"Birth Preparedness and Complication Readiness" of ASHAs under the safe motherhood intervention programme of NRHM at Koppal, Karnataka

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Dissertation submitted in partial fulfillment of the requirement for the award of the degree of

Master of Public Health

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CERTIFICATE

Certified that the dissertation titled "Birth Preparedness and Complication Readiness" of ASHAs under the safe motherhood intervention programme of NRHM at Koppal, Karnataka is a bona fide record of original research work undertaken by Dr. Smitha P.K in partial fulfillment of the requirements for the award of the degree of 'Master of Public Health' under my guidance and supervision.

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DECLARATION

I declare that this dissertation is the result of my original field research. It has not been submitted to any other university or institution for the award of a degree. Information derived from the published or unpublished work of others has been duly acknowledged in the text.

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DEDICATION

To my husband Rejeev, my son Rahul for their support, patience and encouragement throughout my study period;

To my parents Omana and Kochukuttan for the value of education and learning they instilled in me.

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Abbreviations

ANC	Ante Natal Care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AWW	Anganwadi Worker
BP	Birth Preparedness
BPL	Below Poverty Line
CHC	Community Health Centre
CR	Complication Readiness
CHW	Community Health Worker
DH	District Hospital
EDD	Expected date of delivery
EMoC	Emergency Obstetric care
GoI	Government of India
IFA	Iron Folic Acid
IPHS	Indian Public Health Standards
JSY	Janani Suraksha Yojana
JHIPEGO	John Hopkins Program for International Educati in Gynecology and obstetrics

MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
M/O	Medical Officer
NFHS	National Family Health Survey
NRHM	National Rural Health Mission
PHC	Primary Health Centre
PNC	Post Natal Care
PPH	Post Partum Hemorrhage
PPP	Public Private Partnership
RMP	Rural Medical Practitioner
SC	Sub Centre
TBA	Traditional Birth Attendant
TT	Tetanus Toxoid
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
VHND	Village Health and Nutrition Day
VHSC	Village Health and Sanitation Committee
WHO	World Health Organization

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Abstract

Background

Awareness of danger signs of obstetric complications and having a birth preparedness plan is the essential first step in providing an appropriate and timely referral to obstetric care. The objectives of this study was to understand whether community health workers (CHWs) there are equipped with the knowledge and skills essential to help pregnant women developing complications get an appropriate health care; and if the support and supervision they get from higher authorities is adequate to carry out their assigned tasks in a rural backward district of Karnataka.

Methods

A cross-sectional descriptive study was carried out during June -July 2011. A total of 225 CHWs were selected randomly for the study. A structured pre-tested interview schedule was used to collect quantitative data on socio-demographic and work related characteristics, knowledge about danger signs of pregnancy, childbirth and post partum period and service provision .Qualitative data was collected as a series of responses to open ended questions. The collected data was analyzed using SPSS for Windows version 17. Chi-square test was used to determine associations between categorical variables. Themes around qualitative responses supplemented the quantitative data.

Results

Data was obtained from 207CHWs, yielding a response rate of 92%. Proportion of ASHAs who knew key danger signs were 2(1%) for labor and child birth, 10(4.8%) for postpartum period and 15(7.2%) for pregnancy. Composite score out of 10 showed a poor score of 0-3 in114 (55.1%), 4-5 in 78(37.7%), 6-7 in 15(7.2%), with none scoring above 7. Score for BP/CR out of 8 showed a maximum score of 8 in 3(1.4%), 4-7 in 147(71%) and 1-3 in 57(27.5%). However, knowledge of antenatal care (ANC) components was good with >=90% in 104(50.2%) of ASHAs. Knowledge of key danger signs was significantly positively associated with number of rounds of training, recent training and negatively associated with having a child less than 5 years of age. ANC service provision was significantly associated with the extent of support received from auxiliary nurse midwives (ANMs) of the public health system. Birth preparedness service provision was significantly associated with birth preparedness knowledge level, experience, number of rounds of training, practical training and recent training. Lack of regular payment to the CHWs was a major deterrent to their services

Conclusion

CHWs seem to be poorly equipped to identify obstetric complications and to equip mothers with a birth preparedness plan, although these are among their core responsibilities. Number of rounds of training, practical training and recent training that CHWs received have an effect on the knowledge levels related to danger signals in pregnancy, delivery and postpartum and knowledge of birth preparedness plan. Those with better knowledge are seen to be more likely to provide related services. CHWs are in need of frequent training, with a focus on practical training to identify key danger signs. CHWs have considerable potential but need sustained support from the health system to be able to make a difference to maternal mortality and morbidity in this district.

CHAPTER ONE – INTRODUCTION

1.1 Background of study

In 1987 the international public health community launched the Safe Motherhood Initiative (SMI) to raise awareness about the scope and consequences of poor maternal health, and to mobilize action to address high rates of death and disability from the complications of pregnancy and childbirth. The tenth anniversary conference held in Colombo, Sri Lanka, in 1997, concluded that a skilled attendant to assist childbirth is the single most critical intervention to reduce maternal mortality. In the year 2000, 189 countries signed the UN Millennium Declaration which translated into the eight Millennium Development Goals (MDGs). MDG goal five focuses on maternal health. However, it is seen that the progress on achieving this target is poor, especially for the low-income developing countries. Although, evidence exists on interventions that can impact on maternal, newborn and child health and survival, the availability of trained health workforce to realize these interventions in various population settings is a serious concern.[1-5] While Community Health Workers (CHWs)[1] may not replace the need for sophisticated and quality health care delivery through highly skilled health care workers; they certainly play an important role in increasing access to health care and services, and thus, improving health outcomes.

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[1] **Witmer et al (1995)** defined community health workers (CHWs) as community members who work almost exclusively in community settings and who serve as connectors between health care consumers and providers to promote health among groups that have traditionally lacked access to adequate care.

Greater than 20 percent of maternal deaths globally occur in India.[6] India faces several challenges in meeting the needs of pregnant women, particularly for complications of pregnancy and obstetric emergencies. Pregnancy related services are underused as pregnancy is regarded as being a 'natural' phenomenon. Practices undermining the important of increased diet during pregnancy and breast feeding practices are rampant.[7] Anemia is the second largest cause of maternal deaths (19 percent) and more than 50 percent of women are anemic with 17 percent moderately or severely.[8] This could be prevented if timely care and information and intervention reaches to the population in need.[6] Statistics available during 2006, suggests that over 60% of all deliveries are still conducted at home, without a skilled birth attendant, [9] 63.6% report pregnancy related complication, during childbirth it is 37% and 44.4% during the postnatal period.[8] Studies conducted in Andhra Pradesh, Maharashtra, and Rajasthan during 1998- 2000 show that 52%, 47%, 42% of maternal deaths, respectively, happen on the way to a hospital or at home.[10-12] There are other interrelated socio- cultural factors such as traditional beliefs, local healers who are accessed first for any health conditions, which delay care-seeking and contribute to these deaths in rural settings. Thus, CHWs in the Indian setting could promote behavior change for care seeking, and strengthen household to hospital care continuum.

In India, the Accredited Social Health Activist program under the National Rural Health Mission (NRHM) is seen to be following the long tradition of Indian Community Health Workers (CHWs). The concept of community health workers dates back to the pre independence era and the freedom struggle in India when in the 1940s the National Health **(Sokhey)** Sub-Committee of the National Planning Committee of the Indian National Congress recommended a "community health worker" for every 1,000 village population.[13] Later, in 1977 the **Village Health Guide**

scheme was launched under the Rural Health Scheme 1977) by the Government of India,. The village health guides were mostly women who were imparted training on basic preventive and curative aspects of health, required to serve the village they resided and given a small incentive for their work. They were also to play a role in fostering community participation in various health activities in the villages they served.

The Accredited Social health Activist (ASHA) program is a key component of the National Rural Health Mission (NRHM) launched in 2005.The term ASHA, in Hindi means "hope" The ASHA is a woman primarily selected by the community, who resides in the community, is trained, deployed and supported to function in her own village. Nearly 820,000 women have been selected, trained and deployed as ASHA since 2005, and in terms of scale and coverage there are few precedents to the ASHA programme anywhere in the world.[14]

The **Janani Suraksha Yojana(JSY)** a programme under NRHM to promote institutional deliveries among women below poverty line (BPL) relies on the ASHA as a key functionary to act as a link between pregnant women and accredited health facility. She has a role in counseling women on issues such as birth preparedness and importance of safe delivery, arranging escort services to accompany pregnant women, mobilizing funds, arranging transport and blood donor to ensure better outcomes of pregnancy and child birth.[15] ASHA program aims to provide the women especially in the rural areas, with services which make maternity care accessible.

1.2 Problem Statement - Placing Karnataka and Koppal in the context of this study

The state of Karnataka has a population of 62 million.[16] Although it is part of the more developed southern part of India, its social and health indicators are only just above the national average, and it trails behind its more advanced southern neighbors, Kerala and Tamil Nadu.[17, 18, 20] Koppal, carved out of Raichur district in 1997, is a dry district with four talukas (sub-districts) and is the most deprived district in Karnataka. The Karnataka Human Development Report ranks Koppal at the bottom of all districts.[20] In this district pregnant women's experiences represent a more complicated reality.[21] The picture is very grim in addressing the three delays: in recognizing complications and seeking care, in reaching appropriate health facilities and delays in receiving appropriate care once having been admitted to the health facilities.[22] It is in this context that my research is placed to assess the role played by ASHAs at individual, family and community level which seeks to minimize the first two delays thus enabling better outcomes of pregnancy and childbirth.

1.3 Research Objectives

General objective

Contribute to the understanding of "safe motherhood" as perceived by the ASHAs.

Specific objectives

i. To document the current levels of knowledge on components of antenatal care, danger signs of pregnancy, delivery and post partum and to examine the factors associated with

current levels of knowledge.

ii. To document the extent to which ASHAs provide services related to antenatal care, delivery and postpartum period and to examine the factors associated with the extent of service provision.

iii. To understand the provision of emergency transport, funds, blood donor and associated factors in complicated pregnancies.

iv. To understand the nature of barriers and factors determining practice /non practice as perceived by ASHAs on practicing birth preparedness and complication readiness.

1.4 Rationale of the Study

i. There are very few robust assessments of the effect of birth preparedness and complication readiness packages implemented via CHWs.

ii. There are limited number of comprehensive studies in India, which measures the knowledge competencies and performance of CHWs on maternal health outcomes.

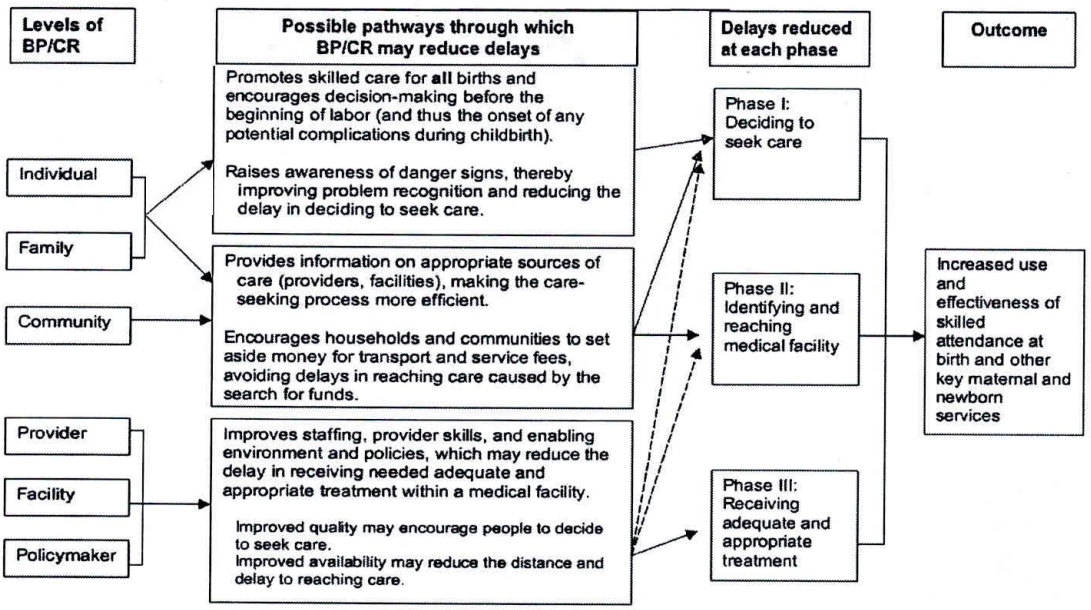
iii. CHWs based maternal health programmes of the past did not work, because CHWs did not work within an "enabling environment" i.e.; where health care providers at primary, secondary and tertiary levels function as a team, in which drugs and equipment are available and effective supervision and systems of referral, are in place. This study of mine attempts to explore the "enabling environment" in which the ASHAs work.

iv. Training received by CHWs does not guarantee its application. Lack of knowledge on basic issues, signals program managers with a clear message regarding the need for additional or appropriate training.

1.5 Conceptual Framework

The conceptual framework below, developed by the JHIPEGO, is a useful tool to visualize the levels at and the pathways through which the ASHA can be expected to influence maternal outcomes. ASHAs are expected to affect individual, family and community levels of Birth preparedness and complication readiness by the way of providing awareness of danger signs, informing women and their families on skilled providers, and other community resources such as transport, blood donor and mobilizes community and aims at minimizing the first two delays of care seeking, in order to ensure better and healthy outcomes of pregnancy and child birth.

