Summer Training at
NRHM, Odisha
(April - June, 2013)

MOTHER AND CHILD TRACKING SYSTEM-A TOOL TO PROVIDE QUALITY ANTE NATAL CARE

By
Afaq Amir Ahmad

Under the guidance of
Dr. Nutan P. Jain

Post Graduate Diploma in Hospital and Health Management
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INSTITUTE OF HEALTH MANAGEMENT RESEARCH
1, Prabhu Dayal Marg
Sanganer Airport, JAIPUR - 302 011, INDIA
Tel. : 3924700, 2791431-32
Fax : 91-141-3924738
E-mail : iihmr@iihmr.org
URL : http://www.iihmr.org
Gram : HEALTHINST

Certificate

This to certify that **Dr. Afaq Amir Ahmad** student of Post Graduate Diploma in Hospital and Health Management (PGDHM) from Institute of Health Management Research, Jaipur, Batch 17th has successfully undergone his summer training in NRHM, Odisha and has done a project on **"Mother and Child Tracking System – A Tool to Provide Quality Ante Natal Care"** in Dhenkanal district.

The candidate has successfully carried out the mentioned studies assigned during his summer training from 08 April 2013 – 08 June 2013 and his approach towards the study was sincere, scientific and analytical.

We wish him success in all his future endeavors.

Dr Nutan P Jain

Professor
IHMR, Jaipur

Dr. Ashok Kaushik

Dean Academics and Student Affairs,
IHMR, Jaipur

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Acknowledgement

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Dr. Afaq Amir Ahmad
IHMR, Jaipur

Abbreviations

ADMO	Assistant District Medical Officer
AIDS	Acquired Immuno Deficiency Program
ANC	Ante Natal Care
ASHA	Accredited Social Health Activist
AWW	Angan Wadi Worker
AYUSH	Ayurveda, Yoga and Naturopathy, Unani, Siddha, SowaRigpa and Homeopathy
BP	Blood Pressure
CBR	Crude Birth Rate
CDMO	Chief District Medical Officer
CDR	Crude Death Rate
CHC	Commuity Health Center
CLMIS	Contraceptive Logistic Management Information System
CME	Continued Medical Education
CUG	Closed User Group
DH	District Hospital
DLHS	District Level Household Survey
EDD	Expected Date of Delivery
FGD	Focus Group Discussion
FRU	First Referral Unit
GIS	Global Information System
GODMAN	Government Doctor's Information Management
Hb	Haemoglobin
HBPNC	Home Based Post Natal Care
HMIS	Health Management Information System
HRMIS	Human Resource *Management Information System*
IFA	Iron Folic Acid
IMR	Infant Mortality Rate
IPHS	Indian Public Health Standard
IT	Information Technology
ITEMS	Integrated Training & Evaluation Management System
JSSK	Janani Shishu Surakhsha Karyakram

MCH	Maternal Child Health
MCTS	Mother and Child Tracking System
MDG	Millenium Development Goals
MHU	Mobile Health Unit
MMR	Maternal Mortality Ratio
MoHFW	Ministry of Health and Family Welfare
NGO	Non Governmental Organization
NHSRC	National Health Systems Resource Centre
NRHM	National Rural Health Mission
OSMIS	Odisha State Malaria Information System
OVLMS	Odisha Vaccine Logistic Management *System*
PHC	Primary Health Center
PPP	Public–Private partnership
PRI	Panchayati Raj Institutions
RCH	Reproductive and Child Health
RKS	Rogi Kalyan Samiti
RMNCH+A	State Health Systems Resource Centre
RTI	Reproductive Tract Infection
SC	Sub Center
SHSRC	State Health Sytems Resource Center
SIHFW	State Institute of Health and Family Welfare
SPSS	Statistical Package for Social Sciences
STI	Sexually Transmitted Infection
TB	Tuberculosis
TFR	Total Fertility Rate
TT	Tetanus Toxoid
UGPHC	Up Graded Primary Health Center
VH&SC	Village Health &Sanitation Committee
VHND	Village Health & Nutrition Day

Backdrop

Summer internship is an integral part of the PGDHM currriculum.As a part of the course;students of the first year are required to undergo summer training at an organization to get in depth exposure of various departments in the organization to get a better understanding of the health care delivery system.
The major objectives of the summer training programs are as follows:

1) To better understand the existing health delivery system including public and private sectors.
2) To observe the implementation of various National Health Programmes at National/State/District levels.
3) To understand various functions of health systems by interactions with key stakeholders, policy makers, programme managers,academicians and researchers
4) To work on the project/task assigned by summer training organizations.

During my training period I had an overview of various programmes undertaken in National Rural Health Mission,Odisha including the current status of the programmes. I also carried out astudy on-

"MCTS – A tool to provide Quality ANC - A case study of Dhenkanal, Odhisa"

Introduction to National Rural Health Mission, Odhisa

The Hon'ble Prime Minister of India Dr.Manmohan Singh launched NRHM on 12 April 2005 in the country, with special focus on 18 states including Odisha. It is the *Biggest ever health project in the health sector in the last 50 years. It recognizes the importance of health care in the process of economic and social development and improving the quality of lives of our citizens. It provides effective health care to rural population throughout the country with focus on 18 states, which have weak public health indicators and weak infrastructures.*
The Hon'ble Chief Minister of Odisha Shri Naveen Patnaik in presence of the Union Minister Health & Family Welfare, Shri Anbumani Ramadoss launched the NRHM programme throughout the state on 17th June 2005 with goal of "Healthcare to All"

The state of Odisha has an area of 155,707 km² and population of 41,947,358. Odisha is the ninth largest state by area in India, and the population. There are 30 districts; each district is subdivided into blocks, the total being 314. Blocks consist of *Panchayats* (village councils) & town municipalities. The state has population density of 270 per square kilometer as against the national average of 382 per square kilometer). The decadal growth rate of the state is +15.94 percent (against 21.54 percent for the country) and the population of the state is growing at a slower rate than the national rate.

Objectives:

1. To bring IMR to less than 28
2. To bring MMR to less than 100
3. To achieve TFR of 2.1
4. To strengthen the existing infrastructure
5. Appointment of contractual staff
6. To increase community participation with help of *Rogi Kalyan Samiti* at all hospitals and Village health and sanitation committee.

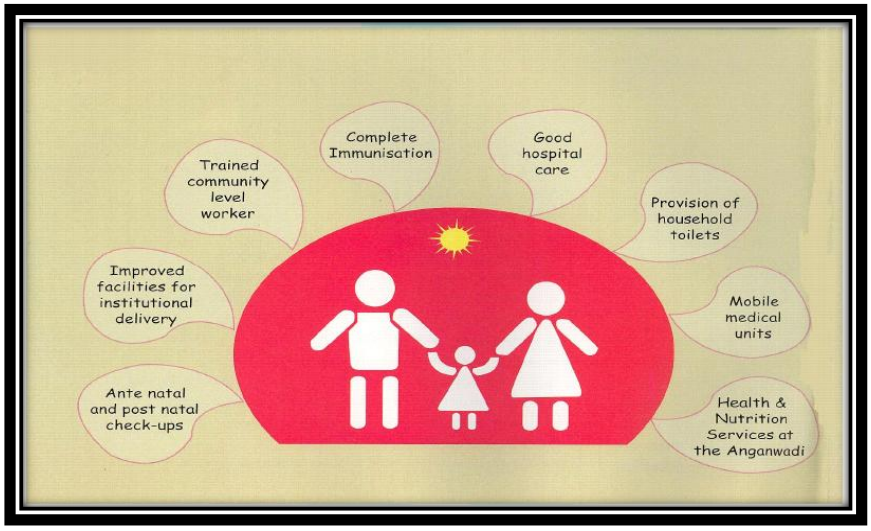


Figure 1 – Functions of NRHM

In Odisha, more than 85 percent of the population live in rural areas and depends mostly on agriculture. The percentages of SC & STs constitute 16.53 & 22.13 percent respectively of the total state population. Nearly 45 percent of the state area in as many as 13 districts has been declared as Scheduled castes dominant areas. Considering that good health is an important asset of livelihood and illness a major cause of impoverishment, the health and allied sector in the state has made noticeable improvements in leprosy control, Polio eradication, IMR, MMR, Malaria, CBR, CDR, Life Expectancy at Birth, Nutritional Status, Literacy, drinking water supply and sanitation.

NRHM has an important role in the provision and administration of health services and in order to raise the quality, extend accountability and deliver the services fairly, effectively and courteously.

The NRHM primarily seeks to provide preventive, promotive, curative and rehabilitative health services to the people through primary health care approach that has been accepted as one of the main instruments of action for development of human resources, accelerating the socio-economic development and attaining improved quality of life. Primary health care is essential health care for all citizens, easily accessible and at cost, which citizens and community can afford.

In the rural areas services are provided through a network of integrates health and family welfare delivery system. The primary health care infrastructure has been developed as a three tier system-sub-centers, Primary Health centers and Community Health Centers. Sub-Centers is the most peripheral contact point between the Primary health care system and the community and is manned generally by Multi- Purpose

Health Workers(Male & Female), AWW and ASHA. Medical Officer supported by Para-Medical and other staff operates primary Health center. Some of the PHCs are running under PPP model.

