iv) Diagnostic services
v) Emergency services

3.5.1 Curative services

Out of the 813 people who visited MHU (i.e. minor and major ailments), maximum i.e. 726 (89.3%) received treatment from the MHU for cure of their ailments. In Kandhmal, only 42.9% of people availed curative services from the MHU out of the total number of people who had illness/health needs in the district. This is because of the less number of people (33 out of 77) visited the MHU in Kandhmal district for treatment of their illness. In rest of the 4 districts, approximately 70% to 80% of people availed curative services from the MHU out of those who had illness.

Table 16 District wise the no. of people availed curative services from the MHU

District	No. of people visited the MHU for curative services			No. of people availed treatment from MHU	No. of people had illness
	Count	% from people availed treatment from MHU	% from people who had illness	Count	Count
Mayurbhanj	263	82.4	69.9	319	376
Kalahandi	220	91.7	69.0	240	319
Rayagada	152	96.2	81.7	158	186
Kandhamal	33	94.3	42.9	35	77
Bhadrak	58	95.1	75.3	61	77
Total	**726**	**89.3**	**70.1**	**813**	**1,035**

The Table presented below gives an idea about the number of people who had major and minor ailments vs. no of people availed curative services from the MHU.

Table 17 No. of people availed treatment from MHU for different illness

Illness	No. of people availed treatment from MHU		
	No.	% from those availed curative services from the MHU (N:726)	% from those who availed treatment from MHU (N:813)
Fever	340	46.8	41.8
Back/leg/joint pain	81	11.2	10.0
Diarrhea without blood	67	9.2	8.2
Malaria	41	5.6	5.0
Cough / Chest infection	82	11.3	10.1
Cold	58	8.0	7.1
Skin rash / infection	34	4.7	4.2
Body ache	25	3.4	3.1
Headache	48	6.6	5.9
Wound	4	0.6	0.5
Gastric/Acidity	6	0.8	0.7
Diarrhea/vomiting	6	0.8	0.7
Eye/Ear infection	9	1.2	1.1
Diarrhea with blood	9	1.2	1.1
Tuberculosis/TB	6	0.8	0.7
Rheumatism	8	1.1	1.0
Stomach Problem	7	1.0	0.9
Abdominal pain	8	1.1	1.0
Anemia	4	0.6	0.5
Jaundice/Yellow fever	2	0.3	0.2
Toothache	3	0.4	0.4
Menstruation related problem	4	0.6	0.5
Foot Crack	4	0.6	0.5
Piles	2	0.3	0.2
Worm Infection	3	0.4	0.4
Vomiting	11	1.5	1.4
Hypertension/BP	2	0.3	0.2
Glottises	1	0.1	0.1
Accident			0.0
Sickle in	1	0.1	0.1
Measles	1	0.1	0.1
Injury	4	0.6	0.5
Color blindness	1	0.1	0.1
Night fall			0.0

Table 17 No. of people availed treatment from MHU for different illness			
Illness	No. of people availed treatment from MHU		
	No.	% from those availed curative services from the MHU (N:726)	% from those who availed treatment from MHU (N:813)
Blood in Urine			0.0
Allergy	4	0.6	0.5
Dumb & deaf			0.0
Small pox	1	0.1	0.1
Liver Problem			0.0
Asthma	1	0.1	0.1
Chest Pain	1	0.1	0.1
Issunfulia	1	0.1	0.1
Total	**726**	**100%**	**89.3**

The 726 people who availed curative services, almost half i.e. 340 (46.8%) had fever followed by 82 (11.3%) had cough / chest infection, 81 (11.2%) back/leg/joint pain, 67 (9.2%) diarrhea without blood, 58 (8%) cold, 48 (6.6%) headache, 34 (4.7%) skin rash/infection, 25 (3.4%) body ache, etc. Only few out of these 726 people had major illness viz. malaria (41, 5.6%), diarrhea with blood (9, 1.2%), rheumatism (8, 1.1%), abdominal pain (8, 1.1%), TB (6, 0.8%), Jaundice (2, 0.3%), etc.

Table 17 also presents each illness wise the number of patient availed treatment from the MHU. Out of the 445 fever cases, 340 (76.4%) received treatment from the MHU. About 96% of back/leg/joint pain cases and 93% of diarrhea cases availed treatment from the MHU. Out of the people who suffered from different major illnesses, 90.3% of diarrhea with blood cases, 60.3% malaria and 75% of TB cases received treatment from the MHU.

About 70% of people who had illness availed curative services from the MHU. While the MHU visits only once or twice in a month to a village, as many as 70% of people receiving curative services is an achievement of the MHU.

The study reveals that only a negligible percentage 0.8% (6 out of 726) of cases were referred to higher health facility by the MHU for treatment, which is against the common perception that the MHU mostly refers patients to the higher health facilities instead of providing treatment in their village. Across all the study districts, the MHU team reported on making the best possible effort to provide treatment to the patients in the village rather referring to the higher health facility. Only highly complicate cases were referred for further diagnosis and treatment.

3.5.2 Reproductive and child health services

As per the demographic data collected in the study, the 515 sample households have a total of 340 children below five years. Also 34 out of 649 women in the age group of 15 to 49yrs were found pregnant and lactating mothers during six months prior the survey.

Table 18 shows that ***out of the 813 people (who visited the MHU) only 47 (5.8%) availed the RCH service from the MHU***.

Table 18 Type of Reproductive and Child Health (RCH) Services availed by the beneficiaries (Children, and Pregnant and Lactating Mothers)		
Services	**Count**	**Column N %**
Weighing	10	21.3
Measurement of blood pressure	12	25.5
Testing of blood sample	2	4.3
Abdomen check-up	14	29.8
Tetanus	2	4.3
IFA tablet/Syrup	18	38.3
Referral of complicated pregnancy	2	4.3
Treatment of childhood illness	23	48.9
Treatment of malnourished children	2	4.3
No medicine due to out of stock	1	2.1
No clinical diagnosis due to lack of facility	3	6.4
Total	**47**	
Note: Multiple RCH services were received by people		

Highest i.e. 24 (51.1%) received treatment for childhood illness followed by 18 (38.3%) pregnant woman underwent abdominal check-up, 16 (34%) were given IFA tablet / syrup by the MHU. Only 12 (25.5%) had BP check-up and 11 (23.4%) were weighed by the MHU. TT was administered to only 2 (4.3%) women.

Although the MHU as per the guideline requires providing the RCH services to people, only 5.8% availed the same from the MHU which indicates about the negligible role played by the MHU in providing RCH services to the women and children in the village.

During the course of interview with the MHU team, various operational factors were highlighted as the reasons for less importance being given to providing RCH services in comparison to the curative services. Details about the operational factors are discussed in the subsequent sections of this report.

3.5.3 Family Planning services

Similar to the RCH services, ***almost negligible number i.e. 13 (1.6%) people in the sample households were provided family planning services out of the 813 people who visited the MHU.*** Only 8 were given oral pills, 6 were counseled on spacing, 4 were counseled on permanent method and 3 were given emergency contraceptives. None of them reported of receiving condom.

Strong inhibitions of people to ask for the family planning services is reported by the MHU team and other service providers as the main reason behind very small number of people turning up or approaching the MHU for the same services. Here it indicates about the need of BCC/IEC in the MHU served villages which was almost not undertaken by the MHU.

3.5.4 Diagnostic services

The provision of diagnostic services under the MHU includes investigation facilities like hemoglobin, urine examination for sugar & albumin, RDK test for malaria and fixation of slide for the diagnosis of TB.

The sample households interviewed in the study reveals that only 7.6% (62 out of 813) of family members received any diagnostic services of them the RDK test for malaria was conducted in case of majority i.e. 52 (83.9%). The urine examination for sugar & albumin was done in case of only 2 (3.2%) persons and hemoglobin test was conducted in case of only 5 (8.1%) persons. Apart from these tests, the slide of 5 (8.1%) doubtful TB cases were collected and deposited by the MHU at the PHC/CHC for diagnosis.

Table 19 Diagnostic services received from MHU

Diagnostic services	Count	Column N %
Hemoglobin test	5	8.1
Urine Examination	2	3.2
RDK test for Malaria	52	83.9
Slide for TB diagnosis	5	8.1
Total	62	
Note: Multiple diagnostic services were received by people		

It is important to note here that a total of 381 fever cases (including the 41 malaria cases) visited the MHU for treatment but the RDK test was done only in case of 52 (13.6%) cases. As already mentioned, most of the MHU served villages are prone to malaria and it is essential that the RDK test of all the fever cases is conducted by the MHU.

The various factors mainly responsible for not undertaking the diagnostic tests are non-availability of the diagnostic instruments and kits, delayed supply of the kits, no technical manpower, etc. with MHU. More details about this are discussed later.

3.5.5 Emergency services and care

Providing emergency services & care at the times of disasters / epidemic / public health emergencies / accidents is another important deliveries expected from the MHU. According to the study findings, out of the 2465 family members (in households who had health problem) only 50 (2.0%) had any emergency health problems during six months prior the survey.

Table 20 Number of people had different emergency health problems

	Count	Column N %
Abdominal pain	4	8.0
Accident	1	2.0
Anemia	2	4.0
Anemia / abdominal pain	1	2.0
Back pain	1	2.0
BP Case	2	4.0
Brain Malaria	1	2.0
Chest & Body Pain	1	2.0
Chest infection & vomiting	1	2.0
Cough & chest infection	1	2.0
Delivery Case	1	2.0
Diarrhea	7	14.0
Diarrhea & Vomiting	2	4.0
Fever	11	22.0
Fever & Headache	1	2.0
Leg fracture	1	2.0
Malaria	7	14.0
Skin Infection / Allergy	1	2.0
Snake Bite	1	2.0
TB	2	4.0
Vomiting	1	2.0
Total	**50**	**100.0**

Among the various emergency cases, maximum i.e. 11 (22.0%) had emergency due to fever followed by 9 (18.0%) due to diarrhea, 8 (16.0%) because of malaria and 4 (8.0%) faced emergency health problem due to abdominal pain.

But out of the 50 emergency cases, only 8 approached the MHU for the emergency health care. Reasons for which the remaining 42 did not approach the MHU during emergency are given in the Table 21.

Table 21 Reasons given by the people for not approaching the MHU during emergency health problems

Reasons	Count	Column N %
Non-availability of MHU at the time of Emergency	42	100.0%
Doesn't have trust on MHU for Emergency	7	16.7%
Recommend by service provider to visit other health facility	1	2.4%
Total	**42**	

Note: Multiple reasons were given by some respondents

Non-availability of the MHU at the time of emergency was reported as the key reason by all the 42 persons who did not approach MHU during the emergencies. Since the MHU only visits once or twice in a month, it is difficult or not possible to approach the MHU at the time of emergency health need specifically in case of accidents and in any public health emergencies.

In other health emergencies like epidemics and disaster, the MHU played an important role in providing health services. As reported in districts like Rayagada, Kandhamal and Kalahandi, the MHU was deployed for managing the Cholera and Diarrhea outbreak in the districts.

Unlike the RCH, Family Planning and Diagnostic services provided by the MHU, the service providers like CDMO, DPM, MOIC and BPMU interviewed at the district and Block level appreciated the role played and contributions made by the MHU for providing health care services during the health epidemics or emergencies. Last year, across 3 out of the 5 study districts, there was diarrhea / cholera outbreak which was severe in Rayagada district. During that time, the MHU team was exclusively entrusted the responsibility of handling the affected villages. Week or month long camps were organized by the MHU team in those affected villages as per the situation in the villages which helped to curb the epidemic in the area. Commendable effort was

made by the MHU in both providing preventive and curative services to the affected people during emergencies.

A case study of a MHU in Rayagada for their commendable effort during epidemic

Hadia a village under Jemadeipentha PHC of Gumma Panchayat of Rayagada Sadar block where the epidemic Cholera first broke out on July 2, 2010 and it spread gradually to the nearby villages namely Khambesu and Raikona. The epidemic was so severe in Hadia village suddenly a girl aged 16 years from the village died due to the same. When the news reached at PHC, Rayagada the MHU of Jemadeipentha immediately rushed to the epidemic spot. The MHU cancelled all its routine work and completely concentrated on these three affected villages. Halogen tablets, ORS packets and anti-diarrheal tablets were provided to all the families in these three villages of Guma Panchayat. After two or three days of operation in Guma Panchayat, the MHU team sensed the possibility of spreading of Cholera to other surrounding and nearby villages. Accordingly, the MHU extended its operation to other villages of Guma Panchayat and in the villages of 8 surrounding GPs namely Butaguda, Halua, Tikarpada, Tadama, Gajigaon, Hatasesathal, Kumbhikota and Kereda and provided similar health services in these GPs.

When more and more people got affected, the MHU team (who was given the responsibility of coordinating the entire operation) decided to launch more organized and strategic move with an aim to curb the spread of Cholera in the area and provide necessary treatment. Based on the decision, treatment centers were established in each of the affected GPs for providing round the clock health care services to the people in the area. The number of treatment centers established in each of these GPs varied depending on the severity of the Cholera epidemic. In only Guma Panchayat, 4 treatment centers were established as almost all villages in the Panchayat were severely hit by the epidemic. Apart from establishing treatment centre, the MHU team also formed core teams having 3 members each consisted of 1 Multi Purpose Health Supervisor, 1 Male Worker and 1 volunteer and placed one such team in each of the treatment centers established for providing required health services. The core team operating at the treatment centre provided 24 hours health services like supplying Halogen tablets, ORS packets and anti-diarrheal tablets to the affected villages, wherever they found complicated cases beyond their competence they immediately referred to the District Headquarter Hospital for further treatment.

Apart from the above responsibilities, the core team was also engaged in taking preventive measures to check further spread of Cholera in the area. The team sprinkled bleaching powder to disinfect the entire affected areas, so as to prevent further infection and to arrest the epidemic. Halogen tablets were distributed to each household in the village for applying the same (with clear message on how to apply the same) in the water used for drinking purpose. The team educated them on use of boiled water for drinking purposes, intake of 3 to 4 liters of water per day by each person; not to use river water for cooking and drinking; do not throw used clothes into the river; inform the core team immediately after 2 to 3 loose motions.

In the pursuit to curtail epidemic in the area, one of the most commendable measures taken up by the MHU team was by taking necessary steps to disinfect the water of the Jhanjabati canal which flows through the Hadia village and finally merged with the Nagabali river. Including the people in Hadia village, the Jhanjabati canal is the lifeline of for many other villages located besides the village. The water of the canal is used for drinking, bathing, cleaning and other purposes. So the MHU team could easily sense that there is an immediate need for disinfecting the canal water at Hadia village which would help to prevent the spread of Cholera to people in other villages who use the same water for drinking purpose. Accordingly, the MHU team very judiciously and promptly made a mixture of sand and bleaching powder and transferred the mixture into sacks which they put it along the banks of the canal.