Conceptual Framework of How BP/CR May Increase the Use of Skilled Care



Source: JHPIEGO/Maternal and Neonatal health Program

1.6 Organization of thesis report

Chapter one of this report covers the background information, statement of the problem, rationale for the study, research questions, objectives and conceptual framework. Chapter two covers the review of the related literature. Chapter three is about methodology, which includes the study design, data collection techniques and tools, sampling, ethical consideration. Chapter four is the result. Chapter five discusses the results, refuting or confirming with the existing literature. It also discusses the strengths and limitations of the study. This chapter also provides policy implications, recommendations and conclusion. The recommendations will also be given to the stakeholders. The list of references follows these chapters.

CHAPTER TWO – LITERATURE REVIEW

2.1 Introduction

The overall aim of my literature review was to identify CHWs programs with an impact on Millennium Development Goal 5 - Maternal health including contributing to birth preparedness and complication readiness. A comprehensive search was performed in various data sources such as, Pub Med, Google and Google Scholar, reports and documents of international agencies, government of India and Karnataka government, and pertinent books and thesis.

The types of CHWs involved in the interventions studied, related to maternal health are the

- Community health workers (CHWs)
- Community mobilizers (CMs)
- Traditional birth attendants (TBAs).

2.2 Defining Birth Preparedness and Complication Readiness

"Birth Preparedness and Complication Readiness" is a strategy which promotes timely use of skilled maternal and neonatal care especially during child birth, based on theory that preparing for child birth and being ready for any complication reduces delays in obtaining this care.[23]

Birth preparedness and complication readiness (BP/CR) is a common strategy employed by numerous groups implementing safe motherhood programs, although the definitions vary. Some of the standard elements of birth preparedness are knowledge of the danger signs,

choosing a birth location and provider, knowing the location of the nearest skilled provider, obtaining basic safe birth supplies, and identifying someone to accompany the woman. It also includes arranging for transportation, money, and a blood donor. The emphasis is on the "demand side" that is, the individual, family and community, or the users of healthcare services.

The Maternal and Neonatal Health (MNH) Program has expanded the concept of BP/CR to address also the "supply side" of the equation, that is, the provider, the facility and the policymaker. Inclusion of these additional levels indicates that factors causing delays in seeking care for obstetric emergencies arise from many different sources, and therefore require action from actors across multiple levels of society.

2.3 Evidence of CHWs in Birth Preparedness and Complication Readiness

2.3.1 Global Scenario

To help achieve the MDG-5, and to reach a wide range of populations who traditionally lacked adequate access to care, many countries in Africa and Asia have invested in the cadres of CHWs.

Various countries have used alternative titles for CHWs,[28] e.g. : Bangladesh (Shastho shebika) India (Anganwadi worker, Basic health worker, village health guide, ASHA) Ghana (community or village health workers) Pakistan (Lady Health worker), Ethiopia (Community health agent) but the roles they played remains almost the same anywhere in the world. They were especially found to be relevant in the rural settings.[27, 24, 29, 30]

In Pakistan and Indonesia majority of CHWs were volunteers , and a few of them received meager salaries [5,24] and in one study done in rural Malaysia transport cost was given.[25]

Salaried TBAs did not increase utilization of maternal services[5] while it did have an impact when case based remuneration was given in a study done at Indonesia.[24]

CHWs in different countries play a wide range of roles, from health education, community mobilization and increasing utilization of services to referrals and actual service provision. Thus, for many developing countries following Primary Health Care approach, CHWs helped reaching populations in the remote and inaccessible parts of the world.[34]

In Pakistan, the Lady Health Worker mustered community participation and helped in the creation of awareness and bringing about changes in attitude regarding basic issues of health and family planning by establishing a comprehensive grass roots level effective system for provision of primary health care to all its citizens.[31]

In **Bangladesh**[29] where nearly 70% of the population resides in the rural areas community based skilled birth attendant program addressed the grass root level needs of the pregnant women in their community by the way of counseling and preparing for birth. They have had the role of informing and motivating individuals and families on antenatal, postnatal care, immunization and family Planning.,[32,24,29,35-41] Special counseling skills were imparted, to help them encourage people to avail health services, and more so in the low income communities.[35,41,42] CHWs motivated women, their households and neighbors on pregnancy care and need for skilled attendance,[38] In Rural West-Java, Indonesia CHWs taught danger signs.[24] In China also evidence exists that CHWs gave health education and planned for obstetric emergencies.[43]

In **Guatemala**[30], training TBAs may have had a positive effect on the rate, detection, and referral of postpartum complications in the rural underserved areas. But here the evidence was less convincing on the overall rates of utilization of obstetric services. In **Indonesia**[24] the trained birth attendants in the rural areas enhanced complication referrals, taught mothers for danger signs and improved the accessibility to skilled providers especially in the rural areas. They had the role of recognizing and referring Emergency obstetric complications (EmOC) [32,24,30,36 40, 44-47] Almost all the CHWs driven interventional studies showed a significant impact on maternal, prenatal and post partum service utilization indicators.

They were practically trained to immunize pregnant women with tetanus toxoid in a few interventions.[24, 36, 40] CHWs recognized and managed anemia [36] with iron and folate supplements. Chemoprophylaxis for malaria [40, 54] and curative treatment for parasitic infections was also provided by CHWs.[40] In Matlab, Bangladesh CHWs provided safe delivery kit, iron and folate, family planning services.[32,36] and managed childbirths.[36] In Rural West-Java, Indonesia CHWs distributed home based maternal and neonatal action record.[24] In China they provided prenatal services at grass root levels [43] In Nepal CHWs managed of postpartum hemorrhage with Misoprostol provided Iron-folate to women, TT doses and postnatal home visits.[12] They also conducted normal deliveries.[55,56] In Hangu, Pakistan also similar interventions were done , but the results are less convincing for complications detection, its referral and utilization of essential obstetric services.[30]

2.3.2 Indian Scenario

There are very few assessments of CHWs as outreach workers effecting birth preparedness and complication readiness.

A family focused program field tested in one state of India and in three zones of Ethiopia worked through CHWs. One major component was the use of pictorial cards for birth preparedness, referral decision making, health care seeking and family planning. Recognition of complications and first aid care in case of complications during and after pregnancy was stressed upon. At the end of 3 years evaluation of services in India showed good progress from the base line statistics. Over 76% prepared for birth and almost 76.2% adopted breastfeeding within the first hour of birth from the base line of 1.7%. In Ethiopia too the program built first steps towards responsive obstetric care. In Rewa district of MP, knowledge and practices regarding birth preparedness of pregnant women and their family members was done. The results suggested knowledge of danger signs (18.6%), transportation services (18.6%), 1st trimester registration (24.1%) and population saved money (44.2%).[48] In Indore ,skilled attendance during delivery was three times higher in well prepared mothers compared to less-prepared mothers.[49]

However, a few studies talk about one or a few components of BP/CR in various states in India. In Mumbai and Orissa CHWs assisted women's groups every month to consider the causes and underlying problems leading to maternal and newborn deaths and develop practical strategies.[50, 51] In Uttar Pradesh, CHWS helped behavior change and counseled women on BP/CR but the emphasis were on new born care.[48] Pregnant mothers in Warda Maharastra, were counseled on routine essential care during pregnancy but emphasis was on new born danger signs.[52]

A recent report (2011) is been released by the NHSRC [14] on the ASHA evaluation in the eight states, (Andhra Pradesh, Assam, Bihar, Jharkhand, Kerala, Orissa, Rajasthan and West Bengal). These states were chosen purposively to capture divergent contexts and mechanisms.

Though a comprehensive evaluation of ASHA programme is been provided by the NHSRC, the report does not provide an exhaustive account of ASHAs performance and skills with respect to all aspects of Birth Preparedness and Complication Readiness. The focus appears to be on providing information on JSY benefits. Counseling or educational inputs were provided by the ASHAs during the home visits. In states like Assam, about 71% of women were counseled on IFA tablets, and 70% on institutional delivery, with 67% having one medical checkup. However, only 46% of beneficiaries reported having been counseled on initiation of breast-feeding, 27% reported received any post partum care advice, and only 13.4% said they had received any advice on nutrition. On cautions for a home delivery only 5.3% received any tips on the basics of clean delivery. Advice on post natal care is also neglected in most of these states. On most other parameters ASHAs do seem to be providing active counseling

Over 90% of the ASHAs are seen to been functional in promoting institutional deliveries. This also happens to be the most supervised elements in the programme. . Though ASHAs are not trained to play a role of a birth companion the escort functionality of the ASHAs were seen to be very relevant in the high focus districts. In a report of Madhya Pradesh CHWs helped in creating the demand for services, helped increase of the ANC, PNC and prepare a micro plan for pregnancy.[53]

Counseling on the basic cleanliness of home delivery is the lowest across states. It is not a major concern in Kerala and AP where almost all respondents have had an institution delivery, but it is a problem in the substantial number of home deliveries that have taken place in the other states- even though they were users of ASHA services. Kerala had a good schedule of meetings and the ANM (called JPHN) was much more available for playing this role- as her work had either shifted up to the PHC or been shifted down to the ASHA- making her a supervisor of an ASHA with little work outputs of her own.

The knowledge competencies, community ownership, and the supervision of CHWs are the characteristics which are insufficiently described and analyzed in these available literatures with respect to Birth preparedness and Complication Readiness. The literature examining the knowledge of CHWs with respect to key danger signs during pregnancy, labor and post partum period and the course of action subsequently taken were seldom found. These characteristics would have helped me in understanding the importance of these factors on CHWs performance on maternal health outcomes in community setting. The present study aims to make a small contribution to the body of knowledge in this little explored area.

CHAPTER THREE – METHODOLOGY

3.1 Study design: Cross-sectional descriptive study.

3.2 Study setting: Koppal District in Karnataka

Target population

ASHA- Accredited social health activist

Source population

ASHA- Accredited social health activist in Karnataka as per NRHM norms (Koppal District)

There are 888 ASHAs currently working in the Koppal district.

Study subjects

225 of 888 ASHAs randomly selected in the district of Koppal.

3.3 Sampling and Sample techniques

3.3.1 Sample Size:

Based on a study at Madhya Pradesh,[51] assuming 46% of the ASHAs have 60-70% knowledge level related to birth preparedness and complication readiness and to get 95% Confidence Interval + 6% using Statcalc the sample size was 204 and adjusting for non response rate of 10% it was found to be 225.

3.3.2 Sampling Technique:

Multistage Random sampling

3.3.3 Sample Selection Procedure:

There are a total of 39 PHCs in the four talukas of Koppal district. The talukas are Koppal, Yalburga, Kustagi and Gangavati. I have randomly selected 2 of the 4 talukas, by the lottery method. These talukas together have a total of 18 PHCs. All the 18 PHCs were included in my study. The sample of 225 ASHAs was randomly selected from these 18 PHCs using probability proportional to size sampling method. Under probability proportional to size sampling, the sample of ASHAs were chosen as a proportion to the total size of the population of ASHAs in the respective PHCs.

3.3.4 Selection Criteria :

Inclusion criteria-

i. ASHAs working for at least 6 months
ii. Willing to participate in the study
iii. Willing to provide a written informed consent

Exclusion criteria-

i. ASHAs working for less than 6 months
ii. Not willing to participate in the study
iii. Not willing to provide a written informed consent

3.4 Study variables

3.4.1 Operational Definition of Independent Variables:

Background Variables

1. Age-:

   The age of ASHA in completed years was asked. A categorical variable was created as a measure for ASHAs age. The categories were 20-24 years, 25-29 years, 30-34 years, 35-39 years and >=40 years.

2. Marital Status-:

   This variable defined as a woman whose traditional marriage has been performed. A variable was created by categorizing into never married, married, widowed, divorced and separated.

3. Education-:

   The last level of education completed by the ASHAs was asked. A variable for the ASHAs education was created by categorizing into <8th standard, 8-9th standard, completed 10th standard, 11-12th standard, post 12th diploma/certificate course and graduation

4. Having Children less than five years of age -:

   A dichotomous variable was created for this, if ASHA said that she had a child less than five years of age then, she was assigned a score of "1" if she replied in negative then a score of "0" was assigned.

Work related Variables

1. Experience:-

   The categorical variable was created based on the response to the question "since when are you working as ASHA?"The categories were 6-12 months, 13-24months, 25-36 months and >36 months.

2. Rounds of Training:-

   The categorical variable was created depending on the number of rounds of training received. The categories were 1 round, 2 rounds, 3-4 rounds and >4 rounds.

3. Practical training:-

   A dichotomous variable was created for this, if ASHA said yes to have received practical training, then a score of "1" was assigned or otherwise '0" was assigned.

4. Training in the last 3 months:-

   A dichotomous variable was created for this if ASHA said yes to have received training in the last 3 months preceding the survey, then a score of "1" was assigned or otherwise '0" was assigned.

5. Time taken to reach the nearest PHC:-

   A categorical variable was created depending on the time taken to reach the nearest PHC. The categories were <30 minutes, 30-60 minutes, 61-120 minutes and >120 minutes.

3.4.2 Operational Definition for Dependent Variables

The operational definition for dependent variables were derived from the expected role of ASHAs vis-à-vis pregnancy related care, birth preparedness and complication readiness as per

NRHM GoI guidelines Annexure 1 JSY document , Annexure 2-D Operational Guidelines on Maternal and Newborn Health, Annexure 3: Format for individual plans- Birth preparedness.