NRHM working on five main Approaches:

1) **COMMUNITIZE**
    - HMC/RKS / PRIs at all levels
    - Untied grants to community/PRI Bodies
    - Funds, functions & functionaries to local community organizations
    - Decentralized planning, VH&S Committees
2) **MONITOR, PROGRESS AGAINST STANDARDS**
    - Setting IPHS Standards
    - Facility Surveys
    - Independent Monitoring Committees at Block, District & State levels
3) **FLEXIBLE FINANCING**
    - Untied grants to institutions
    - NGO sector for public Health goals
    - NGOs as implementers
    - Risk Pooling – money follows patient
    - More resources for more reform
4) **IMPROVED MANAGEMENT THROUGH CAPACITY**
    - Block & District Health Office with management skills
    - NGOs in capacity building
    - NHSRC / SHSRC / DRG / BRG
    - Continuous skill development
5) **INNOVATION IN HUMAN RESOURCE MANAGEMENT**
    - More Nurses – local Resident criteria
    - 24 X 7 emergencies by Nurses at PHC. AYUSH
    - 24 x 7 medical emergency at CHC

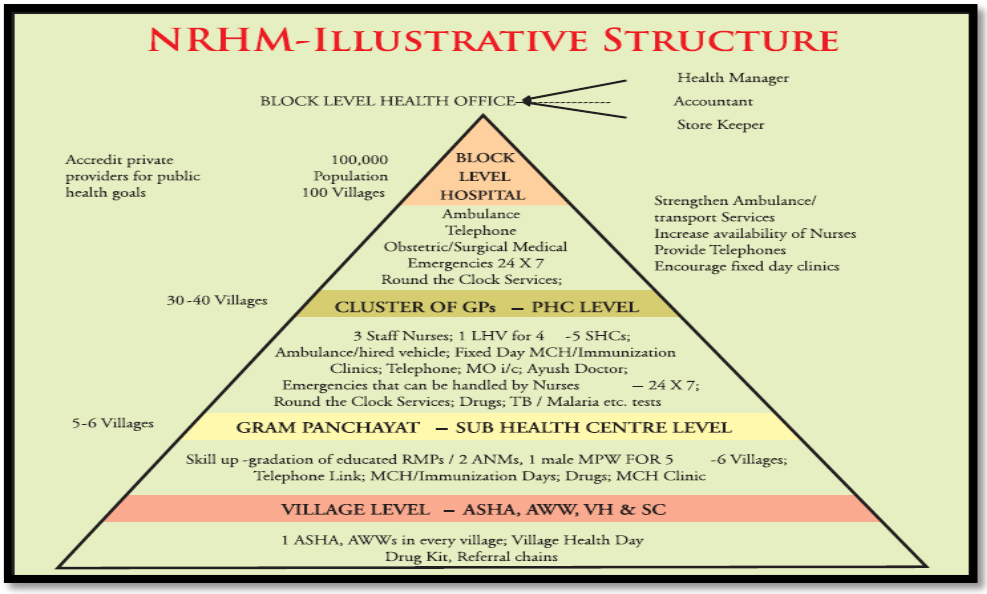


Figure 2 -NRHM-Illustrative structure

Objectives of NRHM Odisha

RCH Objectives

- To reduce Total Fertility Rate from 2.47 to 2.1 by 2010 in the State of Orissa
- To reduce Infant Mortality Rate from the present level of 71 /1000 live births to 50/1000 live births by 2010 in the State of Orissa
- To reduce Maternal Mortality Rate from the present level of 358/100,000 to 250/100, 000 by 2010 in the State of Orissa.

NRHM Initiatives

General Objectives

- Reduction in child and maternal mortality.
- Universal access to public services for food and nutrition, sanitation and hygiene with emphasis on services addressing women's and children's health and universal immunization.
- Prevention and control of communicable, non-communicable, and locally endemic diseases.
- Access to integrated comprehensive primary health care.
- Population stabilization, gender and demographic balance.
- Revitalization of local health traditions and mainstream AYUSH.
- Promotion of healthy life styles.

Objectives of ASHA scheme are-

- Create awareness on health and its social determinants.
- Mobilize the community towards local health planning.
- Increase utilization and accountability of the existing health services.
- Promote good health practices.

- Provide a minimum package of curative care as appropriate and feasible for that level.
- Undertaking timely referrals.

Objective of Mainstreaming of AYUSH:

- Mainstreaming of AYUSH in the health care service delivery system to strengthen the existing public health system.

Objectives of United Fund for Sub Centers

- To increase functional, administrative and financial resources and autonomy to the field units.
- To develop the physical infrastructure and centre specific activities for PHCs.

Objectives of RSK

- Ensure compliance to minimal standard for facility and hospital care and protocols of treatment as issued by the Government.
- Ensure accountability of the public health providers to the community.
- Introduce transparency with regard to management of funds.
- Upgrade and modernize the health services provided by the hospital and any associated outreach services.
- Supervise the implementation of National Health Programs at the Hospital and other institutions that may be placed under its administrative jurisdiction.
- Organize outreach services/ health camps at facilities under the jurisdiction of the hospital
- Display a Citizen's Charter in the Health facility.
- Generate resources locally through donations, user fees and other means
- Establish affiliations with private institutions to upgrade services
- Undertake construction and expansion in the hospital building
- Ensure optimal use of hospital land as per govt. guidelines
- Improve participation of the society in the running of the hospitals
- Ensure proper training for doctors and staff
- Ensure subsidized food, medicines and drinking water and cleanliness to the patients and their attendants.
- Ensure proper use, timely maintenance and repair of hospital building equipment and machinery.

Objectives of Mobile health Units:

- Every district will have at least operational mobile medical unit t for delivering health services in terms of preventive, promotive, curative and effective to rural population especially to poor woman, children and old.

Objectives of Strengthening of PHC/CHC/UGPHC to Indian Public Health Standard:

- To provide optimal expert care to the community.
- To achieve and maintain an acceptable standard quality care in terms of Assured Services.

- To make the services more responsive and sensitive to the needs of the community.

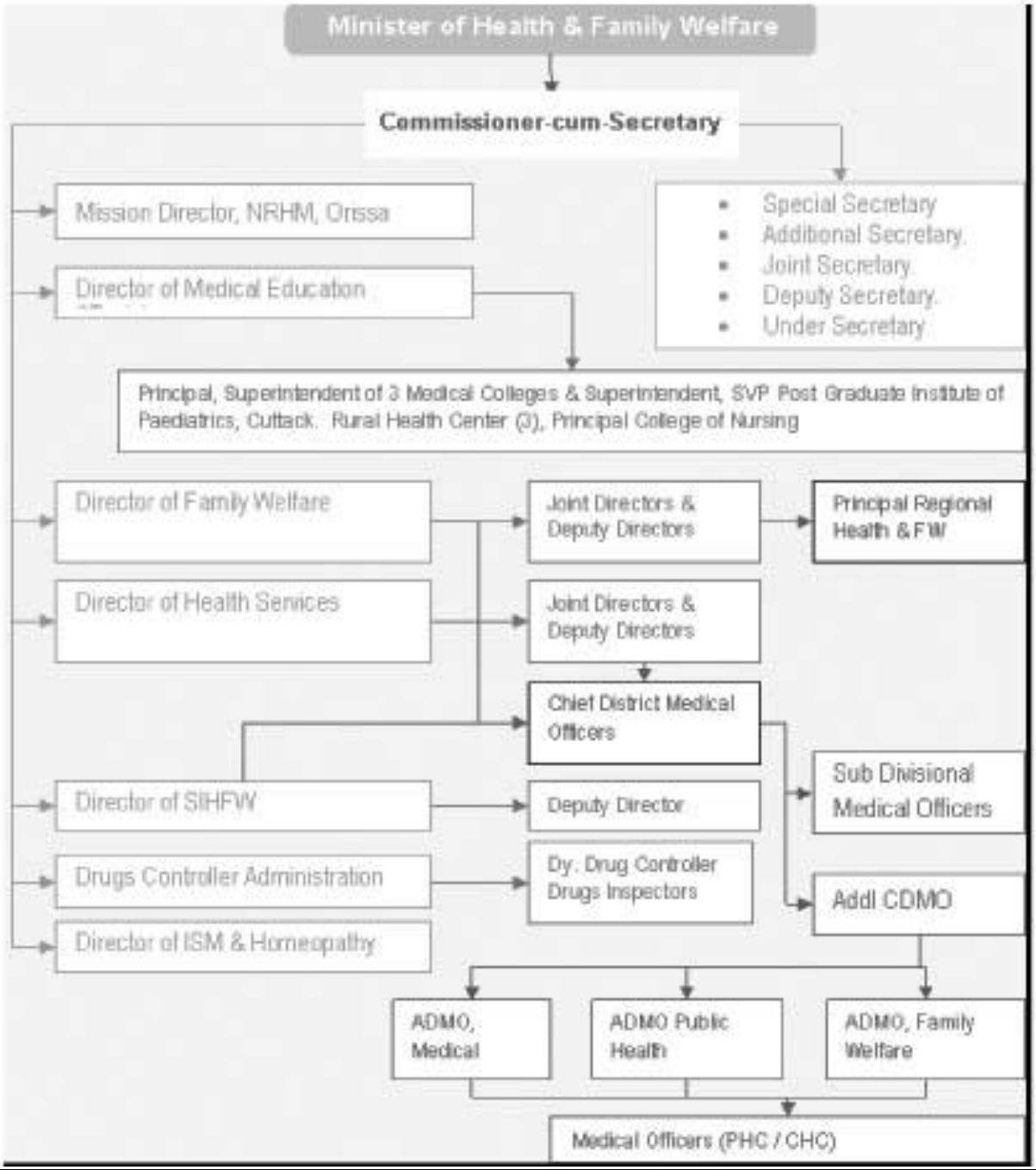
Objectives of Immunization

- Districts will provide equitable, efficient and safe immunization services to all infants and pregnant women. Aim is to achieve 100% full immunization status by 2009-2010 and to maintain it for long.
- **2005-06---------50%**
- **2006-07---------60%**
- **2007-08---------75%**
- **2008-09---------95%**
- **2009-10---------100%**
- Contribute global eradication of Polio by 2007.
- Elimination of Neonatal Tetanus, Diphtheria and Pertussis by 2009.
- Measles mortality and morbidity reduction to 80% by 2010, compared to 2000 estimates.
- Achieve and maintain vitamin A supplementation coverage >80% under the age of 3 yrs
- Establish sufficient sustainable and accountable fund flow at all levels.
- Ensure there is sustained demand and reduced social barriers to access immunisation services.