The MHU team worked tirelessly visiting all the affected villages twice a day and also visited the treatment points, ensuring that the job on hand was well coordinated, targeted, effective and result oriented. Other than the MHU team, field visits were also made by the MOIC, CDPO and BEE of Rayagada block to the epidemic area. A 24x7 control room was established in the DHH with 2 telephone lines to meet emergency and critical services. The MHU team camped in the epidemic area and provided uninterrupted services to the people of the affected villages for a period of one month. The services included injections and medicines like Metradejon, Slofacin, Ornadazole, Tetracyclin, Azithromycin, Dozicyclin, Amikacol injections, Saline and sufficient packets of ORS for immediate treatment to avoid dehydration. The complicated cases were carried by the MHU team in their vehicle to the DHH in addition to the Ambulances deployed by the DHH. The requisite amount of Anti-diarrheal medicines was also supplied to the houses situated on both sides of the affected house and ASHA / AWW were entrusted with the task of following up the medicines consumption by the patients. During the whole operation, only 2 persons died (one died during treatment and the other person died before start of the MHU emergency operation) and 57 complicated cases were

taken to the DHH for providing better treatment. After one month of tireless effort by MHU in particular and other health functionaries, the spread of Cholera could be completely checked and lives of many people were saved. The entire MHU team and other health staff during the operation were completely cut off from their family members, friends and relatives. The commendable effort put in by the MHU team to address Cholera epidemic was "Health Department's pride but it was their family members' envy" as they remained completely absent from their homes for almost one month.

3.6 Effectiveness and achievements of the MHU

The effectiveness and achievements of the MHU were assessed in the study on the following key parameters:

i) Health care services available in the village due to the introduction of the MHU
ii) Importance given to the MHU by people over other health facilities or providers
iii) Extent of the coverage of the patients by the MHU
iv) Health status of people after the treatment received from the MHU
v) Cost benefit to people
vi) Value additions made by the MHU in the lives of people
vii) Level of satisfaction on the services provided by the MHU

3.6.1 Health care services available in the village due to the introduction of the MHU

More than two third i.e. 357 (69.3%) out of the 515 households interviewed in the study feel that the introduction of MHU has helped them to get various health care services which was not available to them earlier in their village (Table 22).

Table 22 No. of households who feel that introduction of MHU helped them to get various services, which was not available earlier

Health Service	Count	Column N %
Free check-up & Medicine	336	94.1
Free diagnosis test	20	5.6
Health awareness	2	0.6
Complicated cases Referred	11	3.1
MHU also help in epidemics	11	3.1
Total	**357**	

Note: Multiple responses were received from some of the households interviewed.

Free health check-up and distribution of medicines were reckoned by most of the households i.e. 336 (94.2%) out of 357, as the key services received from the MHU which was not available to them earlier in their village (Table 22). In fact, the introduction of the MHU has helped people living in the remote and inaccessible areas to get the health care services at their doorstep, in otherwise people would have to cover long distance to visit the static health facilities for treatment.

Table 22 also brings out, only 11 (3.1%) households each reported about the availability of health care during epidemics and referral of complicate cases to higher health facility after the visit of the MHU to their villages. Since most of the sample households interviewed in the study did not experience the outbreak of epidemics in their area, only less number of people reported the same. Similarly there is a less chance of people knowing about the complicated cases being referred by the MHU as the number of such cases is very less.

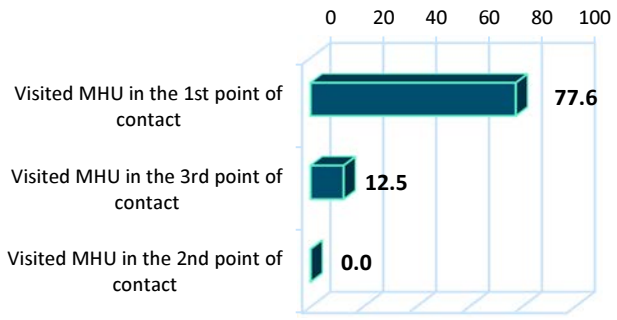
Likewise, only 20 (5.6%) households mentioned about the free diagnostic tests done by the MHU which was not available in their village earlier. While free diagnostic test of patients is one of the key tasks of the MHU, only 5.6% of households informing the same clearly indicate about the less involvement of the MHU in conducting the same. This is very much evident from the data presented in the previous section that only 7.6% of people in the sample

households underwent any kind of diagnostic tests out of the 813 people visited the MHU.

3.6.2 Importance given to the MHU by people over other health facilities or providers

In order to assess the effectiveness of the MHU, the study made an attempt to know the preference given to the MHU over other health facilities or providers. According to the study findings, ***the MHU was the first point of contact for majority i.e. 77.6% (794 out of 1023) of people to get the required health care services or treatment which itself shows the greater need of the MHU at the time of illness and the higher degree of dependence of people on the MHU.***

Chart 8 Preference given to MHU during illness



The other health facilities or providers like the PHC, CHC, DHH, etc. were the first point of contact for the remaining 22.4% for availing health care services. This clearly indicates the higher importance given to the MHU by people over the other health facilities and very much justifies the effectiveness of the MHU in terms of reaching to the majority as their first preference to avail health care services.

Table 23 District wise the no. of people visited MHU as the 1st point of contact

District	No. of people visited the MHU as the 1st point of contact		No. of people visited health facilities
	Count	Column N %	Count
Mayurbhanj	314	84.0	374

Table 23 District wise the no. of people visited MHU as the 1st point of contact

District	No. of people visited the MHU as the 1st point of contact		No. of people visited health facilities
	Count	Column N %	Count
Kalahandi	239	75.9	315
Rayagada	155	85.6	181
Kandhamal	28	36.8	76
Bhadrak	58	75.3	77
Total	794	77.6	1023

The district wise segregated data presented in Table 23 shows that the MHU is the first point of contact for only 36.8% of people in Kandhmal district whereas it is more than 75% for availing the required health care services from the MHU. In Kandhmal, the PHC/CHC was the 1st point of contact for the highest i.e. 40% of people for availing the health services.

3.6.3 Extent of the coverage of the patients by the MHU

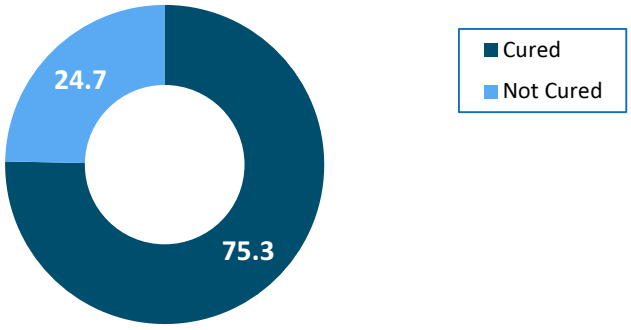
The extent of the coverage of patients by the MHU is another important indicator to assess the effectiveness and achievements of the MHU.

According to the study findings, maximum i.e. 71% (726 out of 1023) received curative health care services from the MHU. More importantly, the study reveals only 1% of cases was referred to the higher health facility for treatment by the MHU.

So the majority of patients were provided curative health services by the MHU rather they were referred to the higher health facility for treatment. This can be treated as one of the achievements of the MHU program introduced by the Government, though the study results suggest a great deal of improvement necessary for rendering the RCH, Family Planning, Diagnostic services, and IEC/BBC services by the MHU.

3.6.4 Health status of people after the treatment received from MHU

Chart 9 % of people cured after treatment by the MHU



As per the study findings, ***more than three fourth i.e. 75.3% (547 out of 726 people who had curative services from MHU) got cured after treatment by the MHU.*** So not only a large percentage of people are availing curative services from the MHU but also are getting cured by the MHU, that justifies the usefulness and importance of this program introduced by the Government.

Table 24 District wise health status of people after availing treatment from the MHU

District	Cured		Not Cured		Total
	Count	%	Count	%	Count
Mayurbhanj	228	86.7	35	13.3	263
Kalahandi	152	69.1	68	30.9	220
Rayagada	124	81.6	28	18.4	152
Kandhamal	21	63.6	12	36.4	33
Bhadrak	22	37.9	36	62.1	58
Total	**547**	**75.3**	**179**	**24.7**	**726**

Note: Figures reported in the table are as per responses from the people interviewed.

Highest i.e. 86.7% of people in the Mayurbhanj district were cured after availing treatment from the MHU followed by 81.6% in Rayagada district. In Kalahandi and Kandhmal districts, 69.1% and 63.6% got cured respectively after treatment by the MHU. In contrast, only 37.9% of people in Bhadrak district got cured from their illness after the treatment provided by the MHU. According to the people in Bhadrak district, the non provision of allopathic medicines from MHU is the reason behind the same. The study team during interaction with the MO, MHU of the Tihidi Block in Bhadrak district came to know that she is an Ayurvedic doctor and prefers to give only Ayurvedic medicines to the patients. Unlike Bhadrak district, the MOs of MHU interviewed in other 4 study districts administer allopathic medicines even though they are from AYUSH background.

3.6.5 Value additions made by the MHU in the lives of people

In order to assess the importance and effectiveness of MHU, the study made an attempt to know from them whether the MHU has made any value additions in their lives. The following findings would help to assess the same:

Out of the 515 households interviewed in the study, 399 (77.5%) felt that the visit of MHU to their village has made value additions in their lives. Out of them, 159 (39.8%) reported that the MHU visit has helped them to avoid any wage loss as the health care services are provided in their village by the MHU. As a result of this, they need not have to travel long distances and lose daily wage by visiting the static health facility for health care services.

Availability of the health care services at the nearest place was reported by the majority i.e. 298 (74.7%) households followed by the saving of time reported by 98 (24.6%) households, avoid any travel cost by 44 (11.0%) households, avoid accompanying cost by 7 (1.8%), etc. points towards various value additions made by the MHU in terms of saving the time and cost of the beneficiaries.

There are 9 (2.3%) households who feel that the MHU service is of a great help for the vulnerable people like aged, handicapped, etc. in the

community. These vulnerable people in otherwise would have to face lot of difficulties for visiting the static health facilities located in the distant places from their village.

Table 25 Various value additions made by MHU in the lives of beneficiary Households

Value Additions	Count	Column N %
Need not have to visit other health facility	65	16.3
Get services at nearest place	298	74.7
Avoiding wage loss	159	39.8
Avoiding time loss	98	24.6
Avoiding travel cost	44	11.0
Vulnerable community got services at village	9	2.3
Avoiding accompanying cost	7	1.8
Free diagnosis test	1	0.3
Health awareness	41	10.3
Get primary health services	9	2.3
Mortality rate decreased	17	4.3
Complicated cases Referred	3	0.8
Total No. of Households who felt that MHU has made some value addition	**399**	

Note: Multiple responses received from the respondents

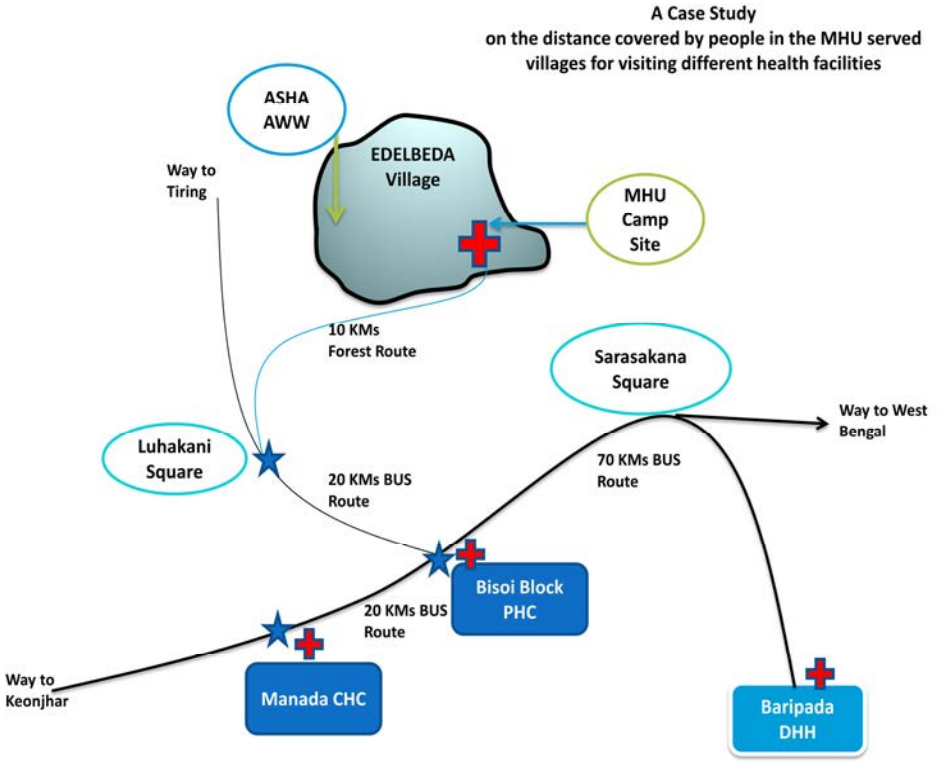
3.6.6 Reduced distance of travel by people as a result of introduction of MHU

In the study villages, the average distance that people have to cover is 16.2 km as against the maximum distance of 65km for visiting the PHC/CHC. Similarly for visiting the DHH people have to cover an average distance of 44.3 km as against the maximum distance of 120 km. So due to the visit of the MHU to the village, majority of people need not have to travel such long distances for getting the basic primary health care services.

A pictorial case study is presented below showing the distance need to be covered by people in one of the MHU served villages of Mayurbhnaj district for visiting the different public health facilities. The case study would give an idea that how people living in the remote and inaccessible areas need to walk through the forest roads to reach at a point from where they can catch any public transport to reach at the PHC, CHC and DHH.

3.6.7 Cost saved by people as a result of the introduction of the MHU

On an average, the target beneficiaries spent Rs. 172/- on travel for visiting the Block PHC/CHC followed by Rs. 198/- for visiting the DHH. In order to visit the private health facility or hospital, the target beneficiaries on an average incurred Rs. 245/- on travel expenses. That means an amount of Rs.170/- to Rs.250/- need to be spent on travel by the beneficiaries for visiting the static health facilities



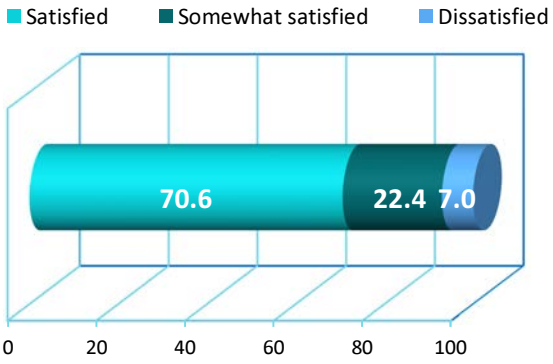
mostly located at the Block and district headquarter.

