Study to Assess the Effect of Awareness, Financial Assistance, Availability and Accessibility of Health Services on Utilization of Maternal Health Services in Jhabua District

By

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TO WHOMSOEVER IT MAY CONCERN

This is to certify that Dr Swati Mittal student of MBA Hospital and Health Management (MBAHM) from The IIHMR University, Jaipur has undergone internship training at National Health Mission, Madhya Pradesh, from 01.02.2016 to 08.05.2016.

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all her future endeavors.

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Certificate of completion of Internship

The certificate is awarded to

Dr. Swati Mittal

In recognition of having successfully completed her internship in

National Health Mission MP

and has successfully completed her Project on

A Study to Assess the Effect of Awareness, Financial Assistance, Availability and Accessibility of Health Services on Utilization of Maternal Health Services in Jhabua District

(8th February 2016 – 8th May 2016)

National Health Mission Jhadua District MP

She comes across as a committed, sincere & diligent person, who has a strong drive and zeal for learning

We wish her all the best for future endeavors

District Program Manager

Dr. Pritibala Rathore

THE IIHMR UNIVERSITY, JAIPUR

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **'A study to assess the effect of Awareness, Financial assistance, Availability and Accessibility of Health services on Utilization of Maternal Health Services in Jhabua district"** and submitted by Dr Swati Mittal under the supervision of Prof. Anoop Khanna for award of MBA in Hospital and Health Management of the University carried out during the period from 1st February 2016 to 14th May 2016 embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Swati

Signature

PREFACE

The MBA (hospital and health management) course is well structured and integrated course of business studies. The main objectives of practical training at MBA level is to develop skill in students by supplement to the theoretical study of business management in general. Professors give us theoretical knowledge of various subjects in the institute. But we are practically exposed of such subjects when we get the training in the organization. It is the training through which we come to know that what an organization is and how it works. During this whole training I got a lot of experience and came to know about management practices in real that how it differs from those of theoretical knowledge and the practically in the real life.

It's very beneficial to learn health care delivery system at various levels. I observed the implementation of various National Health Programmes at National/State/District levels, I understood various functions of health systems by interactions with key stakeholders, policy makers, programme managers, academicians and researchers.

During my training period I had an overview of various programmes undertaken By Madhya Pradesh Technical Support Unit including the current status of the programmes. I also carried out a small study on-

"A STUDY TO ASSESS THE EFFEECT OF AWARENESS, FINANCIAL ASSISTANCE, AVAILABILITY AND ACCESSIBILITY OF HEALTH SERVICES ON UTILIZATION OF MATERNAL HEALTH SERVICES IN JHABUA DISTRICT"

I have tried to put my best effort to complete this task on the basis of skill that I have achieved during my studies in the institute.

ABSTRACT

Key words: ANC care, institutional deliveries, caesarean sections, financial assistance from JSY.

INTRODUCTION

Extensive research based on national surveys and censuses conducted in developing countries shows conditional cash transfer benefits, accessibility and availability of a health facility and maternal education to be very strong and consistent predictors of reduced maternal and child mortality. Current study employs primary data collected through a household survey conducted in the Jhabua District of Madhya Pradesh, which is considered to be a high priority district where more than 260 women are estimated to die from pregnancy- and childbirth-related causes. This study examines the relationship between the above mentioned predictors and utilization of maternal health care services viz. ANC care, institutional deliveries and Caesarean sections within the district.

OBJECTIVES

1) To determine the effect of financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education on utilization of adequate antenatal care services.
2) To determine the effect of financial assistance from JSY, availability of ahealth facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education on utilization of an institutional delivery services.
3) To determine the effect of financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education on utilization of a public institutional Caesarean section services.

METHODOLOGY

A Descriptive cross sectional study was carried out in Jhabua district of Madhya Pradesh. from February 2016 to May 2016. For sample selection, two stage random sampling was done to select the facilities CHC's, PHC's and SC's for facility survey. A total of 12 PHC's and 30 SC's were surveyed. Also, a household survey was carried out to study the behavioral pattern of the beneficiaries of these units.(350 beneficiaries).

Bivariate and multivariate logistic regression wereused to examine the relationships among all independent variables and the dependent variables.

RESULTS &CONCLUSIONS

It is evident from the bivariate analysis that all the independent factors are positively associated with one or the other maternal health care services considered in the study. From the multivariate analysis it can be predicted that utilization of ANC care services is more with higher level of maternal education and availability of a health facility providing services round the clock. Use of institutional delivery services which is incentivized is increased with the receipt of financial assistance under JSY/government scheme. Also higher level of maternal education and connection to health facility by an all-weather road significantly predict use of institutional deliveries. Use of caesarean section services is significantly predicted by the receipt of financial assistance under JSY/government scheme only.

The study concludes that receipt of financial payments under JSY, accessibility to health facilities and their availability round the clock and also maternal education are important parameters that may increase the utilization of maternal health services significantly.

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At the onset of the report I would like to express my special gratitude and appreciation for my college authorities for allowing me to pursue my Dissertation from National Health Mission, M.P.

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This training wouldn't have been completed without a substantial support from Dr. Rehan , Dr. Paras and Dr. Shyam Kumar Jatav of the state and divisional technical team and a great number of people .So I would like to thank all the consultants in various departments and other staff members at NHM, M.P. for being so helpful all the time and making this Dissertation project an unforgettable experience.

A special thanks Dr. Barwe, District Health Officer Jhabua district for his constant support and guidance.

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Finally, and most importantly, I would like to thank God for allowing me to complete my project, my beloved parents for their blessings and my friends for their help and wishes for the successful completion of this training.

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List of Abbreviations

ANM Auxiliary Nurse Midwife

ASHA Accredited Social Health Activist

BPL Below Poverty Line

CHC Community Health Center

CY Chiranjeevi Yojana

DH District Hospital

DHS Demographic Health Survey

GDP Gross Domestic Product

HH Households

HPS High Performing States

IFA Iron Folic Acid

IIPS International Institute for Population Sciences

INR Indian Rupee

JSY Janani Suraksha Yojana

LPS Low Performing States

MNCH Maternal, Neonatal and Child Health

NFHS National Family Health Survey

NGO Non-government Organization

NMBS National Maternity Benefit Scheme

NRHM National Rural Health Mission

OR Odds Ratio

PHC Primary Health Center

PPS Probability Proportional to Size

TT Tetanus Toxoid

WHO World Health Organization

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INTRODUCTION

Health systems across the globe are continuing to evolve in response to a multitude of factors, including improvements in medical technology and knowledge, increased information about health and health services and knowledge and greater access to it, changes in health policy priorities to meet the shifting disease and demographic patterns, new organisational methods and more complex financial mechanisms (Foundations of the system of health accounts, 2011). Health policy makers need to adapt to these developments and to anticipate foreseeable future trends.

India, one of the fastest growing economies in the world, is also registering a marked growth in its Human Development Index. Despite all this, maternal health indicators are far below the expected levels. Out of an estimated 3,58,000 maternal deaths worldwide, about 63,000 are Indian women. India has the distinction of being the highest contributor to maternal deaths in the world. Major contributors being the Indian states of Madhya Pradesh, Rajasthan, Assam , Uttar Pradesh etc.

Maternal health indicators are often considered a reflection of the efficiency of a nation's health system. Strengthening maternal health services helps to improve both maternal health and infant health. In 2001 the United Nations developed the Millennium Development Goals to improve health, social and economic conditions in the world's poorest countries by 2015. One of the eight major goals is to improve maternal health with a target of reducing maternal mortality by 75%.
Indian states and policy makers have initiated major steps in this direction to slash down the maternal and child mortality and to avert their deleterious consequences.

The Reproductive and Child Health (RCH) programme that has been launched by Government of India (GoI) in 1996-97 is expected to provide quality services and achieve multiple objectives. It ushered a positive paradigm shift from method-oriented, target-based activity to provide client-centred, demand-driven quality services. Also, efforts are being made to reorient provider's attitude at grassroots level and to strengthen the services at outreach levels. With continuous efforts, India launched the world's largest and the most successful conditional cash benefit scheme named JSY i.e. Janani Suraksha Yojana. This conditional cash transfer scheme/program provides cash payments to poor families who meet specific behavioral requirements, such as delivering their baby at a health facility. JSY is the largest conditional cash transfer program of its kind in the world and thus has the potential to influence global maternal health policies in a major way. The program is targeted toward assisting poor women across India, but each state may modify the central JSY guidelines and implement the policy differently. Additionally, there are differences in the way state governments elect to distribute cash incentives for delivery care.

State of Madhya Pradesh, through JSY, targeted to increase access to antenatal care, institutional delivery care, postnatal care and neonatal care for poor women. Key features of JSY are:

- early pregnancy registration

- adequate antenatal care
- a micro-birth plan
- institutional delivery
- referral and transport if needed and
- Postpartum care for poor mothers and underserved populations.

This program has enhanced the health infrastructure, availability of skilled manpower, maternal access to blood transfusion during childbirth and referral linkages, contributing to improvements in maternal health indicators.

This new approach requires decentralization of planning, monitoring and evaluation of the services. The district being the basic nucleus of planning and implementation of the RCH programme, Government of Madhya Pradesh has been interested in generating district level data on utilization of the services provided by government health facilities, other than that based on service statistics. It is also of interest to assess people's perceptions on quality of services.

Although the principal element of JSY is providing poor women with money for institutional deliveries, there are likely to be multiple factors that affect women's decision-making about their antenatal care and deliveries. To date, there has been a dearth of research examining these factors, including health care sector/system factors (e.g. receipt of financial assistance, availability of a facility providing health services, transportation/access to facility), household/demographic characteristics of pregnant women and their families (e.g., maternal education, paternal education) and individual characteristics (e.g. age at first birth, parity). For example, some state policies generally limit cash payments to deliveries in public facilities, whereas others have policies that incentivize deliveries in private facilities (Madhya Pradesh). Health infrastructure for antenatal and delivery care may also influence maternal health behaviour. Given the scope, cost and potential influence of JSY, it is important to examine how factors that extend beyond the cash payment affect poor women's use of maternal health care.