Objectives of the NIDDCP

- Assess the magnitude of IDD by periodic surveys.
- Re-survey after every 5-years to assess the extent of IDD and the impact of Iodized Salt.
- Laboratory Monitoring of Iodized Salt and Urinary Iodine excretion.

ORGANOGRAM OF NRHM ODISHA



STATE INITIATIVES UNDER NRHM

- *Swasthya Kantha* Campaign: To provide health related communication information to rural population by writing the information on specific walls meant for the purpose. The walls are located at strategic points in most villages. The major issues tackled are "maternal health, child health, malaria and tuberculosis".
  As a result of the *Swasthya Kantha* campaign, there is increased knowledge on health and sanitation issues of the village with improved health seeking behaviour of the people.

- Innovations in relation to ASHA workers
  - ASHA HBPNC : Home based post natal care for mother and infant by ASHA.
    ASHAs are being trained for home based post natal care which has increased record keeping of immunization, breast feeding and better reporting of LBW babies.
  - Bicycles to ASHAs : ASHAs have been provided with cycles so that they can deliver better services. Cycles help in easy commuting of the ASHAs to the areas that she covers, even in areas where roads are not available. After provision of cycles, there has been an increase in immunization coverage, ANC and institutional delivery.
  - ASHA fixed day payment : To address the grievances of payment of incentives, the government has come up with the policy of having a fixed day for payments of incentives. There are 32 different incentives for ASHA workers.
    With this innovation there has been an increased motivation of ASHA workers towards their work.
  - ASHA *Gruha* : It is a resting place for ASHAs who accompany pregnant women to the hospitals for their delivery.
    The ASHAs feel very secure to accompany pregnant women even at night. As she feels safety for herself during the visit to district hospitals.

- The Government of Odisha has started the 108 Ambulance Service this year

- *Gramsat* to promote health provisions was put up to disseminate innovations and information of health issues and to review the various programmes in place. It is an excellent opportunity for discussions with block and district health officials.

- Public- private partnership:

  1. Urban Slum Health Project: Targeted for outreach and vulnerable areas. Provides services for health, hygiene, sanitation and nutrition.
  2. *AROGYA* Plus project: Specially targeted at Naxalite areas for providing health services to these areas. This project functions similarly as mobile health units
  3. PHC New project: 32 PHC (New) in very outreach areas
  4. Vulnerable Group Project : Meant for primitive tribe groups
  5. Maternity Waiting Home: Providing PNC support to pregnant women in outreach areas. Providing temporary home for expectant mothers living in hard to reach tribal areas, where they come 5-7 days before EDD and can wait for delivery

- Mobile Health Unit : To provide preventive, promotive & curative health services in the inaccessible areas and difficult terrains which are un-served /underserved under usual circumstances. With the advent

of MHU's there has been an increase in the number of cases treated and referred. The MHU's function for 22 days in a month, reaching far of villages to provide quality services to them.

- *Janani* Express: Free referral transport system to promote institutional delivery and reduce out of pocket expenditure by providing nonstop free transport facility and contributing in reduction of infant and maternal mortality. The average patient load has been on a gradual increase.

- Mobile Boat Clinic: To provide basic health services to people of most inaccessible and difficult areas of *Malkanagiri* district (Naxalite area). But after its introduction, giving services to the outreach people has become easier.

- *Tika* Express: An alternate vaccine delivery system for children of difficult and tribal dominated pockets to enhance immunization coverage and strengthen routine immunization programmes. Due to this initiative, percentage of full immunization has been on a constant increase.

- Sick New Born Care Unit: To improve neonatal survival and provide special level- II care to neonates including low birth weight and sick neonates. Special initiatives like "autoclaved cotton dress", "kangaroo care bag" and "oil cloth – with key message" are taken up. It has led to an increase in successful management of a huge number of babies.

- Single Window: *Janani Sewa Kendra* for JSY beneficiaries to reach upto a mark of 100% birth registration and to provide all major MCH related benefits at facility level. With this service in place, there has been an increase in distribution of birth certificates and delivering of other services to the beneficiaries.

- IT initiatives: Various IT applications have been used to achieve the desired objectives.

    - Program monitoring applications
        - *E Swasthya Nirman*
        - Drug Testing and Data Management System
        - *E Sanjog*
        - FRU Montoring System
        - Contraceptive Logistic Management Information System (C LMIS)
        - Odisha Vaccine Logistics Management System (OVLMS)
        - Integrated Training & Evaluation Management System (ITEMS)
    - Human Resource Monitoring & Management
        - E Attendance
        - Human Resource Management Information System (HRMIS)
        - Govt. Doctor's Information Management (GODMAN)
        - Mission Connect (CUG)
    - Citizen Centric Applications
        - E Blood Bank
        - Grievance Redressal System for JSSK Scheme
        - Telemedicine
    - Applications for Planning and Management
        - Odisha State Malaria Information System (OSMIS)
        - GIS in Odisha State Healthcare Planning & Management

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MCTS – A Tool To Provide Quality ANC

Introduction

MCTS was launched in 2010 by the government of India, first in Gujrat and then the model was spread to other states of India. It incorporates Name-based tracking of pregnant women for ANC services, delivery and PNC services, and children for immunization. It facilitates monitoring of regular check ups of pregnant women to ensure birth preparedness, identifying high risk mothers and reduce complications and eventually for closer monitoring of mortality indicators (IMR and MMR)

Maternal and Child health have become the prime focus for healthcare delivery all over the world, especially after the advent of the Millennium Development Goals, with MDGs 4 and 5 being "reducing child mortality rates" and "improving maternal health" respectively.

The MMR of odisha is 258 compared to the national average of 212 where as the IMR is 57 compared to the national average of 44. Evidently, these indicators are high and need interventions to make the situation better.

It was decided to have a name-based tracking system (being put in place by Government of India, MoHFW) whereby pregnant women and children can be tracked for their ANCs and immunisation along with a feedback system for the ANM, ASHA etc to ensure that all pregnant women receive their ANCs and PNCs; and further children receive their full immunization.

MCTS was developed as a tool to provide quality MCH services, to track dropouts and ensure complete service delivery, thereby reducing IMR and MMR.

MCTS includes mapping of families/mothers and children, SMS alerts to beneficiaries and service providers for better service delivery, improved coverage and follow up. It also has an online health record and immunization card of all individuals that can be generated from any DH/CHC/PHC. Details of all the service providers i.e. ANMs and ASHAs are entered into the portal. There is no duplication of data as all pregnancies of a single mother are recorded together. Since a woman gets a unique ID, she can avail services even if she migrates to another location. Weekly work plans are generated to help service providers exactly identify individual woman/child requiring services.

Objectives & Indicators :

1. To assess the impact of MCTS on quality of ANC.

Indicators

- Percentage increase of **early** ANC registration from 2007 to 2013
- Pregnancy confirmation using *Nishchay* Kit
- Percentage increase in 100 IFA tablets distribution to the pregnant mothers from 2007 to 2013
- Percentage of pregnant women who were monitored using BP and weight check from 2007 to 2013
- Percentage of pregnant women who underwent lab tests from 2007 to 2013

2. To identify gaps in providing complete ANC (reduced drop outs)

Indicators

- Percentage increase of complete ANC availed by pregnant women from 2007 to 2013

3. To formulate alternative strategies to bridge these gaps

Geographical Boundaries :

The study covers 2 blocks (Gondia and Kamakhyanagar) of Dhenkanal district of Odisha. Odisha is situated on subcontinent's south-east coast, by the bay of Bengal. It is surrounded by west Bengal to the north-east and in the east, Jharkhand to the north, Chattisgarh to the west and north-west and Andhra Pradesh to the south.
Odhisa comprises of 30 districts.The study to be conducted in Dhenkanal district of Odhisa. Dhenkanal district is occupying a central position in the Geo-political map of odhisa . It is the district which touches the boundary of Keonjhar in the north , jajpur in the east, cuttack in the south and angul in the west .
Total population :11,92,948
Total Area : 4452 Sq.kms
Blocks : 8
Our proposed study aim was to cover Gondia and Kamakhyanagar block

Methodology

The following tools were used for carrying out the study; some of the tools were purely used for exploratory research.

1) **Secondary Data:** documents offered by National rural health mission, Odhisa, Training module for ANMs and few research documents were studied in great depth for a better understanding of the projects.
2) **Primary Data:** primary research is done in form of in depth interview of ANMs and interview schedule and Focused Group Discussion of beneficiaries in the two allotted blocks .

Study Type : Cross-Sectional Descriptive Study

Sampling Unit : Gondia and Kamakhyanagar block from Dhenkanal District

Study Respondents:

Service Provider : ANM's
Beneficiaries : Pregnant women (under ANC)
Women, who have given birth in- last 6 months

Sampling Design:

ANM : ANMs from identified subcenters.
WOMEN: identified women who are having ANC check ups and who have given birth in the last six months.