1. Proportion of ASHAs with knowledge of essential components in ANC:-

   Numerator: Number(#) of ASHAs who spontaneously mention early registration, regular weight check, blood test for anemia, measurement of blood pressure, IFA tablets for 3 months, nutrition education,2 doses of tetanus toxoid, hygiene education, birth preparedness and complication readiness .Denominator: # of ASHAs interviewed

2. Proportion of ASHAs with knowledge of key danger signs during pregnancy-:

   Numerator: # of ASHAs who spontaneously mention the three key danger signs during pregnancy (severe vaginal bleeding, swollen hands/face, and blurred vision) Denominator: # of ASHAs interviewed

3. Proportion of ASHAs with knowledge of key danger signs during delivery-:

   Numerator: # of ASHAs who spontaneously mention the four key danger signs during labor/childbirth (severe vaginal bleeding, prolonged labor (>12 hours), convulsions, and retained placenta) and include severe bleeding Denominator: # of ASHAs interviewed

4. Proportion of ASHAs with knowledge of key danger signs during postpartum period-:

   Numerator: # of ASHAs who spontaneously mention the three key danger signs during the postpartum period (severe vaginal bleeding, foul smelling vaginal discharge, and high fever) Denominator: # of ASHAs interviewed

5. Proportion of ASHAs who provide essential antenatal care services-:

   Numerator: # of ASHAs who spontaneously mentioned actual provision services such as helping in registration for JSY scheme/ for ANC services, calculating date of delivery, providing home visits, helping with at least 3 ANC checkups, facilitating TT injections providing Iron/Folate tablets, invite them to attend health day, get nutrition supplements from Aanganwadi center in the last 1 month preceding the survey to pregnant woman. Denominator: # of ASHAs interviewed

6. Proportion of ASHAs who provide birth preparedness components:-

   Numerator: # of ASHAs who spontaneously mentioned actual provision services such as counsel for institutional delivery, explain cash assistance benefits for institutional delivery, explain transport assistance benefits for institutional delivery, identify a functional Government health centre or an accredited private health facility, identify institution for referral /delivery and identify blood donor in the last 1 month preceding the survey to pregnant woman. Denominator: # of ASHAs interviewed

7. Proportion of ASHAs who arrange for transport:-

   Numerator: # of ASHAs who spontaneously mentioned actual provision of transport services such as 108/auto/private vehicle,108 only, hospital ambulance, auto, families arranged and two wheeler of the families for pregnant woman. Denominator: # of ASHAs interviewed.

8. Proportion of ASHAs who helped provision of funds:-

   Numerator: # of ASHAs who spontaneously mentioned actual provision of funds by the way of counseling the families and pregnant woman, from VHSC funds or a combination, VHSC funds alone or no provision. Denominator: # of ASHAs.

9. Proportion of ASHAs who helped in the provision of blood/blood donor:-

   Numerator: # of ASHAs who spontaneously mentioned actual provision of blood/blood donor as doctor at the PHC/CHC, both ASHA and the doctor, only ASHA, NGO, combination of doctor, ASHA and NGO and no provision. Denominator: # of ASHAs.

10. Support received by the ASHAs from ANM,MO,AWW were examined from the qualitative information provided, which helped to examine the extent to which the support contributed to knowledge and service provision .

    1. Optimal support - If frequency >4 times per week and duration >2 hours or 1-2 hours per interaction
    2. Moderate support – If frequency 2-4 times per week and duration of <1 hour or 1-2 hours or > 2 hours per interaction and frequency >4 times per week and duration of <1 hour per interaction.
    3. Suboptimal support - If frequency > 2 times per week and duration < 1 hours or 1-2 hours or > 2 hours per interaction

3.5 Data collection techniques and tools

3.5.1 Development of the Interview Schedule

The semi-structured interview schedule was predominately adapted from the "Monitoring birth preparedness and complication readiness- tools and indicators for maternal and newborn health" The Maternal and Neonatal Health (MNH) Program of the JHPIEGO. The schedule was modified according to the training curriculum of the ASHAs and

operational guidelines on maternal and newborn health of the NRHM. This was carried out by me in consultation with an expert in field of Reproductive Health Research. It was developed in English which was translated into Kannada by an independent translator and then back translated into English by a third independent translator. This was done to improve the validity and reliability of my interview schedule.

The headings of the main sections of the 12 – page interview schedule are as follows-

1. Background information of ASHA
2. Pregnancy related Knowledge
3. Labor and childbirth related knowledge
4. Post partum care Knowledge
5. Antenatal care service provision
6. Support Mechanisms and barriers

3.5.2 Pre-testing

Pre-testing of the interview schedule was done in approximately 5% of the estimated sample size in a rural setting of another district in Karnataka and relevant modifications were carried out.

3.5.3 Data Collection Procedure:

Data collection was carried out over a six -week period from June to July 2011. I and my research assistant visited each PHC over a period of two days. On the first day, we introduced ourselves and explained the study objectives.

I also collected the phone numbers of the ASHAs from the PHC. My local research assistant helped to contact the ASHAs, convey the study aims, took initial consent over phone, and fixed a place convenient for them to be interviewed.

The second day was used to collect data. To avoid contamination of my data I collected the data from the ASHAs working under the same PHC and Sub center within a span of two days so as to avoid them discussing the type of questions asked. It was an interviewer administered method, where the research assistant read out the content of the interview guide and recorded as appropriate the responses of the respondent. The whole process of asking the knowledge based questions was unprompted. Spontaneous responses were expected of ASHAs. Spontaneous knowledge here refers to the ASHAs naming a sign or response without being asked about that sign by name.

It was very important not to change the meaning or interpretation of the danger sign when been translated to English from the local terminology. The research assistant helped me understand the danger sign as it was mentioned in the local dialect. I took utmost care to translate the names of danger signs in English as per the medical terminology reconfirming with other Medical officers when required.

To achieve the calculated sample size a total of 225 ASHAs from 18 PHC were contacted .There were 207 ASHAs who were found eligible according to my inclusion criteria and provided written consent. The non- response rate was 8%, which was lesser than the expected non-response rate of 10%.

3.6 Data analysis

The collected data were coded, entered, and cleaned, and analyzed by SPSS for windows version 17. The principal investigator coded all questionnaires before their administration. Completed questionnaires were sorted out, collated and cleaned. Cross validation and consistency checks were done. The results were presented in tables showing proportions of the distribution of the characteristics. Cross tabulations were used to compare the characteristics of chi square and p-value.

3.7 Ethical considerations

Ethical considerations involved ethical review, informed consent, confidentiality, as well as risks and benefits. Ethical clearance was obtained from Institute Ethics Committee (IEC); SCTIMST. Written informed consent was obtained from individuals found to be eligible and willing to participate in the study. Efforts were made to identify places for interviews which ensured privacy, participant convenience and no interruption. No information about ASHA's scores on knowledge questionnaires was shared with their supervisor or colleagues. Anonymity was maintained throughout this survey from the data collection up to the write-up of the dissertation. Data was securely handled by using a password on the computer which stored the data that has been entered as a soft copy as soon as it was collected. The computer which stored the data was handled by the researcher only. After all the data had been entered and stored in the computer, the hard copy of the questionnaires was stored in a locker and locked for safe keeping.

CHAPTER FOUR – RESULTS

4.1 Sample Characteristics

4.1.1 Socio-demographic characteristics

The median age of the ASHAs interviewed is 30 years; the range is 20- 57 years. Almost all were married 201(97.1%) Since there was an underlying assumption that ASHAs having children less than five years of age may not be able to spare adequate time to their work and responsibilities, the same included as a question. Only 39(18.8%) of the ASHAs had children below five years of age..

Though the Government of India guidelines mention ASHA s to preferably have at least 8th standard education to work, it allows for a lesser qualified women to take up work as ASHAs in case women with this minimum education level are not available. My study sample had 79(38.2%) of the ASHAs with less than the specified 8 th standard education. Of these there were around 16(7.2%) ASHAs had less than 4th standard education level.

Table 1: Socio-demographic characteristics of the sample population (N=207)

Variable	**n (%)**
Age	
20-24	23(11.1)
25-29	73(35.3)
30-34	72(34.8)
35-39	30(14.5)
>=40	9(4.3)
Marital Status	
Never Married	6 (2.9)
Married	201 (97.1)

Variable	n(%)
Children less than 5 years	
Yes	39(18.8)
No	168(81.2)
Education	
<8th standard	**79(38.2)**
8-9th standard	38(18.4)
completed 10th standard	67 (32.4)
11-12th standard	19 (9.2)
post 12th diploma/certificate course	2 (1)
graduation	2 (1)

Source: Primary survey, 2011

4.1.2 Work related characteristics

A vast majority 163 (78.7) of the ASHAs were working since two to three years.. Nearly two-thirds of the ASHAs, 136(65.7%) had received one round of training which is the 23 days of introductory training provided to all the ASHAs in the district , 69(33.3%) of them received 3-4 rounds of training and an insignificant proportion had received two rounds of training 2(1%). Induction training is to be completed in 23 days spread over a period of 12 months. The first round is of seven days, to be followed by another four rounds of training, each lasting for four days to complete induction training. After the induction training, periodic re-training is to be held for about two days, once in every alternate month at appropriate level for all ASHAs. During this training, interactive sessions will be held to help refresh and upgrade their knowledge and skills, trouble shoot problems they are facing, monitor their work and also for keeping up motivation and interest.

Competencies to be developed in ASHAs after 20 days of training include general competencies, maternal care and home based newborn care as specified in annexe 2-D operational guidelines on maternal and newborn health.

Majority172 (83.1%) of the ASHAs have not received any form of practical training. Only 35(16.9%) of the ASHAs reported undergoing some kind of practical training, 22 at the Taluka hospital and 13 at the district training centre. The content of practical training was predominantly home based newborn care, with little or no emphasis on issues during pregnancy and child birth.

Sixty – seven (32.4%) of the ASHAs said that that they received some form of training within the last three months preceding the survey.

Distance from the ASHA's home to the nearest PHC was included as a variable because this factor would affect the extent of supervision she may get, her interaction and involvement with the PHC activities and subsequently her service provision. A little less than a third of the ASHAs (64) could reach the nearest PHC within 30 minutes, 58(28%) and 54(26.1%) lived within a distance of between 30 minutes- 60minutes and,61minutes- 120 minutes respectively. A small number - 31(15%) - of the ASHAs reported took around 2 hours to reach the nearest PHC. They also reported having to spend money for the bus and private vehicles which were not reimbursed and so most of them came walking.

Table 2: Work Related Characteristics of the sample population (N-207)

Variable	n (%)
Experience	
6-12months	4 (1.9)
13-24months	9 (4.3)
25-36months	163 (78.7)
>36months	31 (15)
Training Received	
1round	136 (65.7)
2 rounds	2 (1)
3-4 rounds	69 (33.3)
Practical Training	
yes	35 (16.9)
no	172 (83.1)
Venue of Practical Training	
Taluka hospital	27(77.1)
Training centre	8(22.9)
Training within last 3 months	
yes	67(32.4)
no	140(67.6)
Time to reach nearest PHC	
<30 minutes	64(30.9)
30-60 minutes	58(28.0)
61- 120 minutes	54(26.1)
>120 minutes	31(15.0)

Source: Primary survey, 2011

4.2 Knowledge levels

4.2.1 Knowledge of the danger signs

Knowledge of the danger signs of obstetric complications is the essential first step in the appropriate and timely referral to essential obstetric care which is of critical importance in decreasing maternal mortality.

The ASHAs were asked to mention what they knew to be key danger signs during pregnancy, labor and child birth and immediate post postpartum (first 2 days) period. Their responses were compared against a list of key danger signs that may be considered as minimum essential knowledge for ASHAs.

The danger signs considered were derived from the ASHAs training curriculum, were selected as key because they are common, easy to recognize, and associated with a potentially severe problem. These were adapted from monitoring Birth preparedness and complication readiness tools and indicators for maternal and newborn health.

.Recognition of the problem, its perceived causes and feared outcome will generally determine how a problem is managed by ASHAs. For this reason the knowledge of danger signs was followed by whether they perceived it to be fatal or not (all key danger signs are associated with a high risk of maternal death).

Table 3: Key danger signs during pregnancy, labor and child birth and post partum period

Key danger signs during		
Pregnancy	**Labor and child birth**	**Post partum period**
1. Severe vaginal bleeding 2. Swollen hands/face 3. Blurred vision	1. Severe vaginal bleeding 2. Prolonged labor (> 12 hours) 3. Convulsions 4. Retained placenta	1. Severe vaginal bleeding 2. Foul-smelling vaginal discharge 3. High fever

Source: JHPIEGO/Maternal and Neonatal Health Program, Knowledge of key danger signs, Indicators 1.1 to 1.3.

Apart from the key danger signs identified by us, the following correct danger signs were also noted when spontaneously mentioned by respondents

Table 4: Other danger signs during pregnancy, labor and child birth and post partum period

Other Danger signs during		
Pregnancy	**Labor and child birth**	**Post partum period**
• convulsions • severe headache • high fever • loss of consciousness • difficulty breathing • severe weakness • severe abdominal pain • accelerated/ reduced fetal movement • water breaks without labor	• severe headache • high fever • loss of consciousness	• severe headache • blurred vision • convulsions • swollen hands/face • loss of consciousness • difficulty breathing • severe weakness

Source: JHPIEGO/Maternal and Neonatal Health Program Section3.Knowledge

Table 5: Knowledge of key danger signs during pregnancy, labor and child birth and post partum period

Knowledge levels N(207)	**Pregnancy N (%)**	**Labor and child birth N (%)**	**Post partum N (%)**
All Key danger signs + Others	15 (7.2)	0	9(4.3)
All key Danger signs	0	2(1)	1(.5)
Not all key danger signs	152(73.5)	186(89.8)	188(90.9)
None of the key danger signs	40(19.3)	19(9.2)	9(4.3)
Aware that the condition could be fatal N(207)	**Pregnancy N (%)**	**Labor and child birth N (%)**	**Post partum N (%)**
All Key danger signs + Others	13(6.3)	0	6(2.9%)
All key Danger signs	0	0	1(.5)
Not all key danger signs	142(68.6)	177(85.5)	169(81.2)
None of the key danger signs	52(25.1)	30(14.5)	31(15)

Source: Primary survey, 2011

a. Knowledge of the danger signs during pregnancy

Only 15 (7.2%) ASHAs correctly identified all key danger signs considered by the study plus a few other danger signs. Thirteen (6.3%) considered the stated danger signs to be potentially life threatening and two ASHAs did not consider danger signals severe enough to take action. None of the key danger signs were mentioned by 40(19.3%).

b. Knowledge of the danger signs during labor and child birth

The knowledge of the respondents of key danger signs during labor and child birth was very poor with only 2(1%) of the ASHAs correctly identifying the key danger signs considered in this study. Nineteen (9.2%) respondents had no idea on any of the key danger signs. The fatality perception was equally bad with none of them considering the key danger signs potentially fatal.

c. Knowledge of the danger signs during immediate post partum period

Around 9(4.3%) of the ASHAs mentioned all the key danger signs plus a few others, only 6(2.9%) considered it potentially fatal. Though not all key danger signs were mentioned by 188(90.9%) a vast majority of respondents mentioned excessive vaginal bleeding as a key danger sign leaving out foul smelling vaginal discharge and high fever. This suggests the post partum hemorrhage was a high priority danger sign for most of the ASHAs as 169(81.2%) of them also considered it potentially fatal. 31(15%) of the ASHAs considered none of the key danger signs fatal.

d. Scoring of Knowledge of key Danger signs

The number of key danger signs was three, four and three during pregnancy, labor and child birth and post partum period respectively. A composite knowledge score of the key danger signs was computed by summing up the responses obtained in all the three scenarios for each respondent. The maximum score would be 10 and the minimum would be zero.