Since majority i.e. 80% of people visited the MHU for health care services, most of the beneficiaries of the MHU need not have to incur such high travel expenses as the health care services is available to them in their village. Had there been no MHU, most of the people would have to incur huge expenses on their mobility for visiting the static health facilities located in the distant places from the village.

3.6.8 Level of satisfaction on the services provided by the MHU

The level of satisfaction of beneficiaries on the services provided by the MHU is another important parameter used in the study for assessing the performance of MHU in Orissa.

Chart 10 Level of satisfaction of beneficiaries on services provided by MHU



Out of the 418 (81.2%) households availed health care services from the MHU, ***majority i.e. 295 (70.6%) were found to be satisfied and 94 (22.5%) were found to be somewhat satisfied with the services provided by the MHU.*** Only the remaining 29 (7%) were dissatisfied with the services provided by the MHU.

In Bhadrak district, relatively smaller number of households i.e. 14 (45.2%) were found to be satisfied with the services provided by the MHU. Since more than 60% of households in Bhadrak responded that they were not cured after the treatment by the MHU, it could be one of the key reasons for which only 45.2% were found to be satisfied with the services provided by the MHU.

Table 26 District wise satisfaction level of beneficiaries on the MHU

District	Dissatisfied		Somewhat satisfied		Satisfied		Total
	Count	%	Count	%	Count	%	Count
Mayurbhanj	4	2.9	29	20.9	106	76.3	139
Kalahandi	15	12.7	28	23.7	75	63.6	118
Rayagada	0	0.0	22	20.4	86	79.6	108
Kandhamal	2	9.1	6	27.3	14	63.6	22
Bhadrak	8	25.8	9	29.0	14	45.2	31
Total	**29**	**6.9**	**94**	**22.5**	**295**	**70.6**	**418**

Adding all the districts together, maximum of households expressed their satisfaction over the various health services provided by the MHU. The reasons of their satisfaction are presented in the table 27. As per the same, majority i.e. 99.5% households felt satisfied with the MHU because of the availability of health care services at the nearest place followed by 92.8% expressed their satisfaction for distribution of free medicines by the MHU. Slightly less than half i.e. 47.3% and 45.8% of households were satisfied due to proper treatment and regularity of health services provided by the MHU respectively. But as far as the free diagnostic test is concerned, only 19.8% showed their satisfaction on the availability of same. This could be because of only few people had diagnostic tests by the MHU.

Table 27 Reasons of satisfaction on health services provided by MHU

Reasons	Count	Column N %
Health services at nearest place	387	99.5
Regular health services	178	45.8
Proper diagnosis	30	7.7
Proper treatment	184	47.3

Table 27 Reasons of satisfaction on health services provided by MHU		
Reasons	**Count**	**Column N %**
Free medicine	361	92.8
Free diagnosis	77	19.8
Need not have to visit other health facility	100	25.7
Need not have to incur any cost by visiting	13	3.3
The health services were not given in village earlier	120	30.8
Diagnosis of complicated cases & referral	19	4.9
Total	**389**	

Note: This includes the 94 somewhat satisfied households
Multiple responses were received from some of the households interviewed.

The reasons of dissatisfaction are presented in Table 28. Out of 123 people who expressed some dissatisfaction, highest i.e. 65.9% of households were dissatisfied due to the ineffective medicines followed by 47.2% because of the non-availability of the MHU service at the time of need. There are 39.0% reported inadequate medicines provided by the MHU as the reason of their dissatisfaction and 30.1% were not satisfied because of less time spent by the MHU in the village.

Table 28 Reasons of dissatisfaction on health services provided by MHU		
Reasons	**Count**	**Column N %**
Ineffective medicine	81	65.9
Inadequate medicine	48	39.0
In-experienced doctor	14	11.4
Doctor was not good	7	5.7
No instrument for ANC	8	6.5
No proper place for ANC	7	5.7
Absence of doctor	2	1.6
Absence of other MHU staff	3	2.4
No or inadequate vaccines	4	3.3
No services due to not reaching at the MHU site	7	5.7
No services due to more patients	3	2.4
Less time spent by MHU in the village	37	30.1
No such services provided under MHU	10	8.1
Inadequate condoms	2	1.6

Table 28 Reasons of dissatisfaction on health services provided by MHU		
Reasons	**Count**	**Column N %**
Inadequate Oral pills	2	1.6
Inadequate emergency contraceptives	2	1.6
No diagnostic instruments	5	4.1
Absence of any diagnosis specialist person	5	4.1
Improper location of MHU site	3	2.4
Long distance of MHU site	4	3.3
MHU services not available at the time of need	58	47.2
Only referral	14	11.4
Total	**123**	

Note: This includes the 94 somewhat satisfied households who also gave their reasons of dissatisfaction
Multiple responses were received from some of the households interviewed.

In brief, ***people were found to be highly satisfied due to the availability of health care services in the village and for free medicines provided by the MHU. The areas that require improvement are provision of diagnostic tests, quality check-up & diagnosis, adequate and quality medicines and more time spent by the MHU in the village.***

3.7 Assessment of operational & managerial effectiveness of the MHUs

Apart from knowing the impact of MHU on beneficiaries, the other important task before the study was to assess the operational and managerial effectiveness of the MHUs functioning in the State. The idea behind the same was to find out various positive practices of the MHUs and know the constraints, gaps and difficulties of the MHU operation in Orissa so that required steps can be taken up by the State to improve the functioning of the MHU and its wider impact and coverage.

In the light of the same, the study made an assessment of the various operational and

managerial processes of the MHU such as identification of MHU sites, roster/visit plan of MHUs, staffing, infrastructure, finance, service delivery, reporting and monitoring & supervision. The findings of the assessment are as follows.

3.7.1 Identification of villages for the MHU operation

The first step of the MHU operation in a Block is to identify the geographically difficult villages for the visit of the MHU. Therefore, the identification process of villages is crucial so that the most difficult villages in a Block are properly identified for the MHU operation in a Block.

In all the five districts visited by the study team viz. Mayurbhanj, Kandhmal, Kalahandi, Rayagada and Bhadrak, the selection of villages was done under the supervision of Chief District Medical Officer (CDMO) but the processes adopted by the respective Block are different from each other. A brief description of the village identification process is presented below.

As per the information shared by the MHU team and other service providers, the respective Block Medical Officer in Charge (MOIC) and Block Program Management Unit (BPMU) were involved in the village identification process in 10 out of 13 MHU Blocks covered under the study. In the remaining 3 Blocks (which are located in Rayagada district) the Zilla Swasthy Samiti (ZSS) of the district took the decision of covering all villages in a Block for the visit of the MHU, hence, there was no formal step taken for the selection of villages in the MHU Blocks of Rayagada district. It is important to mention that all the villages used to be covered by the MHU when the RLTAP program was implemented in Rayagada which prompted the ZSS of the district to continue the same practice after it is being taken over by the NRHM. However, due to such practice lots of implications on the frequency of visiting to the villages and duration of delivering health services by the MHU was observed in the district.

So barring Rayagada district, the Blocks in the remaining four study districts viz. Mayurbhanj, Kandhmal, Kalahandi and Bhadrak adhered to the MHU guideline by selecting only the difficult villages for providing health care services through the MHU.

The study also found that the Block Development Officer (BDO) apart from the Block health administration was part of the selection process in 6 study Blocks of three districts (viz. Thakurmunda & Tiring Blocks in Mayurbhanj and Thuamulrampur, Lanjigarh, M.Rampur & Dharamgarh Blocks in Kalahandi).

However, the MHU team who should know how the villages are identified was associated in only 4 out of 13 study Blocks viz. Tiring, Thuamulrampur, M. Rampur and Khajuripada (Kandhmal) for the same.

Table 29 Block wise criteria followed for identification of villages

Criteria	Mayurbhanj				Kandhmal	Kalahandi				Bhadrak
	Thakurmunda	Bisoi	Tiring	Khunta	Khajuripada	T.Rampur	Lanjigarh	M.Rampur	Dharamgarh	Tihidi
Inaccessible areas	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

Table 29 Block wise criteria followed for identification of villages

Criteria	Mayurbhanj				Kandhmal	Kalahandi				Bhadrak
	Thakurmunda	Bisoi	Tiring	Khunta	Khajuripada	T.Rampur	Lanjigarh	M.Rampur	Dharamgarh	Tihidi
Far from health facility	☑	☒	☒	☑	☑	☑	☑	☑	☑	☒
Low health status	☒	☑	☒	☑	☒	☒	☒	☒	☑	☒
Social & economic vulnerability	☒	☒	☑	☒	☒	☒	☒	☒	☒	☑
Maoist insurgence	☒	☒	☒	☒	☒	☒	☒	☒	☒	☒

Note: Rayagada is not included as it follows different selection method

The criteria used for selection of villages by different study Blocks is presented in Table 29. As per the criteria, all the villages in the Block were screened and then difficult villages were identified from the list. Criterion e.g. inaccessibility of a village due to no proper road connectivity, forests, water logging, etc. was used by maximum i.e. 10 out of 13 study Blocks. In addition to this criterion, long distance of the village from the health facilities is the next important criterion used for identification of villages in 7 Blocks. Other criteria such as low health status and socio-economic vulnerability of people were applied by only 3 and 2 Blocks respectively. None of the Blocks considered Maoist insurgence as a criterion for identification of the difficult villages for the visit of MHU.

It is understood from the above analysis that ***there were no uniform criteria adopted by the MHU operated Blocks for identification of difficult villages. More importantly none of the Blocks also applied any scientific ranking or scoring method to screen and identify the vulnerable villages for the visit of MHU.***

Thus, an attempt has been made here to make a scientific analysis of the distance of the MHU points from the static health facilities using the GIS software which gives a true picture of the exact road distance between the same. This analysis presented in the table below would help to assess the MHU points located nearest to the static health facilities. One sample Block from each study district is considered for preparing the GIS map of the location of static health facilities and MHU points. Distance of the MHU Points from the health facilities is also presented in the map to assess the number of MHU points in a Block located nearest to the health facilities (GIS maps of all the 5 Blocks are annexed with the report).

The Tables 30 and 31 presented below reveal that

Table 30 Distance of MHU Points from the Block CHC

Districts	Block	2kms or below	2 to 5kms	Above 5kms	Total
Mayurbhanj	Bisoi	0	3	19	22
Bhadrak	Tihidi	0	2	27	29
Kalahandi	Lanjigarh	0	4	31	35
Kandhmal	Raikia (AROGYA+)	0	0	21	21
Rayagada	Ramanaguda*	0	2	14	16
* Since all the villages are covered in the Block in different months, only MHU points of one month is taken into account for GIS mapping					

Table 31 Distance of MHU Points from the PHC (New) in the Block

Districts	Block	2kms or below	2 to 5kms	Above 5kms	Total
Mayurbhanj	Bisoi	0	3	19	22
Bhadrak	Tihidi	0	14	15	29
Kalahandi	Lanjigarh	0	1	34	15
Kandhmal	Raikia (AROGYA+)	2	4	15	21
Rayagada	Ramanaguda*	0	4	12	16
* Since all the villages are covered in the Block in different months, only MHU points of one month is taken into account for GIS mapping					

none of the MHU points are located at a distance of 2kms or less except 2 AROGYA+ points in Raikia. However, it is evident from the table that as many as 26 MHU points are located between 2 to 5kms of distance from the PHC (New) and 11 are located in a same distance from the CHC in the five sample Blocks taken into analysis. So the need of these MHU points located at a distance between 2 to 5kms may be reviewed by the concerned Block health administration. Instead of these, other distant and hard to reach villages should be covered to make the best use of MHU services.

3.7.2 No. of villages identified for the MHU operation in a Block

Table 32 presents the number of villages covered in a Block by the MHU/s, which varies from the Block to Block. Among the 13 study Blocks, Lanjigarh, Thuamulrampur and M.Rampur have maximum number of difficult villages ranging from 92 to 128 villages whereas the Blocks like Dharamgarh, Khunta and Tiring have relatively lesser number of difficult villages i.e. between 22 to 27 villages.

In case of Rayagada district, it is not possible to know the exact number of the difficult villages exist in a Block since all villages were identified for the MHU operation.

3.7.3 No. of MHUs placed in a Block

Like the number of identified villages, the number of MHUs placed in a Block also varies from the Block to Block which has been decided by the concerned district health administration.

The Blocks like Thuamulrampur and Lanjigarh in Kalahandi district have the maximum number of MHUs (i.e. 3 MHUs each) followed by M.Rampur, Raygada and Kasipur Blocks have 2 MHUs each. The remaining 7 Blocks (all the study Blocks in Mayurbhanj and Kandhmal) have been provided with 1 MHU each.

Apart from the number of difficult villages, other factors like location (dispersed or contiguous) of the villages in a Block, travel time & distance of the village, etc. were taken into consideration for deciding the number of the MHUs to be placed in a Block.

3.7.4 No. of villages identified vs. No. of villages covered by the MHU in a Block

In 7 out of 13 Blocks visited viz. Thakurmunda, Bisoi, Khunta, M.Rampur, Lanjigarh, Khajuripada and Rayagada (Sadar), the study team found a difference between the number of difficult villages identified

Table 32 No. of villages identified vs. covered by the MHU in a Block

Districts	Block	No. of Villages Identified	No. of villages covered by MHU	No. of villages not covered by MHU	No. of MHU Points in a month	No. of MHUs	Average No. of villages covered per MHU
Mayurbhanj	Thakurmunda	66	44	22	23	1	44
	Bisoi	53	33	20	18	1	33
	Tiring	27	27	0	27	1	27
	Khunta	24	22	2	22	1	22
Bhadrak	Tihidi	32	32	0	18	1	32
Kalahandi	Thuamulrampur	124	124	0	104	3	41
	M.Rampur	92	75	17	75	2	38
	Lanjigarh	128	115	13	92	3	38
	Dharamgarh	22	22	0	19	1	22
Kandhmal	Khajuripada	60	48	12	24	1	48
Rayagada	Rayagada (Sadar)	446	428	18	96	2	214
	Kasipur	369	369	0	96	2	185
	Ramanaguda	220	220	0	48	1	220

and the number of villages covered by the MHU in a Block.

Table 32 shows that the number of villages covered by the MHU in the above mentioned Blocks is lesser than the number of villages identified in the Blocks. That means some villages in spite of their difficult / vulnerable characteristics were not covered by the MHU/s in the Block. While the percentage of villages not covered by the MHU varies from the Block to Block, highest i.e. 38% of difficult villages in Bisoi followed by 33% in Thakurmunda, 20% in Khajuripada and 18% in M.Rampur Blocks were left out from the MHU service.