The study investigates the role of a number of salient health system factors which includes availability of a health facility round the clock, accessibility to a health facility by an all-weather road and demographic factor such as maternal literacy in predicting poor, rural women's utilization of antenatal care and institutional deliveries in the Jhabua district of Madhya Pradesh.

Additionally, it attempts to place these findings in context by examining state Government policies and existing health infrastructure factors that may influence maternal health service utilization through a facility survey.

BACKGROUND

Madhya Pradesh (MP), located in central India, is roughly the size of the United Kingdom with a population of approximately 73 million, accounting for about 6% of the total Indian population. About one-third (approximately 23 million) of its population lives below the national poverty line, compared to a national average of 22%, and the state ranks 20th among 23 Indian states on the Human Development Index (HDI) scale. Despite increased allocations to the social sector, MP is struggling to meet most Millennium Development Goal (MDG) targets relating to hunger, maternal and child mortality, nutrition, water and sanitation and environmental sustainability.

The state ranks first in the country in infant mortality rate (IMR); about 108,000 infants die every year (IMR: 54/1000 live births), among which more than 75,000 die within the first month (Neonatal Mortality Rate [NMR]): 44/1000). It ranks sixth highest in Maternal Mortality Ratio (MMR) (221/ 100,000 live births). This is despite the fact that maternal and child health indicators have been steadily declining over past decade (maternal deaths reducing by 40% from 379 in 2001-03 to 221 in 2011-13 and the IMR dropping from 86/1000 to the current 54/1000).

These challenges are being addressed from within an extremely complex landscape of public health care service delivery. Public sector facilities in MP, directed by the state's Department of Health & Family Welfare (DHFW), range from urban hospitals (51 District hospitals) with highly specialised physicians, to more than 8700 small sub-centres at the village level, staffed by multi-purpose workers or Auxiliary Nurse Midwives (ANMs). Within this range exist various types of public facilities – 63 Civil Hospitals, 334 Community Health Centres (CHC), and 1157 Primary Health Centres (PHC) - arranged in order of secondary to primary levels of care.

Jhabua: District Profile

Located in the west zone of Madhya Pradesh, Jhabua spreads over an area of about 11,898 sq km. Total population of the district is around 1, 02,048. Jhabua comprises of six development blocks. Number of health institutions within the district are as follows

Table 1.Health institutions in the district

District Hospital	01
Community Health Centers	07
Primary Health Centers	17

Sector level	17
Sub Health Centre (SHCs)	210
Ayurvedic Dispensary	45
Homeopathic Dispensary	07

Map showing the location of various MCH centers L1/L2/L3 is attached in the annexures.

District Health Profile

Table 2.Health care indicators of the district

S.N.	Indicator	M.P. (AHS 12-13)	Jhabua (AHS 12-13)
1	Birth Rate (‘000)	24.50	23.30
2	Death Rate (‘000)	7.70	5.70
3	Infant Mortality Rate (‘000)	62	64
4	Under Five Mortality Rate (U5MR)	83	86
5	Neo-natal Mortality Rate (NNMR)	42	38
6	Post Neo-natal Mortality Rate (PNMR)	21	26
7	Mother Mortality Rate (per 1 lakh live births)	227	264
8	TFR	3.2	3.2
9	Sex Ratio	905/1000	935/1000

A mindful confrontation with the reasons for the variation in the state and district indices reflects a high degree of disparity in implementation of health policies and expected deliverables among various districts in the state of Madhya Pradesh. Owing to its remote

location and difficult terrain, health inequity in health outcomes and access to health care services is greater in the district as is evidenced by indicators disaggregated for district. Also, there are urban-rural inequities.

Maternal health care services

The fact that more than 260 women in the district are estimated to die from pregnancy- and childbirth-related causes reinforces the importance of ensuring that all pregnant women receive adequate antenatal care during pregnancy and that deliveries take place under the supervision of trained medical personnel in a hygienic environment (IIPS 1995).

Antenatal care provides an opportunity for a variety of preventive interventions during pregnancy, including tetanus toxoid injections, and educating women about nutrition, safe delivery, and postpartum care (Govindasamy et al. 1993). It also allows women who face a high-risk pregnancy to be identified and monitored during pregnancy to ensure a safe delivery.

Delivery care is an important aspect of maternal care. Most non abortion maternal deaths occur around the time of labor and delivery or within a few days after birth (Fauveau et al. 1988). Access to obstetric services from qualified professionals is therefore essential to preventing maternal deaths. Educated mothers are more likely to recognize a problem, seek medical care, and report a problem. Infant and child mortality rates are also greatly reduced if mothers received antenatal and delivery care from trained health professionals (IIPS 1995).

Factors determining the utilization of maternal health services

Health care financing

Health is viewed as a dimension of poverty and improvement in the health of the poor is considered a key goal of development. Government can alleviate the effects of poverty on health outcomes by implementing appropriate policies to improve access to preventive and curative health care for the poor. Loss of income due to illness and out-of-pocket payments for health services can impoverish the poor. Lack of utilization of preventive and curative health services due to an absence of financial resources, lack of access to health facilities, inadequately equipped facilities and poorly trained, often rude and unavailable staff, all contribute to ill health for poor. The heavy burden of out of pocket expenditure on rural pockets can be reduced to some extent by incentivizing the utilization of health services thereby preventing the people from entering the vicious circle of poverty and ill health.

Service Delivery

Availability of a functioning health facility and transportation are two key components of a health service delivery system. Specifically, in a tribal and backward district like Jhabua, availability of a health facility providing round-the-clock care and availability of reliable transportation to a health facility is critical in determining women's utilization of these services. Provisions for ANC care and other maternity care services are present at the majority of the facilities, but still there exists a huge gap in their utilization. In India, the primary health care center (PHC) is an important public health facility providing care at the community level in rural areas. Public health facility guidelines in India are population

based. A PHC is a primary level health facility that provides antenatal care, delivery care and postpartum care for a population of 20,000 to 30,000, among other preventive and curative services. The PHC is usually staffed by a general doctor, a nurse-midwife and ancillary health workers such as a laboratory assistant, female health worker and pharmacist. Shortages of skilled health care providers for antenatal care and emergency obstetric care are common in these facilities.

Infrastructure and especially lack of roads, also influences utilization of maternal health care services. Poor roads directly influence the time cost for households to seek health care assistance because of the increase in travel time. Owing to its difficult terrain ,availability of transportation, including all-weather roads to the nearest health facility, play an imperative role in use of maternal health services. Poor road infrastructure can make access to delivery care difficult for poor women, in particular, causing them to seek care from less qualified but locally available providers such as traditional birth attendants.

It is the responsibility of the state and local government to effectively functionalize these facilities and manage the operational and financial aspects of the programme for establishment of an enabling environment, efficient service delivery and use of maternal health services.

Maternal education

Female literacy in the district is meager 28%, far below the state average of 51.4%(NFHS 4-2015-2016). The status of the women in the district is worsened by the co-existence of backward traditions and practices , no awareness of their right to health and health care services and no participation I decision making. Three broad pathways of influence, linking maternal schooling to maternal mortality suggests: educated women are better able to break away from tradition to utilize modern means of safeguarding their own health and that of their children (Caldwell and Caldwell 1988; Cleland 1990); educated women are better able to utilize what is available in the community to their advantage (Barrera 1990; Caldwell 1990; Goodburn, Ebrahim, and Senapati 1990); and educated women may be able to make independent decisions regarding their own and their children's health leading to greater utilization of modern health facilities (Caldwell 1979; Caldwell 1986).

REVIEW OF LITERATURE

Theory: Health Systems Framework for Maternal, Neonatal and Child Health

Many frameworks have been proposed to examine predictors of utilization of maternal health services among the poor and to explore how government policies influence their utilization. Poverty has been defined by the World Bank as "deprivation in well-being and comprises many dimensions. It includes low incomes and the inability to acquire the basic goods and services necessary for survival with dignity."[11] Poverty also often includes low levels of health and education, poor access to clean water and sanitation, inadequate physical security, lack of voice and insufficient capacity and opportunity to better one's life.[11]Poverty is both a consequence and contributor to ill health and excessive mortality. Loss of income due to illness and out-of-pocket payments for health services can further impoverish the poor. Lack of utilization of preventive and curative health services due to an absence of financial resources, lack of access to health facilities, inadequately equipped facilities and poorly trained, often rude and unavailable staff, all contribute to ill health for poor.[11] Health is viewed as a dimension of poverty and improvement in the health of the poor is considered a key goal of development. Government can alleviate the effects of poverty on health outcomes by implementing appropriate policies to improve access to preventive and curative health care for the poor. [12]Various frameworks have been adopted to explore poor women's use of health services. Some of these frameworks focus solely on the health care system while others adopt a wider perspective and include contextual factors such as economics and politics.

The Health Systems Framework for Maternal, Neonatal and Child health (MNCH) proposed by Ergo et al. can be used to examine demographic and health system/health care sector predictors that influence poor women's utilization of antenatal care and institutional deliveries.[13] The framework also enables researchers to place these findings within the context of state government policies and existing health infrastructure. The MNCH framework was proposed in 2011 for the Maternal and Child Health Integrated Program (MCHIP) funded by the United States Agency for International Development (USAID).[12,13] This framework, draws from other frequently used health system frameworks, such as one developed by Cleason for the World Bank.[13] The framework has been used by its authors to analyze the health systems of Malawi.[14] It positions MNCH interventions within the broader health system and presents a tool to assess how health systems strengthening initiatives operate within a health system and impact MNCH. All of the factors in the framework operate to improve maternal and child health indicators ultimately by improving access and quality of health care.