Table 6: Scoring of knowledge of key danger signs (N=207)

Scoring of Key Danger signs	n (%)
Score 0-3 - Very poor	114(55.1)
Score 4-5 - Poor	78(37.7)
Score 6-7 - Average	15(7.2)
Score 8-10	None

Source: Primary survey, 2011

4.2.2 Knowledge related to antenatal care service delivery

According to the ASHAs training curriculum all women should receive four routine antenatal (ANC) checkups. To detect problems associated with pregnancy and childbirth, WHO recommends attending four ANC visits, with the first visit occurring during the first trimester. National policies vary regarding the number of visits and in India though ideally four ANC checkups are indicated at least 3 ANC checkups are considered mandatory. Though ANC cannot prevent the major complications of childbirth; never the less it is believed that certain ANC interventions can lead to early detection and timely intervention reducing the number of poor maternal outcomes.

a. Components of Antenatal care

A majority of the ASHAs correctly spontaneously mentioned most of the eight components as specified by the training modules.[2]However only 72(34.8) reported

[2] The components also include birth-preparedness and complication readiness, but these have not been considered because they are discussed in detail subsequently.

hygiene education to be an essential component. Nutrition education as an essential component was reported by only 138(66.7%) of the respondents.

The maximum score for correct knowledge of essential components of ANC, on a scale of 0-8, was eight and the minimum was two. About half (50.2%) of the ASHAs mentioned seven or eight of the eight essential components as suggested by her training curriculum

Table 7: Knowledge and score of essential ANC components (N=207)

Antenatal care components spontaneously mentioned	**Components N (%)**	**Essential Components N (%)**
Regular weight check	150(72.5)	149(72)
Blood test for anemia	204(98.6)	204(98.6)
Urine test for protein and sugar	188(90.8)	184(88.9)
Measuring blood pressure	197(95.2)	196(94.7)
IFA for 3 months	199(96.1)	193(93.2)
Nutrition Education	141(68.1)	138(66.7)
2 Doses of Tetanus Toxoid	204(98.6)	205(99)
Hygiene Education	73(35.3)	72(34.8)
Scoring of Essential Components of ANC		**N (%)**
Score 2-6 - Average		103(49.8)
Score 7-8 -Good		104(50.2

Source: Primary survey, 2011

b. Frequency and Timing of ANC checkups

Frequency of the ANC checkups were reported correctly by 186(89.9%) of the respondents. The vast majority 204(98.6%) of the ASHAs also accurately mentioned the timing of the first ANC checkup as to be in the 1st trimester.

Table 8: Frequency and timing of ANC checkups

Frequency and Timing of ANC checkups (N=207)	Correct responses n (%)
#Frequency of ANC checkups	186(89.9)
$Timing of 1st ANC checkup	204(98.6)

Source: Primary survey, 2011

3 and 4 ANC checkups considered as correct responses

$ 1st trimester considered correct response

c. Information to be provided during home visits

Table 10 below presents the activities that were expected to be spontaneously mentioned for the questions on information provided to pregnant women and her family during home visits, and responses to these.

Surprisingly, the information regarding maternal complications being unpredictable but treatable and discussing the signs and symptoms of complications during pregnancy and delivery were two important information neglected by all the respondents. A meager proportion of 28(13.5%) of ASHAs ever mentioned the fact that all pregnant women are at risk of developing pregnancy related complications.

Table 9: Information Expected to be provided to pregnant women and their families

Information Expected to be Provided to pregnant women and their families (N=207)	Yes n (%)	No n (%)
That all pregnant women are at risk of developing pregnancy related complications	28(13.5)	179(86.5)
That maternal complications are unpredictable but are treatable	0	207(100)
That completing all three ANC visits is important	144(69.6)	63(30.4)
Discussions on plans for delivery (e.g. intention of where to deliver, who the pregnant woman wants to be present at her delivery, contingency plans in the event of complications	25(12.1)	182(87.9)
Signs and symptoms of complications during pregnancy and delivery	0	207(100)

Source: Primary survey, 2011

d. Knowledge related to Birth preparedness plan

The three delays mentioned in my conceptual framework for Birth Preparedness and complication readiness is common and predictable. In order to address these three delays, ASHAs have the responsibility to inform the women and families to be prepared in advance and ready for any rapid emergency action during pregnancy and delivery. Table 10 below indicates the information spontaneously expected for the question on things that a woman is expected to do, in order to be well prepared for birth and the responses to these. These are adapted from the Birth Micro Plan[3] of the ASHAs of her training curriculum.

[3] Annex 3: Format for individual plans- Birth preparedness) and Operational guidelines on Maternal and Newborn Health of the NRHM

Table 10: Knowledge and score of Birth preparedness information steps

Birth Preparedness Steps Information to be provided (N=207)	Yes N (%)	No N (%)
Identify health facility	174(84.1)	33(15.9)
Identify skilled provider	43(20.8)	164(79.2)
Identify mode of transport	157(75.8)	50(24.2)
Save money for delivery	173(83.6)	34(16.4)
Save money for transportation	86(41.5)	121(58.5)
Identify blood donor	7(3.4)	200(96.6)
Identify the person who will escort to skilled care	10(4.8)	197(95.2)
Prepare clean items for birth	171(82.6)	36(17.4)
Birth Preparedness Information Score	**N (%)**	
Excellent -Score 8	**3(1.4)**	
Good-Score 4-7	**147(71)**	
Poor -Score 1-3	**57(27.5)**	

Source: Primary survey, 2011

Although 174(84.1%) of the ASHAs mentioned identification of a health facility for delivery, only 43(20.8%) of had mentioned identifying a skilled person to carry out the delivery. About 75 per cent of the ASHAs mentioned the identification of some or the other mode of transport as part of the birth-preparedness plan.

A vast majority of the ASHAs 173(83.6%) noted advising the women to save money every month in a piggy bank to pay for delivery and transport expenses as part of preparing for birth. However, only 7(3.4%) of the respondents knew that a blood donor needed to be identified, a major omission in terms saving maternal lives.

Only 10(4.8%) of the respondents mentioned identifying an escort to accompany the women for delivery.

An emergency response mechanism in any pregnancy is a combination of the above steps and in the context of my study it is ASHAs responsibility to help her develop a birth preparedness plan.

e. Scoring for knowledge of Birth preparedness information

The score for the birth preparedness information (8 steps) was computed for each respondent from the components mentioned above. The maximum score was 8 and the minimum was 1.Only 3 (1.4%) of the respondents exactly did what was expected of them as per their training curriculum. However, a vast majority (71%) scored 4-7, while about a quarter 27.5%) scored poor with 1-3 score.

4.2.3 Knowledge of post partum checkups and advice

Getting postpartum care soon after giving birth is crucial for the health o the woman. This visit could be in response to a problem, or just for a routine checkup. The question I asked was how many times should a mother have post partum checkup after birth. The answer expected was three times: at 6 hours, 6 days, and 6 weeks postpartum and any time she has danger signs.

Unfortunately none of the ASHAs could mention the correct frequency for post partum care. Here, I also got answers like if the birth took place in a health facility and happened to be a normal delivery, there was no need for post partum checkup. Also, some of the ASHAs opined that the post partum care was for the newborn and not for the mother.

Table 11: Knowledge on advice to be given during Post partum Home visits

Advice to be given during Post partum Home visits	N (%)
Rest for at least 6 weeks	0
Eat more food especially high protein foods	177(85.5)
Exclusive breast feeding for 6 months	203(98.1)
Need for contraception	5(2.4)

Source: Primary survey, 2011

The post partum care training which is covered in ASHA module 2, suggests the above mentioned four activities to be undertaken during post partum home visits. It is the responsibility of ASHAs to counsel the woman and her family to rest for at least weeks after childbirth and not to engage in heavy manual labor. None of the ASHAs reported advice on rest for at least 6 weeks after delivery as a component of information to be given during the postpartum visit. ASHAs also has the responsibility on discussing the need for contraception ; caution the woman the risk of unprotected sex, importance of spacing the next birth for her own health and that of the baby and help her make a choice of family planning. ASHAs did not seem to know that this was a part of home visits after delivery. This is a major lacuna.

But majority of them mentioned advocating for exclusive breast feeding for 6 months and essential advice to postpartum women.

4.3 Service Provision by the ASHAs

4.3.1 Antenatal Care Service Provision

There are various components of ANC provision that ASHAs are expected to deliver as per her training curriculum. Two questions were asked: one on what she is expected to provide, and another on what she actually provided. Knowledge of what is to be done is of course a major factor that would influence whether the concerned service is provided. In addition, the actual provision is subject to various factors such as level of supervision, and other background variables and work related variables discussed in the sample characteristics.

Table 12: Antenatal care Service provision

Antenatal care Service provision spontaneously mentioned	Actual Provision in the last 1 month N (%)
Helping in registration for JSY scheme/ for ANC services	207(100)
Calculating date of delivery	58(28)
Providing Home visits	202(97.6)
Helping with at least 3 ANC checkups	202(97.6)
Facilitating TT injections	205(99)
Providing Iron/Folate tablets	88(42.5)
Invite pregnant women to attend health day	138(66.7)
Get nutrition supplements for pregnant women from Aanganwadi center	7(3.4)

Source: Primary survey, 2011

Calculation of expected date of delivery was very low 58(28%). Only 42.5% provided

iron and folate tablets. This was reportedly because these tablets were not available at the facility. The women were advised to buy the medicines privately from the local pharmacy.

Though her curriculum suggests that she help the pregnant lady get the nutrition supplements from the Aanganwadi center, the ASHAs here were not providing the same which needs further exploration.

4.3.2 Birth Preparedness Service Provision

Table 13: Birth Preparedness service provision

Birth Preparedness Service provision Provision	**Actual**
Counsel for institutional delivery	204(98.6)
Explain cash assistance benefits for institutional delivery	203(98.1)
Explain transport assistance benefits for institutional delivery	191(92.3)
Identify a functional Government health centre or an accredited private health facility for delivery	185(89.4)
Identify Institution for referral /delivery	3(1.4)
Identify blood donor	1(.5)

Source: Primary survey, 2011

Counseling for institutional delivery was provided by the vast majority (98.6%) ASHAs.

Almost all the ASHAs 203(98.1%) reportedly mentioned cash benefits assistance for institutional delivery. Majority 191(92.3%) of the ASHAs explained transport assistance benefits available.

We saw earlier that a very small proportion of ASHAs knew that identifying an institution for referral and a blood donor were components of birth preparedness. This is reflected in the finding that only 4.3 per cent of the respondents said that they identified an institution for referral, almost no one 1(0.5%) actually did identify the blood donor.

4.3.3 Provision of Emergency transport, Funds and Blood

The "108 Emergency service" a free service delivered through state- of -art emergency call response centers across various states in India is exclusively sought by ASHAs in 58(28%) of the cases. This 108 ambulance service can be availed by people by dialing a toll free 108 from landline or any cell service providers service in case of any medical emergency . A combination of 108 services, auto, or other private vehicle like taxis were used in case of emergencies according to 81(39.1%) of the respondents. It was said that in case 108 services replied that it would take longer, they opted for either auto or taxi which was very expensive for the families to afford. But overall the ASHAs were of opinion that the 108 services were good.

Table 14: Emergency Transport Provision

Emergency Transport Provision (N=207)	N (%)
108/Auto/private vehicle	81(39.1)
108	58(28)
Families arrange	45(21.7)
Auto	20(9.7)
Hospital Ambulance	2(1)
Two wheeler of families	1(.5)

Source; Primary survey, 2011

The time taken to arrange transport for perceived high risk was asked to find out the extent of delay experienced once they decided to seek care This also was an indication of how the health system and other community resources were prepared to help the pregnant women in times which were critical. It was reported that around 100 (48.3%) of the ASHAs took more than 30 minutes to arrange transport in times of emergency. Only 26(12.6%) of the ASHAs took less than 15 minutes to arrange transport.

After arranging for transport to reach the health facility it took more than two hours for normal deliveries in 11(5.3%) of the ASHAs responses. The pregnancies perceived to be high risk in 19(9.2%) of the responses took less than 30 minutes and in 50(24.2) responses took more than two hours in reaching the higher health facility. This clearly suggests that in nearly one-fourth of the perceived high risk cases had delay of more than two hours just to reach the facility, which was critical period for the health of both mother and the child.