The following are two important reasons shared by the MHU team and other service providers on non coverage of the identified villages:

First, lack of road connectivity is attributed as the key reason why some of the identified villages were left out from the purview of MHU. Particularly in the Blocks like Thakurmunda, Bisoi, M. Rampur, Khajuripada and Rayagada (Sadar), difficult villages were left out or not included in the visit plan of the MHU because of no road connectivity. These villages are highly inaccessible / thick forest covered areas and are located on the hill tops. It is almost impossible for the MHU team carrying medicines and other equipments to visit those villages for two days in a month. With women staff in MHU team, it is even more difficult for the team to visit those villages which require walking on the hill tops and moving inside deep forests to reach in those identified villages.

Second, the number of MHU/s placed in a Block is inadequate to cover all the identified villages. This is particularly evident in Rayagada district where the entire number of villages of the Block was covered by the MHU.

3.7.5 No. of MHU points identified for coverage of selected villages in the Block

Leaving aside the Rayagada district, a maximum of 48 and a minimum of 22 villages were covered by an MHU in a month. But in the given 22 days of field visits to be made by each MHU in a month, it is difficult for the MHU to visit each and every village at least once in every fortnight for catering to the health needs of people in those villages. Hence the 'MHU Points' have been identified as a strategy so that the people from one or more contiguously located villages can come to that point on a fixed day & time for availing the health care services. In all the Blocks covered in the study, the identification of the MHU points has helped to cover maximum of the difficult villages in the Block.

As per this strategy, if few villages are contiguously located then one of them has been identified as the MHU point and the other contiguously located villages (maximum of two or three) have been tagged to that point for receiving the health care services from the MHU. The MHU team holds its camp at the MHU point and people from that village & other tagged villages come to that point and avail health care services.

In the study Blocks visited by the MHU, a maximum of 38 and a minimum of 18 MHU Points per month have been identified for the visit of one MHU in the Block.

In Rayagada district, a completely contrasting strategy has been adopted for the coverage of villages. Each MHU in the Block have to cover 10 to 12 fixed points and certain non-fixed points in every month. The fixed points of the MHU camp are organized at the sub-centers which are visited by the MHU in every month. So villages attached to the sub-centre get health care services through the MHU on monthly basis. The rest of the MHU points are located in villages which are visited in a gap of at

least 6 months. As a result, people get health care services through the MHU within a span of 6 months which is less frequent if compared with the other study districts. This is also in contradiction to the MHU guideline which necessitates the MHU to visit every village once in a fortnight. Therefore during the visit of the study team to villages in Rayagada district, people demanded for more frequent visits, at least two to three visits in a month, by the MHU.

3.7.6 Roster / visit plan of the MHU

All the MHUs covered in the study prepare their monthly roster / visit plan to the villages. The MHU visit plan includes name of the MHU Point, name of the tagged villages, time of visit and fixed day of visit. The MHU roster prepared in Khajuripada Block of Kandhmal district also mentions the name of hamlets in a village. A sample copy of the MHU roster is presented in the next page.

Except Rayagada, the same MHU roster or visit plan is followed every month in rest of the four study districts. Due to more villages covered in Rayagada, the MHU roster changes in every month. So except the MHU camp planned at the sub-centres, fixed days and time of visit to villages are not maintained in the MHU roster prepared in Rayagada district. It was also observed in all the study districts (excluding Rayagada), the MHU team plans for two fixed days of visit to each village (one visit in every fortnight) in the monthly roster or visit plan prepared by them. Fixed days and time of visit to a village is maintained in the MHU roster. For the easy remembrance of the MHU targeted villagers, instead of dates the days of visits (e.g. 1st Monday, 2nd Monday, etc.) are mentioned in the roster.

It was also observed that some of the identified villages are not included in the MHU roster due to lack of road connectivity or high inaccessibility where the MHU vehicle cannot reach. This was found in all the five study districts.

As per the MHU guideline, each MHU takes 22 days of field visit in a month which comes to 11 days in a fortnight. If 2 villages are planned per day, then a total of 22 villages could be covered twice in a month (once in every fortnight). But as per the study finding, 7 out of the 13 study Blocks prepare visit plan for more than 36 villages in a month i.e. excluding the residential tribal schools visited by the


FIXED TOUR PROGRAMME OF MHU , MANADA CHC,
BISOI BLOCK, MAYURBHANJ FOR THE YEAR 2010-11

Sl.No	MHU Point	Tagged villages	Time of Visit	Fixed Day Visit: 1st Fortnight	Fixed Day Visit: 2nd Fortnight
1	Alloposi	Badpala	10:00 AM	1st Monday	3rd Mond
	Andhaljuri	Chudrapahad	2:00 PM		
2	Tambolbandh	Baghutangar		2nd Monday	4th Mon
	Mayurbeda	Jallabeda	10:00 AM		
		Telenghutu	2:00 PM		
3	Takati	Sarapani		1st Satur Day	3rd Satu
	Bodapali Project UP School	Bhaturanda	2:00 PM		
4	Dholabeda	Dhangdamara	10:00 AM	2nd Tues Day	4th Tue
	Damardiha Nodal UP School	Bonkati	2:00 PM		
		Kalimati			

MHU. That means more than one third of the total villages could not be planned or visited by the MHU twice in a month. This is the reason why majority i.e. 78% of households said that the MHU visits their village once in a month and only 17.8% reported two times visit of MHU in a month. So infrequent visit of MHU affect the health care services provided to people in the villages. That is why almost all the households interviewed in the study demand for at least 3 to 4 visits of MHU in a month. On this ground as well as on the ground of various benefits received by people from the MHU, the Government may decide on engaging more number of MHUs in the State. This would enable the existing MHUs to take the required number of visits to the identified

villages and maintain a fixed time & date of visit to those villages.

3.7.7 Distance of Villages and Mobility

The mobility of the MHU team is one of the key factors behind successful coverage of all the inaccessible and remotely located villages planned for the visit.

Table 33 Distance and time consumed to visit a village by the MHU

Districts	Block	Maximum distance (in km.)	Maximum Time (in min)	Minimum distance (in km.)	Minimum Time (in min)
Mayurbhanj	Thakurmunda	48	90	12	30
	Bisoi	41	60	10	15
	Tiring	30	45	8	20
	Khunta	35	40	7	20
Bhadrak	Tihidi	44	90	18	35
Kalahandi	Thuamulrampur	45	90	12	20
	M.Rampur	85	180	10	20
	Lanjigarh	40	90	10	30
	Dharamgarh	35	60	10	20
Kandhmal	Khajuripada	50	240	10	30
Rayagada	Rayagada (Sadar)	136	240	8	20
	Kasipur	40	90	8	30
	Ramanaguda	30	90	9	30

As shown in Table 33 that the highest distance covered by an MHU is 136 km to reach at a village in Rayagada (Sadar) Block followed by a maximum of 85 km covered by an MHU in M. Rampur Block. The highest time taken to reach these distant villages is 3 to 4 hours. The study team during its visit to the MHU Blocks also came to know about the villages which are not very far off but takes more time to reach due to the poor road conditions (e.g. there is a village in Khajuripada Block of Kandhmal district which is 50 km away but takes 4hours to reach).

So due to more travel time to visit some of the villages, it is difficult for the MHU to hold camp in more than one point on that day of visit. As a result, it adversely affects the MHU visit plan and coverage of all the identified villages twice in a month.

3.7.8 Personnel support to the MHU

The type and number of personnel provisioned under the MHU is another important contributory factor for making the MHU more effective in delivering required health care services.

Table 34 Staff positions in MHU

Staff	Mayurbhanj				Kandhmal	Kalahandi				Bhadrak	Rayagada		
	Thakurmunda	Bisoi	Tiring	Khunta	Khajuripada	T.Rampur	Lanjigarh	M.Rampur	Dharamgarh	Tihidi	Rayagada	Kashipur	Ramnaguda
MO(Doctor)	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Pharmacist	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
HW (F)	☒	☒	☒	☒	☑	☑	☑	☑	☒	☒	☒	☒	☒
Attendant	☒	☑	☑	☑	☒	☑	☑	☑	☑	☒	☑	☑	☑
Driver	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

The MHU team as per the guideline comprises of five personnel viz. Doctor, Pharmacist, Health Worker - Female, Attendant and Driver. As shown in Table 34 that all the 13 MHUs covered in the study has a Doctor. Majority i.e. 11 out of 13 MHUs has male doctors and the rest 2 are female doctors. None of the doctors appointed under the MHU are from allopathic background or holds MBBS degree. All of them are AYUSH doctors (7 have BAMS and 6 have BHMS degree). But there is a contradiction found with regard to the AYUSH doctors in the MHU prescribing allopathic medicines to the patients. The CDMOs and the MOICs in the study districts when asked about the same, expressed the need of providing therapeutic training to all the newly appointed AYUSH doctors on allopathic medicines.

Next to the Doctor, the table shows that all the 13 MHUs have a Pharmacist in place. In 3 out of 13 MHUs the Pharmacist possesses Bachelor degree in

Pharmacy whereas in the remaining 10 MHUs the Pharmacist is a Diploma in Pharmacy.

Unlike the Doctor and Pharmacist, the post of Health Worker (F) and Attendant were lying vacant in 9 and 3 MHUs respectively (Table 34). According to the MO of MHU, the role of Health Worker (F) is highly important for the MHU team particularly for conducting the ANC of pregnant women, PNC and providing family planning services to the women beneficiaries. Since most of the MHUs (i.e. 11 out of 13 MHUs) have male doctor, her role is considered even more important for providing the RCH services. So due to the vacancy of Health Worker (F), the RCH services provided by the MHU were adversely affected in 9 out of 13 MHUs covered in the study.

The MO of MHU and other service providers interviewed in the study expressed the need of a Social Mobiliser in the MHU team for mobilizing community to avail health care services from the ***MHU***. Some of them think that instead of Attendant, the post of Social Mobiliser would be more relevant who can take-up community mobilization and awareness programs through BCC / IEC initiatives. Apart from a Social Mobiliser, the MO of MHU expressed the need of a Laboratory Technician for conducting the required diagnostic tests. Currently due to lack of proper technical skills, the MHU team is unable to conduct certain diagnostic tests of the patients visiting them. Some of them also suggested that the Pharmacist or the Health Worker (F) of the MHU team can be trained on doing the diagnostic tests.

The DPMs and BPOs interviewed in the study felt that the MHU team are from clinical background but lack programmatic understanding e.g. establishing contact with the GKS, ASHA & AWW; community mobilization; care & attention to patients more specifically the aged, women and children; integration of MHU with other health initiatives; IEC/BCC; etc. According to their information, the newly appointed MHU team has not yet been provided any induction or programmatic training. This could be the reason why some of the MHU team members did not even know the various services to be provided by the MHU as per the guideline.

3.7.9 Infrastructure and logistic support to the MHU

The MHU in order to perform its role & responsibilities needs to have required infrastructures, equipments, medicines and various other supplies. The data collected by the study team reveal that all the 13 MHUs have their vehicle (own / private). Only one MHU did not have BP instrument and 3 MHUs did not have weighing machine. Stethoscope was provided to all the MHUs but only 2 MHUs each have microscope and stretcher (Table 35). None of the MHUs covered in the study had container to collect the TB slides for which the same was not collected by most of the MHUs.

It is important to find that all the 13 MHUs were provided with medicines for treatment of minor ailments and the supplies required for treatment of minor injury and suturing (Table 35).

Table 35 Block wise Status of Infrastructures / Equipments provided to the MHU

Infrastructures	Mayurbhanj				Kandhmal	Kalahandi				Bhadrak	Rayagada		
	Thakurmunda	Bisoi	Tiring	Khunta	Khajuripada	T.Rampur	Lanjigarh	M.Rampur	Dharamgarh	Tihidi	Rayagada	Kashipur	Ramnaguda
Vehicle	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
BP Inst.	☑	☑	☑	☑	☑	☑	☑	☑	☑	☒	☑	☑	☑
Stethoscope	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
Weighing Machine	☑	☒	☒	☒	☑	☑	☑	☑	☑	☑	☑	☑	☑
Microscope	☒	☒	☒	☒	☒	☒	☑	☑	☒	☒	☒	☒	☒
Stretcher	☒	☒	☒	☒	☒	☒	☑	☒	☑	☒	☒	☒	☒

However, the RDK was not supplied to 3 out of 13 MHUs since last 10 months and it is not adequately supplied to another 3 MHUs. As the study finding reveal that 47% of fever cases visited the MHU for treatment, it is important for the MHU to get adequate and regular supply of RDK for conducting the malaria tests of all the fever cases. One of the MHU teams interviewed in Mayurbhanj reported that the District Malaria Officer (DMO) has stopped the supply of RDK to the MHUs on the premise that the same is supplied to the ASHA in the village. Since most of the MHU operated areas are prone to malaria and more importantly, when majority of patients with fever cases visit the MHU, it is highly necessary that the district health administration may resume the supply of RDK to the MHU. Due to non supply or irregular supply of RDK, the MO of MHU expressed their strong discontentment and inability to provide proper treatment to the fever cases visiting them. The study team during the interview of MHU teams was also told that the RDK currently supplied to them only detects the Falcifarum cases. In order to detect the Vivax cases, there is a need to take the blood slide of the patient and do the testing in the microscope. Since, most of the MHU teams are not provided with microscope as well as trained manpower to do such testing, the doctor finds lot of difficulties for diagnosis and treatment of fever cases. As a result, the MHU team across all the study Blocks expressed the need of supplying bivalent or combo RDK pack for diagnosis of malaria cases.

Table 36 Block wise medicines and other supplies provided to the MHU

Criteria	Mayurbhanj				Kandhmal	Kalahandi				Bhadrak	Rayagada		
	Thakurmund	Bisoi	Tiring	Khunta	Khajuripada	T.Rampur	Lanjigarh	M.Rampur	Dharamgarh	Tihidi	Rayagada	Kashipur	Ramnaguda
Slide	☑	☑	☒	☑	☑	☒	☑	☑	☑	☑	☑	☒	☒
Needle	☑	☑	☑	☑	☑	☒	☑	☑	☑	☑	☑	☒	☒
RDK	☒	☒	☑	☒	☑	☑	☑	☑	☑	☑	☑	☑	☑
Medicines	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑

Table 36 Block wise medicines and other supplies provided to the MHU

Criteria	Mayurbhanj				Kandhmal	Kalahandi				Bhadrak	Rayagada		
	Thakurmund	Bisoi	Tiring	Khunta	Khajuripada	T.Rampur	Lanjigarh	M.Rampur	Dharamgarh	Tihidi	Rayagada	Kashipur	Ramnaguda
Minor Injury & suturing	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑
IFA Tablet	☑	☑	☑	☑	☑	☑	☑	☒	☑	☒	☑	☑	☑
Condom	☑	☑	☒	☒	☑	☒	☒	☒	☒	☒	☑	☑	☑
Oral Pills	☑	☑	☑	☒	☑	☒	☒	☒	☒	☒	☑	☑	☑
Emergency Contraceptive	☑	☒	☒	☒	☑	☒	☒	☒	☒	☒	☑	☒	☒
TT Vaccine	☒	☒	☒	☒	☒	☒	☒	☒	☑	☒	☒	☒	☒
Pathological solutions	☒	☑	☒	☑	☒	☑	☑	☑	☑	☒	☒	☒	☒

Other items like slides and needles which are required for undertaking the diagnostic tests were not supplied to a total of 4 and 3 MHUs respectively. IFA tablet which is required for pregnant woman and treatment of anemia cases is not supplied to 2 MHUs. It is also important to find that almost all the MHUs were not provided with TT vaccines for pregnant woman. None of the MHUs was also provided with vaccine carrier for carrying vaccines with them.