Tools and Techniques:

Interview schedule for beneficiaries
In-Depth Interview of ANMs
FGDs for beneficiaries

Sampling Size:

Table No 1: Total Sample size collected

Interview Schedule	127 (Beneficiaries)
In-Depth Interviews	11 (ANMs)
FGDs	04 (5 beneficiaries per FGD)
Villages survey	17

Methods To Collect Data

a) Interview: In depth interview of ANMs is required to get relevant information.
b) Survey : All women who are received ANC Care and who have given birth in the last six months

Table No 2: Timeline of the study

Sl No.	Task	Timeline	Duration
1)	Document study and development of study design and tools	8th April'13 to 21st April'13	2 weeks
2)	Field testing of tools ,field study and data collection	22nd April'13 to 5th May'13	2 weeks
3)	Data analysis	6th May'13 to 12th May'13	1 weeks
4)	Finalization of Data And presentations	13th May'13 to 17th May'13	5 Days
5)	Presentation	18th May '13 `	1 day
6)	Relieved from NRHM	20th May'13	

Table No 3: Basic Information of Blocks where surveys conducted

Basic Information	Gondia Block	Kamakhyanagar Block
Name of the CHC	Sriramchandrapur	Anlabereni
Area of the Block	692.77 Kms	190 Sq.Kms
Population	1,52,498	1,13,929
Total No's of village	163	116
Total Hamlet	22	
Total Sector	05	04
Total No's of sub-center	23	21

Table No 4: Sub-center and villages visited during scheduled timeline of study

Gondia Block	Villages survey
JORUNDA Sc	1. Atinda
	2. Natima
MATHENTHULIA Sc	1. Barpa
	2. Mundhubari
	3. Jambu
SARISIPADA Sc	1. Kolha
DEOGAN Sc	1. Deogan
	2. Dagerapali
PINGUA Sc	1. Pingua
Kamakhyanagar Block	
TUMUSINGHA Sc	1. Tumasingha
TANGAR Sc	1. Tangar
	2. Chitagarh
	3. Kantajharia
RAINARSINGPUR Sc	1. Sriarampur
	2. Rainarsingpur
BAISINGA Sc	1. Baisingha
	2. Nausahi

Data Analysis Plan:

The data is entered into SPSS software and percentages of various indicators is found out. The percentages are compared with the previous data and the trend of change is seen over the period of time. Statistical tests (Z tests) are to be applied to attain statistical significance. Also, the qualitative data is also to be analyzed and interpretations made.

Limitations of the Survey:

The following limitations of the survey were identified:

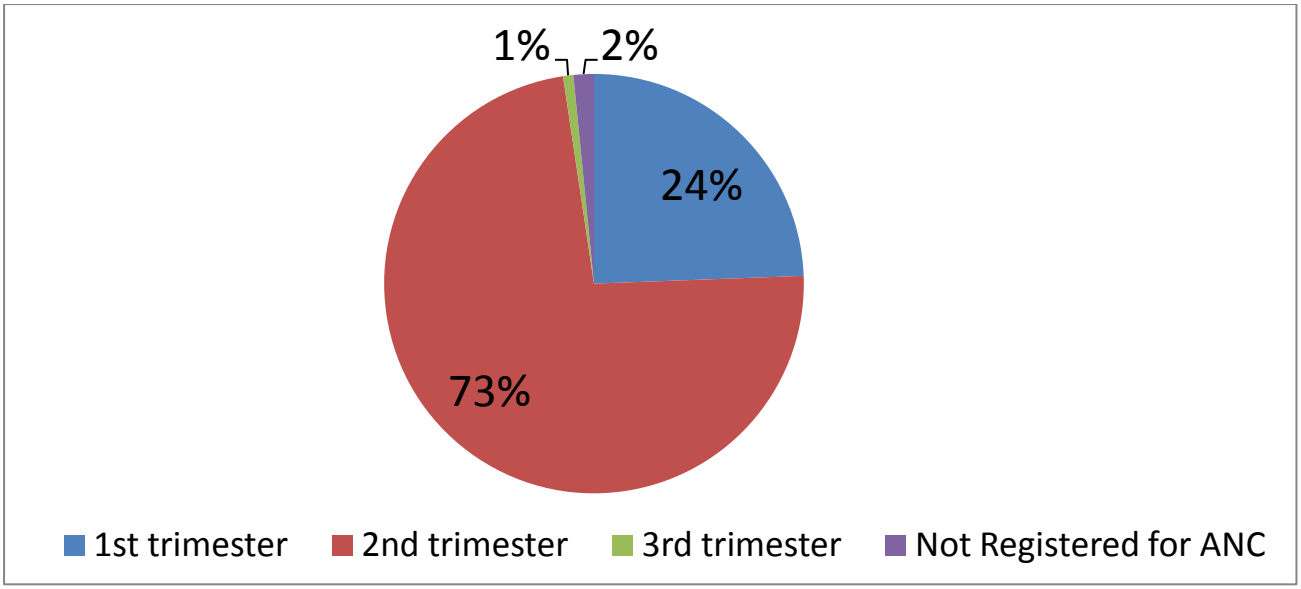
a) Sample sizes were taken was small and the size might not represent the entire universe of the study.
b) There was scope for more in-depth probing of various components making the study more interesting.
c) Time constraints for various activities of the project.

Results

The analysis of results mainly covers two parts. First, the percentage increase/decreases over time in the various indicators to be measured. And secondly, to understand and interpret the qualitative information obtained from the In depth interviews and the FGDs and bring them out in support of the quantitative data.

a) Time of First ANC Checkup

Fig 3 - Percentage distribution of women based on Time of First ANC checkup (N=127)



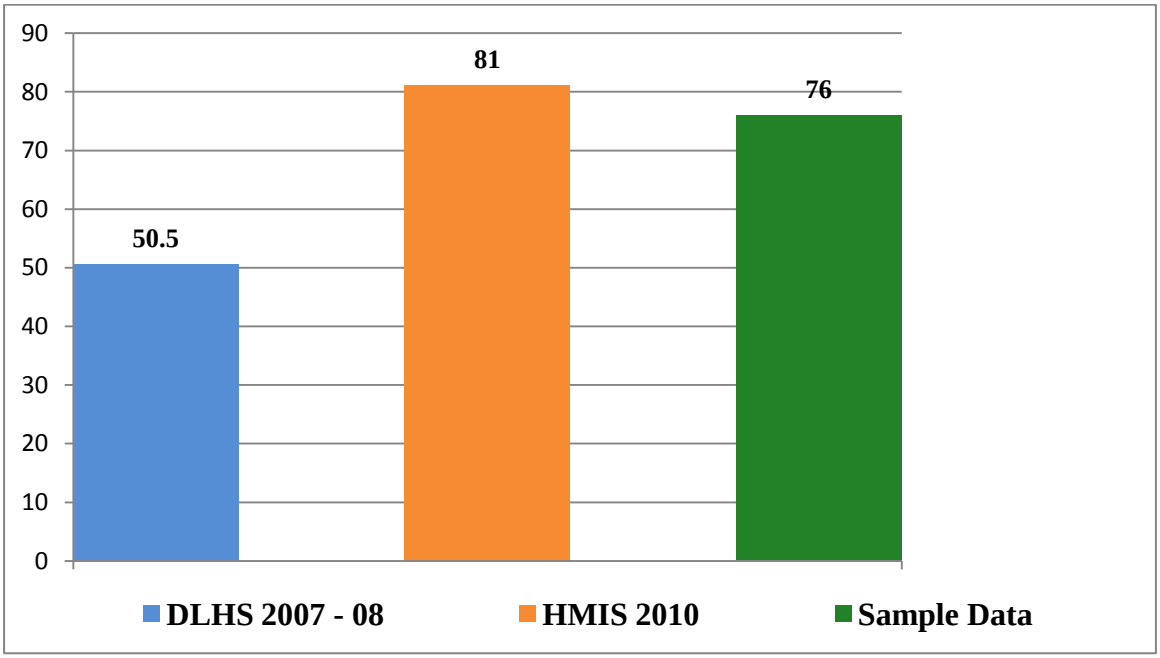
This question was asked so as to know the pattern in which the mothers get themselves registered in the study area. Getting oneself registered as early as possible for ANC checks is ideal for every lady as she starts receiving care early in her pregnancy.

The study showed that only about a quarter (24 percent) of women registered had themselves registered in the first trimester whereas almost three quarters (74 percent) got registered only in the second trimester.

When compared with the previously available data, the percentage of registrations in the first trimester surprisingly shows a decreasing trend. That is, 42 percent according to DLHS III, 32 percent according to HMIS – 2010 and only 24 percent according to the sample data. This finding can be attributed to the fact that over a period of time, there is better reporting and hence false data has reduced. Another factor could be that the source of different data may be very different.