Table 15: Provision of Funds in pregnancy

Provision of Funds in pregnancy (N=207)	N (%)
Counsel women and family to save money	136(65.7)
Counsel women and family to save money + Arrange VHSC funds	57(27.5)
VHSC funds alone	2(1)
No provision	12(5.8)

Source; Primary survey, 2011

As for provision of funds for seeking delivery care, although exclusive counseling to save money for delivery was done by a vast majority of the ASHAs 136(65.7%), a little more than a quarter of them arranged the funds from Village Health and Sanitation Committee (VHSC) in addition to the counseling. VHSC reported to have helped with an amount of Rupees two hundred towards transport expenses in the case of very poor families. Unfortunately, there was no provision of funds by 12 (5.8%) of the ASHAs.

It was reported that even in the case of normal deliveries there was a cost of less than two hundred rupees to reach the health facility in nearly three – fourth of the cases and in nearly a quarter of the perceived high risk pregnancies it cost more than five hundred rupees which is definitely unaffordable by the families living in poverty.

Table 16: Provision of blood/blood donor

Blood/ Blood donor Provision (N=207)	N (%)
Doctor at PHC/CHC helps	112(54.1)
Both ASHA and doctor help	34(16.4)
Only ASHA	2(1)
NGO	1(.5)
Doctor+ ASHA+NGO	13(6.3)
No provision	45(21.7)

Source: Primary survey,2011

The ASHAs also reported that in more than half of the situations needing blood/blood donor the doctor at the PHC/CHC was solely responsible was arranging blood. Unfortunately, ASHA reported no provision of blood or didn't know how to do it in nearly a quarter of the cases.

4.4 Supportive factors and barriers

From the analysis of qualitative responses, four major themes emerged from the narratives of 37 ASHAs practicing / non practicing Birth preparedness and complication Readiness.

There were factors operating at the individual, family, community and the health system levels during instances of her service provision towards pregnant woman.

i. Individual level

It was reported by nearly 165(79.7%) of the respondents that they felt rewarded working as ASHA.

Table 17: Reasons for feeling rewarded(N=207)

Reasons for feeling rewarded	n(%)
Recognition in community	3(1.4)
Ability to make a difference in other women's lives	35(16.9)
Being able to help others	149(72)
Opportunity to learn new thing	21(10.1)
Appreciation from superior	0

Source: Primary Survey ,2011

Nearly a quarter of ASHAs who did not feel rewarded cited the lack of payment as a major reason. Nearly three-fourth of the respondents said they felt rewarded as they were of some help to the woman in their villages. Sadly, none of the respondents cited as been appreciated by their superiors as the reason .This certainly would have an effect on their motivation level and subsequently affect their service provision.

Individual narratives showed the high level of motivation on the part of many ASHAs. "*When every pregnant lady I escort /help delivers a healthy baby and she is also healthy, I feel rewarded.*"

In many instances, ASHAs advanced money for transportation and other medical expenses out of pocket.

Table 18 :Themes from the Qualitative responses

Individual level
• ***Motivated to help others***
• ***No basic facility to stay overnight at health facility***
• ***Lack of awareness of birth preparedness components***
Family Level
• ***Lack of support due to non – payment***
• ***Need for frequent home visits deprive other means of livelihood***
• ***Tensions within the family if needed to escort women at night***
Community level
• ***Lack of awareness about blood donation***
• ***Irregular payment for transport from VHSC funds***
• ***Lack of support from community men during night***
• ***Illiteracy and ignorance of house holds***
• ***Poverty stricken households***
• ***Lack of awareness regarding ASHAs roles and responsibilities***
Health system level
• ***Multiple referral***
• ***Lack of blood bank facility***
• ***Delays in giving treatment to an obstetric emergency***
• ***Poor conditions at health facilities***
• ***Irregular supply of IFA***
• ***Placement of the PHC***
• ***Irregular payment***
• ***Support from ANM***
• ***Lack of appreciation from superiors***
• ***Certification issues at referral centers***
• ***Informal payments at the district hospital and other hospital staff in various facilities.***

"Once a pregnant lady had to undergo C-section as baby was upside down, but the family didn't agree to take the patient to the referral hospital for monetary reasons. I spent my money and took the pregnant lady to the hospital. The doctor told me if she was not brought

immediately and C-section was not done the baby would not have survived. I felt much rewarded."

At the same time, their motivation is dampened by the lack of basic facilities the health system offers the ASHAs.

There is no facility to for us to stay overnight with the pregnant woman in the hospital. We are shooed off by the ANMs and the doctors. We take some bed sheet and sleep in the corridors and wait till the woman delivers. We are left hungry because it is expensive for us to buy food from outside."

Some were promised money if they had to stay overnight with the patient, but it was never given.

Motivation was also dampened by the irrational way in which they were being held responsible by health care providers should things go wrong.
"It is very difficult for me to arrange blood if required. The zilla hospital does not have blood. The doctors ask me to arrange blood from Hospet which is very far 35/- by bus. They also ask me to sign a paper saying if by the time blood comes, the lady dies it is my responsibility. I feel very confused and scared during these times."

ii. Family and community level

Given that most of my respondents were young married women, the support from their families was very important to carry on their responsibilities. It was seen that the ASHAs almost always accompany woman to hospital. This required travelling long distance, staying

overnight and sometimes even longer. The demands of her work were creating tensions at home. They felt that they would be called for at any time of the day to help woman and children of her villages, so was not in a position to take up any other means of livelihood.

Irregular payment even after a month of work (discussed later in this section) deprived tne ASHA of the support from her husband and in-laws to efficiently discharge her duties.

The ASHAs felt there needed to be awareness among the community in the villages that they had a role of helping the pregnant women..

"I want more support from the Grama panchayat member; these people are not very cooperative to help me with the duties and timely release of VHSC funds for transport."

Often, little support was forthcoming even from the families of the pregnant women who the ASHAs were helping.

"Around a year back I took a patient to the district hospital from where the case was referred to a private hospital .The patient's husband also accompanied the patient to the hospital. They said blood was needed. When the husband contacted his family members in his village to come to donate blood, the family told him nobody would give blood and he himself shouldn't donate blood and asked to get the patient back to the village immediately. It didn't matter if the patient died or survived. I tried convincing the husband but the husband was also not ready to donate blood. I told him I would arrange blood myself. I called up my relatives to come with some money and also asked them to donate blood. Two of my relatives donated blood and saved the patient. This was very difficult and rewarding

experience for me."

The determination and motivation ASHAs showed which helped save a life is worth applauding.

iii. Health system level

We examined the frequency and duration of interaction of ASHAs with their superiors as an indicator of the extent of support that ASHAs received from the health system. For the purpose of my analysis support from the ANM , Medical Officer and Anganwadi worker was divided into three categories-

4. Optimal- If frequency >4 times per week and duration >2 hours or 1-2 hours per interaction
5. Moderate – If frequency 2-4 times per week and duration of <1 hour or 1-2 hours or > 2 hours per interaction and frequency >4 times per week and duration of <1 hour per interaction.
6. Suboptimal - If frequency > 2 times per week and duration < 1 hours or 1-2 hours or > 2 hours per interaction

Table 19: Interaction with ANM, MO and AWW

Interaction N=207	ANM N (%)	MO N (%)	AWW N (%)
Optimal	57(27.5)	11(5.3)	46(22.2)
Moderate	103(49.8)	45(21.7)	91(44)
Suboptimal	47(22.7)	151(72.9)	60(29)
None	0	0	10(4.8)

Source: Primary Survey ,2011

Since ANMs were the people to be contacted first and equally accessible in 204(98.6%) of the cases, only the support from ANM is considered for further analysis. There may, however, be exceptions to this. In the open-ended responses, one of the ASHAs said-

"*Sometimes ANM is not cooperative, she (ANM) wants half of the money what I get*".

It could be well understood that it is the quality of interaction and not the quantity which matters. So, the question which was subsequently asked was, "What were the three areas of discussion during interaction?"

It was reported that the areas of discussion with the ANMs were on topics of ANC registration, recent births/deaths and fever cases among the households in the village in that order of importance. In addition they reported to have discussed TB/Malaria cases, smear taking for fever cases, counseling issues of ANC and PNC during home visits, immunization of children in the descending order of importance.

The areas of discussion with the Medical officers were all complicated issues of pregnancy such as need of blood, completion of all ANC checkups, certification issues including payment problems and other health problem seen at their villages in that order of importance. These discussions usually happened at the monthly meetings at the PHC.

The areas of discussion with the AWW were on immunization, weighing children and organizing the health day at the Aaganwadi centers in that order of importance. They also discussed new pregnancies and childbirths in their villages.

Narratives of ASHAs, however, pointed to many health-system created barriers to ASHAs effective functioning. One of major demotivators was that ASHAS were not being paid regularly. Irregular payment and not getting the initial promised amount for helping pregnant

woman was reported by almost all the respondents.

"I need regular payment. Because of no money my husband wants me to quit this job as I even have to go out at night".

Informal payments in the form of bribes at the district hospital and by other hospital staff in various facilities makes the task oif motivating women for institutional deliveries especially hard.

"Doctors need to cooperate and understand a poor woman's condition; instead they ask for bribes, so the patients are going to the RMPs."

ASHAs also seem to be at the receiving end from families for many health-system failures. For example, the ASHA was held accountable by families for repeated referral from one health facility to another, but ASHAs were not in a position to neither clarify nor understand the reasons for referrals.

"Two months back, there was a pregnant woman with severe bleeding.. I called the 108 and got the patient to the PHC, from here the case was referred to the district hospital .We took the patient there, but no doctors were available and no treatment was given. Then we took her to a private hospital. Some tests were done and the hospital said that the patient was severely anemic, The patient was again referred to the Hospet 100 bed government hospital were only saline was given. Then again referred to the Bellary district where the bleeding was brought under control. Some injections and blood was also given. But the patient had no BPL card. The family was very poor. They had to spend 22,000/-, but JSY gave them 700/."

There was an instance when a respondent tries to help a difficult pregnancy and after much persuasion takes the woman to a higher facility but the doctor who sees the patient is unresponsive.

"Last month I brought a pregnant lady with severe bleeding to the PHC, the doctor here immediately referred her to CHC. I, husband and mother in law of the pregnant lady accompanied her to the CHC. The doctor saw the patient gave her 2 injections and said he had a very urgent meeting to attend and was a very tough case for him to handle and left. After the doctor left the patient was a severe pain, then the ANM put the gloves and helped her deliver a healthy baby girl."

An interesting finding that stood out from the narratives was the quality of the ANC. There are instances when breech position and blood groups of the pregnant woman were unknown till the time of delivery. Also there were high levels of eclampsia cases.

There were several narratives indicative of pre-eclampsia, eclampsia, eclamptic convulsions, ante-partum hemorrhage and post- partum hemorrhage which are very well major causes of obstetric emergencies. Why that is pre-eclampsia has not been detected in ANC? If pre- eclampsia is not detected then how does one manage or let ASHA know what to do or how and what to counsel?

4.5 Bivariate Analysis

4.5.1 Factors associated with the knowledge scores of key danger signs

There was no difference in the knowledge scores of key danger signs as related to the background variables such as age, marital status, education and child less than five years However, the work related variables such as training, practical training and training in the last three months the preceding the survey were significantly associated.

Table 20: Factors associated with the knowledge scores of key danger signs

Work Related Characteristics	Knowledge scores of the Key danger signs				
	0-3 N (%)	4-5 N (%)	6-7 N (%)	P value	Total
Experience					
6-12months	4(100)	0	0		4
13-24months	4(44.4)	4(44.4)	1(11.1)	.24	9
25-36months	85(52.1)	64(39.3)	14(8.6)		163
>36months	21(67.7)	10(32.3)	0		31
Training					
1round	89(65.4)	41(30.1)	6(4.4)	.00*	136
2 rounds	1(50)	1(50)	0		2
3-4 rounds	24(34.8)	36(52.2)	9(13)		69
Practical training					
yes	13(37.1)	17(48.6)	5(14.3)	.03*	35
no	101(58.7)	61(35.5)	10(5.8)		172
Training in the last 3 months					
yes	24(35.8)	35(52.2)	8(11.9)	.00*	67
no	90(64.3)	43(30.7)	7(5)		140
Time to reach nearest PHC					
<30 minutes	34(53.1)	24(37.5)	6(9.4)	.80	64
30-60 minutes	31(53.4)	21(36.2)	6(10.3)		58
61- 120 minutes	31(57.4)	21(38.9)	2(3.7)		54
>120 minutes	18(58.1)	12(38.7)	1(3.2)		31

*Source: Primary Survey ,2011 (*p value < 0.05 significant)*

4.5.2 Factors associated with the Knowledge scores of essential components in ANC

There was no difference in the knowledge scores of essential ANC components as related to the background variables such as age, marital status, education and child less than five years. Never the less, work related characteristics such as experience, training, practical training and training in the last three months preceding the survey were seen to be significantly associated.

Table 21: Factors associated with the knowledge scores essential components of ANC

Work Related Characteristics	**Essential components of ANC**			
	Score 2-6 N (%)	**Score 7-8 N (%)**	P value	Total
Experience				
6-12months	2(50)	2(50)		4
13-24months	3(33.3)	6(66.7)	.00*	9
25-36months	74(45.4)	89(54.6)		163
>36months	24(77.4)	7(22.6)		31
Training				
1round	81(59.6)	55(40.4)	.00*	136
2 rounds	1(50)	1(50)		2
3-4 rounds	21(30.4)	48(69.6)		69
Practical training				
yes	6(17.1)	29(82.9)	.00*	35
no	97(56.4)	75(43.6)		172
Training in the last 3 months				
yes	21(31.3)	46(68.7)	.00*	67
no	82(58.6)	58(41.4)		140
Time to reach nearest PHC				
<30 minutes	35(54.7)	29(45.3)	.21	64
30-60 minutes	33(56.9)	25(43.1)		58
61- 120 minutes	23(42.6)	31(57.4)		54
>120 minutes	12(38.7)	19(61.3)		31

*Source: Primary Survey ,2011 (*p value < 0.05 significant)*

4.5.3 Factors associated ANC service provision

There was no significant association between the knowledge levels of the respondents for essential ANC activities and the corresponding service provision.