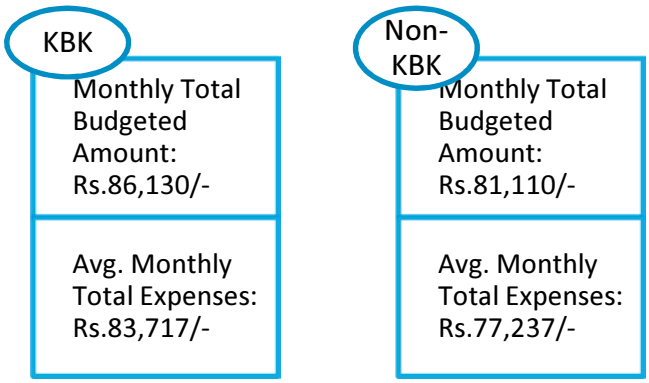
Apart from the medicines and diagnostic kits, the MHU is supplied with various family planning products. However, out of the 13 MHUs visited, the family planning products like condom was not supplied to 7 MHUs, Oral Pills to 6 MHUs and emergency contraceptives was not provided to 10 MHUs. As a result of which, the family planning services could not be properly provided by the MHUs.

3.7.10 Financial support to the MHU

Apart from manpower, infrastructure and logistic provisions, the MHU requires adequate and timely disbursement of funds for undertaking the various tasks assigned to it. As mentioned in the previous chapter of the report, there is a fixed budget provision made by the department of the H&FW for each MHU. The monthly budget provision for the MHU in KBK region (i.e. Rs. 86,130/-) is relatively more than the Non-KBK region (i.e. Rs. 81,110/-). A table is presented below showing the monthly budget provision for a MHU in the KBK and Non-KBK region.

In order to assess the financial support to the MHUs, the expenditure details of all the 13 MHUs during last six months were collected and analyzed. As per the analysis,

- All the 7 MHUs in the KBK district and 6 MHUs in the Non-KBK district received the personnel cost in time as per the budgeted amount.
- The MHU team members viz. MO, Pharmacist, Health Worker (F) and Attendant were paid their monthly remuneration in time across all the MHUs covered in the study. There was no delay or deviation made with regard to the payment of the monthly remuneration.
- As against Rs.8,000/- p.m. provisioned for fuel expenses of the MHU, on an average Rs.5,056/- was spent in every month by one MHU. In the 13 MHUs covered in the study, the highest average fuel expense i.e. Rs. 6,729/- p.m. was made in Rayagada (Sadar Block) and lowest i.e. Rs. 3,053/- was expended in Khunta Block of Mayurbhanj district. That means the fuel expense of Rs.8,000/- p.m. provisioned for the MHU is sufficient to meet the same expense.
- Across all the MHUs, the MO, Pharmacist, Health Worker (F) and Attendant were paid their daily travel allowance on time.
- There was no delay found with regard to the release of monthly remuneration and daily travel allowance to the MHU team.
- In all the five study districts, the medicines for the MHU were procured centrally by the respective district health administration and then the same were supplied to the Block PHC/CHC. The entire amount of Rs.24,000/- p.m. allotted for the medicines was expended.
- The MHU in every month submits the indent for medicines to the MOIC of the Block PHC/CHC. Accordingly, the medicine is supplied to them immediately. There was no delay found with regard to the supply of medicines to the MHU.
- There was also no complain made by the MHU with regard to the quality of medicines provided to them. During the interview with the CDMOs, it was informed to the study team that the district health administration with the given amount tries to procure quality medicines and gives more emphasis to procure medicines with multiple compositions.
- But the MHU team feels that the amount provisioned for the medicines should be enhanced so that more injections, tonics and vitamins can be supplied to the MHU as there is more demand for the same among the beneficiaries.
- The MHU team also demanded for the provision of some extra amount to procure diagnostic instruments and certain supplies like RDK, pathological solutions, etc.



- On an average Rs. 83,717/- p.m. (i.e. 97.2%) was spent per MHU as against Rs. 86,130/- provisioned for the same in the KBK region whereas Rs. 77,237/- (i.e. 95.2%) was expended as against Rs. 81,110/- provisioned for the MHU in the Non-KBK region[5].

3.7.11 Service delivery processes

One of the important tasks before the study was to assess the effectiveness of the service delivery processes. The following important observations were made with regard to the same.

Out of the 26 local service providers like ASHA and AWW interviewed in the study, 13 (50%) reported that the MHU visit the village as per the fixed date and time. The rest 50% reported the irregular visit made by the MHU for which some of the households in the village are unable to get the health care services from the MHU. Due to lack of prior information about the date & time of visit, it so happened that some people on the day of the MHU visit went outside the village for wage earning, weekly marketing, etc. which in turn affect the coverage of people by the MHU.

One of the ASHAs interviewed in the Khajuripada Block of Kandhmal district informed the study team about how people showed strong discontentment on her due to non-visit of the MHU on a scheduled day. Based on the information received from the MHU, she mobilized people at the MHU point for availing the health care services. But the MHU did not turn up on that day for which people (including the old and handicapped people) gathered at the MHU point expressed their anger on ASHA and had to return back home without availing health care services. From that day onwards, the ASHA took the decision that she will only inform to the people after she sees the MHU vehicle enters the village. As a result, people in that village do not get prior information about the MHU visit and the services provided by the MHU get adversely affected.
In almost all the study districts, the MHU team reported that they make best possible effort to visit the villages on scheduled date and time but due to the following unavoidable circumstances their fixed tour plan gets affected for about 2 to 3 days in a month.

- The MHU team sometimes faces breakdown of their vehicle in the midway while going to the village. Although it is an occasional feature, the team is not able to visit the village on the scheduled date & time as a result of vehicle breakdown.
- Sometimes the MHU vehicle is sent to the garage for repairing. During those days the MHU team is unable to take visit to the villages as per the roster.
- Natural disasters like flood and heavy rain adversely affect the visit of the MHU.
- In case of any health emergencies, the MHU team is immediately sent to those areas by the local MOIC for which their fixed visit plan gets disturbed. Lack of telephone connectivity to those remote areas, the MHU team face operational difficulty to immediately inform the concerned ASHA about the cancellation of their visit.

[5] The expenses of the MHU presented above were calculated on the basis of the expenditure pattern in last six months. This is an approximate unaudited expense.

- If there is a health epidemic in their own or neighboring Block or district, the MHU team is sent to those epidemic pockets to hold daily health camps (that lasts for 7 days to 1 month depending on the situation). During this period, the fixed visit plan of the MHU gets completely derailed.
- There are also other human elements like illness and personal needs of the MHU team members (more specifically the MO of the MHU) that hinder their visit to the village on the scheduled date and time.

Apart from taking regular visits to the village on the fixed date and time, the operational effectiveness of the MHU depends on the establishment of proper coordination with the local service providers. The gaps or constraints found in this regard are as follows:

- None of the ASHAs interviewed in the study could show a copy of the MHU roster to the study team which means they were not provided the same. Only through telephone or verbally, the local providers were communicated by the MHU regarding their visit plan. It is important that the ASHA should have the MHU roster with her so that she can display or inform people prior to the MHU visit to the village. That is why only 59% of households reported that they were informed by the ASHA prior to the visit of the MHU.
- The ASHA and the AWW were also not oriented properly about their role during the MHU visits. That could be the reason why the MHU face lot of problem with regard to logistics in the village. Due to lack of proper sitting arrangements, the MHU team has to deliver health care services from the vehicle which creates lot of difficulties for the patients as well as for the MHU. It is important that either the local providers or GKS members arrange a place for the MHU team in the village for providing health care services. There is also a need to keep the ANC examination table, screen and other equipments, table for keeping the medicines ready at the MHU point before the visit of the MHU.
- Sometimes, the ASHA of the village remains absent due to accompanying delivery cases or patients to the hospital or due to other engagement on the day of the MHU visit. During her absence, there is no such mechanism established in the village to inform people and make proper logistic arrangements for the MHU.
- In some places, the MHU team after reaching in the village faces difficulty to contact with the ASHA, as the MHU point and the ASHA are located in two different hamlets of the village.
- Lack of joint effort by the MHU team and the ASHA to mobilize community is clearly evident in the MHU served villages for which the MHU team has to sometime wait long hours for the patients to turn up in time. Due to lack of any specific strategy or manpower assigned for this, the MHU team engages their vehicle driver to go and inform people about the arrival of the MHU in the village.

Apart from these prior arrangements required by the MHU, the MHU also faces certain operational difficulties for providing various health care services:

- Lack of diagnostic instruments for conducting various tests before providing the treatment;
- Non-supply or inadequate supply of RDK;
- Lack of proper sitting arrangement for the patients;
- Non-availability of the examination table for conducting the ANC;
- Non-availability of container for collecting the TB slides;
- Absence of any contact between the ANM and the MHU team which affects the administration of TT to the pregnant woman and the immunization of children under the RCH services (since the ANM roster and the MHU roster are

two different plans, it is difficult for the MHU to provide immunization services to the children. In one of the Blocks of Rayagada, due to lack of coordination between the ANM and the MHU pregnant women were given more than the required number of TTs which has lot of risks on health and life of the beneficiaries. So, the MHU team operating there has decided not to administer vaccines any more. Since the operational area of the MHU and the ANM are not the same, it is difficult for the MHU to get timely information about the immunization from the ANM and vice versa. So without the data on immunization of beneficiaries with the MHU team, there is every chance of duplication of services and it may lead to some health risks. Therefore, the state may examine the viability of some of the health care services outlined for the MHU to deliver in the villages which includes certain diagnostic tests, immunization, etc.); and

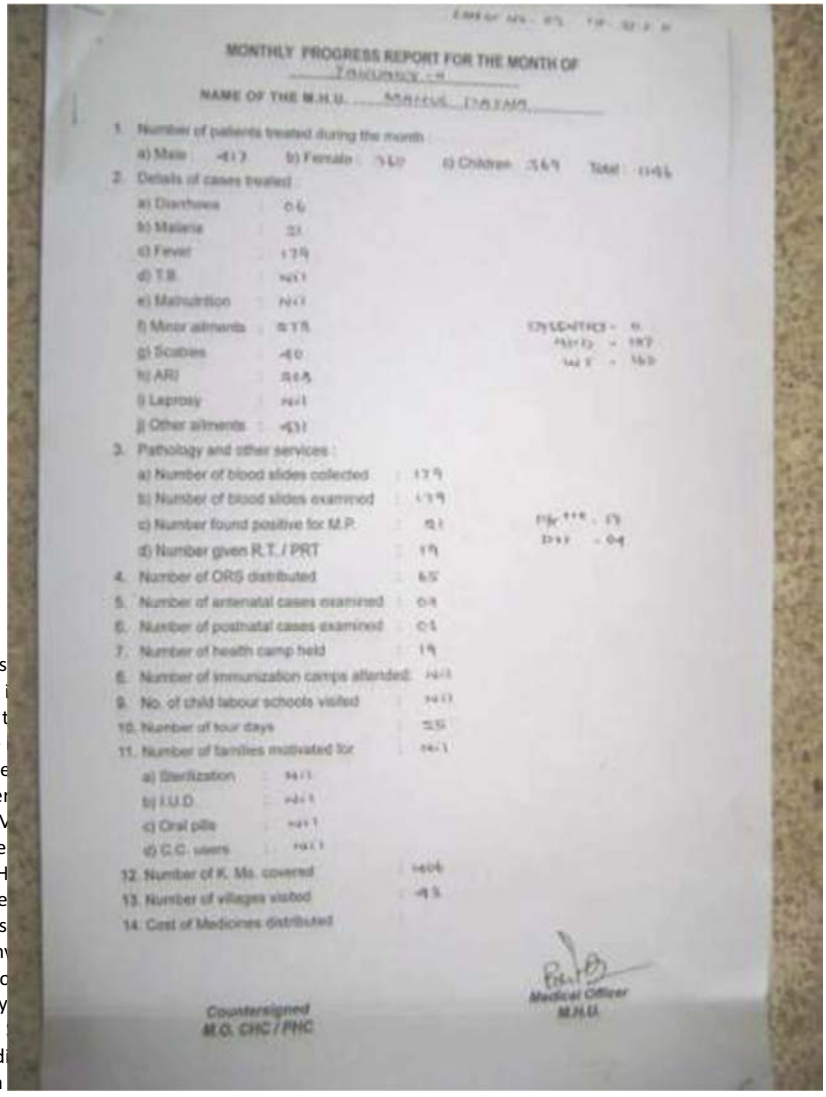
- More demand for the injection and tonics among the beneficiaries in lieu of medicines provided by the MHU[6].

3.7.12 Reporting by the MHU

All the MHUs visited by the study team regularly prepare their monthly report and submit to the respective MOIC, BPMU and CDMO. The format used for monthly reporting is almost same across the MHUs covered in the study. The reporting was done primarily on the various cases e.g. minor ailment, TB, Cataract, ANC, Family Planning, etc. were provided treatment during the month. A sample copy of the monthly report prepared by a MHU is presented in the next page.

3.7.13 Monitoring and Supervision by the MHU

Since the MHU has been entrusted with some key responsibilities of delivering health care services to the people residing in the geographically difficult areas, it is important that the MHU activities are



MONTHLY PROGRESS REPORT FOR THE MONTH OF

NAME OF THE M.H.U.

1. Number of patients treated during the month
   a) Male b) Female c) Children Total
2. Details of cases treated
   a) Diarrhoea
   b) Malaria
   c) Fever
   d) T.B.
   e) Malnutrition
   f) Minor ailments
   g) Scabies
   h) ARI
   i) Leprosy
   j) Other ailments
3. Pathology and other services
   a) Number of blood slides collected
   b) Number of blood slides examined
   c) Number found positive for M.P.
   d) Number given R.T. / PRT
4. Number of ORS distributed
5. Number of antenatal cases examined
6. Number of postnatal cases examined
7. Number of health camp held
8. Number of immunization camps attended
9. No. of child labour schools visited
10. Number of tour days
11. Number of families motivated for
    a) Sterilization
    b) I.U.D.
    c) Oral pills
    d) C.C. users
12. Number of K. Ms. covered
13. Number of villages visited
14. Cost of Medicines distributed

Countersigned
M.O. CHC / PHC

Medical Officer
M.H.U.