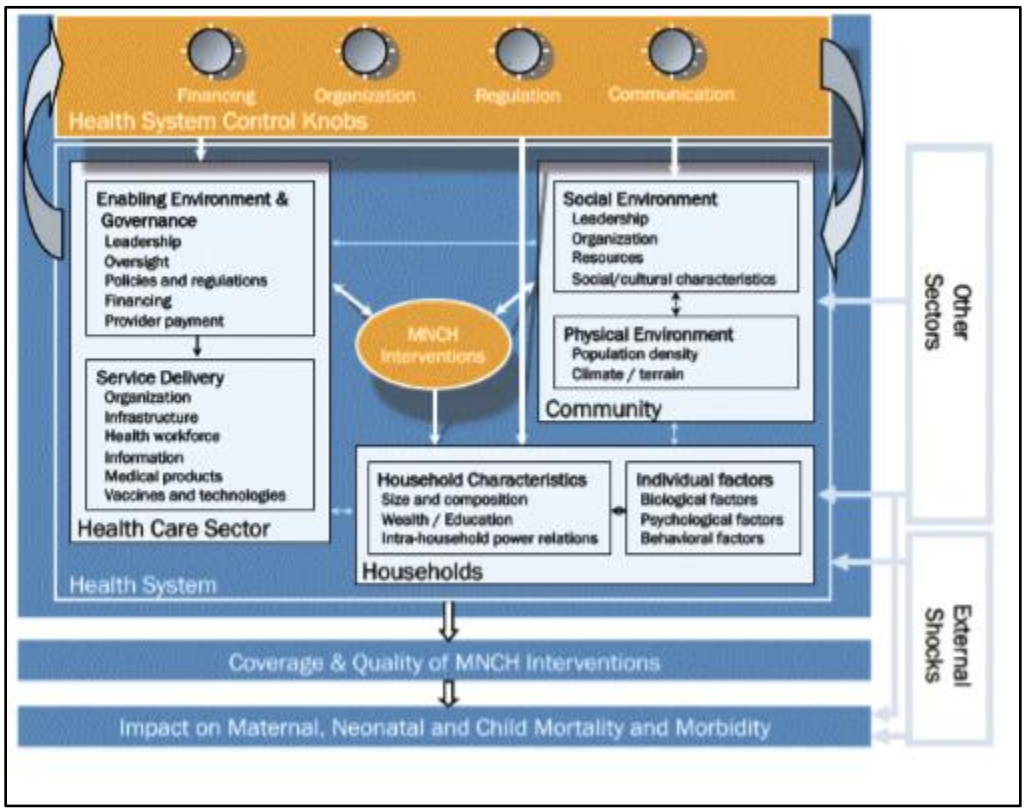


Figure 1: Health Systems Framework for Maternal, Neonatal and Child Health[13]

Figure shows that the three boxes in the central part of the framework represent the main component of the health system.

1. Health care sector: Comprised of two subcomponents: (a) Enabling environment and governance and (b) Service delivery.

2. Community: Comprised of two subcomponents: (a) Physical environment and (b) Social environment.

3. Household: Comprised of household characteristics and individual factors.

All components and subcomponents are interconnected and contain various elements of the health system. For example, enabling environment and governance also includes leadership, financing and provider payment. The bottom portion of the framework shows that coverage and quality of MNCH interventions are determined by a combination of different components of the health system and have a direct impact on maternal and child health outcomes irrespective of the level of intervention. The top of the Health Systems Framework has four control knobs, allowing for analysis of how initiatives trigger changes that affect the coverage and quality of MNCH services and their impact on outcomes. The control knobs represent tools for addressing weaknesses in the system. These knobs are: financing,

organization, regulation and communication. The framework also recognizes the important role that other sectors such as sanitation, food security, education and potential effects of external shocks, such as global recession and earthquakes, have on the MNCH outcomes. This dissertation focuses on implementation of a national maternal health care policy, which is based on the government's financing of institutional delivery care for poor, rural women. However, the focal point is the health system component of the Health Systems framework. Specifically, the dissertation examines the role of health care sector and household factors as predictors of poor, rural women's use of maternal health services in two Indian States. It also explores the linkages between state health system strengthening initiatives and utilization of maternal health services.

Health Care Sector

Enabling Environment and Governance- The governance and stewardship of the health care sector is the responsibility of the state level ministry of health in India. The national level ministry provides funds and guidelines for implementation of maternal health programs but states can act independently to determine the best possible way to implement them based on local conditions. For example, the state of Madhya Pradesh has implemented JSY differently based on local needs. Good leadership ensures that regulations and policies are in place for effective service delivery and monitoring mechanisms are in place for accountability. Operational aspects of financial management are part of the enabling environment and governance that influence the service delivery and use of maternal health services. The proportion of the target population that receives financial benefits is a good indicator of how well a program such as JSY is implemented. In addition to this variable, government documents, literature and personal communication with stakeholders can be used to understand and compare the implementation and impact of JSY in the Indian state of Madhya Pradesh.

Service Delivery-Availability of a functioning health facility and transportation are two key components of a health service delivery system. Specifically, women's access to a health facility providing round-the-clock care and availability of reliable transportation to a health facility have been found to predict women's use of maternal health services.[15,16] In India, the primary health care center (PHC) is an important public health facility providing care at the community level in rural areas. Public health facility guidelines in India are population based. A PHC is a primary level health facility that provides antenatal care, delivery care and postpartum care for a population of 20,000 to 30,000, among other preventive and curative services. The PHC is usually staffed by a general doctor, a nurse-midwife and ancillary health workers such as a laboratory assistant, female health worker and pharmacist. Shortages of skilled health care providers for antenatal care and emergency obstetric care are common in Indian facilities, including PHCs serving poor women in rural areas.[17] A PHC has a labor room, facility to admit patients and basic laboratory facilities. Some PHCs are upgraded to include x-rays and basic operating theaters.[18] Infrastructure and especially lack of roads, also influences utilization of maternal health care services.

Poor roads directly influence the time cost for households to seek health care assistance because of the increase in travel time.[12] Availability of transportation, including all-weather roads to the nearest health facility, play an important role in use of maternal health services.[15] Poor road infrastructure can make access to delivery care difficult for poor women, in particular, causing them to seek care from less qualified but locally available providers such as traditional birth attendants.[12]

Community

The Health Systems Framework emphasizes the importance of both the physical and social community environment and their interaction. The double arrows connecting the community with the health care sector and households indicate the strong relationships between these components. The majority of maternal health service delivery takes place within the community and is influenced by community involvement.

Physical environment - Physical environmental factors such as sanitation, access to healthy foods and population density affect maternal health outcomes. Infrastructure influences the utilization of maternal health care.[12] Physical distance from the nearest health facility, plays a role in maternal health service use.[15] Lack of affordable transport can make access to safe childbirth difficult for rural women.[12]

Social Environment - The social environment includes social units such as schools, worksites, families, friends and organizations. These units influence maternal health by affecting access to maternal health care.

According to the study conducted in Madhya Pradesh state, "Antenatal Care and Birth Related Practices Among the Baigas", worldwide about 5,00,000 women die every year from pregnancy and childbirth related causes. Often the death of a woman in childbirth signifies far more than the tragic loss of a single life. Most of these deaths take place in developing countries, including the countries of South East Asia. The majority of deaths due to maternal causes are avoidable if pregnant women receive adequate antenatal care during pregnancies, having deliveries in hygienic conditions and with the assistance of trained medical practitioners, and receive appropriate and timely postpartum care (WHO,1981).The infant mortality is largely affected by antenatal care. Children of mothers who had received antenatal care had observed lower mortality than other children who did not receive any antenatal care (Munshi Rakesh, 2000; Sandhya, 1991). The study has been carried in two blocks of Dindori district, namely Bajag and Samnapur. NFHS-1 reports that mothers of only 20% of live births received all the required components of ante-natal care. At least three ante-natal checkups, two doses of tetanus toxoid vaccine, and iron and folic acid supplementation during pregnancy for at least three months, to ensure the health of the mother and child is aimed in India through the Reproductive and Health Programme. In addition, the programme encourages institutional deliveries or home deliveries attended by a trained medical professional along with three postpartum visits.

The Baiga people are aware about the antenatal care provided by the Government, but due to misconception, they do not avail its benefits. For antenatal care, neither ANM/Nurse is contacted and consulted, nor do these people go to additional public health center. ANM/Nurse visits their house and after confirmation of pregnancy, she gives the iron and folic acid tablets and asks them to take tetanus toxoid. But the Baiga ladies do not accept tetanus toxoid or any injection; because they have a belief that any of the injections during pregnancy will harm the foetus and the child born will be crippled.

Similar findings were observed in the rural areas of Jammu and Kashmir (Sharma, 1977) the study revealed that 9l% of the rural deliveries were conducted at home. In most of the societies, cultural and spiritual aspect has a strong influence on the various aspects of pregnancy and childbirth. The health, care providers are aware of these aspects and in the last 15-20 years a great deal of collaborative effort between national government and WHO, UNICEF has gone in to the training of Trained Birth Attendants (Royston et al.,1989).

According to a study conducted by Desai S, Wu L and Joshi BL utilization of maternal health care services in India are affected by following. Health Care Sector Level and household level Factors

- Receipt of financial assistance from a government scheme. The cost of health care, including transportation, is a major factor affecting poor women's use of maternal health care. One literature review found that cost of care was the major deterrent to accessing maternal health care services among poor women. Another literature review concluded that interventions for demand-side barriers, including cost of care, have not been well evaluated, although there was evidence that financial assistance to poor families improved women's access to maternal care. For example, a study examining financial incentives for maternal health services in Nepal found that such incentives increased maternal health care utilization.

Janani Suraksha Yojana- India accounts for more than a quarter of maternal deaths across the globe. Poor, rural women account for the majority of these deaths.[4] To tackle this problem, the Indian government introduced JSY in 2005. One of the largest cash incentive schemes ever launched, JSY has attracted the attention of researchers who have examined the scheme's impact on maternal health. Reported results are mixed. Some studies indicate a major positive impact of JSY on maternal health indicators while others show no impact.[10] Most studies of JSY report increases in institutional deliveries, but some note that the scheme alone cannot be credited for the increase. Overall, the existing literature suggests that receiving financial assistance from the government increases women's use of maternal health services.