However the work related characteristics such as training, recent training and the ANM support were significantly associated with ANC service provision.

Table 22: ANM support as associated with ANC service provision

	ANC Service provision			
ANM Support	**2-5 Steps** N (%)	**6-8 steps** N (%)	P value	Total
Optimal	32(56.1)	25(43.9)	.00*	57
Moderate	69(67)	34(33)		103
Suboptimal	11(23.4)	36(76.6)		47

Source: Primary Survey ,2011 (*p value < 0.05 significant)

Table 23: Work Related Characteristics as related to ANC service provision

Work Related Characteristics as related to ANC service provision	Number of activities in ANC service provision			
	2-5 activities N (%)	**6 -8 activities N (%)**	P value	Total
Experience				
6-12months	4(100)	0		4
13-24months	6(66.7)	3(33.3)	.22	9
25-36months	87(53.4)	76(46.6)		163
>36months	15(48.4)	16(51.6)		31
Training				
1round	86(63.2)	50(36.8)		136
2 rounds	1(50)	1(50)	.00*	2
3-4 rounds	25(36.5)	44(63.8)		69
Practical training				
yes	17(48.6)	18(51.4)	.47	35
no	95(55.2)	77(44.8)		172
Training in the last 3 months				
yes	23(34.3)	44(65.7)	.00*	67
no	89(63.6)	51(36.4)		140
Time to reach nearest PHC				
<30 minutes	35(54.7)	29(45.3)		64
30-60 minutes	31(53.4)	27(46.6)	.98	58
61- 120 minutes	30(55.6)	24(44.4)		54
>120 minutes	16(51.6)	15(48.4)		31

Source: Primary Survey ,2011 (*p value < 0.05 significant)

Birth preparedness service provision was seen to be significantly associated with the knowledge score of Birth preparedness plan. Work characteristics such as experience, training, practical training, recent training had a significant association with birth preparedness service provision.

Table 24: Birth preparedness knowledge as related to birth preparedness service provision

Birth preparedness Knowledge score	Birth preparedness service provision activities			
	1-4 activities N (%)	5-7 activities N (%)	P value	Total
Score 8	2(66.7)	1(33.3)		3
Score 4-7	145(98.6)	2(1.4)	.00*	147
Score 1-3	57(100)	0		57

Source: Primary Survey ,2011 (*p value < 0.05 significant)

4.5.4 Factors associated with provision of emergency transport, funds and blood

There was no significant association in the provision of emergency transport as related to the birth preparedness knowledge score. However the work related characteristics such as practical training and the time taken to reach the nearest PHC were seen to be significantly associated with transport provision.

Similarly it was seen that a significant association existed between the birth preparedness knowledge score and the subsequent funds and blood/blood donor provision. Training was the only work related characteristic associated with blood/blood donor provision.

Table 25: Birth preparedness knowledge as related to blood/blood donor provision

Birth preparedness Knowledge score	Blood/Blood donor provision N(%)					
	No provision	Doctor at PHC/CHC	Only ASHA / ASHA+ Dr	NGO only / Dr + ASHA + NGO	P value	Total
Score 8	0	1(33.3)	1(33.3)	1(33.3)		3
Score 4-7	26(17.7)	81(55.1)	29(19.7)	11(7.5)	.04*	147
Score 1-3	19(33.3)	30(52.6)	6(10.5)	2(3.5)		57

*Source: Primary Survey, 2011 (*p value < 0.05 significant)*

rounds of training can definitely affect their knowledge competencies. The fact that recent training made a difference to knowledge scores may be owing to the low educational status of the ASHAs, and definitely highlights the special needs of the CHWs in Koppal and similarly less developed districts.

Despite the overall low levels of knowledge of danger signs, a vast majority (>80%) of ASHAs knew about post partum hemorrhage as a danger sign and also that it was life threatening. This suggests that they were aware of scenarios which were routinely seen, but did not know enough about danger signs which are unpredictable but equally life threatening. It also signals that there is a need to focus on practical knowledge especially on identifying danger signs, in taluka and district hospital settings.

Another related finding causing concern was that none of the ASHAs reported having discussed the signs and symptoms of pregnancy related complications during home visits.

They lacked the most important lesson that training should or could have imparted, i.e.; every pregnancy faces risks and being prepared for it is of paramount importance for better maternal health outcomes. This study shows that neither the ASHAs nor the community were aware that every pregnancy is risky and were not alerted to refer pregnant women to the health facilities at the crucial stage. Then how could one expect better maternal health outcomes? This is absolutely in agreement with the preexisting evidence that acknowledgement of the emergency during pregnancy and the discussion on course of action seldom happens in poverty stricken rural settings.[33]

Another finding which is in absolute agreement with the NHSRC 8 state evaluation[9] is the neglect of post partum care. None of the ASHAs were able to correctly mention the

frequency of post partum checkups and the advice for contraception was given by a meager 2.4% of the ASHAs.

The second objective of this study documents the extent of service provision during the ANC period and delivery. The findings in this study for service provision is very similar to the report of the 8 state evaluation by the NHSRC in 2011.[9] The focus appears to be on providing information on JSY benefits. Essential aspects of service provision during pregnancy were neglected. Only 28% of the respondents actually calculated the date of delivery for the pregnant woman, 42.5% provided IFA, 3.4% helped getting nutrition supplements from the Aaganwadi centers. Even worse, only 1.4% identified an institution for referral and .5% identified a blood donor.

As far as the findings of my third objective which explored the provision of emergency transport, funds and blood donor, it was seen that the time taken just to arrange emergency transport was greater than 30 minutes in 48.3% of the responses. The time taken to reach the health facility took more than two hours for normal deliveries in 5.3% and in 24.2% responses took more than two hours in cases perceived to be of high risk to reach the higher health facility. This is no better than a previous study in Nepal that found 36% of families who decided to seek care and got transport in 2 hours, 15 percent in 2- 2.5 hours.[36]

Though 65.7% helped mobilize funds for delivery, there were a quarter of ASHAs who had no clue on blood donor or blood provision. Here too as emergencies were not anticipated, time is wasted looking for funds, blood donor, transportation and the most appropriate health facility as seen in Pakistan and Nepal.[33, 36]

In contrast to an earlier study in South Asia which suggested that the reproductive health education to the woman and their families were restricted due to weak / nonexistent linkages between the community and the health system[33] this study shows that though ASHA forms an interface between the health system and the community, for various reasons the health system is unsupportive and unresponsive.

For example, there were many indications of the poor quality of antenatal care in the narratives of ASHAs. There were instances when breech position and RH negative blood groups of the pregnant woman were unknown till the time of delivery. Also there were several cases narrated indicative of pre-eclampsia, eclampsia and eclamptic convulsions. This makes one wonder as to why pre-eclampsia was not detected in ANC, and raises questions as to how ASHas can be expected to counsel and prepare for obstetric emergencies if there were such lacunae in services.

Narratives of ASHAs also show that although they are highly motivated and strive to rise to the challenge of saving maternal lives, the dysfunctional health care system in the district thwarts their efforts in many ways: inadequate training, unresponsiveness of health providers, informal payments, repeated referrals and lack of accountability to patients. Irregular payments of their modest remuneration and lack of respect from health providers at various levels add to these difficulties.

Thus it is seen that being an ASHA seems to be being in an unenviable position. She is answerable to the community if things go wrong with women going through pregnancy and delivery , but lacks the skills and knowledge as well as the supervisory and logistical support

from the health system. So, ASHA bears the brunt of both the health system and the community.

5.2 Strengths of the study

1. The study is comprehensive in that the knowledge of the key danger signs, service provision, supervisory and support aspects of CHWs on maternal health outcomes has been explored.
2. It was able to meet its aim and the objectives and provided an understanding of the different factors that determine the birth preparedness and complication Readiness practices at the level of ASHAs, community and to an extent the health system.
3. Qualitative part of the survey supplemented and illuminated the quantitative part making the study more complete and relevant.
4. This study could serve as a baseline data, as evidence suggests that improvement in knowledge levels can be very small when compared to all health care interventions so, even small improvements in the area of knowledge of key danger signs can be regarded as significant program achievements.
5. Data contamination was highly minimized as the ASHAs working in the same PHC/SC were interviewed within a span of 2 days.
6. Since the data was collected by a single investigator, inter observer variability has been avoided.

7. This study is a worst case scenario; meaning in a district which is placed at the bottom of human development index in Karnataka, so the findings can be definitely generalized to all the backward districts across India.
8. Right context and timing of the study –since six years with the launch of JSY and ASHAs playing a role there was no study in the district of Koppal and in the state of Karnataka.

5.3 Limitations of the study

1. There may be a bias in the responses as the respondents were approached through the health system.
2. The presence of a research assistant during the time of interview to help me translate the local dialect may have biased the responses.
3. Follow up of study will be needed to further explore the caste class dimensions and the other qualitative aspects explored.

5.4 Policy Recommendation

The government has no doubt taken steps toward implementing JSY that contribute to decreased maternal and infant mortality and morbidity and also to women's increased access to comprehensive and affordable reproductive healthcare services. However, to continue on this same track, operational policies need to be updated and new policies introduced. These policies will ensure that access to services is expanded to further reduce maternal and neonatal morbidity and mortality.

The data collected in this study suggest the following areas for policy change:-

1. Targeting institutional deliveries is not the only solution for reducing MMR. The issue more crucial is the identification of high risk pregnancies and giving them priority care. ASHAs must be trained to identify women experiencing complications and to refer them directly to the facility equipped to provide comprehensive Emergency Obstetric Care (EmOC).
2. Practical training at taluka (sub-district) and district showing ASHAs how to identify signs and symptoms of complications during pregnancy , childbirth and post partum period with lessons and practical training on immediate first aid, should to taken up immediately by the concerned authorities. The focus should be on key danger signs.
3. Training, practical training should be reinforced by repeated learning of the lessons taught at least three monthly intervals considering the low educational status of the ASHAs in the district.
4. All ASHA supervisors including the ANMs and the MO should have a checklist according to the work of the ASHAs. These should focus on problem solving depending on the contextual factors affecting the service provision. These data should be also used to understand the areas which need to be stressed during discussions and training.
5. The regulation to supply uninterrupted medicines in particular IFA and timely replenishment of ASHAs drug kit should be done.
6. Lack and irregular payment of monetary benefits to ASHAs is seen as a major deterrent to her work. Regular and timely payment to these workers will not deter the spirit of these well motivated ASHAs.

7. The promised Madilu kit which contains 19 items for mother and infant care for BPL / Schedule Caste and Schedule Tribe families, 1st two live births and seen as an incentive by many families should reach the needed uninterrupted.

In addition, many of the health system barriers that hinder ASHAs' work also need to be addressed.

8. It is essential to increase the number of facilities offering comprehensive EmoC and to improve quality of care by training providers at these facilities to offer timely care to women with complications.
9. With the number of AYUSH doctors manning the PHCs it becomes essential to train them to handle obstetric emergencies to avoid irrational and multiple referrals.
10. Blood banks needs to be started at all taluka (sub-district) level hospital and blood should be made available free to all BPL families.
11. Provision for scanning at the sub district hospitals and quality of the laboratory tests need attention. The CHC infrastructure including uninterrupted power supply should be stressed on.
12. Strict regulation is required to handle corruption and rampant informal payments at various health facilities.
13. The provision of funds for fuel from the hospital in case the poor patients have to use the hospital ambulance if 108 services are not available should be made.
14. The provision for an over bridge construction at railway crossings to avoid delays reaching the health facility should be eyed upon.

5.5 Conclusion

In conclusion, the ASHA cadre in India created to address the problem of high maternal mortality has great potential given that they are a very large number, are in the prime of their lives with a high level of motivation and are working at the grassroots.

Unfortunately, it is seen that the best motivated ASHAs in most situations will not be able to save lives of women because their training misses out on all the key knowledge and skills that the ASHAs need in order to save maternal lives. The health system does not provide them with adequate back-up support and is ill-equipped and unresponsive overall. The need of the hour is appropriate training for ASHAs located within a supportive, functioning and responsive health system.

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Interview Schedule for ASHA

Identification No. ----------

District ----------

Block/PHC/CHC ----------

Village ----------

Name of the sub centre ----------

Start Time..... End Time..... Date.....