[6] In almost all the villages visited by the study team, there was common demand among the beneficiaries for giving injection i medicine provided to them. More particularly, people ask for t injection for treatment of Malaria. They have a belief that the works better than the medicine. This perception among the pe developed by the local quacks so that the demand for their ser be more and people will start more depending on them. The M also feels handicapped in administering the SP injection as the doses need to be administered in 4 days of time. Since the MH visiting the village within a span of fortnight or month or more cannot administer the SP injection which needs continuous vis days to the village. The MHU team faces lot of difficulty in conv people on the same. People in some villages also demand befo MHU to provide the injection and syringe to them so that they absence of the MHU can administer through the local quacks. this, people also demand for liquids and tonics instead of medi People think that the liquids and tonics have better impact on than the medicines

reviewed and monitored on a regular basis. Every month, the MHU team participates in the district level review meeting held at the DHH. This monthly review meeting of the MHU is done across all the study districts, which was represented by the concerned MO of the MHU. The meeting is convened by the CDMO or the district nodal officer for the MHU and is participated by the DPMU. The primary focus of this monthly meeting is to review the progress in the month and discuss on the operational difficulties of the MHU.

Since there is a direct operational linkage of the MHU with the BPMU, the BPO and the BADA interviewed in the Blocks informed the need of their participation in the district monthly review meeting of the MHU. The BPOs think that they should be aware of the discussions and decisions made in the district as they have the responsibility of monitoring the MHU progress in the Block.

Apart from the monthly review meeting, it is important that the field monitoring of the MHU activities is done on regular basis. But as per the study findings, there was lesser engagement of district and block health administration found in undertaking field visits to the MHU served areas. The MOIC in 4 Blocks, the BPO in 5 Blocks, the CDMO in 6 Blocks and the DPM in 8 Blocks did not take a single visit to the MHU served villages during the six months prior the study. Although the review meeting of the MHU was held regularly at the Block and District level, it is important that the supervisory staffs like the MOIC, BPO, CDMO and DPM takes field visit to the MHU areas and initiate appropriate actions for improving the service delivery by the MHU.

3.8 Comparative analysis between the MHU and AROGYA+

One of the important tasks before the study was to make a comparative analysis between the MHU and the AROGYA+. As already mentioned, the AROGYA+ initiative like the MHU program focuses on delivering the health care services through the MHU

mode but the approaches of implementation are different. This is a pilot program being implemented in 7 clusters located in 4 Blocks viz. Raikia, Tumudibandh, Daringbadi and Kotagarh of the Kandhmal district. The following are some of the basic differences found between the AROGYA+ and the MHU program:

- The MHU program is being executed exclusively by the Government whereas the AROGYA+ is being implemented through the Public Private Partnership (PPP) mode in which the local NGOs are being engaged for implementation of the same. There are 7 NGOs namely BABP in Raikia; Seva Bharati and Pradata in Tumudibandh; Jagruti, CBSW and Amagaon in Daringbadi and ACM in Kotagarh Block engaged in execution of the AROGYA+ in the seven different clusters of the Kandhmal district.
- All the 7 clusters of AROGYA+ are located in the extremely difficult pockets of Kandhmal district whereas the MHU program run by the

Government is being executed in the difficult as well as the normal Blocks. The clusters identified under the AROGYA+ are highly inaccessible and Maoist affected area which is difficult for the Government to cover or reach out to those areas with required health care services.

- The AROGYA+ program is being implemented through the cluster approach. Two or three most difficult Gram Panchayats have been clubbed together to form a cluster, where all the villages of the cluster are covered by the AROGYA+. In contrast, the MHU provides health care services in the villages identified in scattered or different locations of the Block.
- The AROGYA+ program addresses both supply and demand side factors. That means, it focuses on delivering health care services through the MHU and also makes effort to create demand among the community through social mobilization and awareness programs. So, extra budget and manpower provisions have been kept for the execution of the AROGYA+ program. For example, the AROGYA+ has a Social Mobiliser whereas such position is not there in the MHU. There are also additional components like strengthening of the GKS; formation and strengthening of the Local Steering Committee (LSC); and organizing Jana Adalat-cum-Health Grievance Redressal Camp.

Out of the 7 clusters, the study covered 2 clusters of the AROGYA+ run by the BABP in Raikia and Seva Bharati in Tumudibandh. The study team visited 4 villages in the 2 clusters (2 villages from each cluster) and interviewed a total of 80 households (20 households from each village).

A comparative analysis between the responses of households in AROGYA+ and the MHU served villages is presented in Table 37 for assessing the differences in the effectiveness of the two programs.

Table 37 A comparative analysis of the responses of people in AROGYA+ and MHU served villages

Sl. No.	Indicators	AROGYA+		MHU	
		No.	%	No.	%
1	Households interviewed	80	100.0	515	100.0
2	Family members	410		2563	
3	Households had health problem in past 6 month	79	98.8	494	95.9
4	Family members had health problem in past 6 month	175	42.7	1035	40.4
5	Family members visited any health facility or provider in past 6 month	175	100.0	1023	98.8
6	People availed treatment from the MHU	163	93.1	813	79.6
7	MHU as the 1st point of contact	158	90.3	794	77.6
8	People availed curative services	147	84.0	726	70.1
9	People availed RCH services	3	6.0	47	12.6
10	People availed diagnostic services	2	1.1	62	6.0
11	People availed family planning services	0	0.0	13	1.0
12	Minor ailment cases provided treatment				
	Fever	79	53.7	340	46.8
	Cough/chest infection	25	17.0	82	11.3
	Back/leg/joint pain	20	13.6	81	11.2
	Diarrhea without blood	9	6.1	67	9.2
	Cold	6	4.1	58	8.0
	Headache	6	4.1	48	4.6
	Skin rash/infection	2	1.4	34	4.7
	Body-ache	1	0.7	25	3.4
13	Major ailment cases provided treatment				
	Malaria	3	2.0	41	5.6
	Diarrhea with blood	-	-	9	1.2
	Rheumatism	-	-	8	1.1
	Abdominal pain	1	0.7	8	1.1
	TB	-	-	6	0.8
	Jaundice	1	0.7	2	0.3
14	People got cured after treatment	119	81.0	547	75.3
15	Satisfaction level of the beneficiaries				
	Satisfied	69	88.5	295	70.6
	Somewhat satisfied	8	10.3	94	22.4
	Dissatisfied	1	1.2	29	7.0
16	Reasons of satisfaction				
	Availability of health services in the village	76	97.4	387	92.6
	Free distribution of medicines	76	97.4	361	86.4
17	Family members did not visit the MHU in spite of their illness	0	0.0	21	4.1

In most of the indicators presented in Table 37, the AROGYA+ program has done relatively better than the MHU. Out of the 175 people (who had illness during the past 6 months), 163 (93.1%) availed health care services from the AROGYA+ as against 79.6% from the MHU. The AROGYA+ was the first point of contact for 90.3% of people for availing the required health care services whereas it is 77.6% in case of the MHU. As against 70.1% availed curative services from the MHU, much higher i.e. 84.0% availed the same type of services from the AROGYA+. But both in case of the MHU and the AROGYA+, negligible percentage of people availed the RCH, family planning and diagnostic services.

Relatively a higher percentage i.e. 81% got cured after the treatment by the AROGYA+ than the MHU i.e. 75.3%. This could be one of the key reasons why majority i.e. 88.5% households were found to be satisfied on the health care services provided by the AROGYA+ than the 70.6% on the MHU.
In almost all the indicators discussed above, the AROGYA+ run through the PPP mode has done relatively better than the MHU. During the visit to the AROGYA+ served villages, the study team found greater community involvement in comparison to the MHU served villages. This is because of the additional support provided to the AROGYA+ on community awareness generation, mobilization and engagement. As a result, 100% of people in the AROGYA+ villages visited proper health facilities for availing the health care services. None of them visited the quack, traditional healer, etc. for their treatment.

The formation of the Local Steering Committee (LSC) and the organizing of the Jana Adalat-cum-Health Grievance Redressal Camp has helped to create more awareness among the people about the AROGYA+. Due to these initiatives, the activity of the ASHA was closely monitored for which they were found to be more responsive to the AROGYA+ program than the MHU. The AROGYA+ teams interviewed in the study also reported about the greater support provided by the ASHA in community mobilization and awareness generation.

Apart from the effort made for the community mobilization and awareness generation, regular visit of the AROGYA+ (as reported by the local providers interviewed in the study) could be attributed as the other important reason for which a majority of people availed health care services from the same. In contrast to the MHU, the date and timing of the visit of the AROGYA+ to a particular village was fixed by the GKS and community members. So based on the plan prepared by the people, the AROGYA+ team takes the visit to the villages. On the other side, people are also aware of the date and timing of the AROGYA+ visit which help them to plan their domestic and economic engagements accordingly, so that they remain present in the village at the time of the visit by the AROGYA+.

The only key area that requires improvement in the AROGYA+ program is establishment of coordination with the Block PHC/CHC. Although the MO / representative of the Block PHC / CHC participate in the meeting of the LSC and Jana Adalat-cum-Health Grievance Redressal Camp organized by the AROGYA+, lack of coordination was observed particularly in supply of family planning products, RDK and vaccines to the AROGYA+ by the Block PHC/CHC. As a result, the above items were either irregularly supplied or not supplied to the AROGYA+. There was also lack of coordination found with regard to the recording of data by the Block

PHC/CHC on the beneficiaries covered by the AROGYA+. Since there is no scope in the Health Management Information System (HMIS) format used by the Block PHC/CHC, the beneficiaries covered or provided different health care services by the AROGYA+ was not captured in the same. However, it is important to find that the field monitoring of the AROGYA+ program was done by the CDMO and the MOIC of the Block PHC/CHC. During six months prior the study, at least one visit was made by the CDMO and the MOIC to monitor the health care services provided by the AROGYA+.

Apart from the above, the AROGYA+ team also reported the study team about the reduction of funds made by the Government for the community awareness generation and engagement which is affecting the community mobilization program taken up by the AROGYA+. In the new guideline issued for the AROGYA+, the Government has scrapped the post of three Community Organizers who were placed in each Gram Panchayat instead of which one Social Mobiliser post has been created. The AROGYA+ team felt that the earlier post of the Community Organizer in each Panchayat was helping them better than the current provision of a single Social Mobiliser for mobilizing and creating awareness among the people. The need of additional fund support for medicines and fuel was also reported by the AROGYA+ for effective functioning and delivery of health care services.

In brief, the AROGYA+ program as a result of the additional components like community engagement and strengthening of GKS has helped them to perform better in the most difficult geographic setting than the MHU. These additional components have helped them to overcome many of the community based operational difficulties confronted by the MHU e.g. logistic arrangements for the MHU in the village, prior information to the people, proper coordination with the ASHA, engagement of the Ward Member for community based monitoring and mobilization, etc.

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CHAPTER – IV

4. STUDY RECOMMENDATIONS AND CONCLUSION

4.1 Key Challenges and Recommendations

The study findings presented in the previous section not only brings out the various benefits and achievements made by the MHU but also identifies certain operational gaps or difficulties in the functioning of the MHU. Based on the operational gaps and difficulties, the study has identified here the key challenges faced by the MHU program and has suggested some possible measures to overcome the same challenges. It is important to mention that the recommendations made here are based on the expectations and suggestion of the beneficiaries, the MHU team and other service providers interviewed in the study. The key challenges and recommendations are presented in the matrix below:

Sl. No.	Key Challenges	Recommendations
1	Coverage of villages not having road	• These completely inaccessible villages need to be tagged with the nearest village which

Sl. No.	Key Challenges	Recommendations
	communication	has road communication. • The GKS member of these completely inaccessible villages need to be oriented and engaged so that they can mobilize people from their respective village to come down to the MHU point at the nearest accessible village and avail the health care services.
2	Coverage of only the difficult villages (in Rayagada district)	• The ZSS of the Rayagada district may think of revising their strategy to cover only the difficult villages instead of all the villages currently covered in the district by the MHU. The same strategy would enable the MHU to take visit to the village once in every fortnight.
3	More number of difficult villages in a Block	• Since there are large numbers of geographically difficult villages in some of the Blocks, the State may think of engaging more number of MHUs in the Block so that all the difficult villages in a Block can be covered and at least one visit to the village in every fortnight can be made. • Proper GIS based mapping of all the MHU served villages in a Block should be prepared with details about the location of various static health facilities and their road distance from the treatment point can be shown in the map which would help to identify the most difficult and inaccessible villages for MHU operation. This would also help to exclude those villages which are located near to the static health facilities. • Only hard to reach areas should be covered by the MHU.
4	Maintaining fixed treatment point, date and time of the MHU visit to the villages	• Effort should be made to amicably identify and fix a treatment point in the village with GKS and community members where MHU can provide health care services to the people. A suitable treatment point in every MHU operated villages should be fixed. • The State may think of either putting a permanent structure or converting already available structures like community hall, AWC, etc. as MHU treatment point. • It is essential that the MHU takes regular visit to the village as per the date and time fixed in the MHU roster. Factors such as vehicle breakdown, coverage of more villages, emergency visit to other areas, etc. can be addressed by adopting proper field level strategies. • In every 2 years, the State may review the need of various MHU treatment points identified in a Block. This is essential in the context that the State every year is putting up / adding more static health facilities and creating road infrastructures due to which certain identified MHU points may not be necessary after a period of time. So, every 2 years this needs to be reviewed which would help in minimizing the investment of State resources.
5	Prior information to the local providers and community regarding the MHU visit, services and health messages	• A copy of the MHU roster needs to be circulated to the local providers like ASHA, AWW and ANM and the GKS members so that they in turn can inform the people before the MHU visit. • The State may think of putting a signage in every MHU served villages mentioning the fixed date and time of the MHU visit and the place of the MHU camp in the village.