b) Three or more ANC checkups being done

Figure 4 - Percentage of Women who had at least three or more ANC checkups done

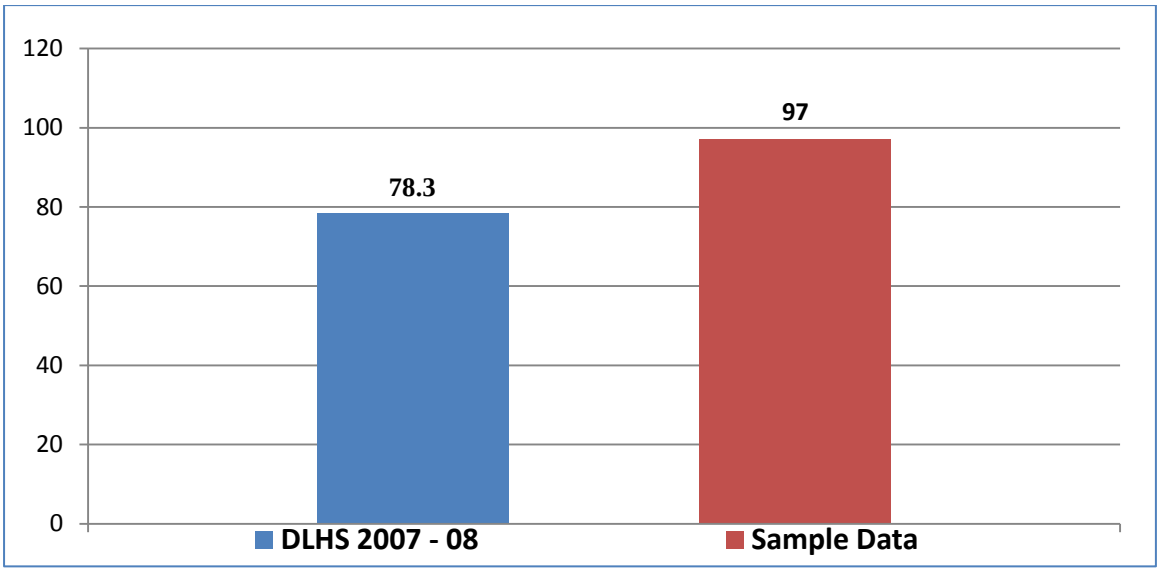


The question of number of ANC checks being done was asked so that the service being given to the various pregnant women could be assessed. More the number of ANC visits during pregnancy, it signifies availability of services as well the motivation level of the health workers as well as the beneficiaries. At least four ANC visits during pregnancy is now necessary for calling it complete ANC. But the indicator taken is Three or more ANCs as four ANCs as an indicator was not available previously hence the data would have become incomparable.

From the data available, it shows that there was a huge increase from the DLHS data to the HMIS data (51 percent to 81 percent) but the percentage slightly drops to 76 percent in the sample data. This drop may be due to the limitations of the sample size and sample selection method.

c) Any ANC checkups done

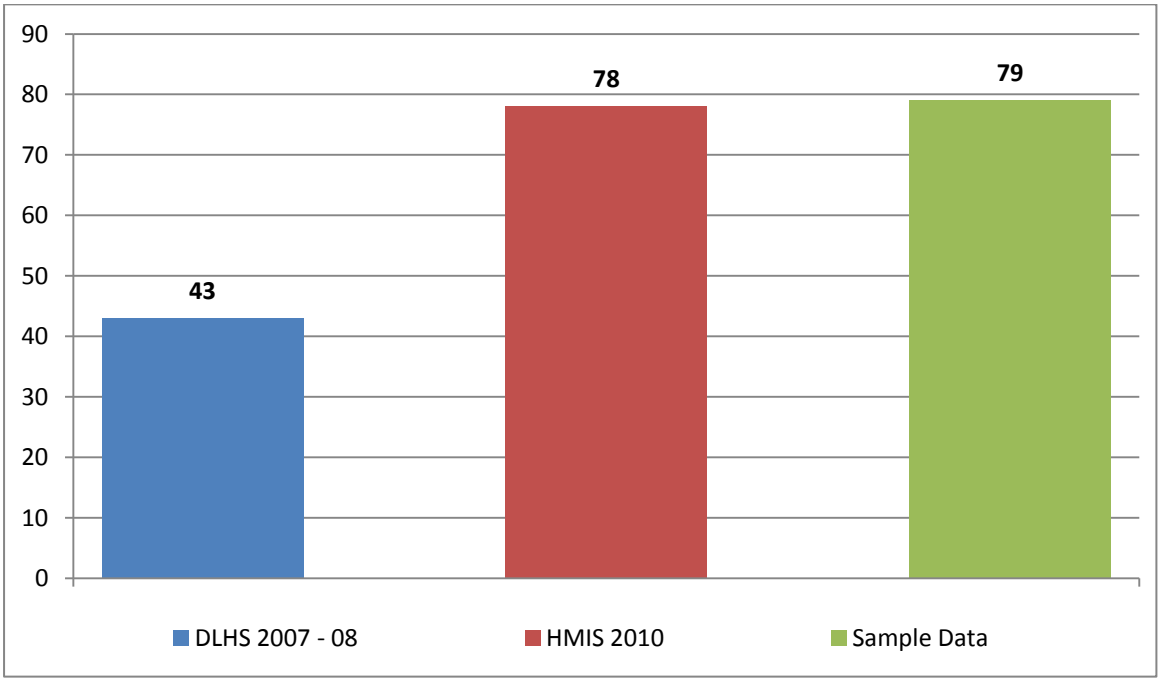
Figure 5 - Percentage distribution of Women who had Any ANC checks Done



This question was asked so as to assess the coverage of ANC services. If a pregnant lady has had at least one ANC visit, it signifies that the services of ANC are accessible to her.
The data collected shows a marked increase in the percentage of Any ANC checks being done. According to DLHS III data, any ANC checks were done in 78 percent of pregnant mothers whereas according to the sample data, 97 percent of mothers have had at least one ANC checks made. This marked increase can be attributed to increased efforts of health service providers at all levels to increase the accessibility and reach of these services.

d) Number of IFA Tablets being given

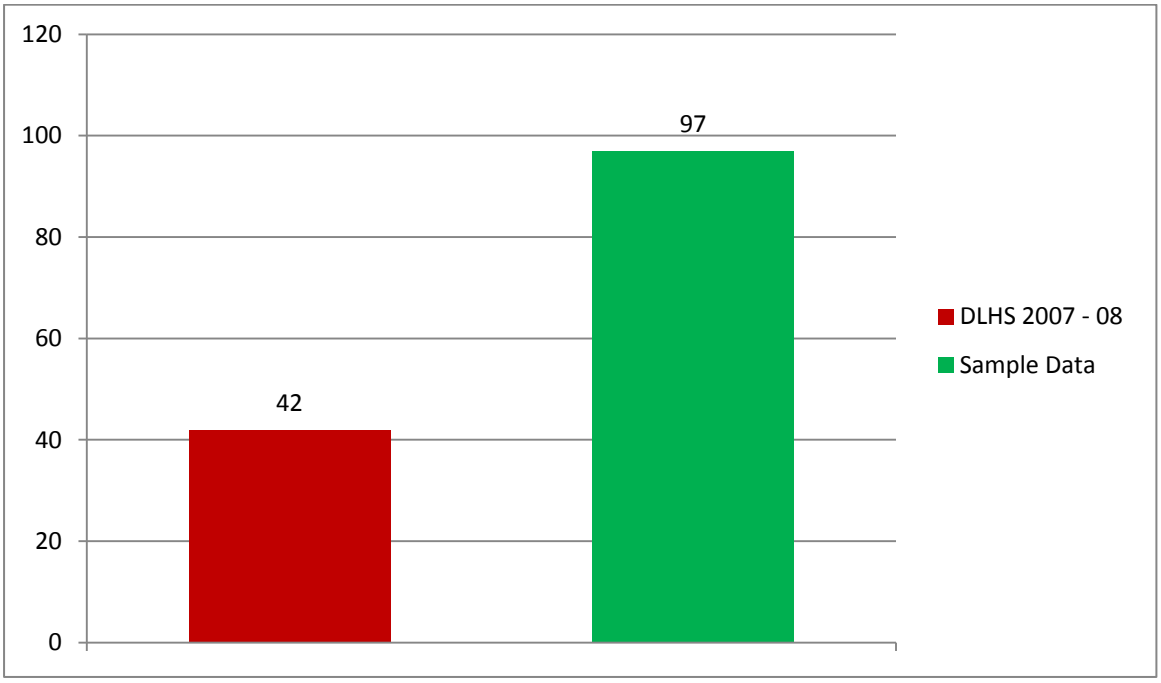
Figure 6 - Percentage distribution of Women who were provided 100 IFA tablets



The question regarding number of IFA tablets being given was asked so as to assess the quality of ANC services because giving at least 100 IFA tablets is a part of complete ANC. Another interpretation from the question could be the availability of IFA tablets to be distributed by the health service providers.
There is a considerable increase in percentage of women getting 100 or more IFA tablets from DLHS III data (43 percent) to HMIS 2010 data (78 percent). Although the sample data shows only a minor increase of only one percent, but maintaining a high percentage of service delivery is also an achievement. Besides the limitation of sample size and selection method could be a reason for the percentage increase being very minor

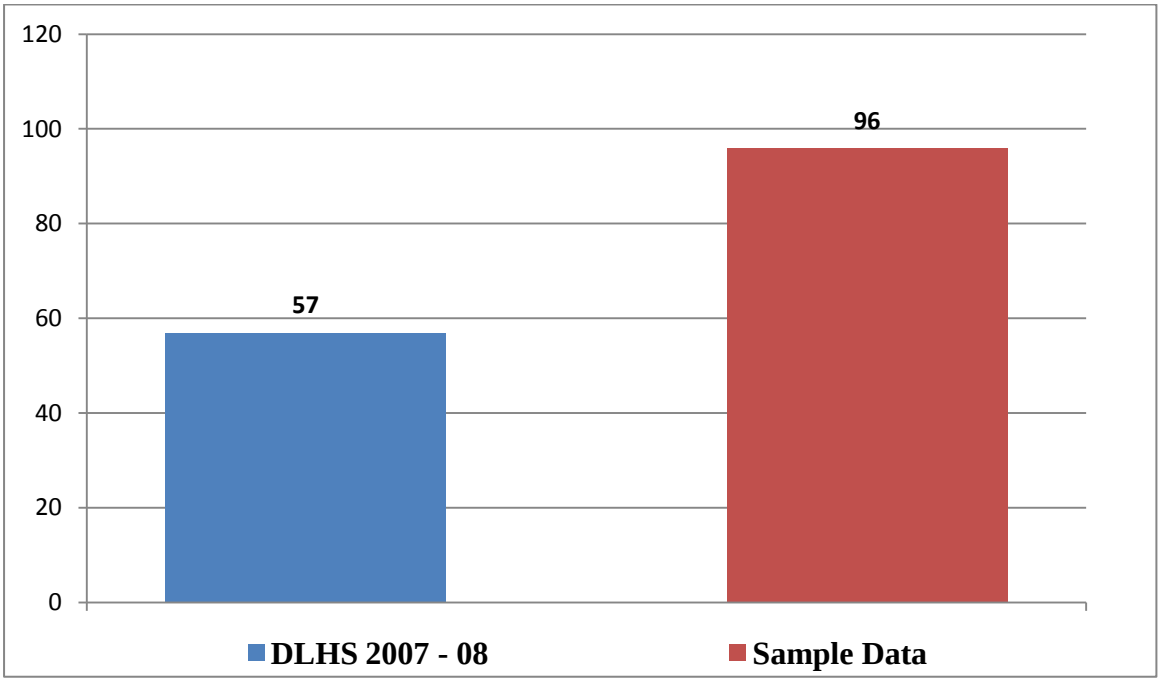
e) Blood Pressure and Weight Measured at each visit
This question was asked to assess the quality of ANC as measuring the blood pressure and weighing the pregnant lady is an important part of ANC service delivery. The blood pressure regulation is important to avoid any post delivery complications and the weight of pregnant ladies is constantly measured to know the growth of the baby.

Figure 7 - Percentage distribution of Women who had BP measured at least once during ANC checkups



The increase in percentage of blood pressure being measured among pregnant ladies increased considerably from 42 percent in DLHS III to 97 percent in sample data.

Figure 8 - Percentage distribution of Women who had Bp measured at least once during ANC checkups



Similarly, the percentage increase of weight being measured among pregnant ladies also increased from only 57 percent in DLHS III to 96 percent in the sample data.

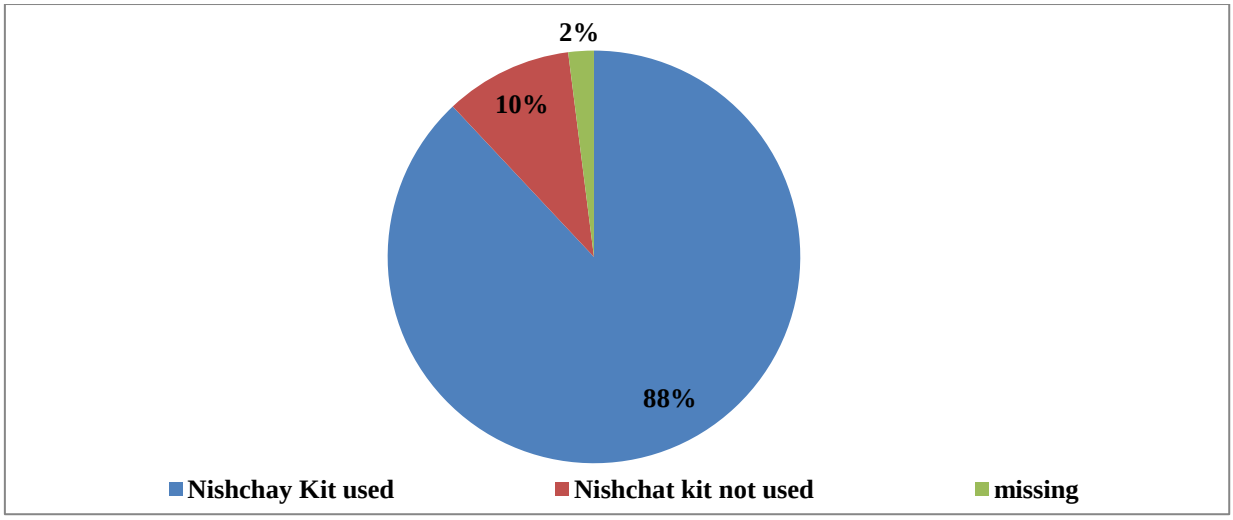
The result shows that the blood pressure and weight of almost all ladies is being measured and monitored. This is helping in improving the overall quality of ANC checks.

f) *Nishchay* kit being used for confirmation of Pregnancy

This question was asked to assess the quality of ANC and to know whether the service providers were using the kits provided to them for detection of pregnancies.

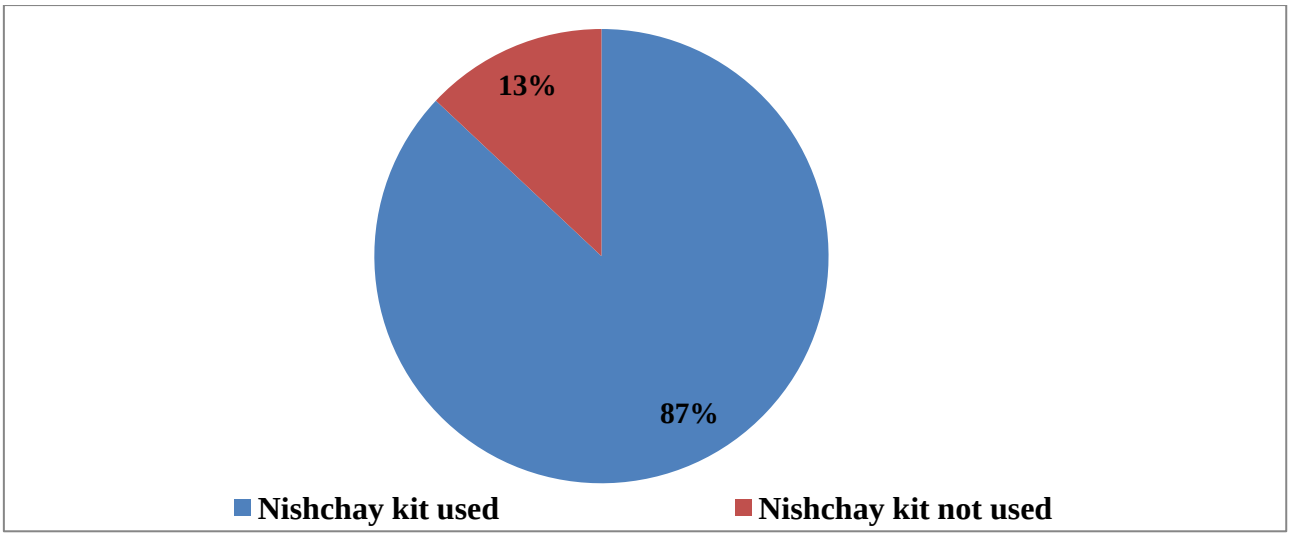
Percentage of women who had their pregnancy confirmed with a Nishchay kit was found to be 88 percent in the sample. But no previous data was available for comparison with the current percentage. The concern was that in a large number of cases, the nishchay kit was being used for confirmation of pregnancy of women even in their second trimester, which was casing wastage of resources and almost all women are visibly pregnant by the second trimester

Fig 9 - Percentage distribution of women based on use of Nishcay kit for confirmation of pregnancy (N=127)



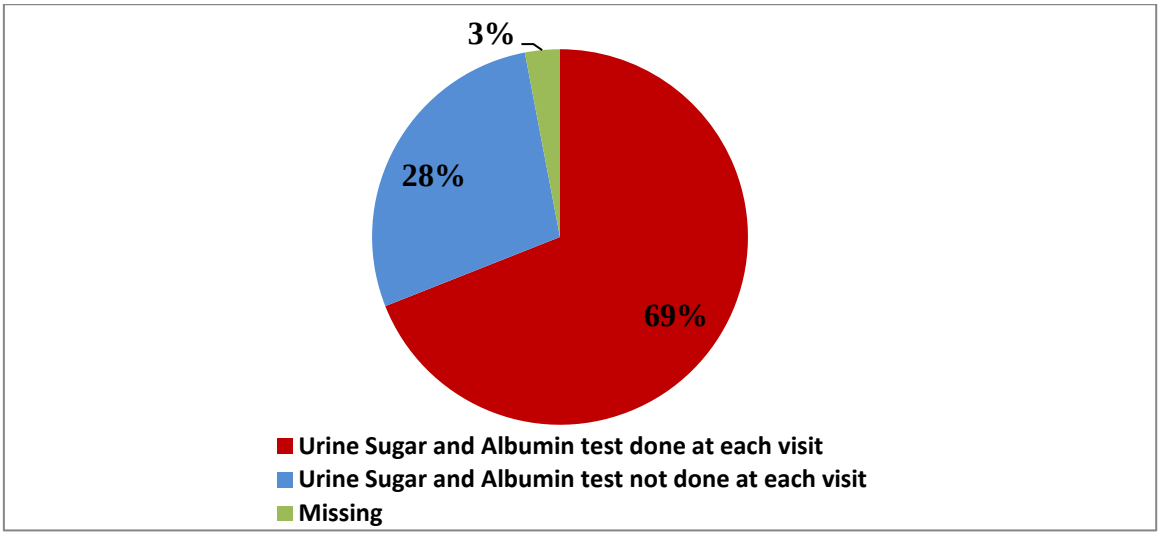
From the data collected, it was also found that among the women registered in the first trimester, 87 percent of them had pregnancy confirmation done via a *nishchay* kit. For the remaining women, the reason for not using the *nishchay* kit was non availability of stock.

Figure 10 - Percentage distribution of women registered in the first trimester based on use of Nishcay kit for confirmation of pregnancy (N=31)



g) Urine Sugar and Urine Albumin test being done at each visit.

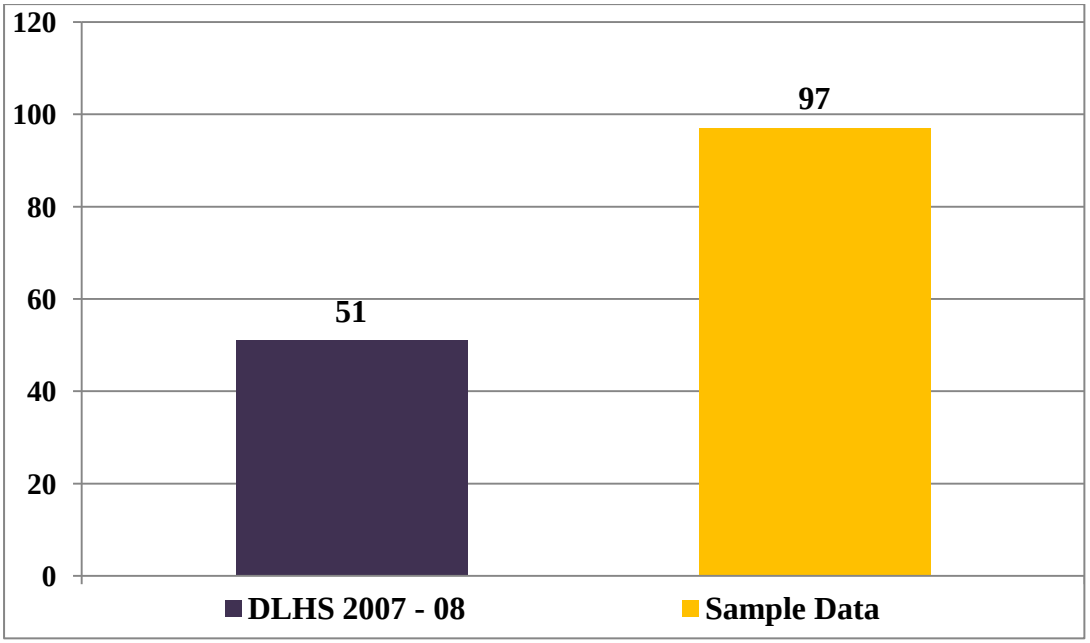
Figure 11 - Percentage distribution of women according to Urine Sugar and Albumin test being done at each Visit (N=127)



This question was asked so as to assess quality of ANC as it is now a mandate to have Urine sugar and Urine albumin checked at each ANC visit. No previous data was found for comparison.
From the data collected it was found that just over a quarter (28 percent) of pregnant women had urine sugar and albumin measured at every visit. From the qualitative data it was found that for almost women, if urine sugar and albumin were within normal range at the first visit, then no subsequent tests would be done.

Urine Sugar and Albumin tests being done at least once
This question was asked to know the extent to which the service providers could provide the service of urine estimation to the beneficiaries.

Figure 12 – Percentage distribution of women who had Urine Estimation Being Done At Least Once

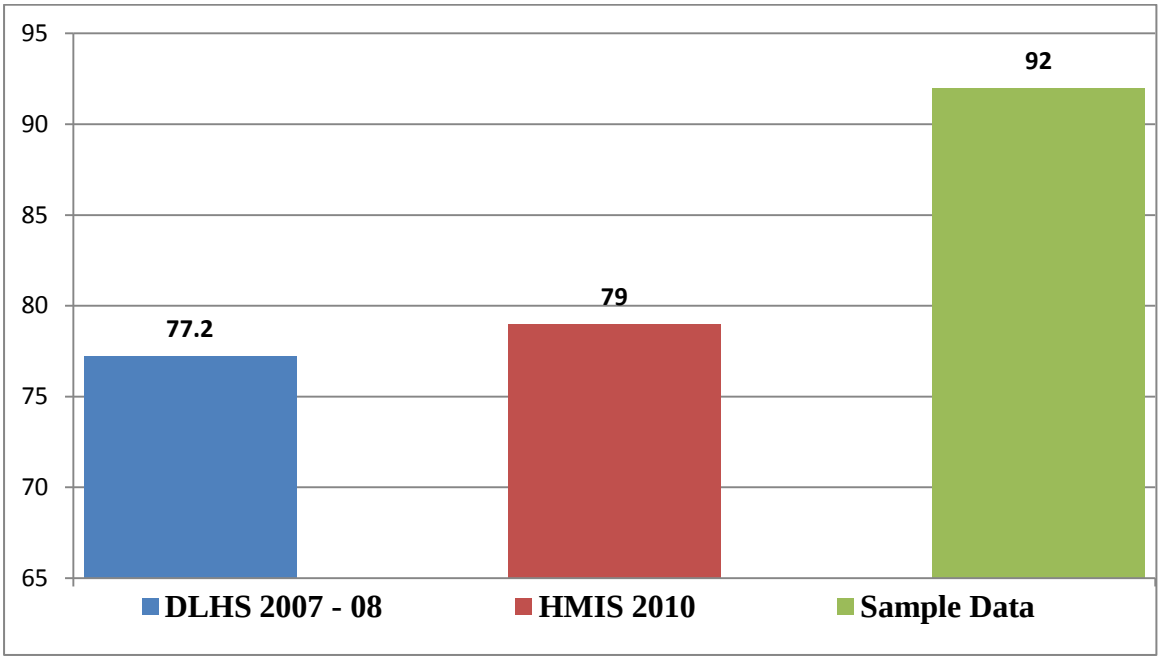


The result from the table shows that there was found to be a great increase in percentage of urine estimation done from the DLHS III data to the sample data. Although it is encouraging, but more focus should be put on doing urine sugar and albumin estimation being done at each visit.

h) Number of TT injections being given

This question was asked to assess to quality of ANC services being provided to the beneficiaries and the availability of TT injections with the service provider.

Figure 13 – Percentage distribution of Women Getting Two TT Injections



The table shows that there was a minor increase in percentage of women getting two TT injections from the DLHS 2007-08 to HMIS – 2010. There is further a considerable increase in percentage of women getting two TT injections according to the sample data collected where it comes to be 92 percent. And about 99 percent of the women received at least one TT injection. This shows that the availability of TT injections is very good as almost all women get atleast one TT injection whereas a majority (92 percent) get two TT injections each.

Discussion

The in depth interviews with the ANMs revealed a lot of information about the various aspects of service delivery and documentation process of MCTS.

The ANMs revealed that due to the introduction of MCTS, the women were being tracked far better than previously done. Due to better tracking, there was consequently increase in number of mothers being registered for ANC. This has led to facilities being provided to the pregnant women in time and hence reduced the overall mortality rates of both mothers and infants considerably.

An ANM reported **"Infant deaths in my sub center have dropped from 20 in 2008-09 to just 2 in 2012"**

Another important development is the generation of work plan. Through the use of MCTS, once data of women and children is entered into the portal, it automatically calculates the services which are due to them and the time at which the services are to be provided to them. This feature helps a great

deal as the ANMs can plan accordingly and ask the ASHA workers to gather all the pregnant women and children who are to receive services and facilitate smooth service delivery.
Service delivery is an important aspect as the sole aim of MCTS is to facilitate better service delivery. Most of the ANMs are aware of the services and the mandatory tests that are to be done during the ANC checks, but few tests like breast examination and recording of respiration were not done at all. Similarly, History taking was not done completely according to SBA guidelines and Urine Sugar and Albumin is also done according to guidelines given.
The issue of maintaining records into various registers is two folds. Too many registers are being maintained by the ANMs to record the different kind of data that they collect. Almost all ANMs complain of being overburdened with work as they have to maintain multiple registers. Another problem was found to be the entry being made into registers that the ANMs maintain and the MCTS registers did not match. This inconsistency of data needs to be addressed.
Another area of concern was the deputation of manpower according to the standards laid down. In almost all the places visited, there was only one ANM to do all the work and there was a need felt for an extra ANM to help them in their work.
FGDs of he beneficiaries also revealed similar information and problems with regards to service delivery were reiterated during the course of discussions. One major area of concern was the SMS being sent to the beneficiaries was in English. So the SMS was incomprehensible as most of the beneficiaries were unable to understand the SMS being sent to them. SMS was also being sent to the service providers who were actually being benefited from it as in addition to the work plan, it acted as a quick reference to the service to be delivered.

Alternate Strategies

SMS being sent to the beneficiaries should be sent in local language so that they are able to understand what service they are supposed to avail. This will act as a double check and go a long way in ensuring that the service delivery is done in time.
Continued Medical Education may be given to the service providers so that they can acquire the required knowledge to conduct the various tests.
Regular mentoring and On the Job Training may be initiated to enhance skills on the way of conducting the various mandatory tests so that better service delivery can be ensured.
The ANMs who perform consistently well may be rewarded. This is important since the ANMs are all getting similar remunerations allotted to them, so the motivation to work for better service delivery may become less.
Measures should be taken to reduce the number of registers that are being maintained by the service providers. A single register may be put up to have the various entries so that the burden of maintaining multiple registers may be overcome. Furthermore, refresher training may be given to service providers to enhance skills on proper documentation so that any inconsistency of data may be done away with.
The HMIS and MCTS portals and the data may be integrated into a common platform. This is very important as a lot of data on both these platforms is common and is causing duplication of data. Another advantage of bringing both HMIS and MCTS data on a common platform is that any discrepancies in data caused due to differential recording or data entry operator error may be minimized.

Conclusion

It is evident from the study that the introduction of MCTS has greatly enhanced the quality of ANC in a number of ways. Being a name based tracking system, follow up of the beneficiaries has become really very easy. Numerous details of the beneficiaries including the mobile number is also recorded. Hence calling the beneficiaries for follow ups is easy. This has resulted in an overall decrease in the number of dropouts. The automatically generated work plans helps ANMs in timely provision of due services to the beneficiaries. Some aspects of service delivery and documentation need to be taken care of but MCTS has led to an overall increase in quality of services by helping service providers know what and to whom services are to be provided.

References :

Handbook for ANMs (MoHFW)
Understanding HMIS Volume 1 and 2 (MoHFW)
Monthly Village Health Nutrition Day – Guidelines for ANMs/ASHAs/AWWs/PRIs – February 2007 – Ministry of Health and Family Welfare
Operational Manual – Mother and Child Tracking System – August 2010 – Department of Health and Family Welfare of Gujarat in collaboration with NIC Gujarat
Ethical Guidelines for Biomedical Research on Human Participants – ICMR – 2006
Guidelines for Antenatal Care and Skilled Attendance at Birth by ANMs/LHVs/SNs – Maternal Health Division – MoHFW – April 2010
A Strategic Approach to Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) in India –MoHFW – January 2013

Annex:

1) Questionnaire for Beneficiaries

Use of MCTS in Improving Quality of ANC

Interview Schedule

(For Beneficiaries – Pregnant Ladies and Lactating mothers)

Informed consent : I would like to thank you for taking the time to meet me. My name is Afaq Amir Ahmad. I would like to talk to you about your experience regarding the ANC visits during your pregnancy. The interview should take about 10 minutes. The responses will be kept confidential. This means that the interview responses will be shared only with the research team and we will ensure that any information that we include in our report does not identify you as the respondent. Remember, you don't have to talk about anything that you don't want to and you can end the interview at any time.

Do you have any questions about what I just explained?

Are you willing to participate in the interview?

Interviewee Signature

Sub center	
Village	
Serial No	
Date of Interview	
Duration of interview (in minutes)	

Section 1 – Background Characteristics				
Q. NO.	**QUESTIONS AND FILTERS**	**CODING CATEGORIES**		**SKIP TO**
1	How old are you? (Age in completed years)			
2	How old is your husband?			
3	Education (self)	Illiterate	1	
		Literate, no formal education	2	
		Literate, formal education	3	
		Don't know/ can't say	98	
4	Education (husband)	Illiterate	1	
		Literate, no formal education	2	
		Literate, formal education	3	
		Don't know/ can't say	98	
5	How old were you at the time of your marriage?			
6	How many children do you have?			

Section 2 -				
Q. NO.	**QUESTIONS AND FILTERS**	**CODING CATEGORIES**		**SKIP TO**
7.	Have you been registered for ANC?	Yes No	1 2	If "2" End the interview
8.	When was the first ANC check done?	First Trimester Second Trimester Third Trimester	1 2 3	
9.	Did you receive the Mother & Child Protection card ?	Yes No	1 2	If "2" skip to Q 11
10.	Do you carry the card during visits for check up?	Yes No	1 2	
11.	Have you completed the 4 compulsory visits for ANC during your last pregnancy?	Yes No	1 2	
12.	Where was the ANC checkup conducted?	AWC Sub center Home	1 2 3	
13.	Was Privacy maintained during the test	Yes No	1 2	

14.	Was proper history taken?	Yes No	1 2	If "2" skip to Q 19
15.	Personal history taken? (EDD and any symptoms)	Yes No	1 2	
16.	History of systemic illness taken?(BP, diabetes, RTI, STI,AIDS etc)	Yes No	1 2	
17.	Family history taken?(BP, diabetes, TB, Thalassaemia etc)	Yes No	1 2	
18.	History of Allergy/drugs or alcohol consumption)	Yes No	1 2	
19.	Was General Examination conducted?	Yes No	1 2	If "2" skip to Q27
20.	Pulse examined?	Yes No	1 2	
21.	Blood pressure measured?	Yes No	1 2	
22.	Oedema checked?	Yes No	1 2	
23.	Respiration checked?	Yes No	1 2	
24.	Weight recorded?	Yes No	1 2	
25.	Was weight and blood pressure measured at each visit?	Yes No	1 2	
26.	Was breast examination done?	Yes No	1 2	
27.	Was abdominal examination done?	Yes No	1 2	If "2" skip to Q29
28.	How was it done?	Standing Lying on a table	1 2	
29.	Were any lab tests done?	Yes No	1 2	If "2" skip to Q 36
30.	Pregnancy confirmation using Nishchay kit?	Yes No	1 2	
31.	Hemoglobin estimation	Yes No	1 2	
31.	Urine Sugar estimation?	Yes No	1 2	
33.	Urine albumin estimation	Yes No	1 2	
34.	Malaria Test done?	Yes No	1 2	
35.	Was Hb and Urine estimation done at each visit?	Yes No	1 2	
36.	Were any intervention or counseling methods used?	Yes No	1 2	If "2" skip to Q40
37.	Was IFA supplementation provided & counseling for it done?	Yes No	1 2	
38.	Were 100 IFA tablets provided?	Yes No	1 2	
39.	Did you consume prescribed amount of IFA supplement?	Yes No	1 2	
40.	Did you receive the TT injections?	Yes No	1 2	If "2" skip to Q42
41.	Did you get both the doses of TT?	Yes No	1 2	
42.	Was counseling for birth preparedness given?	Yes No	1 2	If "2" skip to Q47
43.	Do you have the Phone no of ambulance?	Yes No	1 2	
44.	Do you have the Phone no of ANM?	Yes No	1 2	

45.	Have you kept Money aside for transport?	Yes 1 No 2	
46.	Did you keep Clean clothes to be used during delivery?	Yes 1 No 2	
47.	Was counseling for recognizing danger signs done?	Yes 1 No 2	
48.	Was counseling for Diet, Rest and infant feeding given?	Yes 1 No 2	
49.	Was the schedule for the next visit explained?	Yes 1 No 2	
50.	Are you satisfied with the facilities provided during your pregnancy	Yes 1 No 2	

51. Do you have any suggestions to improve the quality of ANC?

_____

_____

_____

Thank You

Interviewer : Afaq Amir Ahmad

Starting Time : _____ Closing Time :_____

2) In Depth Interview for ANMs

Date:

IN- DEPTH INTERVIEW SCHEDULE

(For ANM only)

S.No : ☐

Name of Sub Centre	
Name of the Village & Block	
Name of the ANM	
Marital Status	
Educational Level	
Year of Experience	

1. Have you heard about MCTS? From where have you heard about it?
2. What is the use of MCTS?
3. Do you feel it is beneficial? How?
4. What are the steps in ANC? (to assess knowledge of service provider)
   Probes
   Pregnancy confirmation, History taking, General examination, Physical examination, Lab tests, counseling and interventions.
5. Do you know about the mother and child protection card?
6. What are benefits of issuing this cards during ANC?
7. How you make sure that pregnant women is regularly consuming the IFA tablets?(stool color, constipation, nausea)(bell ring to remind)
8. Severely Anemic? Hb% ???
9. Do you think that organizing VHND really helped MCTS?(follow up)
10. Do you feel that there has been a change in trends of ANC registrations after implementation of MCTS? If so, how? (Are all pregnant mother covered?)
11. How are you using MCTS to your benefit? (does it help you do your job better? does uploading help?)
12. What is the current situation on MCTS in your village?(Preg woman, Lactating mother, Immunization, ANC data)
13. Do you keep a register to maintain records? (Ask for it.Check entries, verify with primary data and finally with MCTS data at block level)
14. How do you identify High risk pregnancies? (complication detection, Hb level)
15. Do you think there are any barriers/loop holes in MCTS? (family, local practitioners etc)

In your view, what are the strategies that could be implemented to make the service better?

3) Focused Group Discussion for beneficiaries

Focus group Discussion Guideline

Dt : ☐-☐-☐

FGD with beneficiaries' i.e. pregnant women and resident lactating women of the village who gave birth within the past three months.

1**)Block:_____ 2) Subcentre _____ 3)Village :_____**

S.No	Name of Participants	Age	No of Children	Education level	
1.					
2.					
3.					
4.					
5.					
6.					
7.					

Name of the facilitator and designation: ……

Name of the Note recorder and designation: ……..

FGD Guidelines for Mothers/Husbands to understand their roles?

1. When was Registration of ANC done? MCP card? Mamta card?
2. Pregnancy confirmation test?
3. TT injections 1 & 2?
4. IFA tablets distribution?
5. IFA tablets consumption?
6. Do ASHA/ANMs counsel you on minor problems relating to IFA consumption?
7. BP measurement at each visit?
8. Urine sugar and Albumin at each visit?
9. Weight measurement at every visit?
10. Malaria testing ?
11. Do ASHA workers and ANMs follow up after ANC check ups?
12. Do they visit you at home? Contact through mobile?

4) List of people interacted during training period

S.No	Name	Designation
1.	Dr.Pramod Kumar Meherda, I.A.S.,	Commissioner -cum -Mission Director
2.	Mr. Lala Manoj Roy	OAS Manager HRD
3.	Mr. Biswajit Modak	Senior Training Consultant
4.	Dr D K Panda	Team Leader
5.	Mr. Adait Kumar Pradhan	State Programme Manager
6.	Mr. Santosh Kumar Nayak	PPP Consultant
7.	Mr. Pranaya Kumar Mohapatra	Health Plan Consultant
8.	Mr. Deepak Kumar Biswal	Monitoring & Evaluation Consultant
9.	Mr. Sushanta Nayak	Coordinator, CPRC (Community Process Resource Centre)

10.	Dr. R.N. Panda	Child Health Consultant
11.	Mr. Debashis Dash	IT Consultant
12.	Mr. Guruprasad Rath	IT Consultant
13.	Ms. Mithun Karmakar	1. GIS Mapping
14.	Mr. Sanjay Kumar Das	1. HMIS Report & Data analysis

4)