Q No.	Question	Options	Code
1. Background information of ASHA			
1.	Name		bi01
2.	What is your age?	1. <30 years ☐ 2. 30-39 years ☐ 3. 40-49 years ☐ 4. >50 years ☐	bi02
3.	What is your current marital status?	1. Single ☐ 2. Married ☐ 3. Widowed ☐ 4. Divorced ☐ 5. Separated ☐	bi03
4.	Do you have children less than 5 years of age?	1. Yes ☐ 2. No ☐	bi04
5.	What is highest level of education you have completed?	1. <10th standard ☐ 2. Completed 10th standard ☐ 3. 11th- 12th standard ☐ 4. Post 12th Diploma/ certificate course ☐ 5. Graduation ☐ 6. Post Graduation ☐	bi05
6.	Since when are you working as ASHA?	1. 6 months – 12 months ☐	bi06

		2. 13-24 months ☐ 3. 25-36months ☐ 4. >36 months ☐	
7.	How many rounds of training have you received?	1. 1 round ☐ 2. 2 rounds ☐ 3. 3-4 rounds ☐ 4. >4 rounds ☐	bi07
8	Did the training include any practical content?	1. Yes ☐ 2. No ☐	bi08
9.	If yes, where did you go for practical training?	1. Government district Hospital ☐ 2. Taluka hospital ☐ 3. CHC ☐ 4. PHC ☐ 5. Sub centre ☐ 6. Private Hospital ☐ 7. Private Maternity Center ☐ 8. Home ☐ 9. Other(Specify) ----------	bi09
10.	Did you receive any training in the last 3 months?	1. Yes ☐ 2. No ☐	bi10
11	How long does it take from your home to reach the nearest primary health centre?	1. <30 minutes ☐ 2. 30 minutes- 60minutes ☐ 3. 61minutes- 120 minutes ☐ 4. >120 minutes ☐	bi11

2. Pregnancy related – knowledge

12.	In your opinion, what are some serious health problems that can occur during pregnancy that could endanger the life of a pregnant woman?	**Key Danger signs** 1. *bleeding* ☐ 2. *swollen hands/face* ☐ 3. *blurred vision* ☐	**Other Danger signs** 1. *convulsions* ☐ 2. *severe headache* ☐ 3. *high fever* ☐ 4. *loss of consciousness* ☐ 5. *difficulty breathing* ☐ 6. *severe weakness* ☐ 7. *severe abdominal pain* ☐ 8. *accelerated/ reduced fetal movement* ☐ 9. *water breaks without labor* ☐ 10. *other (Specify)*----------	p k12

All key danger signs+ Others ☐----------1
All Key danger signs ☐---------- 2
Not all key danger signs ☐----------3

13.	In your opinion, could a woman die from any of above mentioned problems?	**Key Danger signs** 1. *bleeding* *yes* ☐ *no* ☐ *don't know* ☐ 2. *swollen hands/face* *yes* ☐ *no* ☐ *don't know* ☐ 3. *blurred vision* *yes* ☐ *no* ☐ *don't know* ☐ **Other Danger signs** 1. *convulsions* *yes* ☐ *no* ☐ *don't know* ☐ 2. *severe headache* *yes* ☐ *no* ☐ *don't know* ☐ 3. *high fever* *yes* ☐ *no* ☐ *don't know* ☐ 4. *loss of consciousness* *yes* ☐ *no* ☐ *don't know* ☐ 5. *difficulty breathing* *yes* ☐ *no* ☐ *don't know* ☐ 6. *severe weakness* *yes* ☐ *no* ☐ *don't know* ☐ 7. *severe abdominal* 8. *pain* *yes* ☐ *no* ☐ *don't know* ☐ 9. *accelerated/ reduced* *fetal movement* *yes* ☐ *no* ☐ *don't know* ☐ 10. *water breaks without* *labor* *yes* ☐ *no* ☐ *don't know* ☐ *Other (specify)*_____	pk13

All key + other danger signs considered fatal ☐---------*1*
All Key danger signs considered fatal ☐----------*2*
other danger signs considered fatal ☐------*3*

		OPTIONS	COMPONENTS OF ANTENATAL CARE (16)	ESSENTIAL COMPONENTS (17)	
14	In your opinion, what are the **components** of antenatal care?	1. Regular weight check			pk14
		2. Blood test for anemia			
		3. Urine test for protein and sugar			
		4. Measuring blood pressure			
15.	**Essential components** to reduce complication in pregnant woman?	5. IFA tablets for3months			pk15
		6. Nutrition education			
		7. Two doses of tetanus toxoid immunization			
		8. Hygiene education			

		9. Birth preparedness plan			
		10. Complication readiness			
		11. Others (Specify)-			
16.	What information do you provide while you visit pregnant women and their families?	1. That all pregnant women are at risk of developing pregnancy related complications ☐ 2. That maternal complications are unpredictable but are treatable ☐ 3. Importance of ANC visits ☐ 4. Discussions on plans for delivery (e.g. intention of where to deliver, who the pregnant woman wants to be present at her delivery, contingency plans in the event of complications. ☐ 5. Signs and symptoms of complications during pregnancy and delivery ☐ 6. Other (Specify)---------- *All essential information provided* ☐----------*1* *Some essential information provided* ☐----------*2* *Most essential information not provided* ☐----------*3*			pk16

17.	How many antenatal checkups should a pregnant woman have?	1. Three ☐ *2.* Four ☐ *Correct Answer* ☐-------*1* 3. >Four ☐ *Incorrect answer* ☐------*2*	pk17
18.	When should a pregnant woman have the 1st antenatal checkup?	1. 1st trimester ☐ 2. 2nd trimester ☐ *Correct answer* ☐----------1 *3.* 3rd trimester ☐ *Incorrect answer* ☐----------2	Pk18

3. Labor and Childbirth - Knowledge

19.	In your opinion, what are some serious health problems that can occur during labor and childbirth	**Key Danger Signs** 1. *Severe vaginal bleeding* ☐ 2. *Prolonged labor (> 12 hours)* ☐ 3. *Convulsions* ☐	**Other Danger Signs** 1. *severe headache* ☐ 2. *high fever* ☐ 3. *loss of consciousness* ☐	lck19

	that could endanger the life of Pregnant Woman?	4. *Retained placenta beyond 30 minutes* ☐	4. *Other (Specify)* _____	

All key danger signs+ Others☐----------1
All Key danger signs☐---------- 2
Not all key danger signs☐----------3

20.	In your opinion, could a woman die from any of these problems?	**Key Danger Signs** 1. *severe vaginal bleeding* yes☐ no☐ don't know☐ 2. *labor lasting >12 hour* yes☐ no☐ don't know☐ 3. *convulsions* yes☐ no☐ don't know☐ 4. *retained placenta beyond 30 minutes* yes☐ no☐ don't know☐ **Other Danger Signs** 1. *severe headache* yes☐ no☐ don't know☐ 2. *high fever* yes☐ no☐ don't know☐ 3. *loss of consciousness* yes☐ no☐ don't know☐ 4. *other(Specify)* _____	lck20

All key + other danger signs considered fatal☐---------1
All Key danger signs considered fatal☐----------2
other danger signs considered fatal☐------3

21.	In your opinion, what are some things a woman can do to prepare for birth?	1. identify health facility ☐ 2. identify skilled provider ☐ 3. identify mode of transport ☐ 4. save money for delivery ☐ 5. save money for transportation ☐ 6. identify blood donor ☐ 7. identify the person who will escort to skilled care☐ 8. prepare clean items for birth ☐ 9. Others(Specify)---------- *All essential information stated* ☐----------1 *Some essential information stated* ☐----------2 *Most essential information not stated* ☐----------3	lck21

4. Postpartum Care - knowledge

22.	In your opinion, what are some serious health problems that can occur during the first 2 days after birth that could endanger the life of the woman?	**Key Danger Signs** 1. *Severe vaginal bleeding* ☐ 2. *Foul-smelling vaginal discharge* ☐ 3. *High fever* ☐	**Other Danger Signs** 1. *severe headache* ☐ 2. *blurred vision* ☐ 3. *convulsions* ☐ 4. *swollen hands/face* ☐ 5. *loss of consciousness* ☐ 6. *difficulty breathing* ☐ 7. *severe weakness* ☐ 8. *other(Specify)* _____	pck22
		All key danger signs+ Others ☐----------1 All Key danger signs ☐---------- 2 Not all key danger signs ☐----------3		
23.	In your opinion, could a woman die from any of these problems?	**Key Danger Signs** 1. *Severe vaginal bleeding* *yes* ☐ *no* ☐ *don't know* ☐ 2. *malodorous vaginal discharge* *yes* ☐ *no* ☐ *don't know* ☐ 3. *high fever* *yes* ☐ *no* ☐ *don't know* ☐ **Other Danger Signs** 1. *severe headache* *yes* ☐ *no* ☐ *don't know* ☐ 2. *blurred vision* *yes* ☐ *no* ☐ *don't know* ☐ 3. *convulsions* *yes* ☐ *no* ☐ *don't know* ☐ 4. *swollen hands/face* *yes* ☐ *no* ☐ *don't know* ☐ 5. *loss of consciousness* *yes* ☐ *no* ☐ *don't know* ☐ 6. *difficulty breathing* *yes* ☐ *no* ☐ *don't know* ☐ 7. *severe weakness* *yes* ☐ *no* ☐ *don't know* ☐ 8. *other(Specify)*		pck23
		All key + other danger signs considered fatal ☐---------*1* All Key danger signs considered fatal ☐----------*2* other danger signs considered fatal ☐-------*3*		
24.	In your opinion, how many times should a mother have postpartum checkup after child birth?	1. Once at 3 weeks postpartum ☐ 2. Once, at 6 weeks postpartum ☐ 3. 3 times: at 6 hours, 6 days, and 4. 6 weeks postpartum ☐ *Correct Answer* ☐-------*1* 5. Any time she has danger sign ☐ *Incorrect Answer* ☐-----*2* 6. Only if she has danger signs ☐ 7. Other(specify)----------		pck24
25.	In your opinion, during the postpartum visit what should you advice the mother?	1. Rest for at least 6 weeks ☐ 2. Eat more food especially high protein foods ☐ 3. Exclusive breast feeding for 6 months ☐ 4. Need for contraception methods ☐ 5. Others (specify)----------		pck25

26.	In your opinion, what things would you advice regarding breastfeeding?	1. Start breastfeeding immediately ☐ 2. Breastfeed at least 8-10 times in 24 hours. ☐ 3. Baby should not be given any other foods for 6 months ☐ 4. Correct position for breastfeeding ☐ 5. Others (specify)----------	pck26

5. Antenatal Care service provision

27. Which antenatal services are you expected to provide to pregnant women?

What is the actual provision of services in the last 1 month?

1. ANTENATAL CARE SERVICE	EXPECTED TO PROVIDE (a)	ACTUAL PROVISION (b)	
1. Helping in registration for JSY scheme/ for ANC services			asp27.1(a) asp27.1(b)
2. Calculating date of delivery			
3. Providing Home visits			
4. Helping with at least 3 ANC checkups			
5. Facilitating TT injections			
6. Providing Iron/Folate tablets			
7. Invite them to attend health day			
8. Get nutrition supplements from Aanganwadi center			
9. Others(specify)			

2. BIRTH PREPAREDNESS SERVICE	EXPECTED TO PROVIDE (a)	ACTUAL PROVISION (b)	asp27.2(a) asp27.2(b)
1. Counsel for institutional delivery			
2. Explain cash assistance benefits for institutional delivery			
3. Explain transport assistance benefits for institutional delivery			
4. Identify a functional Government health centre or an accredited private health facility			
5. Identify Institution for referral /delivery			
6. Identify blood donor			
7. Others (specify)			

28.	Where do you advise a pregnant woman to go in case of delivery,		NORMAL (a)	COMPLICATED (b)	asp28
		1. Government district Hospital			
		2. Taluka Hospital			
		3. CHC			
		4. PHC			
		5. Private Hospital			
		6. Private Maternity Center			
		7. Home			
		8. Other(specify)			
29.	In general, how long would it take to reach this health facility?		NORMAL (a)	COMPLICATED (b)	asp29
		1. Less than 30 minutes			
		2. 30 minutes – 60minutes			
		3. 61 minutes – 120 minutes			
		4. More than 2 hours			
30.	What is the total cost of transportation from home to facility?		NORMAL (a)	COMPLICATED (b)	asp30
		1. < Rs 200/-			
		2. Rs 201-500/-			
		3. >Rs 500/-			
31.	In your opinion, how are the services in this facility? Would you say they are excellent, good, average, or poor?		NORMAL (a)	COMPLICATED (b)	asp31
		1. Excellent			
		2. Good			
		3. Average			
		4. Poor			
		5. Don't know			

32.	Can you tell me why you have ranked the services as above?		NORMAL(a)	COMPLICATED (b)	asp32
		1. doctor always there			
		2. facility always open			
		3. staff respond to my questions			
		4. facility always has necessary medicines/blood			
		5. not a long wait			

	was in danger?		
b.	Where did you take her?		asp35b
c.	How did you take her there?		asp35c
d.	Who all accompanied the woman?		asp35d
e.	What services did the woman receive once she arrived at the facility?		asp35e
36.	Can you think of a most difficult experience when you dealt with a complicated pregnancy?-		asp36
37.	Can you think of a most rewarding experience of having successfully helped a pregnant woman in your community?		asp37

6. Support mechanism & barriers

38.	Do you feel rewarded in your role as ASHA?	1. Yes ☐ 2. No ☐	sb38
39.	If yes, What makes you feel rewarded about being ASHA?	1. recognition in community ☐ 2. Ability to make a difference in other women's lives ☐ 3. Being able to help others ☐ 4. Opportunity to learn new thing ☐ 5. Appreciation from superior ☐ 6. Others(Specify)----------	sb39

40.	What can be done to making you communicate more effectively with pregnant woman?	1. Provision of Flip book / Chart / Posters ☐ 2. Support from ANM / AWW during home-visit ☐ 3. On job support for conducting counseling sessions at AWC / VHND ☐ 4. Support for conducting group meetings / counseling sessions ☐ 5. Other (Specify)	sb40
41.	Whom do you first contact when you have difficulty in interacting with pregnant woman?	1. Aaganwadi worker ☐ 2. ANM ☐ 3. Medical officer ☐ 4. Others(specify) ----------	sb41
42.	Who is more accessible to you?	1. Aaganwadi worker ☐ 2. ANM ☐ 3. Medical officer ☐ 4. Others(specify) ----------	sb42