Sl. No.	Key Challenges	Recommendations
		• Signage may be also placed at the fixed treatment point of MHU in the village with information on fixed date, time, place and health services provided by the MHU. • Apart from signage, the fixed treatment point in the village as well as the same MHU served village should be properly branded with IEC / BCC information and materials for increasing its visibility and use of information. • Effort should be also made to develop the treatment point as community kiosk which would help community members get basic health information and services. • The Swasthya Kantha which has already been prepared in the village needs to be used for informing people regarding the MHU visit date, time, services and other relevant information. • Any deviation in the plan of visit needs to be communicated to the frontline workers in the community and GKS members.
6	Engagement of the GKS and PRI members and the community level frontline workers in the MHU activities	• Before the MHU visit to the village, it is essential that the GKS and PRI members and the frontline workers in the community make prior arrangements e.g. information to the people, sitting and other logistic arrangements for the MHU, etc. in the village. So, they need proper orientation on their roles and responsibilities with regard to the visit of the MHU. • The State may also think of including the MHU activities in the job role of the local providers like ASHA, AWW and ANM for supporting the MHU. Job incentives can also be paid to the local providers for encouraging their support to the MHU. • The MHU team should have continuous interface with the frontline workers (preferably ASHA) for prior information to people on MHU visit, community mobilization, logistic arrangement at the treatment point, community awareness generation, etc. • GKS and PRI members of the local area may be engaged for monitoring of the services extended by the MHU.
7	Supply of diagnostic instruments and kits	• The MHUs need to be regularly and adequately supplied with the RDK for testing of Malaria. The State may think of supplying bivalent RDK kits to the MHU so that both Falcifarum and Vivax cases can be detected on the spot for providing right treatment. ACT should be also made available to MHU for malaria treatment. • Since clinical diagnosis is important, there is also a need to equip the MHU with basic diagnostic instruments like microscope, hemoglobin meter, weighing machines, etc. so that the MHU can do some instant diagnostic tests. • The MHU also needs to be provided with the container to collect sputum of the patients for identification of TB cases. Since required temperature needs to be maintained, it is essential to provide the container for collecting the suputum.
8	Staff vacancy and positioning in the MHU team	• The position of the Health Worker (F) needs to be immediately filled-up for taking up the ANC and PNC

Sl. No.	Key Challenges	Recommendations
		properly. • As per the suggestion made by the MHU team, the State may think of promoting the 'Driver or the Attendant or both' as Social Mobiliser. It would help to establish proper contact with the frontline workers in the community, GKS and community members and help in create health awareness and disseminating relevant information in the community. • Additional incentive can be paid to the person in the MHU team who would be required to take up the responsibility of community mobilization.
9	Capacity requirement for the delivery of the health care services	• In most of the Blocks (except few in the KBK district), the newly appointed AYUSH doctors and the other clinical staff require at least one month therapeutic training to administer the allopathic medicines. Training on Panchabadhi & National Disease Control Program (NDCP) should be also imparted to the MHU doctor. • The MHU team also needs to be provided an induction training focusing on the programmatic requirements and their role. • The MHU team also requires orientation on the other health programs run by the Government and how the same can be integrated with the MHU activities. • The Pharmacist in the MHU team may be trained on conducting the diagnostic tests of patients at the camp site.
10	Myths and misconception of the targeted beneficiaries	• In view of the demand for injection, tonics and liquid medicines, the MHU needs to apply proper IEC / BCC strategy to dispel such myths and misconceptions. • The IEC/BCC programs are also needed for preventive measures and improving the health seeking behavior of the people. • In this regard, the State may think of putting canopy at the MHU point for display of IEC/BCC materials, video shows and other relevant materials may be provided for community awareness generation and most importantly improving the health seeking behavior of people in the community. A complete and well designed IEC kit can be provided to each MHU team for the same.
11	Administer TT vaccines and immunization to the children	• It would be right if these services are entrusted to only the ANM so that the overdoses of TT and immunization to the children can be avoided. • The State may revisit the guideline of the MHU to verify the feasibility of providing the said health care services by the MHU.
12	Follow-up of the patients provided treatment by the MHU	• It is important that the medicines provided by the MHU are utilized properly for getting cured from the illness. The local providers need to be engaged for follow-up with the patients. • The focus of the follow-up should be on proper consumption of medicines, referral visits to higher health facilities, conducting diagnostic tests, etc.
13	Emergency health care services	• Since emergency health care service is one of important areas of MHU, the State may place at least 2 MHUs at the DHH or 1 MHU in each SDH exclusively for taking care of

Sl. No.	Key Challenges	Recommendations
		the emergency health care needs like outbreak of epidemics, accidents, etc. in the district. This would help avoiding any disturbance in the fixed visit plan of the existing MHUs. • At the district level, the State may take up some collaborative initiative between Orissa Disaster Rapid Action Force (ODRAF) and MHU team which would help addressing health needs during any natural and manmade disasters. • In case of emergency health referrals of patients, the vehicle provided to the MHU may be used in carrying patient to the hospital on the day of visit to the village.
14	Regular tracking, monitoring and supervision of the MHU	• The CDMO, DPM, MOIC, BPO, etc. needs to take more frequent field visits to the MHU served villages in order to assess the quality of the health care services provided by the MHU and help them in improving the service delivery process of the MHU. • Supportive supervision by the district and block level health administration needs to be extended for capacity building of the MHU team and effective service delivery by them. • GIS based tracking system should be employed to know whether the MHU team has visited the village as per the planned date and time. This would enhance the accountability of the MHU for providing health care services in the remote and inaccessible locality. • In this regard, GPS coordinates of all the MHU points and GIS mapping of the roads to these points can be

Sl. No.	Key Challenges	Recommendations
		prepared so that online tracking of the visit of MHU vehicle to the fixed point can be traced. This would help to enhance the accountability mechanism of the MHU team operating in the remote and inaccessibility pocket of Orissa. • Apart from GIS based tracking system, the GKS members of the community can be empowered and engaged to monitor the attendance of each MHU team member at the treatment point. A report signed by the GKS member on the MHU visit would be highly beneficial in this regard to know the extent and quality of services provided by the MHU
15	Supervision and Monitoring of other health programs by MHU	• The date fixed to visit different points by MHU may be tied up with the other health events e.g. VHND, Immunization day, etc. organized in the same point which would help the MHU to monitor the delivery of services in other health programs in addition to the core services expected from MHU. • MHU may be also engaged to monitor the services provided by ASHA and also entrusted with the task to support and review the activities undertaken by GKS. • Other tasks such as monitoring of birth / death registration and verification of MCP cards and Mother Child Tracking System (MCTS) may be taken up by the MHU.

4.2 Concluding Remarks

While the study findings presented in the previous chapter reveal some key benefits received by the beneficiaries from the MHU and the AROGYA+, there are some gaps found in the operational and managerial processes of the MHU. Not only the majority of people during illness visited the MHU for treatment but also for the maximum of them it was the first point of getting treatment. More importantly, three fourth of the patients got cured after receiving the health care services from the MHU. Although few people availed RCH, diagnostic, family planning and emergency services, the role played by the MHU in providing curative services was appreciated by almost all the beneficiaries. Availability of health care services in the nearest areas and free distribution of medicines are some of the key factors which made them satisfied with the MHU. Due to the additional components like community engagement and strengthening of GKS, the AROGYA+ program has performed relatively better in the most difficult geographic setting than the MHU.

However certain operational gaps like more number of villages covered by the MHU, infrequent visit to the village, vacancy of Health Worker (F) & Attendant posts, non-availability of diagnostic instruments and inadequate & irregular medical supplies like RDK & family planning products requires to be addressed for enhancing the operational effectiveness and the benefits of services provided by the MHU. Apart from addressing all these operational gaps, the state may place more MHUs in the difficult Blocks which would reduce the pressure on the existing MHUs but also benefit the targeted beneficiaries to get more frequent health care services from the MHU.

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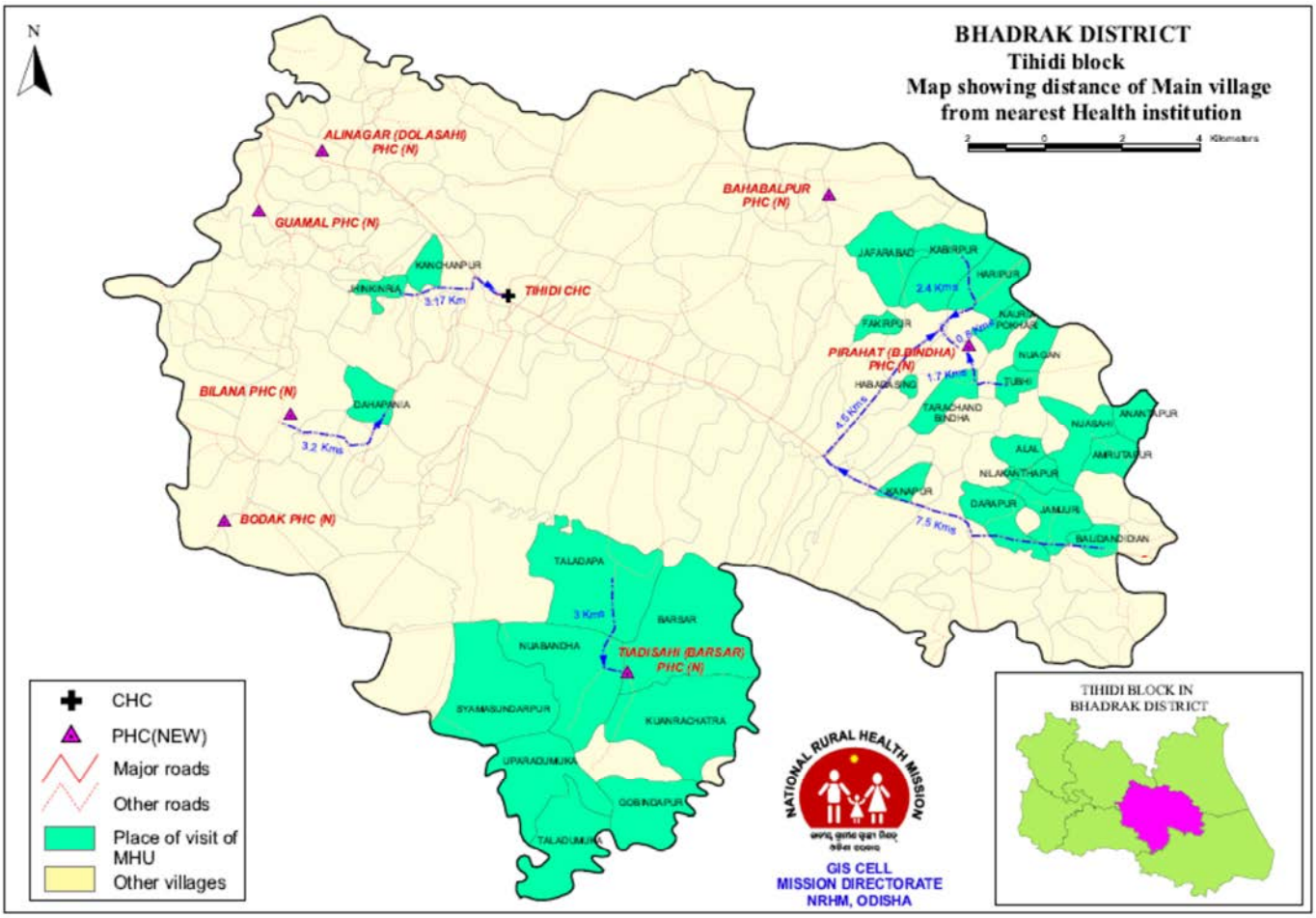
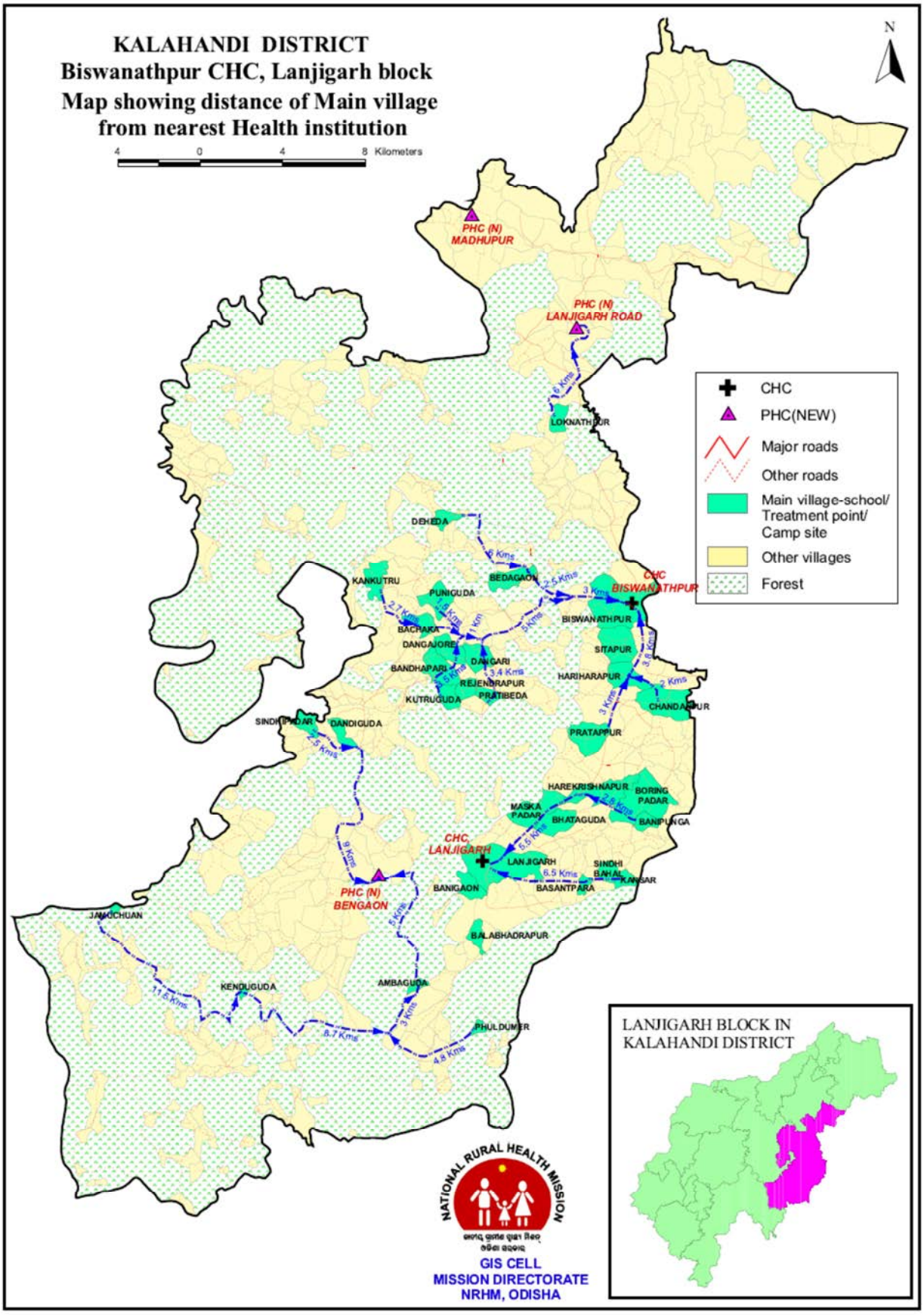
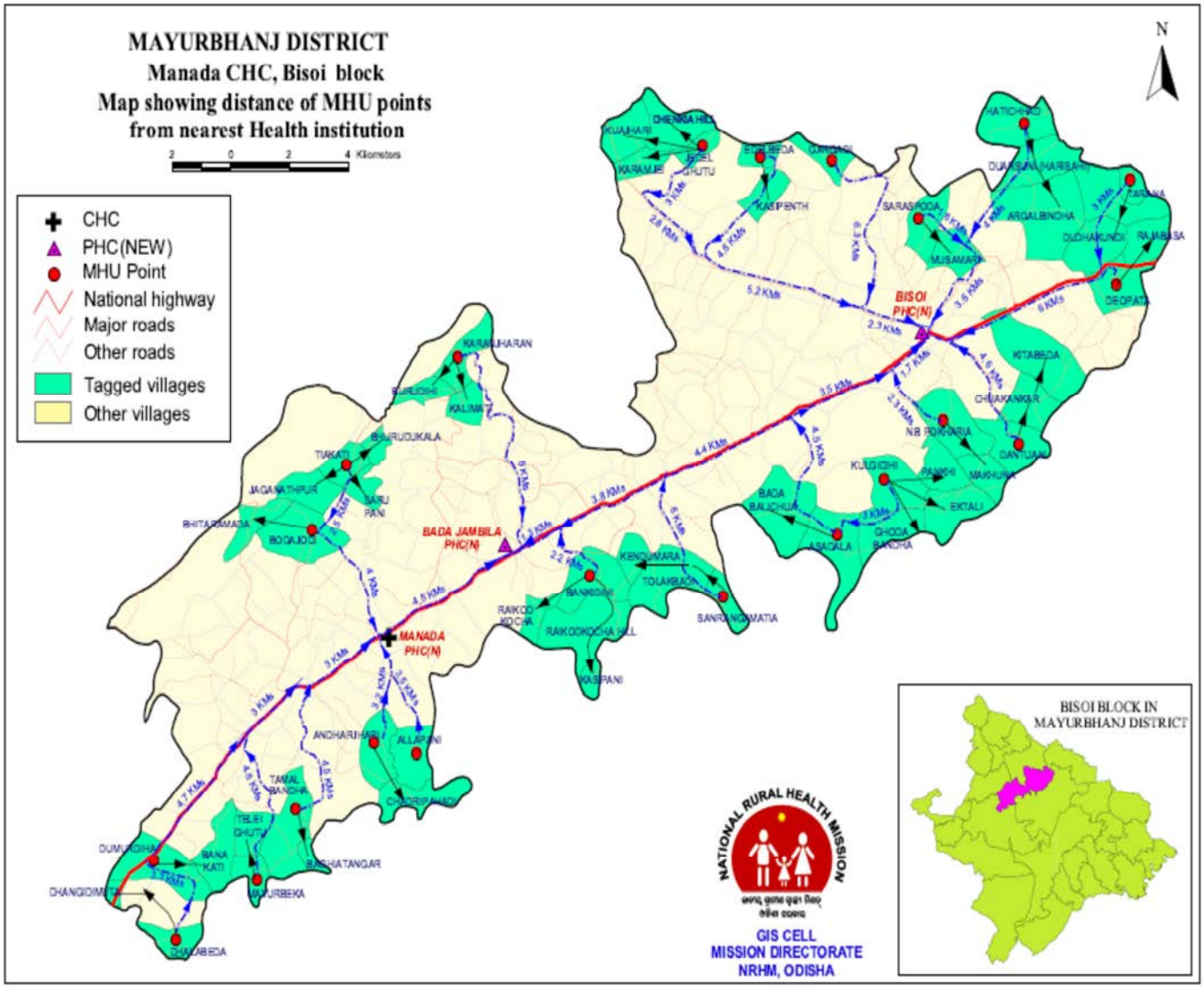
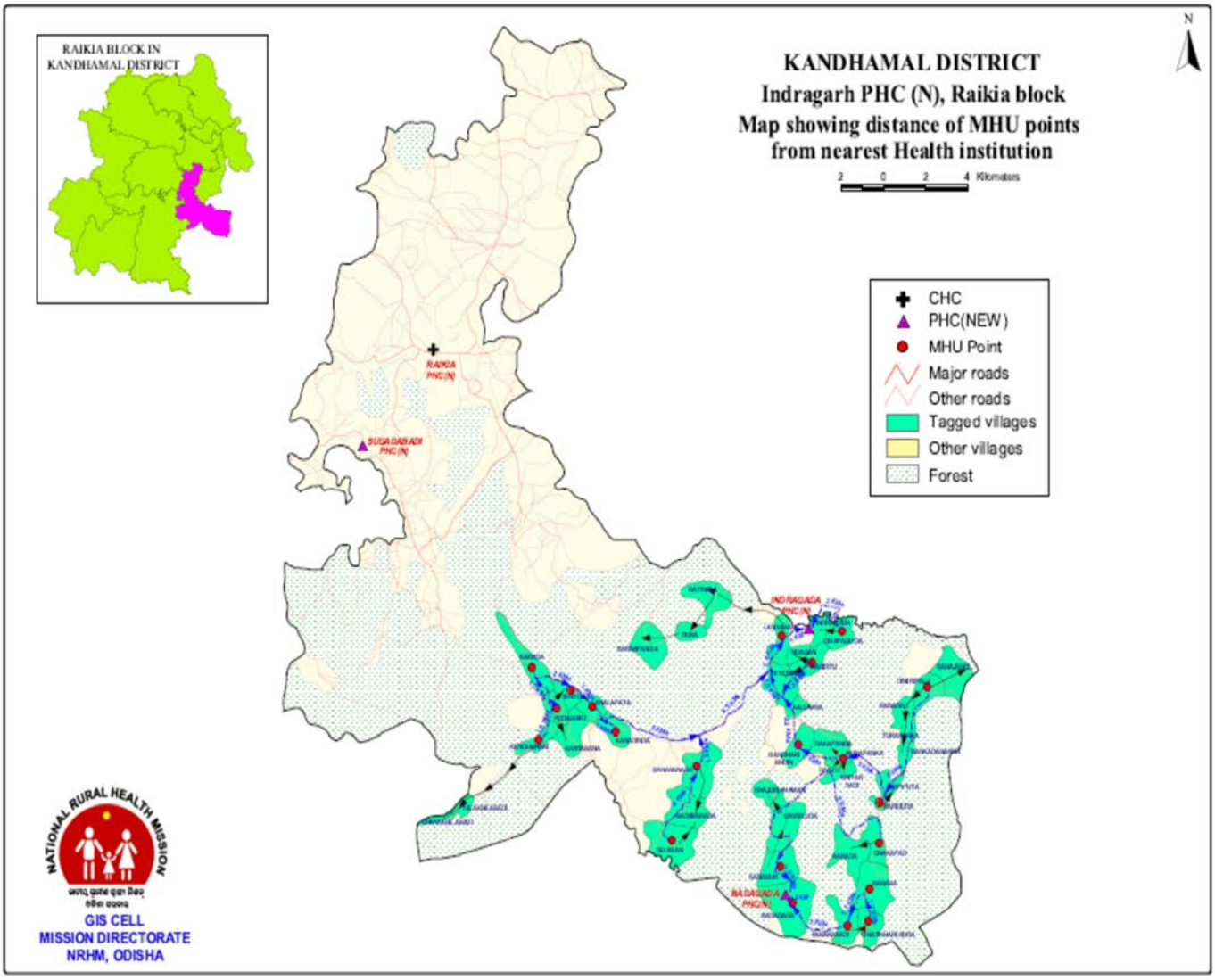
ANNEXURE

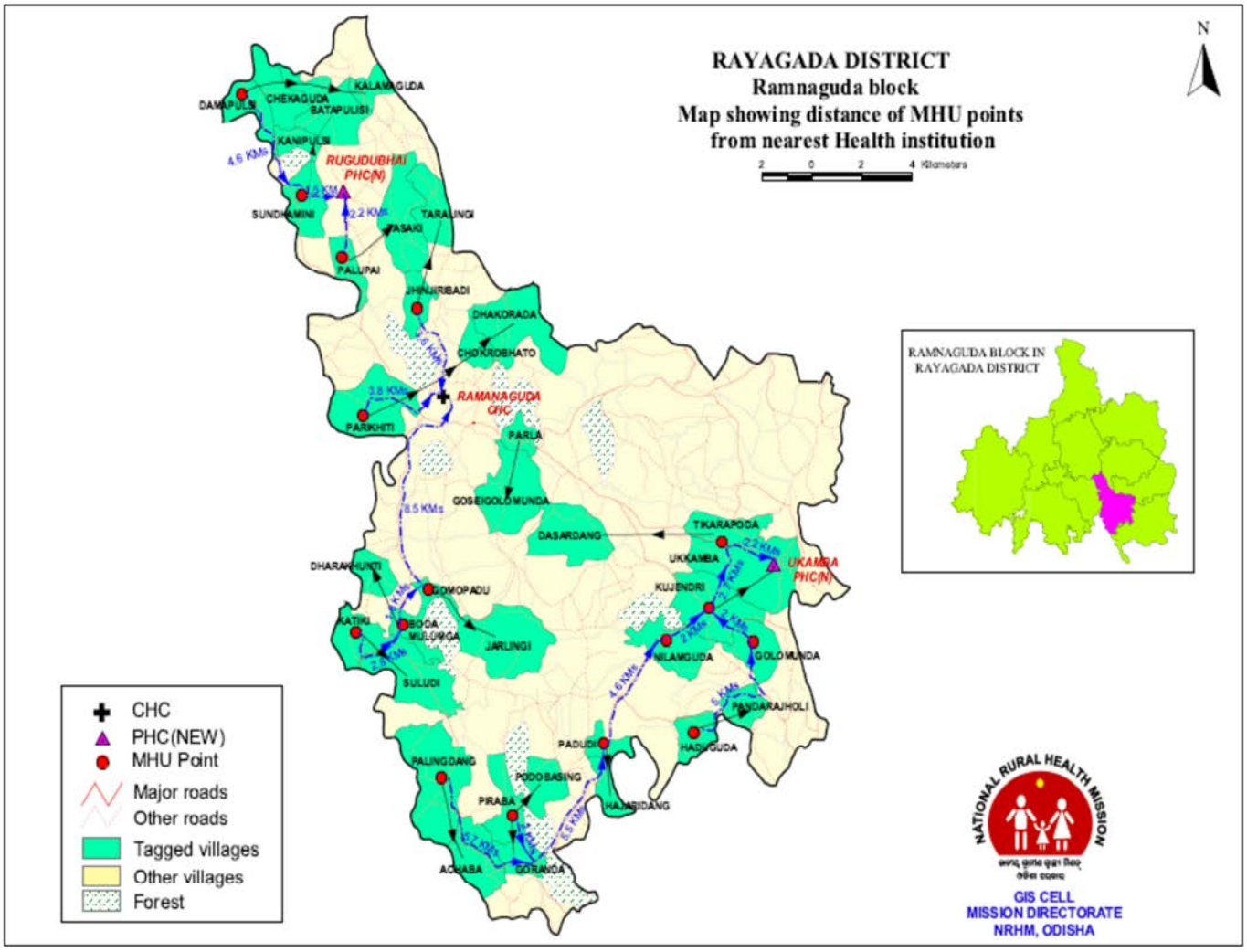
GIS MAP OF LOCATION OF MHU POINTS AND STATIC HEALTH FACILITIES IN SAMPLE STUDY BLOCKS




KALAHANDI DISTRICT
Biswanathpur CHC, Lanjigarh block
Map showing distance of Main village
from nearest Health institution
4 0 4 8 Kilometers
N
PHC (N)
MADHUPUR
PHC (N)
LANJIGARH ROAD
LOKNATHPUR
DEHEDA
BEDAGAON
KANKUTRU
PUNIGUDA
CHC
BISWANATHPUR
BISWANATHPUR
BACHAKA
DANGAJORE
SITAPUR
BANDHAPARI
DANGARI
REJENDRAPUR
PRATIBEDA
KUTRUGUDA
HARIHARAPUR
CHANDANPUR
SINDHIPADAR
DANDIGUDA
PRATAPPUR
HAREKRISHNAPUR
BORING
PADAR
MASKA
PADAR
BHATAGUDA
BANIPUNGA
CHC
LANJIGARH
LANJIGARH
SINDHI
BAHAL
KANSAR
BASANTPARA
BANIGAON
PHC (N)
BENGAON
JANOCHUAN
BALABHADRAPUR
KENDUGUDA
AMBAGUDA
PHULDUMER
CHC
PHC(NEW)
Major roads
Other roads
Main village-school/
Treatment point/
Camp site
Other villages
Forest
LANJIGARH BLOCK IN
KALAHANDI DISTRICT
NATIONAL RURAL HEALTH MISSION
GIS CELL
MISSION DIRECTORATE
NRHM, ODISHA


MAYURBHANJ DISTRICT
Manada CHC, Bisoi block
Map showing distance of MHU points
from nearest Health institution
2 0 2 4 Kilometers
CHC
PHC(NEW)
MHU Point
National highway
Major roads
Other roads
Tagged villages
Other villages
N
BISOI PHC(N)
MANADA PHC(N)
BADA JAMBILA PHC(N)
BISOI BLOCK IN MAYURBHANJ DISTRICT
NATIONAL RURAL HEALTH MISSION
GIS CELL
MISSION DIRECTORATE
NRHM, ODISHA


RAIKIA BLOCK IN KANDHAMAL DISTRICT
KANDHAMAL DISTRICT
Indragarh PHC (N), Raikia block
Map showing distance of MHU points from nearest Health institution
2 0 2 4 Kilometers
N
CHC
PHC(NEW)
MHU Point
Major roads
Other roads
Tagged villages
Other villages
Forest
RAIKIA PHC(N)
SUBADABADI PHC(N)
INDRAGADA PHC(N)
BADAGADA PHC(N)
NATIONAL RURAL HEALTH MISSION
GIS CELL
MISSION DIRECTORATE
NRHM, ODISHA


RAYAGADA DISTRICT
Ramnaguda block
Map showing distance of MHU points
from nearest Health institution
N
2 0 2 4 Kilometers
KALAMAGUDA
CHEKAGUDA
BATAPULISI
DAMAPULISI
KANIPULISI
4.6 KMs
RUGUDUBHAI PHC(N)
SUNDHAMINI
4.5 KM
2.2 KMs
TARALINGI
TASAKI
PALUPAI
JHINJIRIBADI
DHAKORADA
CHOKROBHATO
3.8 KMs
RAMANAGUDA CHC
PARIKHITI
PARLA
GOSEIGOLOMUNDA
8.5 KMs
DASARDANG
TIKARAPODA
UKKAMBA
2.2 KMs
UKAMBA PHC(N)
DHARAMUNTI
GOMOPADU
KUJENDRI
KATIKI
BOODA MULUMGA
JARLINGI
NILAMGUDA
GOLOMUNDA
SULUDI
PANDARAJHOLI
HADAGUDA
PADUDI
PALINGDANG
PODOBASING
PIRABA
HALABIDANG
ACHABA
GORANDA
CHC
PHC(NEW)
MHU Point
Major roads
Other roads
Tagged villages
Other villages
Forest
RAMNAGUDA BLOCK IN RAYAGADA DISTRICT
NATIONAL RURAL HEALTH MISSION
GIS CELL
MISSION DIRECTORATE
NRHM, ODISHA

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