- Availability of a PHC providing services round-the-clock. Another health care sector factor that has been found to be a significant predictor of utilization of maternal health services is availability of a health facility that provides round-the-clock services.[20] For example, one study of maternal mortality in Gambia found

that non-availability of a health facility was an important predictor of high maternal mortality ratio.[12] Research conducted in Bangladesh shows that greater access to a health facility improves use of maternal health care services, especially emergency obstetric care, as well as reduces maternal mortality.[16] A functional health facility requires the availability of both a physical infrastructure and skilled health care providers to provide services round-the-clock.

A study examining non-utilization of public facilities using NFHS-3national data found that lack of health facilities was linked to non-use of antenatal care and delivery care. Primary household surveys conducted in the Indian state of West Bengal by the Future Health System in 2008 found that physical access to a health facility had an impact on institutional deliveries, but not on antenatal care. Overall,the research suggests that availability of a functioning health facility plays an important role in increasing use of maternal health services and in improving maternal health outcomes.

- Connection to a health facility by an all-weather road- Connection to a health facility by an all-weather road is another health care sector factor found to predict rural women's utilization of maternal health care.[18] The absence of all-weather roads provides a disincentive for women to travel to health care facilities for their deliveries. About 40% of Indian villages lack all-weather roads and 2.7 million kilometers of rural road network are in poor condition because of neglect and underfunding.[17] Availability of an all-weather road to a health facility helps to ensure

access to maternal care and institutional delivery.[18] One study examining access to obstetric care in Gambia found that poor road conditions was an important cause of delay in obtaining maternal health care, contributing to a high maternal mortality ratio.[15] In the three-delay model proposed by Thaddeus and Maine, absence of roads acts as a deterrent to seeking health care and leads to a delay in decision-making and reaching a health facility.[16]

Household Level Factors

- Maternal education. Maternal education is an important household level predictor of utilization of maternal health services in developing and developed and developing countries.[12] Higher education helps women to understand the importance of early and adequate antenatal care and institutional delivery. A number of Indian studies have examined the role of maternal education in maternal use of health services. For example, a study using NFHS-2 data from the southern states found that educated women were more likely to have adequate antenatal care and institutional delivery compared to uneducated women.[11] A similar study in the northeastern states also found that higher education among women increased their utilization of antenatal care and institutional delivery in government facilities.[15] In India, a 1995 study using the Perform System of Indicators Survey (PSIS) data from a northern state

found that more educated women had increased use of antenatal care and institutional delivery.[6] A national Indian study using NFHS-2 data revealed that uneducated women have lower use of maternal health services, including institutional deliveries and antenatal care, than their educated peers. There was a positive relationship between maternal education and utilization of maternal health care services, although the influence of education was not as great in the southern states as in the northern states.[20] A similar study focusing only on the northern states found a significant positive association between maternal education and utilization of maternal health services, including antenatal care.[13] Still another study in the western state of Maharashtra using NFHS-2 data indicated that maternal education was significantly associated with use of a private facility for delivery care.[20] Overall, both the Indian and international studies reveal that maternal education is an important predictor of use of maternal health services, with more educated mothers utilizing more services.

Purpose of the Study

This study examines selected predictors of maternal health services utilization in the Jhabua district of Madhya Pradesh after implementation of Janani Suraksha Yojana. The study adds to the literature by identifying factors beyond cash payments that may influence use of maternal health services among poor, rural women in the district. Women in this study resided in rural areas of Jhabua district, in difficult terrain and extremely harsh conditions with majority of them belonging to below poverty line cohort. The study also presents a comparative analysis of the influence of four predictors viz. JSY financial payments, availability of a health facility round the clock, accessibility by an all-weather road and maternal education on three different variables of maternal health service utilization.

OBJECTIVES:

4) To determine the effect of financial assistance from JSY, availability of a PHC providing services round-the-clock, connection to a health facility by an all-weather road and maternal education on utilization of adequate antenatal care services.
5) To determine the effect of financial assistance from JSY, availability of a PHC providing services round-the-clock, connection to a health facility by an all-weather road and maternal education on utilization of an institutional delivery services.
6) To determine the effect of financial assistance from JSY, availability of a PHC providing services round-the-clock, connection to a health facility by an all-weather road and maternal education on utilization of a public institutional Caesarean section services.

Operational Definition of Variables

Independent variables

1) Receipt of financial assistance from JSY or a government scheme: Receiving financial assistance from JSY or any government scheme.
2) Availability of a primary health center (PHC) providing services round-the-clock: Availability of a PHC providing 24-7 services.
3) Connection to a health facility by an all-weather road: Connection by an all-weather road to any health facility.
4) Maternal education: Mother's total years of schooling as reported by the respondent (classified into four groups).

Dependent variables

1) Adequate antenatal care: Receiving a first antenatal visit in the first trimester, at least three antenatal care visits, at least 100 iron folic acid tablets and two TT vaccines (taken during last pregnancy).
2) Institutional delivery: Child birth/delivery in a public health facility, including sub center (SC), primary health center (PHC), community Health center (CHC), district hospital (DH), or ayush clinic.
3) Use of Caesarean section in a Public Facility: Child birth/delivery by a C-section or any operative procedure.

RESEARCH QUESTIONS and HYPOTHESIS:

1) Does receiving financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education significantly affect utilization of adequate antenatal care?

Hypothesis:

1A) Mothers who have received financial assistance from JSY or a government scheme are more likely to receive adequate antenatal care than mothers who do not receive such financial assistance.

1B) Mothers who have access to a health facility providing services round-the-clock are more likely to receive adequate antenatal care than mothers who lack such access.

1C) Mothers who have connection to a health facility by an all-weather road are more likely to receive adequate antenatal care than mothers who lack such access.

1D) Mothers with more education are more likely to receive adequate antenatal care than mothers with less education.

2) Does receiving financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education significantly affect utilization of an institutional delivery?

Hypothesis:

2A) Mothers who have received financial assistance from JSY or a government scheme are more likely to have an institutional delivery than mothers who did not receive such financial assistance.

2B) Mothers who have access to a health facility providing services round-the-clock are more likely to have an institutional delivery than mothers who lack such access.

2C) Mothers who have connection to a health facility by an all-weather road are more likely to have an institutional delivery than mothers who lack such access.

2D) Mothers with more education are more likely to have an institutional delivery than mothers with less education.

3) Does receiving financial assistance from JSY, availability of a health facility providing services round-the-clock, connection to a health facility by an all-weather road and maternal education significantly affect utilization of a public institutional Caesarean section services?

Hypothesis:

3A) Mothers who have received financial assistance from JSY or a government scheme are more likely to have a Cesarean section done in a public facility than mothers who did not receive such financial assistance.

3B) Mothers who have access to a health facility providing services round-the-clock are more likely to have a Caesarean section done in a public facility than mothers who lack such access.

3C) Mothers who have connection to a health facility by an all-weather road are more likely to have a Caesarean section done in a public facility than mothers whose lack such access.

3D) Mothers with more education are more likely to have a Caesarean section done in a public facility than mothers with less education.

METHODOLOGY

STUDY TYPE: Descriptive cross sectional study.

STUDY AREA: Jhabua district of Madhya Pradesh.

STUDY DURATION: February 2016 to May 2016.

SAMPLING TECHNIQUE:

Selection of state and district is purposive. It is proposed to researcher to conduct the study in the Jhabua district of Madhya Pradesh. This study primarily aims to assess the effect of state health policies, factors related to health facilities and characteristics and perceptions of individuals on utilization of maternal health care facilities. Hence, to have a clear picture of the factors affecting maternal health service utilization, health policies and facility assessment and individual characteristics are studied separately through two survey questionnaires constructed in local language. Random sampling was used to select the facilities and the ever married women.

MEASURES

Firstly, facility survey is carried out through a semi structured questionnaire. Facility checklists (L1 /L2/L3) are used for measuring the aptness of human resource deployed, availability of minimum required equipment and other related infrastructure. Questionnaire also contained information on availability of health facilities in the village and if the health facilities were accessible throughout the year by an all-weather road. Also through FMIS and state government websites, information regarding percentage of JSY payments and ASHA incentives were extracted. Survey questionnaire for facility assessment is provided in Appendix…….

For facility assessment, facilities were selected based on two stage random sampling. In the First stage a total of twelve L2/L3 facilities were selected randomly out of a total of 32 facilities. In the second stage, out of a total of 210 Sub Health Centers, 30 centers were randomly selected.

Sample Frame: 242 Health facilities.

Sample Size: 42 Health facilities.

Secondly, a household survey was carried out to assess the effect of individual characteristics on utilization of Maternal Health services. A semi structured questionnaire constructed in local language was used to collect the information. It was divided into two sections. In the first section, general information of the respondent was recorded and in the second section, information on facility and its services and also whether or not received the financial benefits of JSY were recorded. Study respondents comprises of all ever married women whose last baby was delivered not more than 2 years back. Household questionnaire used is provided in the Appendix…….

Out of a total of 386 ever married women interviewed, 350 women were selected to carry out the final assessment.

Sampling Design: Random Sampling.

Sample size: 350 women (considering 10% nonresponse).

Study respondents: all ever married women whose last baby was delivered within last two years.

STUDY- VARIABLES

The Facility questionnaire provided data on independent variables like availability of a Health facility providing services round-the-clock and connection to a village or residential area by an all-weather road and dependent variable like percentage of Caesarean sections.

The Ever-married Women questionnaire provided information on independent variables like receipt of financial assistance from JSY or a government scheme, maternal education, paternal education. Also data for information about women's use of maternal health services(ANC checkups and institutional deliveries) came from the Ever-Married Women questionnaire. Participation in the survey is strictly voluntary.

Independent Variables

1. Receipt of financial assistance from JSY or a government scheme: Receipt of any financial assistance from JSY or any other government schemes during the last childbirth. It is a binary variable.
2. Availability of a PHC providing services round-the-clock: Presence of a health center providing 24-7 services. It is a binary variable.
3. Connection to a health facility by an all-weather road: Village of residence connected throughout the year by a road to a sub-center, primary health center, community health center, district hospital .It is a binary variable.
4. Maternal education: Mother's total years of schooling was obtained and placed in one of four categories: Uneducated, less than five years of education, five to nine years of education and ten or more years of education.

Dependent variables

1. Adequate antenatal care: Mother having an antenatal visit in the first trimester, at least three antenatal visits and 100 or more iron folic acid (IFA) tablets and Tetanus Toxoid. It is a binary variable. All of the conditions need to be satisfied for a "yes."
2. Institutional delivery: Mother having a delivery in a government facility. Government facilities include sub center (SC), primary health center (PHC), community health center (CHC), district hospital (DH). Institutional delivery is a binary variable.
3. Caesarean section: Any delivery other than normal (vaginal delivery without use of instruments) is considered as a C-section delivery because the number of other operative deliveries is very low for the analytic sample. Use of Cesarean section is a binary variable.

DATA- ANALYSIS

Ever married women assessment

Descriptive statistics for all independent and dependent variables were generated to summarize the sample's demographics and maternal services utilization data .Logistic regression was selected as the appropriate statistical model to apply to this study because all of the dependent variables are binary.

Bivariate analyses using binary logistic regression were conducted to examine the relationships among all independent and dependent variables.

To test the hypotheses, multiple logistic regression analyses were used to determine the degree to which the independent variables are predictors of the three dependent maternal health service utilization variables

Three separate regression analyses were carried out.

Statistical software SPSS 16 was used in the statistical data analyses.

Facility assessment

The facility analysis includes descriptions of percentage of financial benefits delivered , human resource policies and availability and related infrastructure practices in the selected facilities.

Owing to its small sample size, state policy and facility assessment is carried out using advance Excel options.

The study results of the degree to which the standard state policies and practices are being followed in the facilities, can be used to explain the differential pattern of women's use of maternal health services in different areas.

RESULTS

Descriptive Statistics for Jhabua District

The analytical sample consisted of 386 women between the ages of 15 and 49 years who were residing in Jhabua district of Madhya Pradesh. Women who gave birth between January 2014 and March 2016 were included in the analysis. Table … presents characteristics of the study cohort. There were few missing cases in this dataset which were not considered in the final analysis.

Hence the final sample size turns to be 350 women of Jhabua District. The following table illustrates the descriptive statistics of the sample with regard to the independent variables and maternal health care utilization outcomes.

Table 3. Descriptive statistics of the independent and dependent variables

VARIABLE	JHABUA
Receipt of financial assistance from JSY/govt. scheme	
Received financial assistance	60.24%
Did not receive financial assistance	39.76%
Availability of PHC providing services round-the-clock	
Health facility available	78.26%
Health facility not available	21.74%
Connected to a health facility by an all-weather road	
Connection available	99%
Connection not available	1%
Maternal education	
Uneducated	72%
Less than 5 years	12.23%
5-9 years	11.22%
10 or more years	4.55%
Adequate antenatal care	
Yes	9.05%
No	90.95%
Institutional delivery	
Yes	82.33%
No	17.67%
Use of C-section	
Yes	2.2%
No	97.8%

It is quite evident from the above frequency distribution that the Health facilities in Jhabua district are within the easy reach of the residential residing therein. 99% of the facilities are connected via good condition concrete roads thereby increasing the access to health facilities.

78.26% of the health facilities provide their services round the clock. Majority of the 21.74%of the facilities that do not provide services round the clock are located in the remotest areas and among scattered population areas.

Table also reveals that only 60.24% of the women receive financial assistance provided under Janani Suraksha Yojana while 39.76% cannot avail this facility.

Status of female literacy of Jhabua District is far behind the state average. Only 28% of the women in Jhabua are literate.

A view on maternal health services utilization statistics reveals 82.33 % of the study women have gone for institutional deliveries. The figure falls steeply to 9.05 % when it comes to ANC services utilization. And also, only 2.2% of the women have received caesarean section facilities in the district.

Bivariate Analysis

Bivariate analyses was used to examine relationships between the independent variables and the three dependent variables and to select variables to use as predictors in the multivariate analysis. All variables that have a moderately significant relationship (p value < 0.10) with at least one of the three dependent measures of health services utilization in Jhabua District were included in the regression model for multivariate analysis. Findings reveal that all of the independent variables, including receiving financial assistance from JSY or a government scheme, access to a Health facility providing round the-clock services, connection by an all-weather road and maternal education were significantly related to at least one health service utilization variable in Jhabua.

BIVARIATE ANALYSIS

Table 4. Bivariate Analysis

	Adequate Antenatal Care		Institutional Delivery		Use of C-section	
Independent Variables	Unadj. OR	p value	Unadj. OR	p value	Unadj. OR	p value
Receipt of financial assistance from JSY/govt. scheme	0.86	0.66	4.23	0.00***	1.40	0.08*
Access to a Health facility providing services round-the-clock	1.56	0.09*	2.25	0.45	1.14	0.63
Connection by an all-weather road to a health facility	0.99	0.97	1.40	0.02**	0.71	0.28
Maternal education						
Uneducated	Ref.					
Less than 5 years	1.33	0.42	0.97	0.88	0.74	0.90
5-9 years	1.30	0.33	1.26	0.11	1.02	0.34
10 or more years	2.86	0.02**	1.52	0.21	1.14	0.51

As is evident from the above table, adequate antenatal care was significantly associated with the variables- access to a Health facility providing services round the clock (p value<0.10) and maternal education (p<0.05).

Institutional delivery was found to be significantly associated with receiving financial assistance from JSY or a government scheme (p<0.01) and connection to a health facility by an all-weather road (p value<0.05).

Receipt of financial assistance from JSY/govt. scheme was found to be a significant predictor of utilization of C-section services within the district, women who received financial assistance from JSY were more likely to opt for C-section services than women who did not received such benefits.

Multivariate Analysis

Following table presents results of the multivariate analyses for receiving adequate antenatal care; adjusted odds ratios and 95% confidence intervals are shown for independent variables in the table. With respect to the health care sector variables, receipt of financial assistance from JSY or a government scheme and Connection to a health facility by an all-weather road failed to significantly predict receipt of adequate antenatal care in Jhabua.

Table 5. Multivariate Analyses for Receipt of Adequate Antenatal Care

Independent Variable	Adjusted Odds Ratio	95% CI	*P* value
Receipt of financial assistance from JSY/govt. scheme	1.60	0.87-2.93	0.13
Availability of Health facility providing services round-the-clock	2.97	1.08-8.21	0.04**
Connected to a health facility by an allweather road	1.04	0.62-1.75	0.89
Maternal Education			
Uneducated	Ref.		
Less than 5 years	1.18	0.54-2.59	0.67
5-9 years	2.34	1.32-4.15	0.00***
10 or more years	2.97	1.08-8.21	0.04**

Availability of a Health facility providing services round-the-clock was a significant predictor of utilization of antenatal care -women with a health facility in her vicinity were 2.9 times more likely to receive adequate antenatal care than women without such a facility in her vicinity.

With respect to household variables, maternal education was found to be a significant predictor of receiving adequate antenatal care- Women with 59 years of education were 2.3 times more likely and women with 10 or more years of education were almost 3 times more likely to have received adequate antenatal care when compared to uneducated women. However, it was found that Receipt of financial assistance from JSY/govt. scheme and Connection to a health facility by an allweather road are not significant predictors of adequate ANC services utilization.

Table 6. Multivariate Analyses for Use of Institutional Delivery

Independent Variable	Adjusted Odds Ratio	95% CI	*P* value
Receipt of financial assistance from JSY/govt. scheme	1.42	1.06-1.90	0.02**
Availability of Health facility providing services round-the-clock	1.04	0.83-1.31	0.72
Connected to a health facility by an allweather road	1.42	1.06-1.90	0.02**
Maternal Education			
Uneducated	Ref.		
Less than 5 years	1.18	0.43-1.67	0.67
5-9 years	1.01	0.74-1.38	0.95
10 or more years	2.34	1.32-4.15	0.00***

Above table presents results of the multivariate analyses for use of institutional delivery; adjusted odds ratios and 95% confidence intervals are shown for independent variables in the model. With respect to the health care sector variables, only Availability of a Health facility providing services round-the-clock fails to have any significant association with utilization of Institutional delivery services available in Jhabua District. Receiving financial assistance from JSY or a government scheme was a significant predictor of institutional delivery - women who received payment were 1.4 times more likely to have an institutional delivery than those who did not receive payment.

Connection to a health facility by an all-weather road significantly predicted women's use of institutional delivery in Jhabua. Access to such a road increases the odds of women having an institutional delivery 1.4 times more as compared to women who do not have such access.

Maternal education was found to have a significant positive association with institutional delivery.

Women having more than 10 years of education were 2.3 times more likely to have an institutional delivery than uneducated women.

Table 7. Multivariate Analyses for Use of Cesarean Section

Independent Variable	Adjusted Odds Ratio	95% CI	*P* value
Receipt of financial assistance from JSY/govt. scheme	1.66	1.01-2.70	0.04**
Availability of Health facility providing services round-the-clock	1.59	0.90-2.8	0.11
Connected to a health facility by an all-weather road	0.44	0.14-1.31	0.14
Maternal Education			
Uneducated	Ref.		
Less than 5 years	0.80	0.30-2.11	0.65
5-9 years	1.57	0.78-3.18	0.21
10 or more years	1.99	0.83-4.79	0.12

This table presents results of the multivariate analyses for use of Cesarean section; adjusted odds ratios and 95% confidence intervals are shown for independent variables.

With respect to the health care sector variables, women who received financial assistance from JSY or a government scheme were 1.7 more likely to receive C-section facilities than women who could not avail such benefits.

Neither availability of a PHC providing services round-the-clock nor connection to a health facility by an all-weather road was a significant predictor of a Csection delivery in Jhabua. Also, with respect to household variables, maternal education was not a significant predictor of C-section delivery.

Table 8. SUMMARY RESULTS

S.No.	Hypothesis	Results
1A)	Mothers who have received financial assistance from JSY or a government scheme are more likely to receive adequate antenatal care than mothers who do not receive such financial assistance.	NOT SUPPORTED
1B)	Mothers who have access to a health facility providing services round-the-clock are more likely to receive adequate antenatal care than mothers who lack such access.	SUPPORTED
1C)	Mothers who have connection to a health facility by an all-weather road are more likely to receive adequate antenatal care than mothers who lack such access.	NOT SUPPORTED
1D)	Mothers with more education are more likely to receive adequate antenatal care than mothers with less education.	SUPPORTED
2A)	Mothers who have received financial assistance from JSY or a government scheme are more likely to have an institutional delivery than mothers who did not receive such financial assistance.	SUPPORTED
2B)	Mothers who have access to a health facility providing services round-the-clock are more likely to have an institutional delivery than mothers who lack such access.	NOT SUPPORTED
2C)	Mothers who have connection to a health facility by an all-weather road are more likely to have an institutional delivery than mothers who lack such access.	SUPPORTED
2D)	Mothers with more education are more likely to have an institutional delivery than mothers with less education.	SUPPORTED for those women who have more than 10 years of education.
3A)	Mothers who have received financial assistance from JSY or a government scheme are more likely to have a Cesarean section done in a public facility than mothers who did not receive such financial assistance.	SUPPORTED
3B)	Mothers who have access to a health facility providing services round-the-clock are more likely to have a Caesarean section done in a public facility than mothers who lack such access.	NOT SUPPORTED

3C)	Mothers who have connection to a health facility by an all-weather road are more likely to have a Caesarean section done in a public facility than mothers whose lack such access.	NOT SUPPORTED
3D)	Mothers with more education are more likely to have a Caesarean section done in a public facility than mothers with less education.	NOT SUPPORTED

Findings of the facility Assessment

Provision of ANC care, Institutional Delivery and Availability of Health Facility

It is seen that ANC care facilities are available in all the facilities surveyed and 71.43% of the facilities provide institutional delivery but there exist huge disparities in the availability of health facilities and other related infrastructure at these facilities.

Of the 42 facilities surveyed, only 28.58% of the facilities provided services round the clock or as per the schedule. At 71.43% of the facilities more than fifty percent of the staff posted was found present at the facility (50% attendance). At 30.96 % of the facilities more than fifty percent of the required equipment was found available and at 33.34% of the facilities more than fifty percent of the bio medical waste apparatus was found functional.

Figure 2.Provision of ANC care and Availability of Health Facility

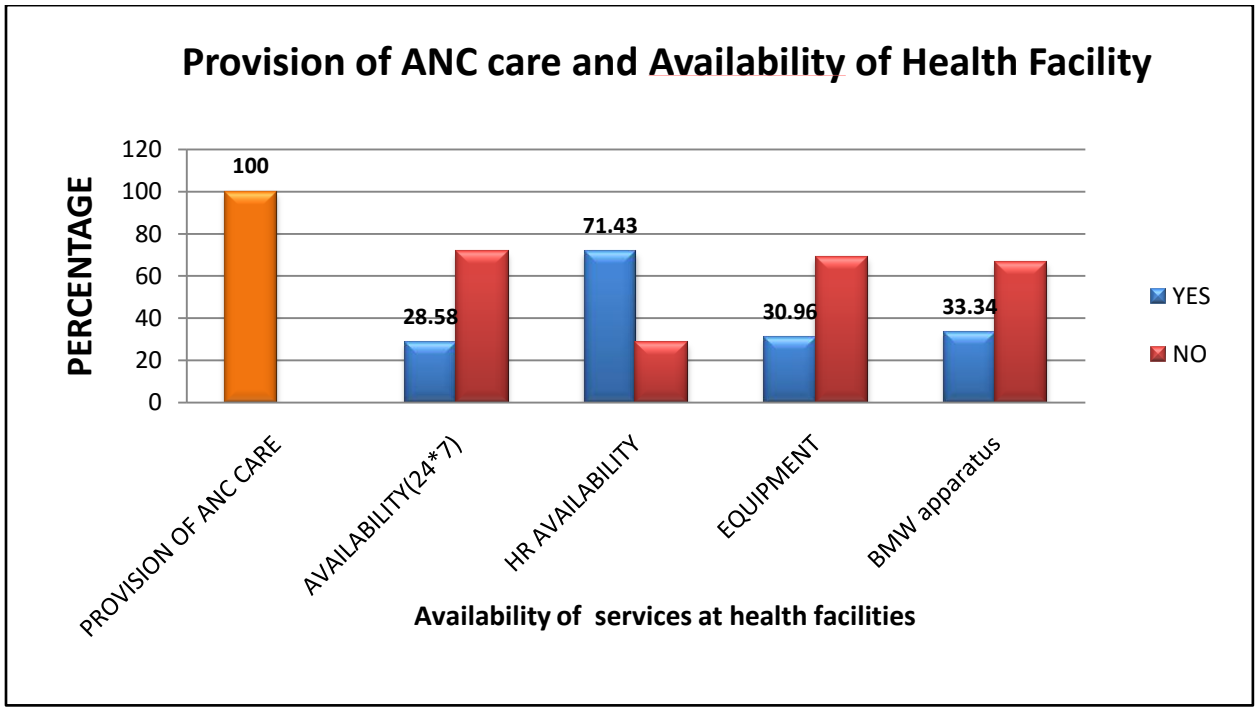
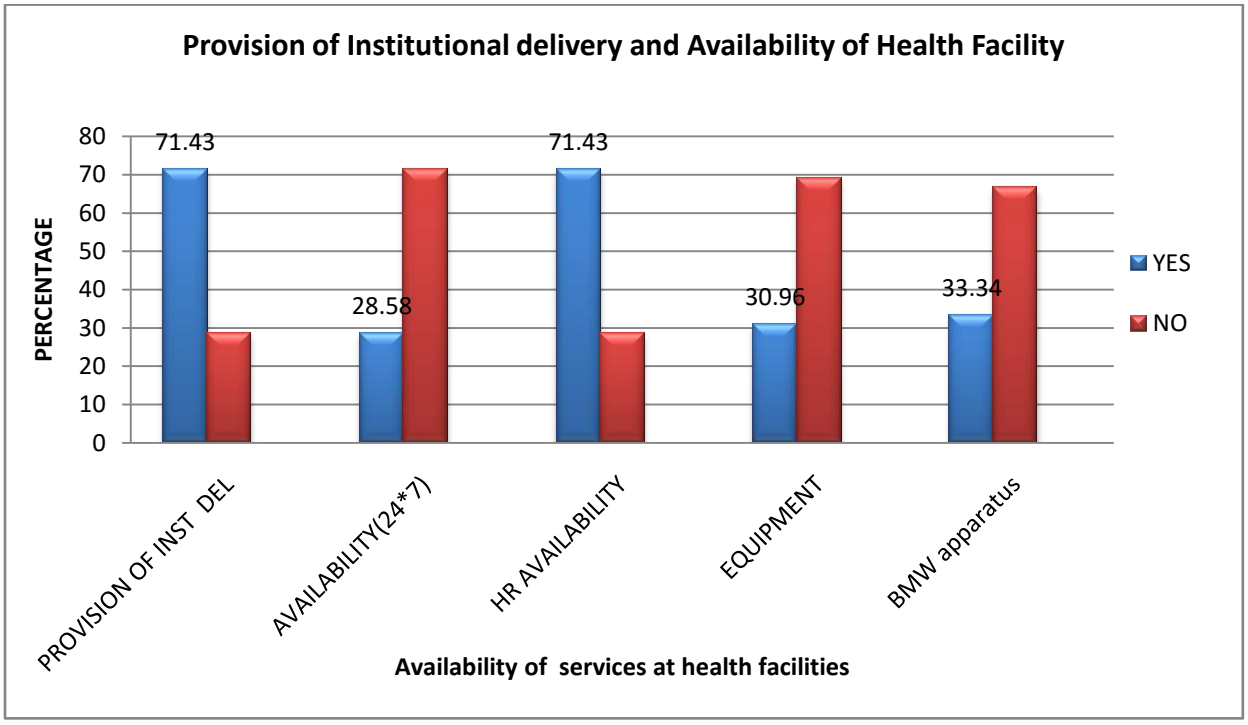


Figure 3.Provision of Institutional delivery and Availability of Health Facility



Provision of ANC care, Institutional delivery and Accessibility to a Health facility through all-weather roads

It is seen that ANC care facilities are available in all the facilities surveyed and 71.43% of the facilities provide institutional delivery but only 61% of the facilities are accessible by an all-weather roads.

Figure 4.Provision of ANC care and Accessibility to a Health facility through all weather roads

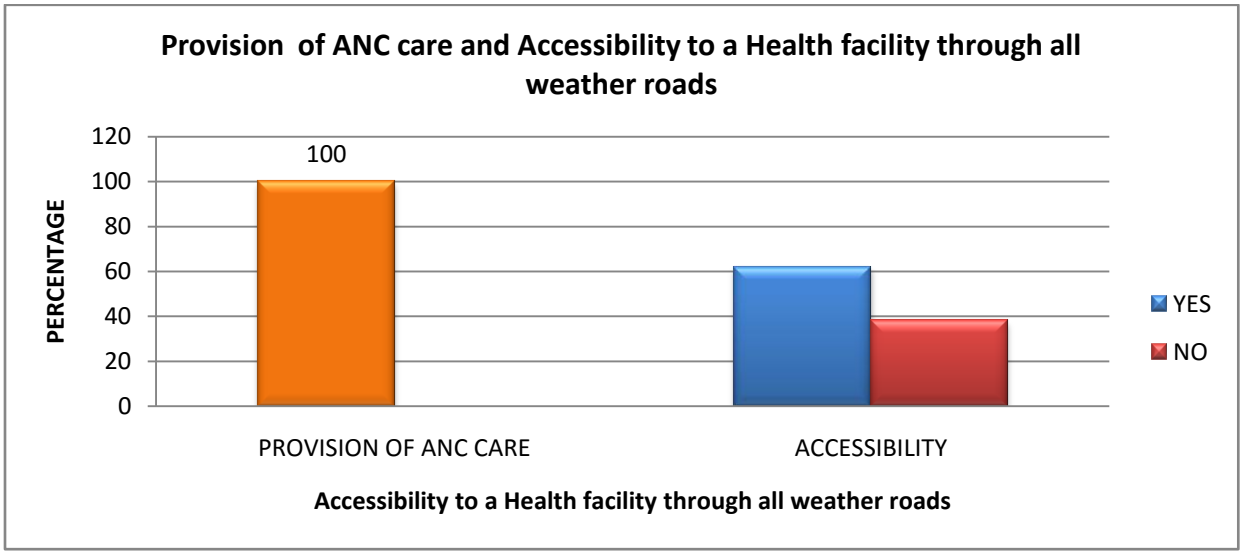
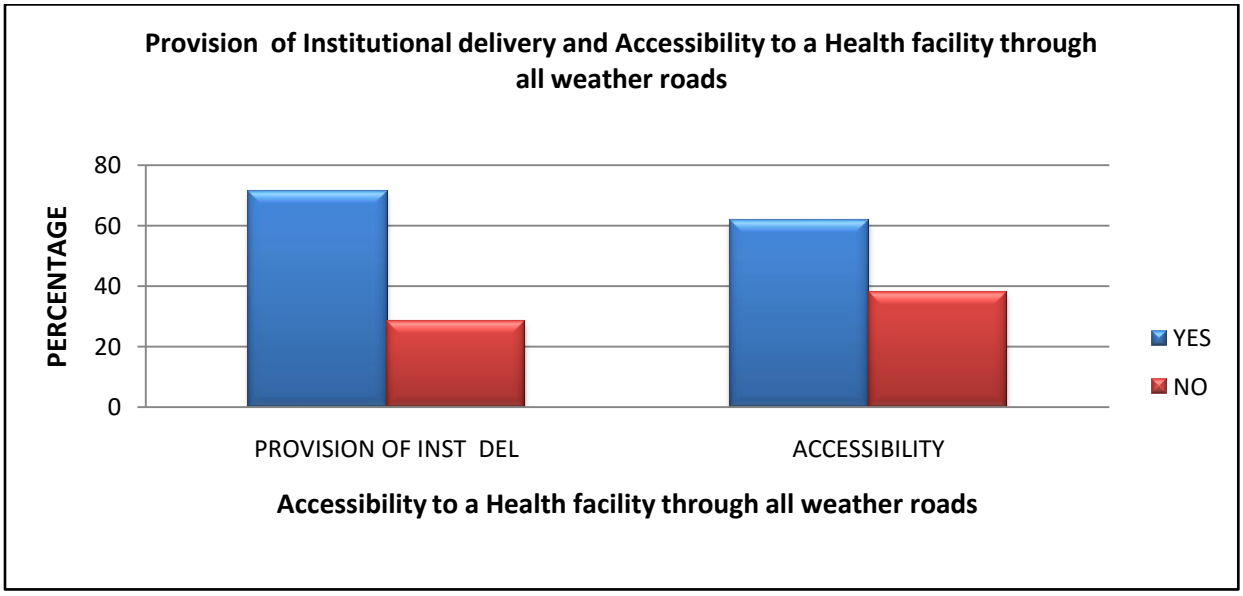


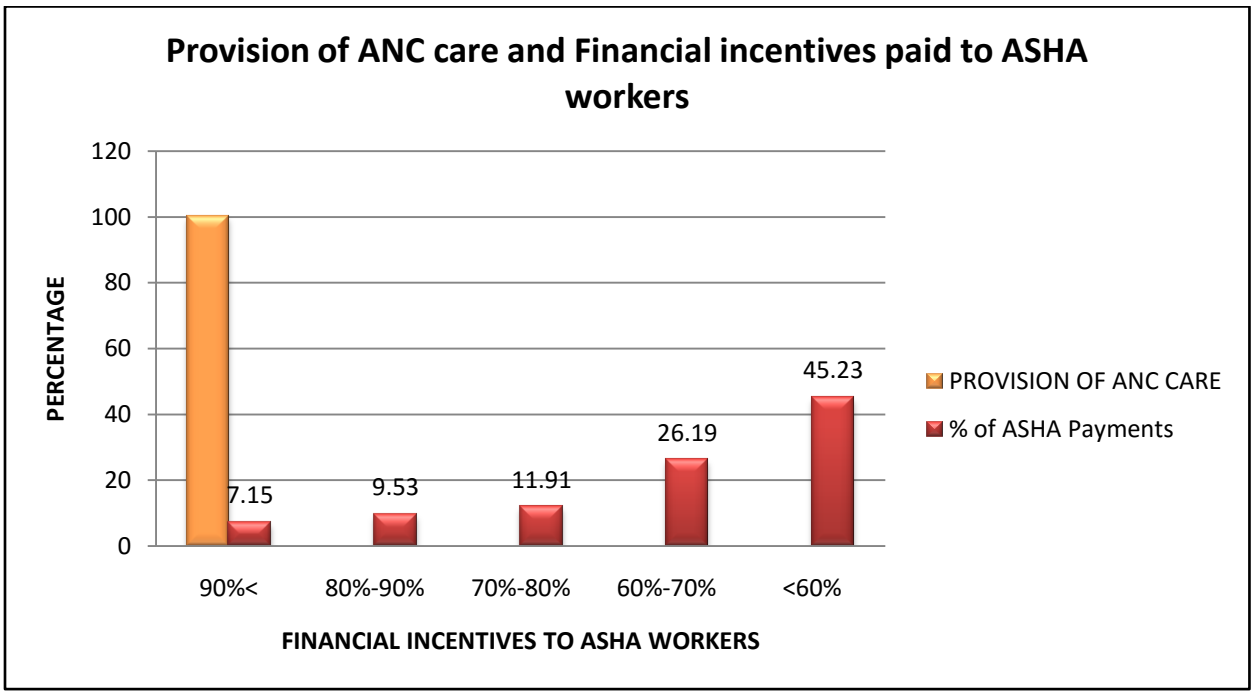
Figure 5.Provision of Institutional delivery and Accessibility to a Health facility through all weather roads



Provision of ANC care and Financial incentives paid to ASHA workers

As per the scheme, ASHA workers are to be incentivized with an amount of Rs. 300/- for every full ANC. While analysis it was found that 45.23% of the facilities disburse less than sixty percent of the total amount to be disbursed as ASHA payment, 26.19% disburse sixty to seventy percentage of the total amount, 11.19 disburse seventy to eighty percent of the total amount,9.53% of the facilities disburse eighty to ninety percent of the total amount and 7.51% of the facilities disburse more than ninety percent of the total amount as ASHA payments.

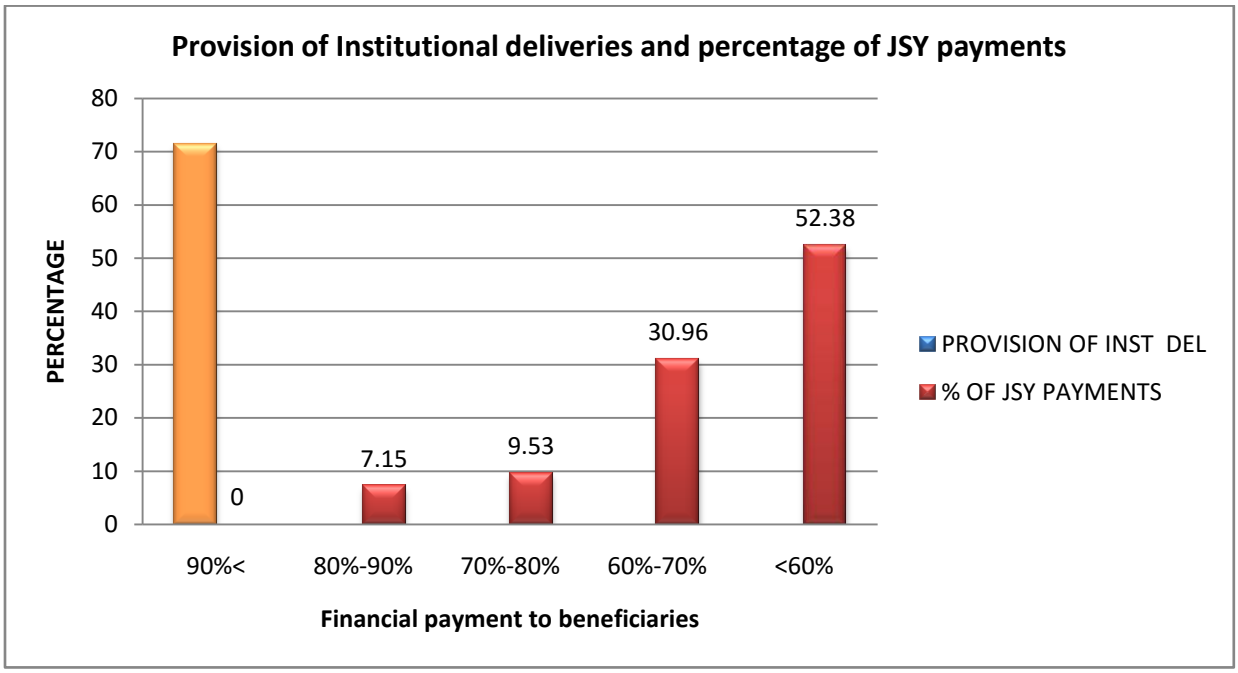
Figure 6.Provision of ANC care and Financial incentives paid to ASHA workers



Provision of Institutional deliveries and percentage of JSY payments

As per the scheme, Institutional deliveries are to be incentivized with an amount of Rs. 1400/- to every beneficiary. While analysis it was found that 52.38 of the facilities disburse less than sixty percent of the total amount to be disbursed as JSY payment, 30.96% disburse sixty to seventy percentage of the total amount, 9.53% disburse seventy to eighty percent of the total amount,7.15% of the facilities disburse eighty to ninety percent of the total amount and no facilities disburse more than ninety percent of the total amount to the beneficiaries.

Figure 7.Provision of Institutional deliveries and percentage of JSY payments



Conclusion

The current study utilized the Health System Framework of Maternal, Neo Natal and Child Health to examine the role of JSY financial assistance and other health sector and Household factorsin predicting utilization of Maternal Health Services among women of Jhabua district. Overall incentivizing the services and set up of infrastructure has reported better use of Maternal Health services among the women of Jhabua district. Also, Maternal Education was a significant predictor of Maternal Health Services showing increased use with higher levels of education.

Findings within the state underscore the complexity in designing the Maternal Health interventions to enhance the women's access to health services. They suggest the need for the designing interventions after careful contextual analysis of the district. It also brings forth the need to leverage the existing resources to increase the access, quality and equity of maternal care services.

Current findings also emphasizes the potential benefits of incentivizing the utilization of ANC care services and improving training of community workers to better prepare women for child birth.

Investments in maternal education and family planning programs that discourage adolescent child birth and encourage smaller family size may increase maternal health service utilization in the long run.

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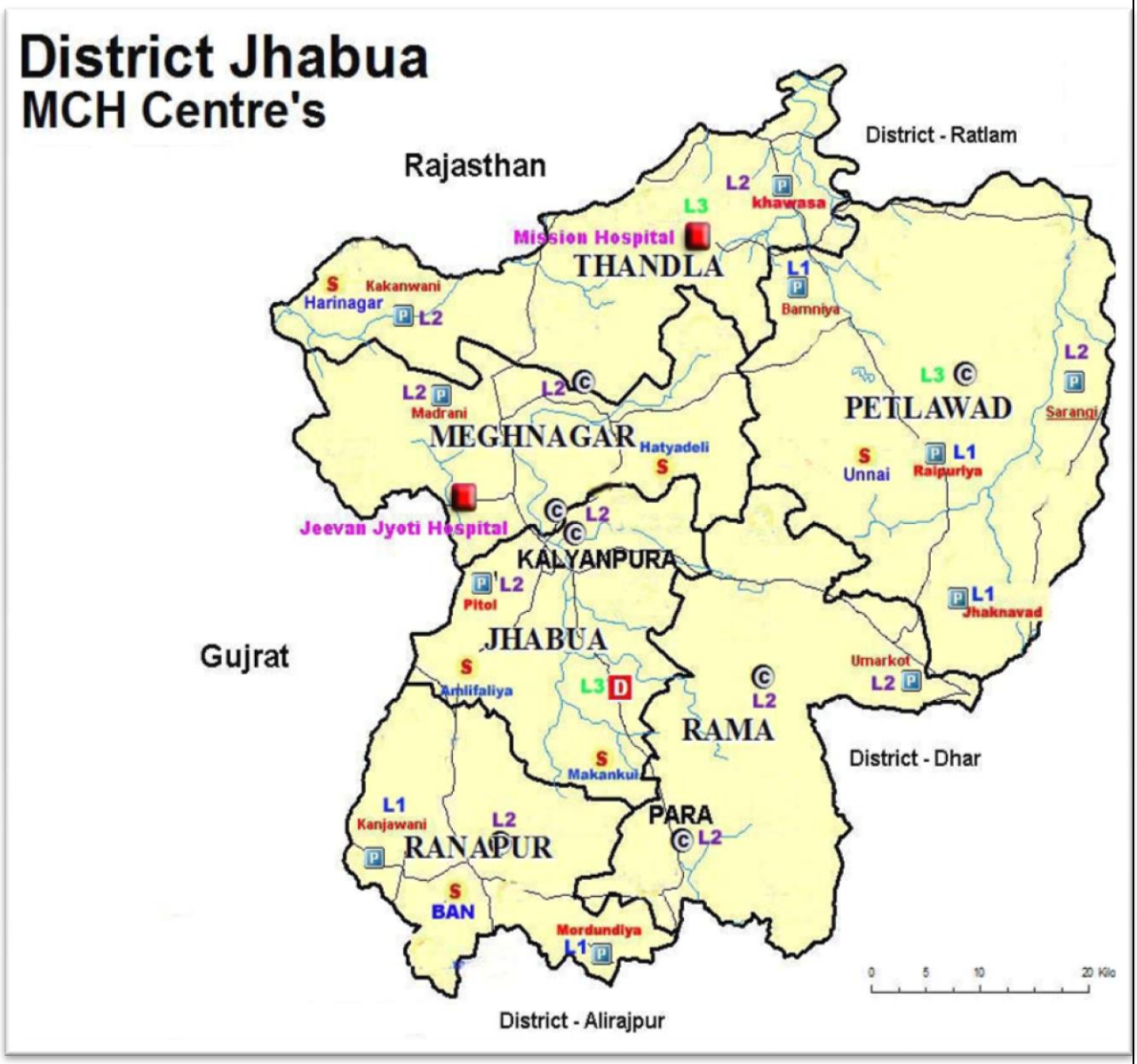
APPENDICES

Map of Jhabua District



Self EvaluationCheck List for PHF / Checklist for Site Assessment

Services					
Sl. No		L1	L2	L3	Findings
I	Services				
i	Normal Delivery with Active Management of Third Stage of labour	+	+	+	
ii	Assisted Vaginal Delivery	-	+	+	
iii	Essential New Born Care	+	+	+	
iv	Pre-referral stabilization of Patient with Obstetric Emergency	+	+	+	
v	Ceasarean Sections	-	-	+	
vi	Management of Obstetric Emergency	-	+	+	
vii	Blood Storage Centre/ linkage to Blood Bank	-	-	+	
viii	Blood Bank	-	-	+	
ix	Referral linkages	+	+	+	
B.	**Requirements**				
i	Delivery table	+	+	+	
ii	Newborn Care Corner in the LR with facilities for neonatal resuscitation (at OT in case of L3 institutions)	+	+	+	
iii	Suction machine	+	+	+	
iv	Facility for oxygen administration	+	+	+	
v	Partographs	+	+	+	
vi	Referral Slips	+	+	+	

	Equipments: *(Indicative list, facilities should be operational with adequate equipments)*				
i	Tables for Instruments	+	+	+	
li	Instrument Tray	+	+	+	
Iii	Autoclave and Drums to sterilize equipments	+	+	+	
Iv	Sponge holder 10 inches	+	+	+	
V	Kocker's forceps straight 8 inches	+	+	+	
Vi	Curved artery forceps 6 inches	+	+	+	
Vii	Knife handles and Blades	+	+	+	
viii	Alley's forceps 6 inches	+	+	+	
ix	Episiotomy scissors	+	+	+	
x	Stainless steel kidney tray, 8 inches	+	+	+	
xi	Disposable syringes and needles	+	+	+	
xii	Vaginal Speculum	+	+	+	
xiii	Needle holder and Suture material	+	+	+	
xiv	Abdominal retractors	-	+	+	
xv	Catheters-different nos. plastic and rubber	+	+	+	
xvi	Clamps	+	+	+	
xvii	Disposable gloves	+	+	+	
xviii	Vacuum extractor	-	+	+	
xix	Outlet Forceps	-	+	+	
xx	Sterile Cord Ties	+	+	+	

III	**Drugs (both for adult and children)**				
i	Antibiotics	+	+	+	
ii	Anti Hypertensives	+	+	+	
iii	Anti convulsants/ Sedatives	+	+	+	
iv	Analgesics	+ -	+	+	
v	Oxytocics	+	+	+	
vi	IV Fluids / Plasma Expanders	+	+	+	
vii	Emergency Drugs	+	+	+	
viii	Vitamins and Minerals	+	+	+	
ix	ORS	+	+	+	
x	Antimalarials	+	+	+	
xi	Broncho dilators	+	+	+	
IV	**Equipment for neonatal care & resuscitation**				
i	Foetal stethoscope	+	+	+	
ii	Baby weighing scale	+	+	+	
iii	Radiant warmer	+	+	+	
iv	Phototherapy unit	--	++	++	
v	Self inflating bag and mask (neonatal size)	+	+	+	
vi	Oxygen hood (neonatal) and cylinder	+	+	+	
vii	Paediatric Laryngoscope and endotracheal tubes	+	+	+	
viii	Mucous extractor with suction machine	+	+	+	
ix	Feeding tubes	+	+	+	

V	Equipment for Anaesthesia	I	II		
i	Facemask			+	
ii	Airway			+	
iii	Laryngoscope			+	
iv	Spinal Anesthesia needles sizes 23,25 & 27			+	
v	Endotracheal tubes			+	
vi	General Anaesthesia machine with all accessories(Boyle's apparatus for L3 institutions)			+	
vii	Intravenous drip sets			+	
viii	Oxygen cylinder with attachments			+	
VI	**Manpower**				
i	ANM/SN(Min. 2 for L1, 4 for L2 & 9 for L3 institutions) with SAB trained (if untrained, PHF will trained them within 2 months)				
ii	MO- MBBS(Min.1 for L1 L2 &L 3 institutions)				
iii	O & G Specialist (Min.1 for L2 & l3 institutions)				
Iv	Pediatric Specialist (Min. 1 for L2 & l3 institutions)				
	Overall grading of the PHF as per the above list.			**Level I/Level II/None**	