43	What is the nature of your interaction with ANM, medical officer at the health facility with respect to pregnant woman?	Supervisor	Frequency	Duration	Location	Three areas where most time is spent	sb43
		ANM (a)				1. 2. 3.	
		Medical officer (b)				1. 2. 3.	
		Others (c)				1. 2. 3.	
44.	Where you feel you need more support in helping Pregnant woman of your community?						sb44

Appendix 2

Annexure-1

Role and responsibilities of ASHA under Janani Suraksha Yojna

(Related to ANC services to pregnant women only)

The Janani Suraksha Yojana has identified ASHA, the accredited social health activist as an effective link between the Government and the poor pregnant women in I0 low performing states, namely the 8 EAG states and Assam and J&K and the remaining NE States. In other eligible states and UTs, wherever, AWW and TBAs or ASHA like activist has been engaged in this purpose, she can be associated with this Yojana for providing the services. Role of ASHA or other link health worker associated with JSY would be to:

- Identify pregnant woman as a beneficiary of the scheme and report or facilitate registration for ANC,
- Assist the pregnant woman to obtain necessary certifications wherever necessary,
- Provide and / or help the women in receiving at least three ANC checkups including TT injections, IFA tablets,
- Identify a functional Government health centre or an accredited private health institution for referral and delivery,
- Counsel for institutional delivery,

Tracking Each Pregnancy: Each beneficiary registered under this Yojana should have a JSY card along with a MCH card. ASHA/AWW/ any other identified link worker under the overall supervision of the ANM and the MO, PHC should **mandatorily prepare a micro-birth plan**. Please see **Annexure – I**. This will effectively help in monitoring

Essential Strategy

- It should be ensured that ASHA keeps track of all expectant mothers and newborn. All expectant mother and newborn should avail ANC and immunization services, if not in health centres, atleast on the **monthly health and nutrition day, to be organised in the Anganwadi or sub-centre**:
  - Each pregnant women is registered and **a micro-birth plan** is prepared **(please see Annexure-1)**
  - Each pregnant woman is tracked for ANC,
  - For each of the expectant mother, a place of delivery is pre-determined at the time of registration and the expectant mother is informed,
  - A referral centre is identified and expectant mother is informed,

14. Monitoring by ANM

14.1 Monthly Meeting at Sub-centre Level: For assessing the effectiveness of the implementation of JSY, monthly meeting of all ASHAs / related health link workers working under an ANM should be held by the ANM, possibly on a fixed day (may be on the third Friday) of every month, at the sub-center or at any of Anganwadi Centres falling

under the ANM's area of jurisdiction. If Friday is a holiday, meeting could be held on following working day.

14.2 **Prepare Monthly Work Schedule:** In the monthly meeting, the ANM, besides reviewing the current month's work vis-à-vis envisaged activities, should prepare a Monthly Work Schedule for each ASHA / village level health worker of following aspects of the coming month:

- **Feed back on previous month's schedule -**

  (a) Number of pregnant women missing ANCs,
  (b) No. of cases, ASHA/link worker did not accompany the pregnant women for Delivery,
  (c) Out of the identified beneficiary, number of Home deliveries,
  (d) No. of post natal visits missed by ASHA,
  (e) Cases referred to Referral Unit (FRU) and review their current health status,
  (f) No. of children missing immunization.

- **Fixing Next Month's Work Schedule (NMWS):** To include -

(i) (i) Names of the identified pregnant women to be registered and to be taken to the health center/Anganwadi for ANC,
(ii) (ii) Names of the pregnant women to be taken to the health center for delivery (wherever applicable),
(iii) (iii) Names of the pregnant women with possible complications to be taken to the health center for check-up and/or delivery,
(iv) (iv) Names of women to be visited (within 7 days) after their delivery,
(v) (v) List of infants / newborn children for routine immunization,
(vi) (vi) To ensure availability of imprest cash,
(vii) (vii) Check whether referral transport has been organized.

Annexure-I

Annexure -1 MICRO-BIRTH PLAN FOR JSY BENEFICIARIES

STEP	Activity	To be undertaken by	Proposed Time Line
1.	Identification and Registration of beneficiary	ANM/ASHA/AWW or any link worker	At least 20-24 weeks before the expected date of delivery.
2.	Filling up of Maternal and Child card (In duplicate – one each for mother and ASHA/Link worker) (This will form part of the JSY'S Registration	ANM/ASHA/AWW or an equivalent link worker	Immediately on registration

	Card).		
3.	4 I-s': Inform dates of 3 ANC & TT Injection (s) Identify the health center for all referral Identify the Place of Delivery Inform expected date of delivery	ANM/ASHA/AWW or an equivalent link worker Provide the 1st ANC immediately on Registration. ASHA to follow up the ANCs at the Anganwadi Centres/Sub-center (SC) and ensure that the beneficiary attends the SC/Anganwadi centre /PHC for ANC on the indicated dates Motivation: ANM should call the beneficiary to the Anganwadi/SC to participate in the Monthly meeting and explain enhanced cash and Transport assistance benefits for Institutional delivery.	Immediately on registration
4.	Collecting BPL or necessary proofs /certificates Wherever necessary from Panchayat / local bodies / Municipalities	ANM/ASHA/AWW or an link worker	Within 2-4 weeks from Registration
5.	Submission of the completed JSY card in the Health center for verification by the authorized/Medical officer. II. Take necessary	MO, PHC ANM/ASHA/AWW/link Worker	At least 2-4 weeks before the expected date of delivery

	steps toward arranging transport or making available cash to the beneficiary to come to the Health Centre III. Ensure availability of fund to ANM/Health worker/ASHA etc.	ANM/ MO, PHC	
6.	Payment of cash benefit / incentive to the mother and ASHA	ANM/ MO, PHC	At the institution.

For complicated cases or those requiring cesarean section etc:

Ac –1	Pre-determine a Referral health center and intimate the pregnant women	**By ANM/ASHA/link worker**
Ac –2	Familiarize the woman with the referral centre, if necessary carry a letter of referral from MO PHC	**ANM/ASHA/link worker**
Ac –3	Pre-organize the transport facility in consultation with family members/community leader	**ANM/ASHA/Community**
Ac –4	**Arrange for the medical experts** if the same is not available in the referred heath center	**MO, PHC**

(Source of information Ministry of Health and Family Welfare website on NRHM

http://mohfw.nic.in/dofw%20website/JSY_features_FAQ_Nov_2006.htm)

Competencies to be developed in ASHA after 20 Days of Training

Appendix 3- Annexe 2-D Operational guidelines on maternal and newborn health

Competencies	Knowledge required	Skill required
General Competencies	□ Knowledge about qualities that need to be inculcated to successfully work as ASHA □ Knowledge about village and its dynamics □ Clear understanding of role and responsibilities □ Understanding of who are the marginalised and the specifi c role in ensuring that they are included in health services	□ Conducting a village level meeting □ Communication skills – especially interpersonal communication and communication to small groups □ Skill of maintaining diary, register and drug stock card. □ Tracking benefi ciaries and updating MCH/ Immunisation card.
Maternal Care	□ Key components of antenatal care and identifi cation of high risk mothers □ Complications in pregnancy that require referral □ Detection and management of anaemia □ Facility within reach, provider availability, arrangement for transport, escort and payment □ Understanding labour processes (helps to understand and plan for safe delivery) □ In malaria endemic areas, identify malaria in ANC and refer appropriately □ Understanding obstetric emergencies and readiness for emergencies including referral	□ Diagnosing pregnancy using Nishchay kit □ Determining the Last Menstrual Period (LMP) and calculating Expected Date of Delivery (EDD) □ Tracking pregnant women and ensuring updated Maternal Health Cards for all eligible women □ Developing birth preparedness plans for the pregnant woman. □ Screening of pregnant woman for problems and danger signs and referral □ Imparting a package of health education with key messages for pregnant women □ Attend and observe delivery and record various events □ Recording pregnancy outcomes as abortion, live births, still birth or

		newborn death) □ Recording the time of birth in Hrs, Min and Seconds, using digital wrist watch
Home-Based Newborn Care	□ Components of essential newborn care □ Importance of early and exclusive breastfeeding □ Common problem of initiating and maintaining breastfeeding which can be managed at home □ Signs of ill health or a risk in a newborn	□ Provide normal care at birth (dry and wrap the baby, keep baby warm and initiate breastfeeding) □ Observation of baby at 30 seconds and 5 minutes for movement of limbs, breathing and crying □ Conduct examination of new born for abnormality. □ Provide care of eyes and umbilicus □ Measure newborn temperature □ Weigh newborn and assess if baby is normal or low birth weight □ Counsel for exclusive breastfeeding □ Ability to identify hypothermia and hyperthermia in newborns □ Keep newborns warm
Sick Newborn Care	□ Knowledge of risks of pre-term and low birth weight. □ Knowledge of referral of sick newborns – when and where?	□ Identify low birth weight and pre-term babies. □ Care for LBW, pre-term babies □ Identify birth asphyxia (for home deliveries) and manage with mucus extractor □ Manage breastfeeding problems and support breastfeeding of LBW/Pre-term babies □ Identifi cation of signs of sepsis and symptomatic management. □ Diagnose newborn sepsis and manage it with cotrimoxazole

Appendix 4- Annexe 3: Format for Individual Plans

(Birth Preparedness

Name: Age:

Husband's name:

HH income

LMP

EDD

Past pregnancy history (Include abortion, if any):

Order of pregnancy	Date of delivery (Month and Year)	Place of delivery: Home, SC, PHC, CHC, DH, Private Nursing Home	Type of delivery: Natural, Forceps, C-Section	Birth Outcome: Live Birth, Stillborn,	Age and Status of child currently	Any other complications: Fever, Bleeding
First						
Second						
Third						

• Any risk factors:

• Nearest SBA: Phone:

• Nearest 24X7 PHC: Distance: Time: Cost

• Nearest Sub-Centre with a Skilled Birth A endant

• Nearest CHC with facilities to manage complications: Distance:

Time: Cost

• Distance to District Hospital:

• How much is transport going to cost?

• Is the vehicle fixed: Owner: Phone No.:

• Will we need extra money for the treatment? How to organize it?

• Who will take care of the children when mother goes to the facility?

• Who will accompany her to the facility?

• Where will they stay?

• How will they finance their stay?

• Have they organized clothes and blankets for the ba

Appendix 5 - Informed consent

BIRTH PREPAREDNESS AND COMPLICATION READINESS OF ASHAs UNDER THE SAFE MOTHERHOOD INTERVENTION PROGRAMME OF NRHM

RESEARCH SUBJECT INFORMATION SHEET

This study is being carried out as part of the course requirement for post-graduate studies (Masters in Public Health) in Achutha Menon Center for Health Science Studies, Sree Chitra Tirunal Institute for Medical Sciences, Trivandrum which I am currently undertaking. This consent form may contain words that you do not understand. Please ask me if any words or information is not clearly understood by you.

Purpose of the Study

ASHAs are first person in a community to be contacted for any health related problems, especially of women and children. You have undergone training to create awareness, promote good health practices and counsel women on birth preparedness, importance of safe delivery in your community. Training also helps you to promote institutional deliveries, through provision of referral, transport, and escort services in order to have healthy outcomes of pregnancy and childbirth.

This survey is carried out to understand whether the trainings you receive, help you to strengthen your knowledge and skills and the support you get from higher authorities is adequate to carry out your assigned tasks. These findings will be used to provide feedback to the authorities about aspects that are done well and suggestions for aspects that can be improved.

You have been chosen through a random or chance process of selection much like picking an orange out of a basket without looking. A total of about 225 subjects will be included and interviewed as part of this study.

Procedure

The interview would take approximately 30 - 45 minutes of your valuable time. You will be asked questions in private. The questions asked will be on your background information,

and knowledge based, related to pregnancy, childbirth and immediate post birth care, antenatal services, and the provision of the same. Also, some questions pertaining to the the type of support you receive or would want to receive to carry out your tasks will also be asked.

This collected data will be used for research purposes only. I may contact you again if the collected information was found to be incomplete. If you choose not to participate, this decision will not affect your employment at this health facility in any way.

No information about your scores on knowledge questionnaires will be shared with your supervisor or colleagues, nor will it affect your job status.

Benefits

There may not be any direct benefit for you from this study. The information collected from you and from other participants will help to provide some general feedback to the facility about aspects that are done well and suggestions for aspects that can be improved.

Confidentiality

You will be interviewed in private. All information related to you will be kept confidential and at no stage will your identity be revealed. A respondent identification number will be assigned to each participant that will help in maintaining the confidentiality of the data collected. Access to this number will be restricted to those analyzing the data only.

Contact Information

If you have any research related questions, you may contact me or any of the below mentioned persons at the following address:

Dr.Smitha P.K MPH scholar 2010, AMCHSS SCTIMST, Trivandrum-11 Cell: 09495391378	Dr.T.K Sundari Ravindran Professor,AMCHSS, SCTIMST Trivandrum - 11 Tel: 0471-2524233	Dr. Anoop kumar.T Member Secretary, Institute Ethics Committee, SCTIMST Trivandrum Tel:0471-2520256

Voluntary Participation

Your participation in this study is purely voluntary which means you can decide whether to participate in the study or not. You can refuse to answer any question I ask. If at any stage you wish to discontinue, you are free to do so without any adverse consequences. You can also refuse to participate in the study entirely.

Interviewer's Name with signature: Date:

BIRTH PREPAREDNESS AND COMPLICATION READINESS OF ASHAs UNDER THE SAFE MOTHERHOOD INTERVENTION PROGRAMME OF NRHM

CONSENT FORM

I have read / been read out the information in the information sheet. The nature of the study and my involvement has been explained and all my questions have been answered satisfactorily. By signing this consent form, I indicate that I understand what will be expected from me and that I am willing to participate in this study. I know that I can withdraw at any time. I have been informed who should be contacted if the need arises.

Respondent's Name:

Respondent's Signature

Date: