“Identification of lacunae in Newborn and Postpartum Care services in a Tribal Block (Pavi Jetpur) of Vadodara district, Gujarat”

A dissertation submitted in partial fulfillment of the requirements for the award of

Post-Graduate Diploma in Health and Hospital Management

by

Swati Mahapatra

International Institute of Health Management Research

New Delhi -110075

Jan-Apr. 2011

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under the guidance of

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Certificate of Internship Completion

Date: 25.04.2011

TO WHOM IT MAY CONCERN

This is to certify that **Ms. Swati Mahapatra** has successfully completed her 3 months internship in our organization from January 17, 2011 to April 20, 2011. During this internship period she has worked on **"Identification of lacunae in Newborn and Postpartum Care Services in a Tribal Block (Pavi Jetpur) of Vadodara District, Gujarat"** under the guidance of me and my team at **Deepak Foundation**.

During her association with the foundation, she has contributed significantly in all the activities that were assigned to her. Her performance was excellent!

We wish her good luck for her future assignments.

Archana Joshi
Director
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Certificate of Approval

The following dissertation titled **"Identification of lacunae in Newborn and Postpartum Care services in a Tribal Block (Pavi Jetpur) of Vadodara district, Gujarat"** is hereby approved as a certified study in management carried out and presented in a manner satisfactory to warrant its acceptance as a prerequisite for the award of Post-**Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

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Certificate from Dissertation Advisory Committee

This is to certify that **Ms. Swati Mahapatra**, a participant of the **Post - Graduate Diploma in Health and Hospital Management**, has worked under our guidance and supervision. She is submitting this dissertation titled **"Identification of lacunae in Newborn and Postpartum Care services in a Tribal Block (Pavi Jetpur) of Vadodara district, Gujarat"** in partial fulfillment of the requirements for the award of the **Post-Graduate Diploma in Health and Hospital Management.**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Anupama Sharma
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Abstract

Identification of lacunae in Newborn and Postpartum Care services in a Tribal Block (Pavi Jetpur) of Vadodara district, Gujarat.

by

Swati Mahapatra

Achievement of Millennium Development Goals 4 and 5 of reducing MMR and IMR is of paramount importance for additional gains in maternal and child survival. This requires that the critical gaps in our understanding of maternal and neonatal mortality be identified and addressed. Hence there was a need to understand the lacunae in newborn and postpartum care services and to focus on improving utilization of these services especially in tribal blocks of Vadodara district. This was done through assessment of knowledge, awareness and practices on newborn and postpartum care services among healthcare providers and beneficiaries. The constraints faced by the providers in delivering these services were assessed and the causes of deaths were determined.

The study was conducted in one of the tribal blocks (Pavi Jetpur). Both primary and secondary data was collected to study the perception of the beneficiaries and providers at all levels. Quantitative instruments in the form of semi-structures schedules were used for primary data collection. Also qualitative instruments like discussion guides were prepared for conducting FGDs, IDIs and KIIs. Further secondary data of deceased beneficiaries was collected through Verbal Autopsy for the time period of 2007-10.

Long gaps and inadequate training has led to poor knowledge of services like postpartum and newborn care, identification of high risk symptoms, providing basic treatment, among the ASHAs and ANMs. The lack of awareness among people leading to deliveries at home in absence of any skilled service provider adds up to the lack of primary service delivery by the ASHAs and ANMs. The MOs, BHO and paediatrician were aware of the services that ought to be provided to postpartum women and newborns but were often curtailed due to lack of specific infrastructure at government facilities. The social dogmas and customs made the postpartum women shun whatever knowledge they had regarding newborn care and lean back on traditional methods which proved harmful.

A closer look at data collected from both the quantitative and qualitative survey showed that the biggest lacunae lies in the most basic of the service infrastructure. As a result of

this, both the service providers as well as the beneficiaries had largely not been able to reap the benefits of the health care services facilitated by the government. These lacunae in practices were detrimental to the health of postnatal mothers and newborns and needs further research to determine, why such decisions are made at the household level.

Acknowledgement

At every stage during the last three months, right from the conceptualization of the topic and this project to its completion, I have received constant support, guidance and encouragement from my respected mentors and colleagues.

I am very much indebted to Mrs. Archana Joshi, Director, Deepak Foundation, Dr. Nandini Srivastava, Deputy Director for giving me the opportunity to work with such a big and renowned organization.

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The linguistic support provided by master trainers was commendable.

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ABBREVIATIONS

MDG – Millennium Development Goals

WHO – World Health Organization

UN – United Nations

UNICEF – United Nations International Children's Emergency Fund

MMR – Maternal Mortality Rate

IMR – Infant Mortality Rate

PPP – Public Private Partnership

SMCS – Safe Motherhood and Child Survival

PPW – Postpartum Women

ASHA – Accredited Social Health Activist

ANM – Auxiliary Nurse Midwife

MO – Medical Officer

BHO – Block Health Officer

KMC – Kangaroo Mother Care

FGD – Focused Group Discussion

IDI – In-Depth Interview

KII – Key Informant Interview

VA – Verbal Autopsy

PHC – Primary Health Centre

CHC – Community Health Centre

SC – Sub Centre

PPC – Postpartum Care

NBC – Newborn Care

ANC – Antenatal care

PNC – Postnatal care

VHSC – Village Health Sanitation Committee

GoG – Government of Gujarat

IMNCI – Integrated Management of Newborn and Childhood Illness

AWW – Anganwadi Worker

ORW – Outreach Worker

MPW – Multi Purpose Worker

BCC – Behavioral Communication Change

IEC – Information Education Communication

LHV - Lady Health Visitor

EDD – Expected Date of Delivery

ICDS – Integrated Child Development Services

PART 1 – INTERNSHIP REPORT

ORGANISATIONAL PROFILE

1.1. About Deepak Foundation

Deepak Foundation started as a corporate social responsibility of Deepak Group of Industries (Deepak Fertilizers and Petrochemicals Corporation Ltd. and Deepak Nitrate Ltd.). In 1982, from a small hospital providing maternal and child care services to the industrial workers in *Nandesari*, Deepak Foundation sowed the seeds of health care for 40,000 villagers living around the industrial area. The Foundation has now extended its health services to the entire rural communities of the District by diversifying its work to encompass other allied activities such as livelihood generation through dairy cooperatives, savings groups, preschool education, disaster relief and rehabilitation. The initiative that initially catered to nearly 30 surrounding villages for nearly twenty years has now evolved into a full fledged Foundation covering all 1548 villages of Vadodara District in Gujarat. Through its multifaceted programs, it reaches out to nearly 1.9 million population to provide services in various developmental sectors with prime focus on Maternal and Child Health and ensuring sustainable Livelihood through Public Private Partnership (PPP). However, Pioneers were determined to bring this dream to fruition by following the blue print drafted by NRHM and joining hands with the State Government to make the health care delivery system more effective. The Foundation's policy has been to provide an integrated package of services by involving public and private stakeholders considering community participation a key to success. As a result of this alliance, the Interventions today have become a model for others to emulate and continues to be implemented with need based inputs and partnership.

The core intervention sectors of the Foundation are:

- Promoting practices for safe motherhood and child survival.
- Making available health and pre-school education services.
- Ensuring sustainable livelihood for under-privileged and marginalized communities.
- Providing disaster relief and rehabilitation services.

Apart from maternal and childcare services, the Foundation has diversified into allied activities such as livelihood through natural resource management, empowering women through dairy cooperatives, savings groups and preservation of pithora art, promoting preschool education, HIV/AIDS prevention and disaster relief and rehabilitation.

The Foundation implements its activities through sustainable Public Private Partnerships (PPP); by ensuring community participation through Community Based Organisations (CBOs); by working in close collaborations with national and international NGOs; and through the network of Civil Society Organisations. The strength of the Foundation lies in its cross-functional specialist workforce, with nearly 400 full time professional staff deployed across 22 different locations throughout Vadodara. Additionally, there are around 2091 village level women volunteers responsible for programme implementation activities at the village level. The entire team works under the overall supervision of the executive head, the Director.

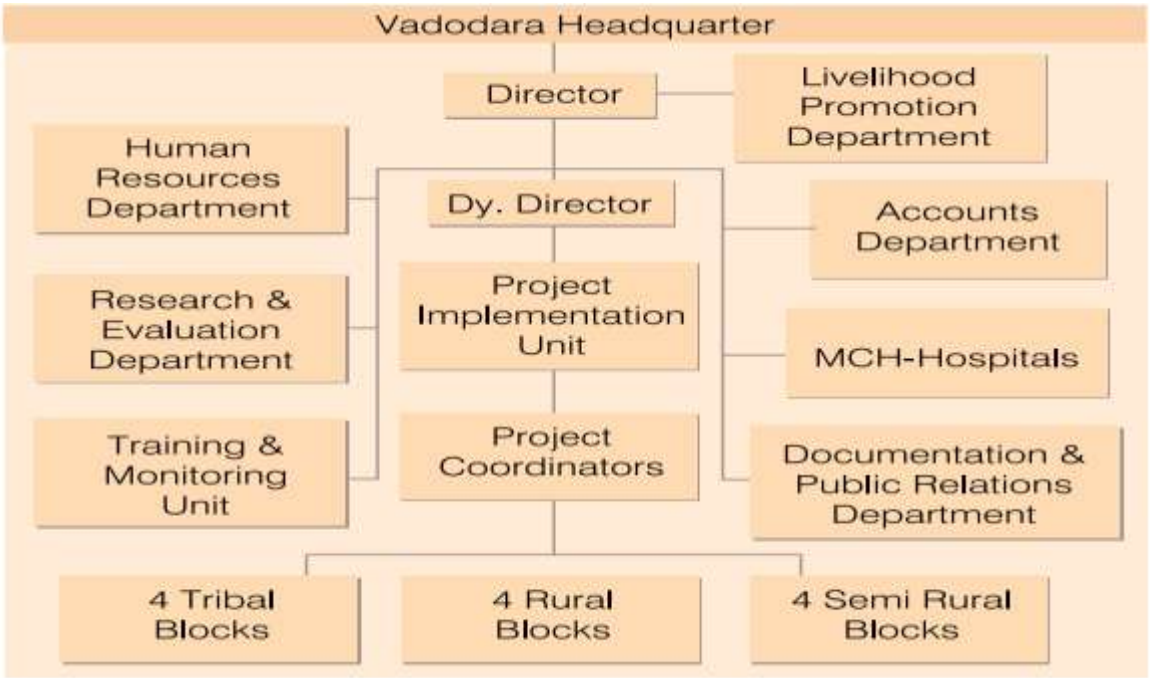
Vision

Empowering women in rural and tribal areas by providing livelihood and healthcare opportunities.

Mission

Creating an enabling and sustainable environment among rural communities. We envisage a world free of distress, disease, deprivation, exploitation and subjugation, thus ensuring the overall well-being of the family, society and community, with special focus on women and children.

1.2. Organogram



1.3. About the Projects

1.3.1. Safe Motherhood and Child Survival (SMCS)

The Safe Motherhood and Child Survival (SMCS) is a PPP initiative of Deepak Foundation implemented in 2005 in partnership with Department of health and Family Welfare, Government of Gujarat. The project aims to reduce infant and maternal mortality in the district through the existing government health delivery systems in line with the goals of NRHM and State Population Policy. Any woman who is pregnant and/or has an infant is registered by a trained Accredited Social Health Activist (ASHA) in the intervention area covering eight blocks of Vadodara. The beneficiaries are contacted periodically till they complete the eligibility period of 21 months. Every year maternal and infant care services are provided to more than 1,00,000 pregnant and nursing women through the field network of outreach staff. The SMCS project is based on the "three delays model" proposed to reduce maternal and infant deaths. It seeks to address the delays in accessing care through a combination of Behaviour Change Communication (BCC), Emergency Transport Facility (EmTF) and Comprehensive Emergency Obstetric Newborn Care (CEmONC), complemented by supportive activities like capacity building of grassroots-level functionaries, community participation and a strong Computerized Management Information system (CMIS).

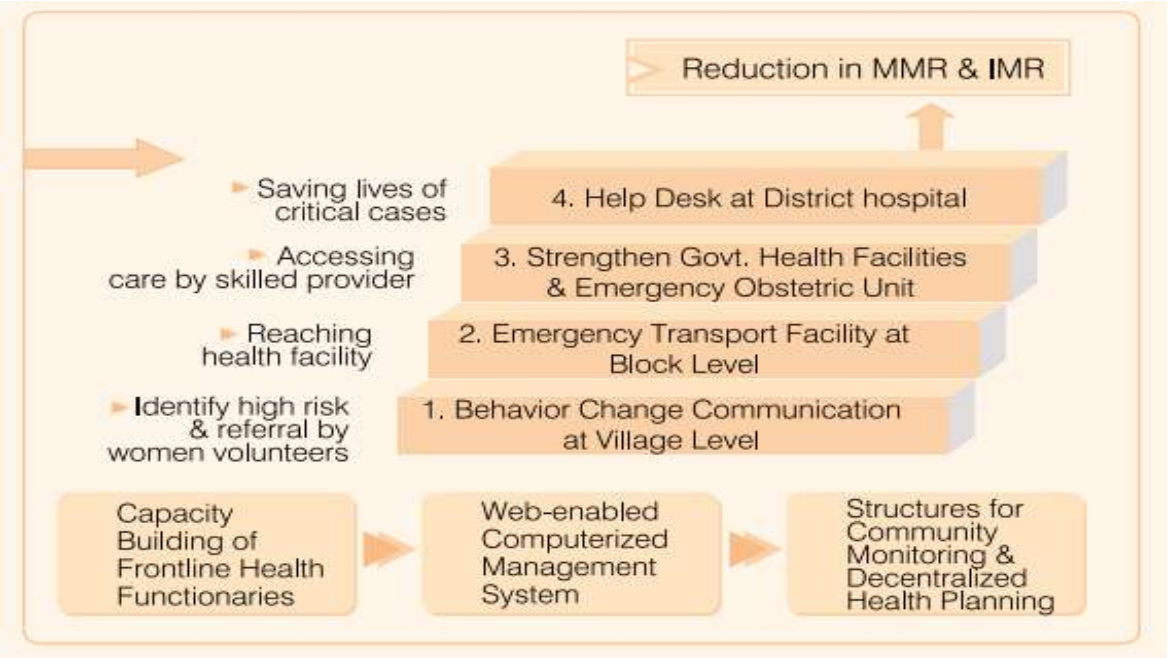
The Safe Motherhood and Child Survival (SMCS) is the core intervention project implemented by the Foundation as a PPP initiative in partnership with the Department of Health and Family Welfare, Government of Gujarat. The goals of the project have been set in line with the Millennium Development Goals 4 and 5 (1990-2015), the goals of National Rural Health Mission (2005-2012) and the Gujarat Population Policy (2002) to reduce maternal mortality ratio (MMR) to less than 100 per 100,000 live births and infant mortality rate (IMR) to less than 30 per 1000 live births in the Vadodara District. The goals are envisaged to be achieved through community mobilization and strengthening of public health care delivery system.

The project was implemented in a phased manner, starting in 2005 from the most underdeveloped tribal blocks of the district (Kawant, Naswadi, Pavi Jetpur and Chhota Udepur) covering nearly a million population and subsequently expanded to remaining eight rural blocks of Vadodara district covering a million population. In the intervention area covering 1548 villages, Village Level Health Workers (now Accredited Social

Health Activist (ASHA) identify and register all pregnant women and women having an infant to ensure delivery of uninterrupted care through public health services.

Conceptual Model of Project Implementation

The implementation strategy for the SMCS project is based on the 'three delays model'. The key services provided through project are presented in the Figure.



Additionally, Anaemia Control Project has been undertaken in all 12 blocks of the District and Mobile Health Units have been deployed in remote areas of Kadwal in Pavi Jetpur block and Dugdha in Naswadi block to reach out to tribal communities.These core activities are supported by a robust Computerised Management Information System (CMIS) that provides a ready database of over two million beneficiaries for review and planning. The output reports generated at the block level are shared with government health functionaries to validate the government health service statistics and to prepare joint action plan.

The Foundation has formed and activated Village Health and Sanitation Committees (VHSC) for eliciting community participation. Community empowerment and monitoring of health services is an integral part of the project. Two innovative initiatives were undertaken this year to address newborn and infant care and nutrition. Janmakshar (horoscope) distribution was initiated to facilitate vital registration and identification and

referral of low birth weight babies. Infant and young child nutrition practices were promoted through an initiative supported by World Bank.

1.3.2. Key Activities

Behaviour Change Communication **-** Awareness is the key to bring about change. Behaviour Change Communication (BCC) is the strategic use of communication for creating awareness to promote positive health outcomes. It involves understanding the communities, context and the environments in which the behaviours occur. BCC is also about using persuasive techniques to demand health rights and to make health services accessible and available to the needy person.

As a part of the SMCS project, the focus of BCC is on practices related to antenatal, natal, postnatal and newborn care, emphasizing on the advantages of institutional deliveries. At the village level, the BCC activities are carried out by ASHAs, women Out Reach Workers, Facilitators supported by dedicated Information Education Communication Unit. Various other channels of communication are used such as Display Boards (wall paintings showing key health indicators of the village) in the villages, distribution of a fortnightly 4-page coloured newspaper in local language, local folk art-Bhavai shows and other participatory methods to educate the community and various stakeholders regarding key health indicators, promote utilization of public health services and create awareness of several government schemes.

Emergency Transport Facility

The Foundation introduced the 24x7 Emergency Transport Facility (EmTF), the first of its kind in Gujarat, in the tribal blocks in 2005 and subsequently in the rural blocks in 2007. As a part of this facility, two 24x7 Emergency Control Rooms (ECR) – one at Bodeli for tribal blocks and one at Vadodara for rural blocks were set up. A user fee of Rs. 2/Km was charged but the service was provided free for those with BPL card. With the introduction of free EMRI-108 ambulance service in Gujarat, the calls were diverted to the new service and the Foundation's services were gradually phased out.

Strengthening Peripheral Government Health Facilities

Once the demand for public health services is created, the public health facilities should be geared to address the health needs. Therefore beginning 2006 the Foundation, in

association with the district health officials started activating Sub-Centres and PHCs to deliver basic health services, round-the-clock, at the doorsteps of the community. Local resources were mobilised to ensure 24-hour availability of VLHW/ TTBA/ANM at the Sub-Centres for 8 hours each and expenses towards refurbishing the infrastructure were jointly borne.

1.4. Integrated Child Development Services

Since 1996 theFoundation has been supervising the functioning of 40 anganwadi centres under the ICDS scheme of Department of Women and Child Development, Government of Gujarat. These centres cater to the nutritional and education needs of approximately 6000 beneficiaries (including children, pregnant and lactating women, adolescent girls) in villages surrounding the Nandesari industrial area.

Apart from the services received under the ICDS scheme, the Foundation has adopted various strategies to enhance the holistic development of children as well as welfare of the community. Realising the importance of community participation in service delivery, the Foundation has recruited and trained women volunteers from the villages to enhance the preschool education component of ICDS. The anganwadis provide innovative play methods and hands-on experience to make pre-school learning easier and effective. Additionally, the Foundation provides two sets of uniform to each child and supplements the nutrition by additional milk, iron-fortified biscuits, sweet meal etc. and also aids in repair and maintenance of anganwadi facilities through community participation and industrial associations. Twice in year, the health check up of all children (0-6 yrs.) is facilitated through involvement of medical and paramedic staff of DMF hospital.

The team of anganwadi workers and supervisors is given regular monthly trainings to strengthen their capacity as well as to keep them updated on the recent developments. Participatory on-the-job training approach is used for preschool teachers, anganwadi workers and supervisors, wherein academicians and professionals provide trainings on various play methods and interpersonal skills. Monthly meetings are also organized with the community to strengthen their rapport and to address their concerns. These meetings also include sessions on BCC. The Foundation signed an MoU with the Pune Municipal Corporation for operations and management of 49 balwadis spread across 17 primary school premises in Yerwada area of Pune, Maharashtra. This pilot project aims to provide

pre-school education services, through established balwadis, to approximately 1700 children in the age group of 3-5years.

1.5. Kawant Livelihood Project

With a strong background of implementing SMCS project, coupled with the extensive experience in successfully initiating a number of sustainable livelihood generation activities in rural and tribal areas of Gujarat, the Foundation launched a holistic development program in Kawant using a multi-sector, multi-stakeholder, PPP approach. The Kawant Livelihood Project (KALP) was initiated under the Vanbandhu KalyanYojana of the Government of Gujarat, in the Kawant block of Vadodara district.

The prime objective of KALP is to improve and strengthen the livelihood opportunities of the people by helping them build their own capacities to meet their basic needs. Efforts will be made to double the income of the population through various livelihood activities, thereby laying the foundation of self-reliance and self-sufficiency.

1.5.1. Key Sectors

The existing resources and field network of the Foundation in Kawant under SMCS project provide the key outreach network for this project. In addition, a multi-disciplinary specialist team has been put in place with an experienced field team to implement the multitude of project activities of KALP. All the KALP activities are linked up with the existing CBOs such as VHSCs and Self-Help Groups (SHGs).

1.5.2. Key Activities

Agriculture and Horticulture

Integrated Wadi Agriculture Diversification Project (IWADP) and Rashtriya Krishi Vikas Yojana (RKVY) were implemented under these sectors.

Irrigation and Watershed Development

Irrigation is the prime requirement for agriculture: higher the availability of water, larger the area that can be cultivated. Facilities of drip irrigation and pitcher irrigation have been provided to the farmers. Whilst the farmers have easily accepted pitcher irrigation, more efforts are being made to encourage farmers to use drip irrigation method. The

construction of group and individual wells has been initiated to provide support to Wadi development and improve agriculture.

Dairy Development

Development of livestock production in Kawant is critical to tribal prosperity. Dairy Cooperative Societies facilitate a regular cash inflow for the farmers. Twenty awareness meetings and video shows were held in several villages with around 1626 participants, mostly women. The purpose of these meetings was to create awareness about the importance of dairy cooperatives and on techniques to increase milk production. Trainings for WDCS cover cattle care, cooperative management, leadership and administrative training and orientation training at village level. For capacity building of dairy cooperative societies, Information Education and Communication (IEC) material including posters were developed and distributed. The Foundation also completed a 6-month training course for the first batch of para-Vets comprising of 27 women.

Self Help Groups

SHGs are an informal association of 10 to 20 women from a similar socio-economic background living in the same village. These groups enable its members to develop their individuality and provide them with a platform for accessing public services and bank facilities. Besides income generating activities and seeking micro credit, the SHGs work on a range of issues such as health, nutrition, agriculture, forestry and watershed. Sangathans are group of SHGs involved in livelihood activities. Sangathan groups are working for overall village development, with special emphasis on social and economic development.

REFLECTIVE LEARNING DURING INTERNSHIP

- Writing grant and contract proposals
- Writing research and review papers
- Drafting research specifications.
- Project-managing research projects.
- Evaluation and analysis of end line data of SMCS(Safe Motherhood and Child Survival) project.
- Commenting on draft research instruments, such as questionnaires, and editing draft reports.

- Working on a wide range of research projects and employing a range of different research methodologies.
- Conducting, then analyzing, in-depth interviews with members of the public and large-scale data sets.
- Commenting on draft research instruments, such as questionnaires, and editing draft reports
- Keeping up to date with developments in policy and social issues, as well as qualitative and quantitative research methods
- Filling Award nominations
- Explaining complex ideas and findings in a way that can be easily understood
- Producing both written and oral briefs for policy colleagues and ministers, based on reviews of research evidence.
- Responding to external and internal research enquiries from colleagues, government departments, academics, local councils, regional development agencies and members of the public
- To use outcome data to demonstrate the organizations' impact on the lives of the people served

PART 2 – DISSERTATION REPORT

CHAPTER 1 INTRODUCTION

1.1. BACKGROUND

The main aim of Millennium Development Goal 5 is the improvement of maternal health. To achieve this goal, states are called upon to undertake measures to reduce the maternal mortality ratio and increase the proportion of births attended by skilled persons. World Health Organisation (WHO) estimates that more than 30 million women suffer ill health or death during pregnancy and childbirth (WHO, 2003a). Globally, each year 60 percent of maternal deaths and 75 percent of newborn deaths occur in the first seven days of postpartum period. The vast majority of these deaths are in developing countries where access to basic and emergency health care is poor. Measures to improve maternal health in the form of increasing skilled attendance and emergency obstetric care are expected to contribute to a decline in the burden of maternal mortality as well as morbidity. On another note, maternal morbidity during pregnancy leads to higher perinatal and neonatal mortality, thereby affecting attainment of the MDG 4 of reducing infant mortality. Thus while it is clear that addressing the issue of maternal morbidity derives squarely from the MDG on improving maternal health, it is in parallel related to most of the other goals. Globally there has been a considerable decline in under-five and infant mortality in the past two decades. However neonatal mortality remains relatively unchanged especially in developing countries (UNICEF, 2009; Darmstadt GL, Lawn JE, 2003). Worldwide four million infants die in the first 28 days of life each year: the neonatal period. Three quarters of these neonatal deaths occur in the first week of life, and more than one quarter occurs in the first 24 hours after birth (UNICEF, 2009; Lawn JE, Cousens S, 2005; Save the Children Federation, 2001) where the majorities are delivered at homes. Evidence suggests that these deaths could be prevented by simple, inexpensive practices and interventions during the pregnancy, delivery and postnatal period. However, these interventions cannot produce optimal results unless there is synchronization between the services provided and the reciprocal change in practices and behaviors amongst the recipients. The technical competency for provision of services and bringing behavioral change cannot be over emphasized.

In India over the last decade extensive efforts have been made by international donors and government to implement these practices. However, limited attempts have been made to

explore if these efforts have made a difference at the grass root level. India needs more scientific evidence on practices of both health service providers and users to identify what works and what does not in the local context. It is equally important to monitor change in practices and behaviors to guide interventions. Strategies to scale up such interventions should also be tested and implemented in a phased approach in partnership with government and donor agencies.

Despite an impressive economic growth, Gujarat needs to accelerate its progress on reducing the State's infant and maternal mortality rates to achieve MDG 4 and 5. To meet the MDGs, the Government of Gujarat's Population Policy (2002) had set goals to reduce the infant mortality rate (IMR) to less than 30 per 1,000 live births and maternal mortality ratio (MMR) to less than 100 per 100,000 live births by 2010. Findings of recent nationwide Sample Registration System in India (Oct.2009) shows an IMR of 53/1000 live births in Gujarat and MMR of 160/100,000 live births, much higher than the intended goals of 16 and 100 by the year 2010. The National Family Health Survey (NFHS, 2005-06) third round data for Gujarat state shows that the key maternal and infant health indicators such as proportion of anemic women, undernourished children and home deliveries in rural areas remain high and the situation is worse in tribal areas.

With this background of extensive efforts made over the years this study assessed the burden of neonatal and maternal mortality and prevalence of practices of women in relation to care during postpartum period in a tribal block of Vadodara, Gujarat. The purpose was to identify lacunae in the service provided, plug in the gaps identified to generate evidence and recommendations to guide policies and interventions to induce behavior change for saving newborn and maternal lives.

1.2. RATIONALE OF THE STUDY:

The Millennium Development Goals 4 and 5 of reducing MMR (to less than 100 per 100,000 live births) and IMR (to less than 30 per 1000 live births) between 1990 and 2015 has been the center of attention in international forums in recent years. With the broad objective of reducing the maternal and infant mortality rate in Vadodara district, Deepak Foundation in partnership with the Department of Health and Family Welfare, Government of Gujarat, initiated a large scale (Safe Motherhood and Child Survival) project as a Public Private Partnership (PPP) model.

Despite provision of a comprehensive package of services through the Foundation's Safe Motherhood and Child Survival project in the tribal areas of the district, MMR decreased to some extent (from 430/100,000 live births to 253/100,000 live births) while the IMR did not show an appreciable decline (from 56/1000 live births to 54/1000 live births) during five year intervention period (2005-2010). Indicators of service delivery and utilization for newborns and postpartum women were revealed to be poorer than that of post-neonatal and antenatal care, respectively (Community based data, Deepak Foundation), having a direct bearing on infant and maternal mortality rates.

Reducing maternal and neonatal mortality is of paramount importance for making additional gains in maternal and child survival. The achievement of Millennium Development Goals requires that critical gaps in our understanding of maternal and neonatal mortality be identified and addressed. Thus there is a need to understand the lacunae in newborn and postpartum care services and to focus on improving utilization of these services in tribal blocks of Vadodara District.

1.3. REVIEW OF LITERATURE

Appropriate delivery care is crucial for both maternal and perinatal health and increasing skilled attendance at birth is a central goal of the safe motherhood and child survival movements. Skilled attendance at delivery is an important indicator in monitoring progress towards Millennium Development Goal 5 to reduce the maternal mortality ratio by three quarters between 1990 and 2015 (UN-MDG, 2011). In addition to professional attention, it is important that mothers deliver their babies in an appropriate setting, where life saving equipment and hygienic conditions can also help reduce the risk of complications that may cause death or illness to mother and child (Campbell OM, Graham WJ, 2006). A study from urban slums and peri - urban areas in Delhi has reported 70percent home deliveries of which 81.9percent were attended by untrained dais (Aggarwal OP, Kumar R, Gupta A., 1997). In India the public sector is perceived by many to be of low quality. The absence of even primary newborn care facilities, such as warming and resuscitation equipment is common (ICMR, 1991). Reluctance to use institutional services may also be a problem with many mothers preferring to deliver at home even when services are affordable, accessible and of acceptable quality (Ray SK, Mukhopadhyay BB, 1984). In areas of the world with high rates of home delivery, stillbirths are prevalent, but they are difficult to distinguish from early neonatal deaths (Lawn J, Shibuya K, Stein C, 2005). Newborn care practices at and immediately

following delivery can contribute to morbidity and mortality of neonates (Darmstadt GL, Bhatta ZA, 2005). The remarkable decline in neonatal mortality rates in the middle of the 20th century in high income countries has been commonly credited to the advent of hygienic childbirth practices and modern obstetric care (Piekkala P, Erkkola R, 1985), with additional reductions since the 1970s attributed to increasingly intensive neonatal care. In low income countries, where skilled professionals attend fewer than half of deliveries, and each year 60 million births occur outside facilities (UNICEF, 2009), the burden of neonatal morbidity and mortality related to childbirth remains very high (Lawn JE, Lee AC, 2009). Of the world's 4 million annual neonatal deaths, 98percent occur in developing countries (Save the Children, 2001). In India, neonatal mortality now accounts for up to 70percent of infant mortality (Paul V., 1999). Most perinatal and neonatal deaths happen at home, and many could be avoided with changes in antenatal, delivery, and newborn care practices (WHO, 1996). Major global causes of perinatal mortality are asphyxia at birth, low birth weight, and prematurity. Low-cost interventions, including training in neonatal resuscitation (Deorari AK, Paul VK, 2001), and "kangaroo" (skin-to-skin) care (Conde-Agudelo A, 2003), may effectively reduce deaths from these causes; it has been estimated that introducing these interventions as a package might decrease perinatal deaths by 50percent or more (Darmstadt GL, Bhutta ZA, 2005). The World Health Organization recommends dry cord care where nothing is placed on cord stump unless indicated (WHO, 1998). Various studies done in developing countries have reported mothers applying substances like mustard oil, turmeric, cow dung, antiseptic lotion etc on the cord stump (Kesterton AJ, Cleland J., 2009). Maintaining the normal body temperature is extremely important in newborns because of their larger body surface area. A study done in rural India has proven that even when pregnant mothers have access to a trained birth attendant for delivery at home, thermal care is the component of essential newborn care which gets neglected (Baqui AH, Williams EK, 2007). Breast feeding is the norm, giving prelacteal feeds is a deep-rooted custom in India and many studies have reported up to 100percent of mothers giving pre lacteal feeds (Banapurmath CR, Selvamuthukumarasamy A., 1995). "Oil cleansing" of the throat, eyes, nose, and ears by the mother or grandmother or by a skilled woman whose services are specially sought for the purpose. A recent study has reported that 29percent of patients with persistent pneumonia have a history of GERD or oil instillation in the nostrils (Kumar M, Biswal N, 2009).

Childbirth is also the time of greatest risk for maternal deaths with at least 42percent of the annual estimated 352,000 maternal deaths occurring during labor and the first 2 days after birth (Hogan MC, FK K, Naghavi M, 2010). Maternal mortality ratio (MMR) is a sensitive indicator that not only denotes the status of women in a society but also provides information about availability and her accessibility to quality healthcare (NIPS, Macro International Inc., 2008). Maternal mortality, a key human rights issue, is an unfortunate tragedy that results from a complex interplay of biological, social, cultural and economic determinants (Rosenfield A, Maine D, 2006). Even after reproductive and child health – 2 (RCH-2), it has not been possible to reach a large segment of the marginalized population through the organized health sector (Pallikadavth S, Foss M, Stones RW, 2004). Despite a plethora of health institutions, over 50percent births amongst the urban poor continue to occur in home settings and under the supervision of untrained birth attendants (Agarwal S, Srivastava K, Sethi V, 2007). Even where facilities exist, socio-economic and cultural barriers prevent their optimum utilization by the women who need those most (Griffiths P, Stephenson R., 2001) because it is considered complex and expensive (Campbell OM, G W., 2006). Utilization of antenatal care, intra partum care and post partum care service by the target population continues to be poor. This could be due to lack of awareness, availability and accessibility (Kumar R, Singh MM, 1995). Most maternal deaths can be prevented if women have access to basic medical care during pregnancy, childbirth and postpartum period (WHO, 1994). Perinatal care has a tremendous impact on the health of the mother and child (Carroli G, Rooney C, Villar J., 2001). Counseling and social mobilization and can remove the traditional barriers to a large extent in health seeking behavior (Agarwal P, Singh MM, Garg S., 2007). Studies indicate that awareness and attitude of postnatal mothers towards neonatal care and post partum care has lots of lacunae especially in those who belong to the lower socioeconomic status. There is scope for improvement by providing better care and health education for antenatal mothers at primary care level itself.

1.4. Objectives of the Project

General Objective:

To identify the lacunae and modify the existing PPP model to improve the service delivery and utilization of the essential newborn and postpartum care services to achieve a reduction in the infant and maternal mortality in tribal areas of Vadodara District.

Specific Objective:

The specific objectives of the study are to -

- assess the knowledge, attitude and practices about newborn and postpartum care services among beneficiaries and providers
- assess the constraints in delivering newborn and postpartum care services among the providers
- determine the causes of newborn and maternal deaths
- study the perception about newborn and postpartum care among the healthcare providers at all levels

CHAPTER 2

DATA AND METHODS

To understand the above stated objectives, both primary and secondary data were used. The details of primary data collection are as follows –

2.1. PRIMARY DATA COLLECTION

2.1.1. Study Design

An Exploratory study design was adopted for the study.

2.1.2. Study Area

Among the four tribal blocks, Pavi Jetpur block was selected for the study (Appendix 5).

2.1.3. Study Unit

- Postpartum Women (42 days after delivery)
- Accredited Social Health Activist (ASHAs)
- Auxiliary Nurse Midwives (ANMs)
- Medical Officer (MOs)
- Block Health Officer (BHO)
- Paediatrician

2.1.4. Selection of Village

In Pavi Jetpur block there are 11 PHCs and 213 villages. List of villages in the selected block was arranged in ascending/descending order so as to select 45 villages having highest number of deliveries from all the 11 clusters through computerized systematic random sampling procedure.

2.1.5. Sample Size

Total number of deliveries between Dec.15, 2010 and Jan. 20, 2011 in Pavi Jetpur block is 386. 30 percent of the total number of deliveries that is a sample of 117 postpartum women from the selected villages during that period is taken.

Total number of ASHAs in Pavi Jetpur block is 265. 20 percent of the total number of ASHAs that is a sample of 53 ASHAs is taken from the selected villages.

A sample of 21 ANMs were taken from the selected villages from a total of 58 in the Pavi Jetpur block.

2.1.6. Sampling method

A systematic random sampling method was applied for:

- Selection of villages from all the 11 clusters in the Pavi Jetpur block

Simple random sampling procedure was applied for:

- Selection of a sample of postpartum women
- Selection of ASHAs
- Selection of ANMs

2.1.7. Data Collection Technique

The scheme of data collection is presented below:

Sl.no.	Levels of data collection	Respondents	Instrument used	Methods of data collection
1.	Block	BHO	In-depth interview	Semi-structured interview schedule
		Paediatrician	Key Informant Interview	-do-
2.	PHC	MO	In-depth interview	Semi-structured interview schedule
3.	SC	ANM	• Self-administered questionnaire • Focus group discussion	• Semi-Structured Questionnaire cum interview schedule • Guidelines
4.	Village	ASHA	• Self-administered questionnaire • Focus group discussion	• Semi-Structured Questionnaire cum interview schedule • Guidelines
5.	Community	Postpartum woman	• Questionnaire	• Semi-Structured Questionnaire cum interview schedule

2.1.7. Tools for Primary Data Collection

Quantitative Instrument - Three semi-structured schedules were prepared, one each for ASHA, ANM and Postpartum women (Appendix- 4) which had three sections namely,

- Background characteristics which includes socio-economic, demographic and household characteristics.

- Knowledge on postpartum care services which includes types of postpartum care services, postnatal check-up, home visits, records/registers, complications and high risk cases of PPW.

- Knowledge on newborn care services which includes knowledge on birth weight, practice of birth registration, KMC, vaccination, cord care, complications, danger signs, high risk symptoms and its management among newborns, causes of newborn deaths.

The schedule was translated in the local language i.e. Gujarati and was pre-tested in the villages that were not selected in the study and was fine-tuned based on the results of the pre-testing and modifications were incorporated.

Qualitative instrument - Qualitative data was collected through Focus Group Discussion (FGD), In-Depth Interviews, and Key Informant Interviews at all levels among various stakeholders. Guidelines for FGD, IDI, KII and Case studies were prepared for Medical Officers (MOs), ASHAs, ANM, Postpartum women, Paediatrician and Block Health Officer (BHO). The gaps revealed in the quantitative research were addressed by the qualitative research.

2.1.8. Tools for Primary Data Analysis

Quantitative Instrument – Data entry of the quantitative schedules were done in Statistical Package for Social Sciences (SPSS) version 17. Analysis of the findings was done by computing Descriptive statistics according to the type of the variable. The mean (± standard deviation) was computed for continuous variables while categorical variables were assessed by computing frequencies (%).

Qualitative instrument – The responses of the FGD, IDI and KII was entered and analysis of the same was done using Microsoft office 2007.

To understand the fourth objective secondary data of verbal autopsy was used.

2.2. SECONDARY DATA COLLECTION

Verbal Autopsy

Verbal Autopsy (VA) is a community –based death review to find out the medical causes of death and ascertaining the personal, family or community factors that may have contributed to the deaths of individuals. Deepak Foundation initiated the process of conducting verbal autopsy in the tribal and rural blocks. The verbal autopsy consists of interviewing people who are knowledgeable about the events leading to the death such as family members, neighbours and traditional birth attendants. The main purpose of a verbal autopsy is to:

- identify deaths that have occurred in maternal and infants
- provide broad categories of causes of maternal and infant deaths
- understand the factors that may have contributed to the deaths
- describe the background characteristics of maternal and infants

To ensure that all maternal and infant deaths are identified in a defined population, it is important to conduct verbal autopsies on all reported deaths of maternal and infants, rather on only those deaths that have been coded as maternal and infant death on the death certificate (Fig.1).

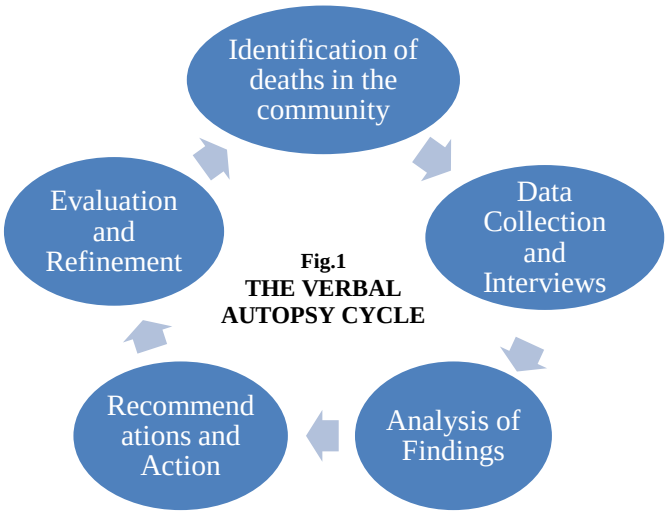


Fig.1
THE VERBAL AUTOPSY CYCLE

2.2.1. Study Area

Extracted data for Pavi Jetpur block was taken from the verbal autopsy data set for the 12 blocks of the district, which was collected and authorized by Deepak Foundation during the years 2007-08, 2008-09, 2009-10 respectively.

2.2.2. Study Unit

- Postpartum Women (42 days after delivery)
- Neonates (within 28 days of birth)

2.2.3. Sample Size

Total number of postpartum women during the years was 12 in 2007-08, and 9 each in 2008-09 & 2009-10 respectively.

Total number of neonates in Pavi Jetpur block during the years was 101 in 2007-08, 154 in 08-09, and 118 in 09-10 respectively.

2.2.4. Tools for Secondary Data Collection

A verbal autopsy questionnaire was developed which consists of a combination of structured, semi-structured and in-depth interviews. The structured questionnaire was used to elicit information related to socio-economic background of the family, the obstetric history of the beneficiary women, delivery related information, high-risk symptoms observed before death and treatment taken, if any, before death. This quantitative information was supported by a 'narrative' event of the death which included details regarding identification of high-risk symptoms, decision taken regarding addressing the problem, people involved in decision making, facility or health functionaries approached for treatment, type of treatment received and referral, if any. This detailed information was taken through the structured questionnaire and narrative of each maternal and infant death was shared with medical specialist (Gynaecologist for maternal deaths and Paediatrician for infant deaths) who in turn verified the medical causes of death.

2.2.5. Tools for Secondary Data Analysis

Data entry and analysis of the quantitative data was done in Epi-Info software and was converted into Statistical Package for Social Sciences (SPSS) version 17. After validation

of the causes by Gynaecologist and Paediatrician, analysis of the findings was done by computing Descriptive statistics according to the type of the variable. The mean (± standard deviation) was computed for continuous variables while categorical variables were assessed by computing frequencies (%). The qualitative information was analyzed manually.

CHAPTER 3

RESULTS AND FINDINGS

This chapter includes two sections the first section shows the results and the second section infers discussion on that.

3.1. KNOWLEDGE, AWARENESS AND PRACTICES ABOUT POSTPARTUM AND NEWBORN CARE SERVICES AMONG PPW

3.1.1. Background characteristics of PPW

The study was conducted in a tribal block (Pavi Jetpur) of Vadodara where knowledge, awareness and practices about postpartum and newborn care services among ASHAs, ANMs and PPWs were assessed. The constraints in delivering these services among the healthcare providers (ASHA and ANM) were also assessed.

From the study it was seen that the mean age of the postpartum women interviewed was 25 years. Half of them were below poverty line, close to half above poverty line and three percent did not have a card. More than two fifth of them were illiterate, close to one fourth had primary education, about one fifth had secondary education and 12 percent had higher educational qualifications. 95 percent were married and only five percent were unmarried. More than four fifths belonged to scheduled tribes, around seven percent belonged to scheduled castes and the rest were general class and OBC (Table 1).

The mean age of first pregnancy among the surveyed women was 22 years. The average number of pregnancy was 2. More than 90 percent of the outcomes of these pregnancies were live births. Still births amounted up to only five percent and miscarriages and abortions covered up for the rest three percent (Table 2).

3.1.2. Knowledge about Postpartum care services among PPW

Less than three fifth of the times ASHAs were present during delivery. Half the deliveries are done at government Facility, about one third at private Facility and only 16 percent at homes (Table 3).

About 94 percent of the women had healthcare service providers paying home visits in the first 7 days for check up. Average number of visits in the first week was five. ASHAs made up for more than four fifth of the health care workers who visited for post natal check ups. ANMs constituted two fifth and others like Dai, outreach workers constituted up to one sixth. Hygiene and sanitation was the topic of discussion in atleast two thirds of

these visits. Close to half the time nutrition was discussed. Maternal health and family planning was discussed only about one tenth times (Table 4).

More than two third women visited health facility after delivery. One third of them visited government facilities, another one third private Facility and more than two fifths visited Jabugam. Half the time the reason of visit was regular check up, though more than one fourth times it was due to complications or health problems. Close to half the times the women were counseled about nutrition, about two fifth times they were advised about hygiene and sanitation. More than one fifth of the women were counseled about iron supplementation too. One fifth of the cases were referred if complications aroused. More four fifth of the women were assisted by health care providers during visits to health facilities. About half the times ASHAs accompanied the women to health facilities, close to two fifth times family members accompanied and seven percent times others (Table 5).

About one third women faced postnatal complications. More than three quarter complications were lower abdominal pain, about 14 percent times it was excessive bleeding and other complications like severe headache, fever, foul smelling vaginal discharge which combined up to one fourth. More than 90 percent PPW sought treatment in government Facility, about one third preferred private Facility and only five percent other places like at home from Dai or ANM was preferred. The average cost of treatment was INR 3232. Migration was one tenth of times the reason for not seeking treatment (Table 6).

More than 90 percent PPW consumed IFA tablets after delivery. About half the times IFA supplementation was taken to increase the Hb levels, close to half the times it was taken to increase the milk secretion and 15 percent PPW consumed IFA tablets to increase weight. 96 percent ASHAs, about 90 percent ANMs, more than two fifths AWWs and close to one third ORWs advised IFA supplementation (Table 7).

3.1.3. Knowledge about Newborn care services among PPW

According to postpartum women most of the newborn were weighed immediately after birth. Average birth weight of newborns in the study area was 1.8 Kgs. Almost all the time the newborn was weighed within 24 hours of birth. Only three percent newborns were weighed after 24 hours of birth. 99 percent of the newborns were born full term. 99 percent of the births were registered and 97 percent of the newborns had a registered birth certificate and close to 90 percent had produced Janmakshar. Average time (in days)

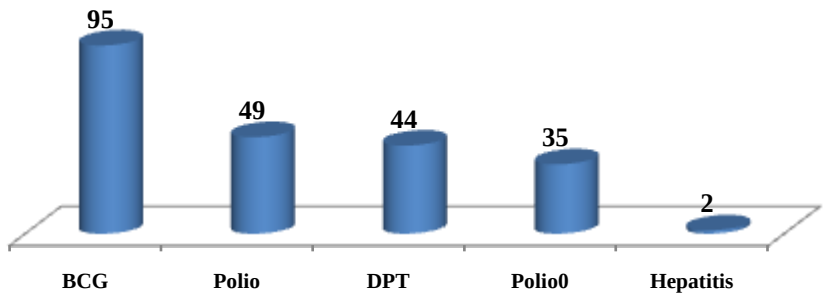
during which a newborn was given bath was after 5 days of birth. Three fourth of the newborns were kept warm immediately after birth. Three fourth of the newborns were wrapped in a clean, dry cloth. While 16 percent were kept warm using a warmer, only eight percent were given KMC.

Only three percent newborns had some substance applied to their umbilical cord stump (Table 8).

More than two thirds of the women claimed to have knowledge about Kangaroo Mother Care (KMC) and knew the right way of giving. Four fifth of the women thought low birth weight is a reason why the newborn might need KMC, whereas only six percent said premature birth also calls for KMC (Table 9).

99 percent of the newborn were fed colostrum. 93 percent of the women knew breast feeding should be started within half hour of giving birth and four fifth practiced it too. Only about a quarter of the women agreed that the baby should be fed 2-3 times a day, though only three percent practiced it. About eight percent women said the newborn should be fed 4-6 times a day and about one fifth of the women surveyed actually fed their newborn 4-6 times a day. Only one percent said that the newborn should be fed 7-10 times a day though more than half the women fed their newborn 7-10 times a day. Seven percent women said animal milk can be fed to the newborn and only three percent actually practiced it. About five percent agreed that things like Janam ghutti and water can be fed to the newborn and about 12 percent practiced it. More than half the women agreed the newborn should not be given anything other than breast milk, though no one seemed to be practicing it. Almost everyone knew the importance of exclusive breast feeding (Table 10).

Fig.2
PERCENT NEWBORNS RECEIVED LIST OF VACC INES ACCORDING TO PPW IN A TRIBAL BLOCK (PAVI JETPUR), VADODARA



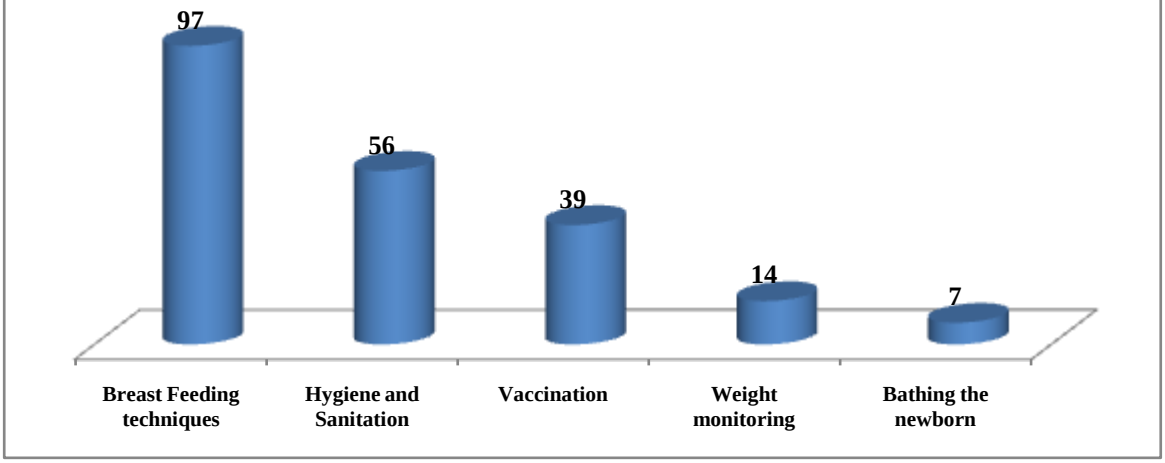
About 99 percent of the newborns were vaccinated. About 95 percent newborns were given the BCG vaccination, more than one third were given Polio0, around half the babies were given polio vaccination, more than two fifth were given DPT and only one percent were given hepatitis vaccination (Fig.2).

About 14 percent of the babies faced some kind of sickness after birth. Close to one fifth faced breathing problems and another one fifth had skin rashes. Others like fever, cough, and cold made up for more than two thirds of other cases. Treatment was taken in all the cases. Treatment was sought from PHCs in about one fourth of the cases. Three fourth times it was private facilities people preferred and only one fifth times were these cases got treated from the Jabugam (Table 11).

Only three percent women had knowledge about breathing problem and another three percent were aware of other danger signs like newborn not responding to breast feeding or newborn not crying after birth. Only four percent of the newborns showed any danger signs within first 10 days. In one fifth cases treatment was sought from Government Hospitals, in another one fifth private hospitals was chosen and in two fifth cases treatment was sought from Jabugam. In all the cases help was sought from health care providers. ASHAs were there to help in each case. In three fifth of the cases ANMs were also there and in two fifth of the cases ORWs also helped (Table 12).

About half the PPW had some knowledge about Asphyxia, about two fifth knew about Hypothermia and a same percentage of PPWs knew about sepsis too. About one tenth of the newborns suffered from Asphyxia. All of the identified cases were taken to health facility. One fifth of them were taken to a government hospital, two fifth were taken to private facilities and another two fifth were taken to Jabugam (Table 13).

Fig.3
PERCENT PPW COUNSELED ON NEWBORN CARE PRACTICES IN A TRIBAL BLOCK (PAVI JETPUR), VADODARA.



99 percent of the PPW were counseled about newborn care practices. About 90 percent PPW were counseled by ASHAs. About three fourth PPW were counseled by ANMs, and about one third of the PPW were counseled by AWW and another one third by ORWs. Half of the counseling sessions had hygiene and sanitation as a topic of discussion. During three fourth of the sessions breast feeding was discussed, vaccination was discussed in about two fifths of the sessions. Weight monitoring was discussed in only one fourth of the counseling sessions and other topics like infection control and keeping the newborn warm came up in only 13 percent of the counseling sessions (Fig.3).

3.2. KNOWLEDGE, AWARENESS AND PRACTICES ABOUT POSTPARTUM AND NEWBORN CARE SERVICES AMONG ASHAs AND ANMs

3.2.1. Background characteristics of ASHA and ANM

From the study it was observed that the average age of ASHAs in the study area was 29 years while that of ANMs was 38 years. About half the ASHA were above poverty line and close to two fifths were below poverty line while in case of ANMs more than four fifth of them were above poverty line and only 5 percent of them were BPL. Whereas only four percent of ASHAs and about 15 percent of ANMs did not have card indicating their economic status. More than one tenth of the ASHA were illiterate while all the ANMs were literate. More than two fifth of the ASHAs had completed their primary education while only about one third of the ANMs were educated only till primary levels. One fourth of the ASHAs had gone up to complete their secondary education and more than two fifth of the ANMs had completed it. Only about 15 percent ASHAs were graduates and about one fourth of the ANMs had done their graduation. More than four

fifths of the ASHAs were married and only about one tenth were unmarried whereas about two third ANMs were married and only one third were unmarried. The average population covered by an ASHA was 2715 and the average population covered by an ANM was 4525 (Table 14).

The average number of years since when the ANMs had received training was more than 8 years. Even then more than three quarters of the ANMs feel confident about their abilities whereas only about one fifth of the ANMs felt they need more training. About one third ANMs did not think it is their responsibility to ensure vaccination though four fifth of them felt it is their responsibility to counsel regarding family planning and provide health education in general. Conducting surveys, delivery and counseling on maternal and child care was not felt by two third of the ANMs feel as their responsibility (Table 15).

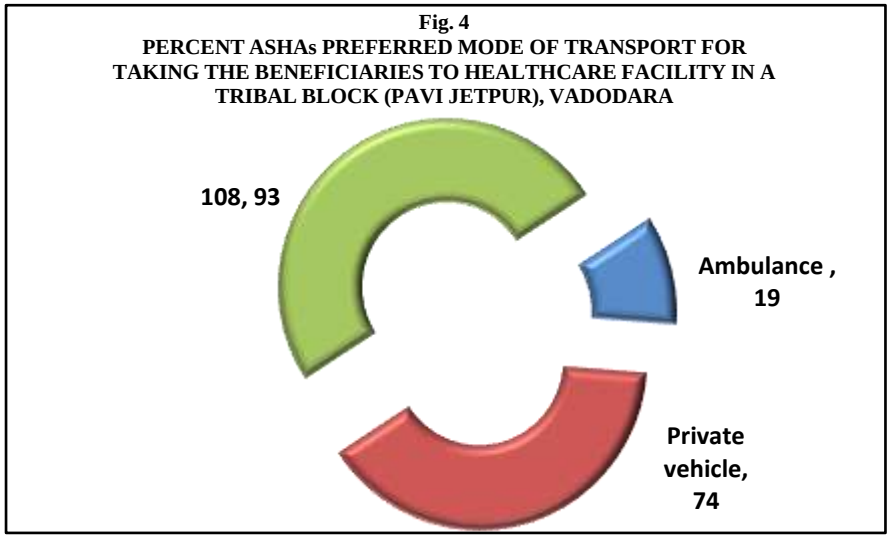
3.2.2. Knowledge about Postpartum care services among ASHAs and ANMs

Knowledge regarding health services to be availed by postpartum women was pretty good among both ASHAs and ANMs and clearly marks the difference in their roles. Two thirds of the ASHA knew regular check-ups are important for post partum women and more than three fourth of the ANMs were also aware of this. About 90 percent ASHAs and 95 percent ANMs knew the importance of iron supplementation. More than three fourth ANMs were aware of the various family planning services while only one third of ASHAs knew about it. Only 5 percent ASHAs knew the importance of counseling for a post partum women whereas more than four fifth of the ANMs knew well about counseling (Table 16).

About three fifths of the ASHAs and 95 percent ANMs suggested first check up within 24-48 hours of delivery even if the PPW had no problems. Around two third ASHAs and 95 percent ANMs suggested second check-up within first seven days. More than one third ASHAs and four fifths of the ANMs suggested a PPW should have a third check-up within 42 days of delivery if she has any problem. The mean number of PPW in the area in the preceding month of the survey was 3 in case of ASHA and in case of ANM it was . When asked about reasons why women do not seek postnatal check up within 7 days of delivery more than half the ASHA said it was due to social customs and bindings and three fourth of the ANMs had the same opinion. About three fifth of the ASHAs and about half the ANMs thought financial constraints also could be a reason. Only one tenth

of the ANMs thought lack of transportation facility could be a reason and only two percent ASHAs came up with the same reason. Four percent of the ASHAs were of the opinion that irregular visits of ANMs could be a cause too and about 15 percent ANMs said migration was also a reason for women not seeking postnatal check-up within 7 days of delivery. Both ASHAs and ANMs mainly refer PPW to government facilities like PHC or CHC or sub centres for check-ups and only about two third of ASHAs and ANMs suggest PPW to visit private facilities for check-up. Three fifths of the ASHAs and only one third of the ANMs ensure postnatal check-up was being done through regular home visits. About one fifth of the ASHAs consult family members to ensure postnatal check up whereas about 15 percent of the ANMs talk to the family members of PPW. Close to one fourth ASHAs and more than one third ANMs talk to the PPW directly to know about postnatal check-up getting done. Only two percent ASHAs check the MAMTA card to ensure this. More than four fifth of the ASHAs are key health service providers to PPW and about three fifths of the ANMs were also considered as major health service providers. Other than ASHA and ANM, AWW, ORW and Dai were also considered as major health service providers and they constituted about two third, one third and one fourth respectively (Table 17).

Fig. 4
PERCENT ASHAs PREFERRED MODE OF TRANSPORT FOR TAKING THE BENEFICIARIES TO HEALTHCARE FACILITY IN A TRIBAL BLOCK (PAVI JETPUR), VADODARA



According to ASHAs half the PPW availed the 108 service provided by the government, around two fifths of the PPW used private vehicles and only one tenth preferred ambulance as the major mode of transport during emergencies (Fig.4).

All the ASHAs and ANMs said they pay regular home visits to postnatal women. Where the ASHAs on an average had visited 3 postpartum women in the week preceding the survey the ANM on an average had visited 5 PPWs. About one fifth of the ASHAs and 15 percent of the ANMs enquire about their menstrual cycle during their home visits. About one third ASHAs and two third ANMs discuss hygiene and sanitation during their home visits. About one fourth ASHAs refer the PPW to some health facility if they find any complication. Only seven percent ASHAs and five percent ANMs were able to check for high risk symptoms during their home visits. More than half the ASHAs discuss hygiene and sanitation with the PPW and nutrition was discussed by nearly half the ASHAs too. Only one fifth of the ASHAs discussed maternal health which was one of the most important things and about three percent discussed family planning (Table 18).

More than two third ASHAs and less than three fifths of the ANMs maintained their registers through home visits. One fifth of the ASHAs and more than two fifth of the ANMs update their registers based on the information they get from the family members. More than half the ANMs and only one tenth ASHAs referred case papers. About five percent ASHAs directly interacted with the PPW for recording their details (Table 19).

About 90 percent ASHAs and all the ANMs identified complications (if any) during postpartum period. More than two thirds of the ASHAs and close to half the ANMs thought excessive bleeding was a complication. About one fourth of the ASHAs and half the ANMs checked for abdominal pain in PPW. Where only one tenth ANMs and around one third ASHAs thought convulsions could be a complication. Only 15 percent ASHAs and 10 percent ANMs checked for low BP and high fever. About one third ASHAs and 15 percent ANMs checked for foul vaginal discharge which could be a complication. More than four fifths of the ASHAs and all the ANMs referred PPW to health facilities if any complication was identified. Only six percent ASHAs and five percent ANMs asked the PPW to undergo the necessary treatment. A similarly low number of ASHAs and ANMs counseled the family members regarding the importance of treatment at that stage. Again only eight percent ASHAs and five percent ANMs advised regular check-ups. Women identified with complications were mostly referred to government facilities like PHCs, CHCs, SCs. Less than half of the ASHAs and around three fifth of the ANMs referred identified women to private facilities. Around three fifth of the ASHAs and four fifth of the ANMs referred identified women to Jabugam (Table 20).

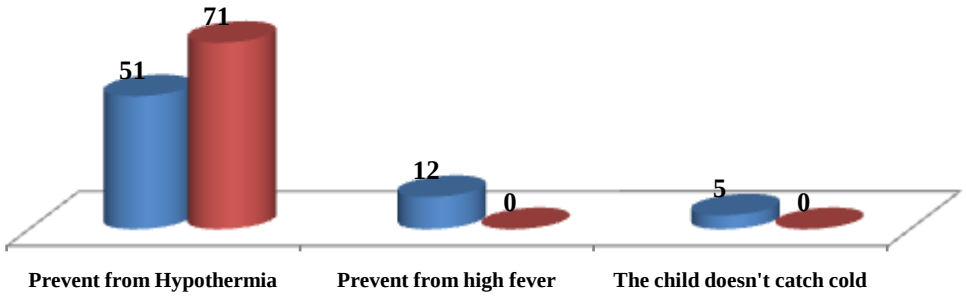
None of the ANMs and only a quarter of the ASHAs interviewed thought that PPW is at high risk of death within the first 24 hours of delivery. Half the ASHAs thought the PPW is at a high risk of death during the first three days after delivery and about 12 percent ASHAs and 15 percent ANMs thought that PPW is at risk of death within the first 7 days of delivery. More than three fourth ASHAs and more than four fifth ANMs were of the opinion that the PPW is at high risk till 42 days from the date of delivery. Just less than three fourth of the ASHAs and half the ANMs referred high risk women to Jabugam and only one third of the ASHAs and less than half the ANMs referred them to private facilities. The most common place of referral though (by either ASHA or ANM) was government facilities like PHCs, CHCs, and SCs (Table 21).

3.2.3. Knowledge about Newborn care services among ASHAs and ANMs

All the ASHAs and ANMs make sure to be present during the birth of the newborn at the healthcare facilities. Knowledge about birth weight and the need to weigh the newborn immediately after birth was pretty good among both the ASHAs and ANMs. About half the ANMs and more than four fifth of the ASHAs felt that the newborn should weigh around 2.5 kg. Only about one tenth of ASHAs felt that the newborn should weigh below 2.5 kg, whereas around two fifth ANMs thought a newborn should weigh more than 2.5 Kg. All the ASHAs and about 95 percent of the ANMs make sure birth registration is done. An ASHA on an average registers 3 births whereas an ANM registers 7 births. More than one fourth of the ASHAs face some difficulty in registering the births like unavailability of the Talati and in addition to this ANMs felt insufficient information about the newborn and migration were some of the other issues which sometimes created problems in birth registration (Table 22).

All the ASHAs and ANMs were aware of the Kangaroo Mother Care (KMC). Only half the ASHAs and four fifth of the ANMs know the correct method of giving kangaroo

Fig. 5
PERCENT ASHAS & ANMS KNOWLEDGE ABOUT REASONS NECESSARY FOR MAINTENANCE OF WARMTH IN A NEWBORN IN A TRIBAL BLOCK (PAVI JETPUR), VADODARA.



mother care. More than 90 percent ASHAs and ANMs thought low birth weight is the main reason why a newborn should be given KMC. A few ASHAs and ANMs also realized that premature birth might also call for KMC (Table 23).

Half the ASHAs and about three fourth ANMs realized keeping the newborn warm prevents hypothermia. Only 12 percent realized it prevents high fever and only five percent realized it prevents the newborn from catching cold too. Three fourth of the ANMs thought keeping the newborn warm is necessary for preventing hypothermia (Fig.5).

All the ASHAs and ANMs knew that the newborn should not be bathed within 24 hours of birth. All the ANMs and ASHAs were aware of the importance of breast feeding. All of them knew that the newborn should be put to breast immediately (within half an hour) after birth. The knowledge about importance of feeding colostrum to the newborn was common among ASHAs and ANMs. All the ANMs and ASHAs realized that no complimentary feeding until six months.

All the ASHAs and ANMs felt they had the necessary knowledge about providing vaccinations to newborns should be given. All of them know that BCG is one of the most important vaccinations. More than four fifth ASHAs and three fourth ANMs realized Polio0 is an important vaccination. More than four fifth of the ANMs thought DPT is a very important vaccination, whereas most of the ASHAs were not aware of it. Most of the ASHAs do not know about hepatitis vaccination and only just more than one fourth ANMs knew about it (Table 24).

Mostly all the ASHAs and ANMs realized that umbilical cord care and keeping a check on the temperature of the newborn were very important part of newborn care. About two thirds of the ASHAs and ANMs realized that infection control was also a very important part of newborn care. When asked about the constraints in availing care for newborn, the ASHAs and ANMs did not seem to know much. About one third ASHAs and ANMs thought financial constraints played a major role. Lack of nearby health facility could be a constraint according to nearly two fifth of the ANMs. Things like superstitious beliefs and lack of family support was also some of the possible constraints according to few ASHAs and ANMs (Table 25).

It was observed that a very high percentage of ASHAs and ANMs had knowledge about infection control and they counseled postnatal mothers and their families on what follow up cord care was required to prevent infection in newborns. Only 15 percent ANMs felt that a solution prepared by ANM/healthcare provider should be used to stabilize the patient.

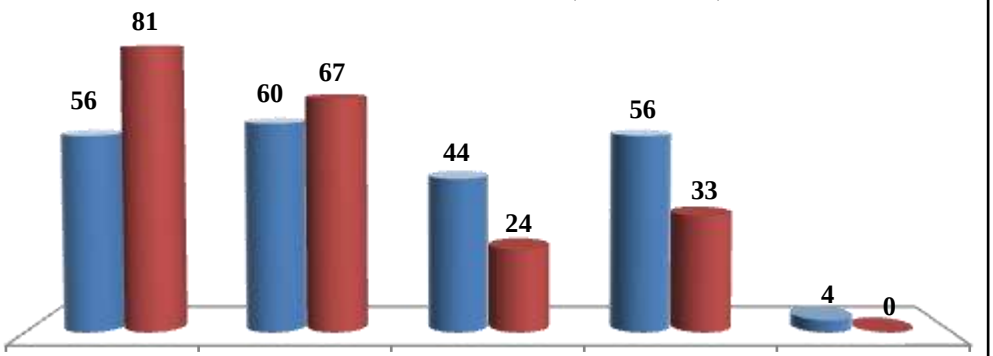
About three fifth of the ASHAs and close to three fourth of the ANMs had knowledge about complications due to breathing problems. More than one fourth ASHAs and about three fifth ANMs realized sepsis could be a serious complication. About one fifth ASHAs and none of the ANMs felt skin rashes could be a complication. 15 percent of the ASHAs and about one fifth of the ANMs also felt weakness could be a complication. Only 12 percent of the ASHAs and 15 percent of the ANMs provide basic primary care to ensure the patient was stable till he/she reaches the healthcare facility. Around two third of the ASHAs and more than four fifth ANMs referred identified cases to health facilities. Home remedies and counseling was hardly practiced by either ASHAs or ANMs (Table 26).

All the ASHAs and ANMs tried to identify danger signs in the newborn. Half the ASHAs and two third of the ANMs believed in checking the newborn directly to identify the danger signs. One fifth of the ASHAs and one fourth the ANMs talk to the mother to confirm the danger signs. Close to two fifths of the ASHAs and one fourth ANMs check the response of the newborn to breast feeding to see if there are any danger signs. When asked what major danger signs were seen in a newborn, about one third ASHAs and one fourth ANMs said not responding to breast feeding was one. About one fourth ANMs thought not passing urine/stool properly could be a danger sign, but very few ASHAs

thought so. About half the ASHAs and one third ANMs thought irregularities in the breathing rate could be a danger sign. About one fifth ASHAs and one fourth ANMs thought convulsions or high fever could be danger signs as well. Only 12 percent ASHA thought the newborn not crying after birth is a danger sign but none of the ANMs came up with this reply. Most of the ASHAs and ANMs referred newborns identified with danger signs to nearby healthcare facilities. Only 15-20 percent ASHAs and ANMs provided basic or primary care to stabilize the newborn or counseled the family members about how to handle the situation. About half the ASHAs and ANMs referred these cases to private facilities. Most of the cases were referred to government facilities like PHCs, CHCs and SCs. Around one fifth of the ASHAs and ANMs referred them to children's hospitals. Two third ASHAs and one third ANMs referred these cases to Jabugam (Table 27).

About two fifth ASHAs and four fifth ANMs checked the newborns directly to identify high risk newborns. One fourth of the ASHAs and more than one third ANMs discussed with the mother to identify the high risk newborns. Only ten percent ANMs more than two fifth of the ASHAs checked whether the newborn was responding properly to breast feeding or not. Some ASHAs also checked the dull movements of the newborn to identify high risk newborns. Two fifth of the ASHAs and close to three fifth of the ANMs referred these cases to private hospitals. Only one tenth ANMs and about 15 percent ASHAs referred them to children's hospitals. Around half the ASHAs and about 15 percent ANMs referred these cases to Jabugam whereas majority of ASHAs and ANMs referred these cases to government facilities (Table 28).

Fig. 6
PERCENT ASHAs &ANMs KNOWLEDGE ABOUT COMMON CAUSES OF NEWBORN DEATHS IN A TRIBAL BLOCK (PAVI JETPUR), VADODARA



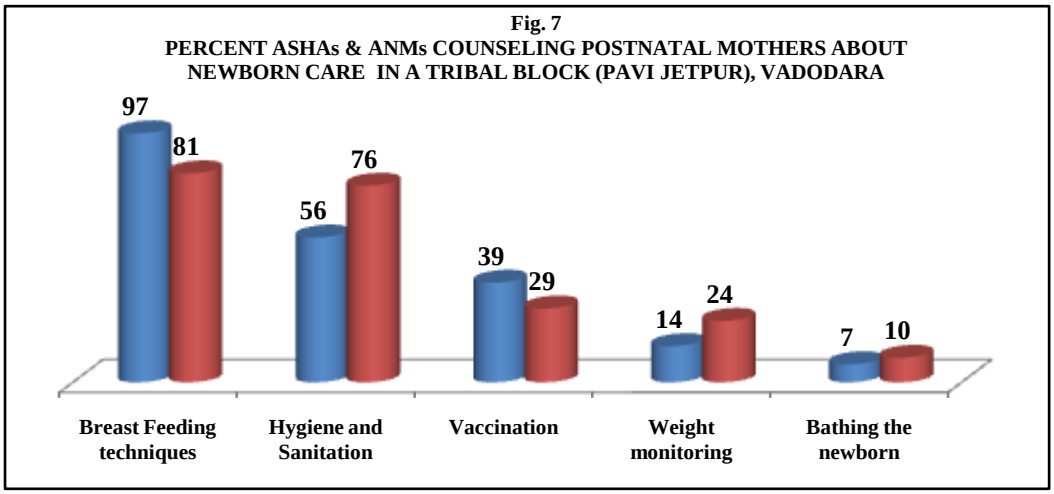
Four fifths of the ANMs and more than half the ASHAs believed low birth weight was one of the reasons of newborn deaths. One third ASHAs and more than half the ANMs believed sepsis was also among one of the major causes of newborn deaths. About one fourth ANMs and more than two fifth ASHAs believed Asphyxia causes newborn deaths. Premature birth was also considered a reason for newborn death by about two third of the ANMs and three fifth of the ASHAs. Congenital abnormality has been pointed out to be one of the reasons for newborn death by four percent ASHAs, though none of the ANMs reported so (Fig.6).

About three fourth ANMs and one fifth ASHAs knew that irregular breathing rate was a symptom of Asphyxia. The chest in-drawing was recognized by only nine percent ANMs and 17 percent ASHAs. The most common way they managed these symptoms was by referring to healthcare facility. More than half the ASHAs and about two fifth ANMs do this. Only about 15 percent ANMs and merely four percent ASHAs realized mouth to mouth respiration could help stabilize the patient. Only half the ANMs and one fifth ASHAs recognized bluish coloration of the body as a symptom of hypothermia. The rest of the symptoms of hypothermia like decrease in body temperature, the child becoming dull were recognized by less than 15 percent ASHAs and ANMs. One third of the ASHAs and more than a quarter of the ANMs suggested providing KMC could be a good way of managing these symptoms. Five percent ANMs and 15 percent ASHAs said not bathing the newborn for seven days was a good way of handling the situation. Around one tenth ANMs and about one fifth ASHAs felt keeping the newborn warm could help manage these symptoms. Oozing out of pus was recognized as a symptom of sepsis by more than half the ASHAs and also by two fifth of the ANMs. Less than one fifth of the ASHAs and ANMs recognized other symptoms of sepsis like skin rashes, fever, and pain at the site of infection. More than two fifth ASHAs and only five percent ANMs stressed on proper hygiene and sanitation to address these symptoms. Only one tenth of ASHAs and ANMs suggested not applying any substance on the cord. About one tenth ASHAs and ANMs suggested use of antiseptic/antibiotics. If the infection persists, one fourth ASHAs and one third ANMs referred them to healthcare facility (Table 29).

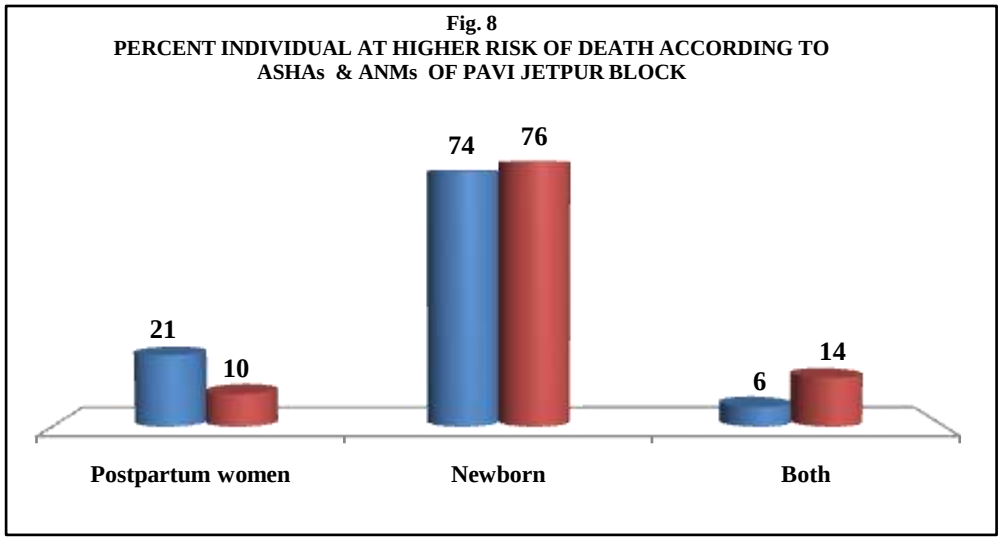
In the preceding one month of the survey eight newborns died due to Asphyxia, five due to Hypothermia and nine due to Sepsis. In the cases where newborns were identified with Asphyxia, one fourth of the ASHAs and ANMs referred them to private facilities. One fourth ASHAs and about one tenth ANMs referred them to Jabugam, but more than half

of the ASHAs and ANMs referred them to government facilities like PHCs, CHCs. In cases where Hypothermia was identified, more than half of the ASHAs and about one fourth ANMs referred the newborn to private facilities. More than three fourth ASHAs and only one tenth ANMs referred them to Jabugam. More than two third ASHAs and about two fifth ANMs referred them to government facilities. In cases where Sepsis was identified, three fifth ASHAs and only 15 percent ANMs referred to private facilities. Only ten percent ANMs and four fifth ASHAs referred them to Jabugam. More than four fifth ASHAs and more than half the ANMs referred them to government facilities (Table 30).

Fig. 7
PERCENT ASHAs & ANMs COUNSELING POSTNATAL MOTHERS ABOUT NEWBORN CARE IN A TRIBAL BLOCK (PAVI JETPUR), VADODARA



Questions about counseling postnatal mothers about newborn care brought out data like nearly all the ASHAs and more than four fifth ANMs counseled the PPW about breast feeding techniques. More than three fourth ANMs and more than half ASHAs counseled them about hygiene and sanitation. About two fifth ASHAs and more than one fourth ANMs counseled about vaccinations of the newborn. Only 14 percent ASHAs and about one fourth ANMs counseled about weight monitoring of the newborn. Less than one tenth ASHAs and only one tenth ANMs took up bathing the newborn during counseling sessions (Fig.7).



According to three fourth of the ASHAs and ANMs the newborn was at high risk of death. About one fifth ASHAs and one tenth ANMs believed postpartum women are at a higher risk of death. Only six percent ASHAs and around 15 percent ANMs thought both the newborn as well as the postpartum women were at high risk of death (Fig.8).

3.3. PERCEPTION OF ASHAs ABOUT POSTPARTUM AND NEWBORN CARE SERVICES

Focus Group Discussions (2) were conducted with the ASHA workers where twenty three ASHAs participated from two clusters. The objective was to understand their knowledge, behaviors and perception about post-partum care and newborn care services and to understand their views in identifying the lacunae in these services due to which newborn and maternal death tolls are increasing alarmingly.

The average age of the ASHAs was 30 years. Five of the ASHAs were graduates. 52percent of the ASHAs had studied till secondary section and 26percent had studied till primary section. All the ASHAs were married. Half of the ASHAs (50percent) socio-economic status was below poverty line. After delivery ASHAs go for home visits on the 1^{st}, 3^{rd}, 7^{th} and 28^{th} day and counseled them on various topics of post-partum care services and maintained registers where they recorded details of all post-partum women. Some of the complications that postpartum women faced during postnatal period were excessive bleeding, foul vaginal discharge, and anaemia. Most of the ASHAs referred these cases to PHC, CHC and Jabugam. Only 10 percent of the ASHAs realized that the first seven days were the most critical high risk period for a postnatal woman. Some of the high risk symptoms identified by the ASHAs were prolonged labour, premature delivery, sickle

cell anaemia (++), heavy bleeding and these cases were referred to PHC, CHC, Private facilities and Jabugam.

No nearby health facility, no delivery facilities at PHC/CHC, no blood bank facility, no gynaecologist were some of the lacunae in the postpartum care delivery. ASHAs suggested application to the government officials, raising the issues during VHSC meeting and putting forth the solutions to bridge these gaps observed. ASHAs received 5 days training on postpartum care and wished to have more refresher trainings at regular intervals with focus more on early risk identification and common causes of maternal deaths.

Most of the ASHAs were present when the birth takes place in a healthcare facility. All the ASHAs had knowledge about the normal birth weight of a newborn and the timing of weighing a newborn immediately after birth. They also had knowledge on postpartum care practices like KMC, bathing a newborn, maintenance of warmth, breast feeding, and vaccinations. The common health problems that were seen in a newborn were breathing problem, pneumonia, diarrhoea, convulsions and the identified cases were referred to CHCs and private facilities. Only two thirds of the ASHAs check the newborn directly to identify any danger signs. Only a few of them know about the danger signs like difficulty in breathing, convulsions, high fever, infection, not crying of the newborn after birth. According to them the high risk symptoms that were seen in a newborn were birth asphyxia, umbilical cord infection, convulsions, pneumonia, low birth weight, not responding to breast feeding, diarrhoea, vomiting. ASHAs referred these high risk identified cases to children's hospital and private facilities. The common causes of newborn deaths according to ASHAs were low birth weight, premature birth, sepsis, hypothermia, pneumonia. Most of the ASHAs know about sepsis, asphyxia and its symptoms but only half of them are aware of hypothermia.

Lack of newborn care facility at PHC/CHC, no special newborn care unit in any of the healthcare facility, no paediatrician were some of the lacunae in newborn care service delivery. Myths and misconception still persisted in interior tribal areas. ASHAs received only 1 day training on newborn care and wished to have more training on areas like identification of danger signs, high risk symptoms and their appropriate referral. All the ASHAs believed that the newborn is at high risk of death which was a major concern.

3.4. PERCEPTION OF ANMs ABOUT POSTPARTUM AND NEWBORN CARE SERVICES

According to the ANMs hygiene and sanitation, nutrition and family planning were the different types of PPC services provided. Proper counseling of PPW and creating awareness among masses was done to ensure regular postnatal check-ups. They visited the homes on 1st, 3rd and 7th days of deliveries for postnatal check-ups. All the ANMs maintained maternal and child care register, some additionally maintained IMNCI register, weight monitoring registers and ANC/PNC registers. According to the ANMs excessive bleeding, PPH, convulsions, sepsis were the complications seen in PPW. Every time a complication was seen the PPW were directly referred to health care facilities. The place of referral were most of the times private facilities, CHCs or government hospitals. The notion of time of high risk of PPW is different among ANMs. Some said it was seven days from delivery, some said 42 days and some 15 days. The high risks identified in PPW according to ANMs were heavy bleeding, anaemia, sepsis, PPH, high BP, difficulty in delivering placenta. The ANMs pointed out deliveries carried out by untrained dais, no postnatal check-ups, no sub-centre, no delivery room at PHC, lack of awareness among the masses, lack of facilities like blood bank at PHCs as some of the major lacunae in service delivery. They felt early risk identification, mass awareness and application to the government to improve facilities could help bridge the gap. Only one of the three ANMs had been trained on postnatal care, but the rest of them had not been trained on postnatal care. All the ANMs felt they need more refresher training to deliver service more confidently. The ANMs attended delivery of newborn only at CHCs, but did not assist pregnant women to health facilities. Some ANMs weighed the newborn immediately after birth, some weighed within 24 hrs and some on the 2nd day. The birth registration was done by the ASHAs at the Panchayat. The ANMs advised KMC only in case of LBWs. ANMs suggested PPW to keep the newborn warm. The ANMs advised to bath the newborn only after 7 days of birth of the newborn, advised breast feeding at regular intervals, advised feeding the newborn with colostrum in first half an hour of birth. They also advised not to start any complimentary feeding till 6 months. The ANMs seem to be aware of vaccinations like BCG, polio, polio0, DPT and Hepatitis. The complications seen in newborns were pneumonia, diarrhoea, asphyxia, hypothermia, jaundice etc. ANMs referred identified cases to CHCs, government hospitals and private facilities. The most common causes of newborn deaths according to the ANMs were infection, LBW, pneumonia, asphyxia etc. Very few ANMs provide primary care like keeping the

premature births in incubators. Most ANMs referred premature births to healthcare facilities. The ANMs suggested not applying any substance to the umbilical cord. In case of cases identified with Asphyxia, ANMs provided mouth to mouth respiration and if acute referred to health facilities. In Hypothermia cases they suggested to keep the newborn warm else referred to health facilities. Very few ANMs suggested primary care in cases identified with sepsis. Most of them directly referred to healthcare facilities. The ANMS said there are a lot of lacunae like lack of newborn care facilities at PHC/CHCs, lack of transportation services, lack of blood bank facilities, lack of knowledge of where to refer in what complication etc. They felt the government has to improve facilities to bridge these gaps. Most of the ANMs had not been provided with any training regarding NBC. In order to provide services more confidently they felt they need more training. According to most of the ANMs the PPW is at high risk of death and this automatically puts the newborn at risk too (Appendix 3).

3.5. PERCEPTION OF MOs AND BHO ABOUT POSTPARTUM AND NEWBORN CARE SERVICES

Perceptions of the healthcare providers like Medical Officers, Block Health Officer, Paediatrician, ANMs, and ASHAs about postpartum and newborn care was studied through In-depth interviews and Focused group discussions.

During an in-depth interview it was observed that all the MOs believed that postnatal home visits are necessary in the 1st, 3rd and 7th day after delivery. The BHO considered only a visit on the 1st and 3rd day could suffice. All the MOs felt the PPW is at a high risk after delivery and thus proper postnatal care is necessary. The BHO along with some MOs felt early detection of complications and their treatment could help improve the health of PPW. The MOs and BHO said postpartum care was provided at the healthcare facility on the 1st day of delivery and then through regular home visits by ASHAs and ANMs. Everyone felt ASHAs and ANMs are responsible for providing these facilities. On being asked about the types of postpartum care services, different MOs listed slightly different services like abdominal check up, BP check up, vaginal check up, pulse, temperature and other complications. The BHO said Nutrition, Family planning, Hygiene and sanitation and Iron supplementation were some of the types of postpartum care services available. The MOs and BHO said routine check-ups of the entire body to look for any complication was provided at the health facilities. MOs said to ensure that PPW undergo regular postnatal check-ups, healthcare providers pay regular home visits and

counsel the PPW as well as their family members. BHO said they regularly conduct BCC/IEC activities to generate more and more awareness among the masses. When asked about the high risk period for a PPW, some MOs said it is till 3 days after delivery, some said 7 days and some said 42 days. The BHO also said the PPW is at high risk till 42 days of delivery. The high risks identified among PPW that were pointed out by the MOs and BHO made up a long list that comprised postpartum haemorrhage, severe anaemia, hypoglycaemia etc. Most of the time treatment was sought at private facilities, government facilities or CHCs. The major causes of death among PPW were identified to be Sepsis, Anaemia, Congenital abnormality, prolonged labor etc. When asked about the lacunae in postpartum care service delivery MOs and BHO said lack of awareness, no nearby healthcare facility, financial constraints, lack of manpower etc. were the major lacunae. Making the sub-centres functional, creating mass awareness through BCC/IEC activities, proper monitoring by healthcare providers, more facilities at present health facilities were some of the measures pointed out by MOs and BHO which could help in bridging the gaps. To improve the health conditions of PPW, they suggested proper counseling and health education of PPW, regular monitoring and timely referrals and proper nutrition could be very helpful. Only two of the MOs said that newborn care facilities are available at their health centres. All the other seven MOs said there was no newborn care facility available at that time. The MOs and BHO listed the types of newborn care services as KMC, breast feeding techniques, maintenance of warmth, bathing practices, umbilical cord care etc. Common complications in newborns were noted to be breathing problem, convulsions, infection, high fever, not responding to breast feeding, neonatal jaundice, pneumonia etc. The MOs and BHO suggested primary care should be provided at home by health care providers and then they should be referred to health facilities. All the MOs and BHO felt danger signs in newborns could be identified best by directly examining the newborn. The major danger signs listed by MOs and BHO were high fever or temperature going down, convulsions, breathlessness, infection, not crying after birth, not responding to breast feeding, low birth weight , bluish coloration of skin etc. All the MOs and BHO said cases identified with danger signs were provided primary care at PHC and if the condition is acute then they are referred to CHC and government facilities. Newborns with high risks like neonatal jaundice, sepsis, hypothermia, asphyxia, congenital abnormality etc were identified. In some cases with high risks, primary care was provided at PHC, but most of the cases were referred to CHCs, government facilities or private facilities. The MOs and BHO felt hypothermia,

sepsis, asphyxia, pneumonia and low birth weight were among the most common causes of death among newborns. In case of premature birth the newborn was referred to health care facility and the mother was advised to provide KMC. In case of newborns with low birth weights, some MOs suggested providing KMC and keeping the baby warm. Other MOs and BHO suggested providing regular breast feeding along with the previous two was necessary and if condition does not improve refer to health facility. When asked about common myths and superstitions, some MOs and BHO said there was nothing as such where as other MOs said application of ash on umbilical cord and complementary feeding seem to be the most important superstitions affecting the newborn's health. When asked about suggestions to improve newborn health conditions, MOs suggested provide basic newborn care services at PHCs, counseling PPW was very important to strengthen the service delivery mechanism (Appendix 3).

3.6. PERCEPTION OF PAEDIATRICIAN ON NEWBORN CARE SERVICES

In a key informant interview with the paediatrician it was found that newborn care facility was available at CHC. The types of newborn care facilities provided at CHC, listed by the paediatrician are warmer and oxygen facility for initial stabilization of newborn, counseling on breast feeding techniques, vaccination, KMC, hygiene and sanitation.

The paediatrician said the common complications seen in newborns were meningitis, convulsions, pneumonia, neonatal jaundice, epilepsy, congenital anomalies. These complications are treated at CHCs initially and if acute referred to government facilities. The paediatrician said the newborn was directly examined for identification of any danger signs. The newborn not crying after birth, not responding to breast feeding, not passing urine/stool normally, dull and abnormal movements of the newborn etc were some of the major danger signs listed by the paediatrician. Theses danger signs if observed were managed by first closely observing and providing primary treatment at CHCs and if condition is acute referred to government facilities. The paediatrician said to identify high risks of a newborn things like aspirated stool in the womb, congenital abnormality, intact anal opening, not crying of the newborn after birth need to be checked for. These cases were referred to government facilities. The major causes of deaths among newborns according to the paediatrician were asphyxia, convulsions, sepsis, hypothermia, premature birth. According to the paediatrician to take care of premature births newborns should be provided KMC. To take care of low birth weight early and frequent breast feeding was necessary. The paediatrician felt common myths and superstitions among

PPW were applying substances on the umbilical cord, not feeding colostrum to the newborn, no complimentary feeding before six months. The paediatrician felt regular follow up, proper counseling to post natal mothers on newborn care and regular exclusive breast feeding till 6 months could help improve the health conditions of the newborn. According to the paediatrician the lacunae in newborn care service delivery were no monitoring and follow up done, no information on newborn care was provided by the ANM, no primary care was provided to stabilize the newborn. Early identification of high risk symptoms, periodic monitoring and follow up, training of the staff nurses, newborn care services to be provided at PHC are a few things that could be done to bridge the gaps according to the paediatrician (Appendix 3).

3.7. CAUSES OF MATERNAL DEATHS: VERBAL AUTOPSY

3.7.1. Background characteristics of deceased women

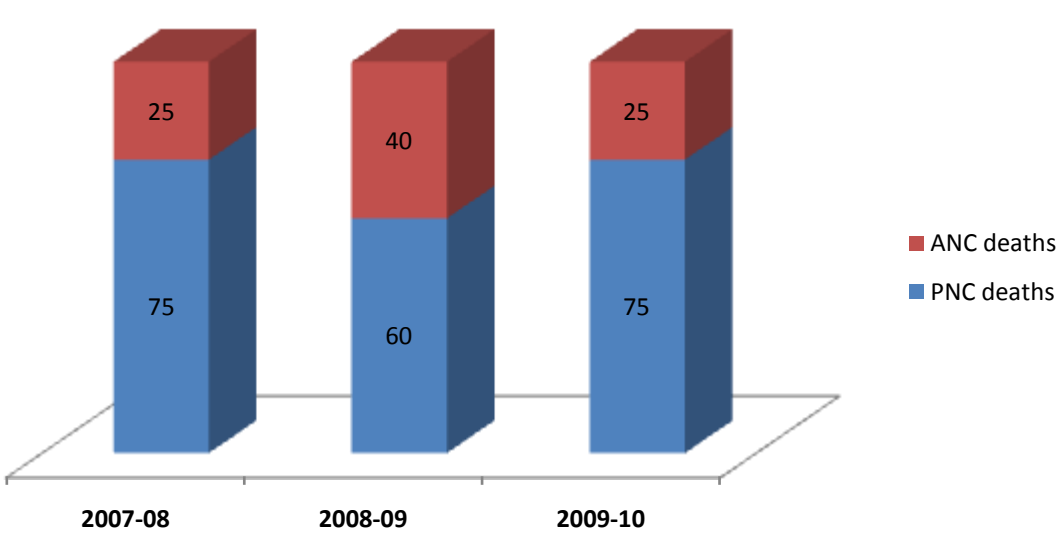
The verbal autopsy data for maternal and infant deaths during 2007-10 were taken to locate the trend in the causes of death and to identify the lacunae in the service delivery.

In 2007-08 all the maternal deaths recorded were women from scheduled tribes, whereas in 2008-09 and 2009-10 about 855 of the recorded maternal deaths were from scheduled tribes and rest were from scheduled castes. In 2007-08 just more than half the maternal deaths were women from families below poverty line and just more than two fifth of the maternal deaths were women from families above poverty line. In 2008-09 the maternal deaths from families APL came down to one third of the total maternal deaths and the rest two third were from families BPL. In 2009-10 half the maternal deaths were from families APL and half from families below poverty line. In 2007-08 about one third of the maternal deaths were recorded from nuclear families and just less than two thirds were from joint families. In 2008-09 the number of maternal deaths in nuclear families went down to 13 percent and the number in joint families increased up to about three quarters of all maternal deaths. About 13 percent of the maternal deaths in 2008-09 were women from extended families. In 2009-10 one third of the maternal deaths were recorded from nuclear families and two thirds of the maternal deaths were from joint families. There were no maternal deaths recorded in extended families in 2009-10 (Table 31).

In 2007-08 half the maternal deaths were women of 18-19 years of age. About one quarter of the deceased women were from the age group of 20-24 and 13 percent of the deceased women belonged to the age group of above 30. About seven percent of the maternal deaths were women of age below 18 years. In 2008-09 the number of deceased

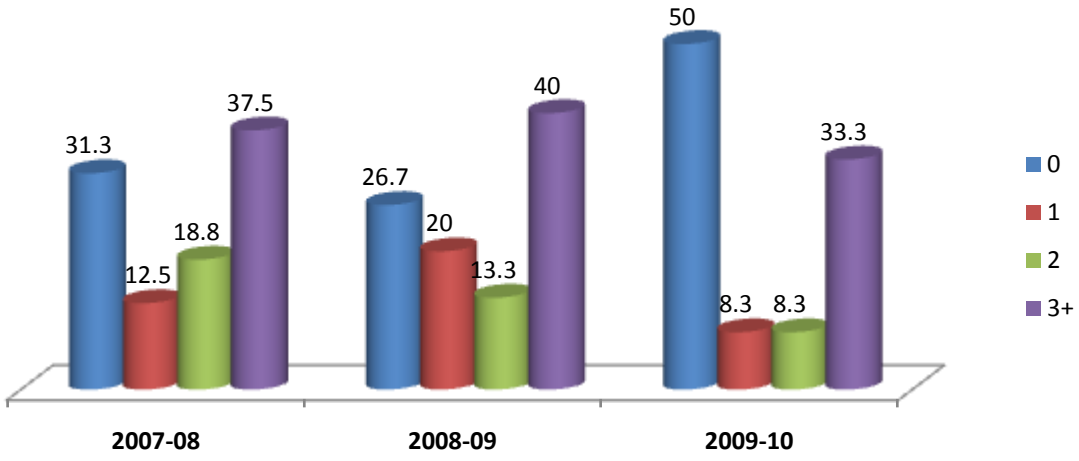
women of age below 18 remained close to seven percent whereas the percentage of deceased women from the age group of 18-19 increased from 53 percent the previous year to 57 percent. About one fifth of the deceased women in 2008-09 belonged to the age group of 20-24. Similar numbers i.e. seven percent of deceased women were from both the age group of 25-29 and above 30. In 2009-10 about 59 percent of the maternal deaths were women of the age 18-19. About one sixth of the deceased women in 2009-10 were from the age group of 20-24 and another one sixth from the age group of 25-29. In 2007-08 and 2008-09 about two third of the maternal were illiterate women. About one fifth of the deceased women had primary education and only about 13 percent of the deceased women had secondary education. In 2009-10 though the percentage of maternal deaths from illiterate women had come down to about two fifth of the total number of deaths and half the deceased women had secondary education. In 2007-08 about one fifth of the deceased women were involved in household chores only and another one fifth worked for themselves. More than two thirds of the deceased women worked out of home for a livelihood. In 2008-09 and 2009-10 women who worked out of home for a livelihood constituted to close to half of the maternal deaths and half were from the women who worked for themselves (Table 32).

Fig. 9
PERCENT DISTRIBUTION OF PHYSIOLOGICAL CONDITIONS OF A DECEASED WOMAN IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.



In 2007-08 and 2009-10 three quarters were PNC deaths and one quarter was ANC deaths, whereas in 2008-09 two fifths were ANC deaths and three fifths were PNC deaths (Fig. 9).

Fig. 10
PERCENT DISTRIBUTION OF DECEASED WOMAN'S NUMBER OF PAST PREGNANCIES IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.



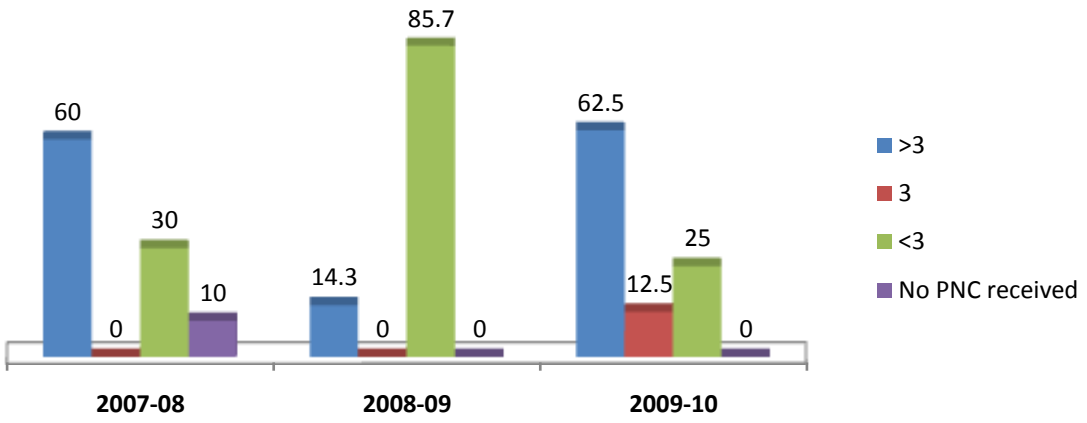
In 2007-08 about one third of the deceased women were first time mothers and another one third had more than three pregnancies earlier. One third of the deceased women had one or two pregnancies. In 2008-09 about one quarter of the deceased women were first time mothers, one fifth had one pregnancy earlier, 13 percent had two pregnancies earlier and two fifth had more than 3 pregnancies prior to this time. In 2009-10 half the deceased women were pregnant for the first time and about one third had had more 3 or pregnancies earlier (Fig. 10).

3.7.2. ANC & PNC of deceased women

In 2007-08 about four fifth of the deceased women had received ANC care and only 18 percent had not received any ANC care. In 2008-09 close to half the deceased women had not received any ANC care, whereas about a quarter of them had received one or two ANC cares. Another quarter had received three or more ANC cares. In 2009-10 about half the deceased women had received one or two ANC cares and about another half had received three or more ANC cares, only about 10 percent of the deceased women had not received any ANC care. In 2009-10 about two fifth of the deceased women had received one TT injection, one third had received two TT injections and about a quarter had not received any TT injection. In 2008-09 one third of the deceased women had received one TT injection and three fifths had received two. Only about seven percent of the deceased

women had not received any TT injection. In 2007-08 about 62 percent of the deceased women had IFA supplements. The percentage increased to 73 percent in 2008-09 and in 2009-10 it rose to 83 percent (Table 33).

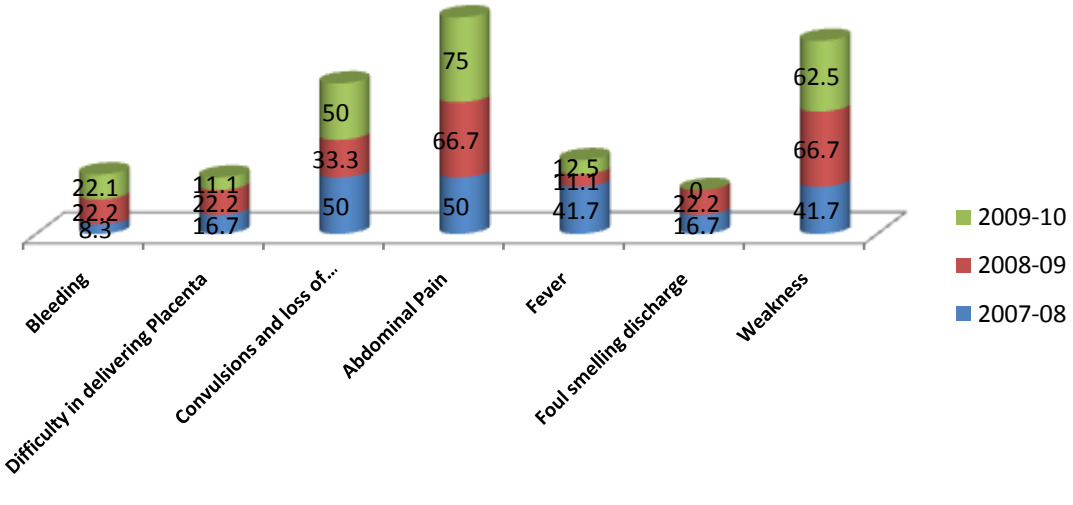
Fig. 11
PERCENT DISTRIBUTION OF PNC RECEIVED BY THE DECEASED WOMEN IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.



In 2007-08 about three fifth of the deceased women received 1-2 PNC, about 30 percent received more than 3 PNCs and only 10 percent did not receive any PNC. In 2008-09 85 percent of the deceased women had received more than 3 PNCs and the rest had received 1-2 PNCs. In 2009-10 about three fifth of the deceased women had received one or two PNCs and the rest had received three or more PNCs (Fig. 11).

3.7.3. Complications & Causes of death of deceased PPW

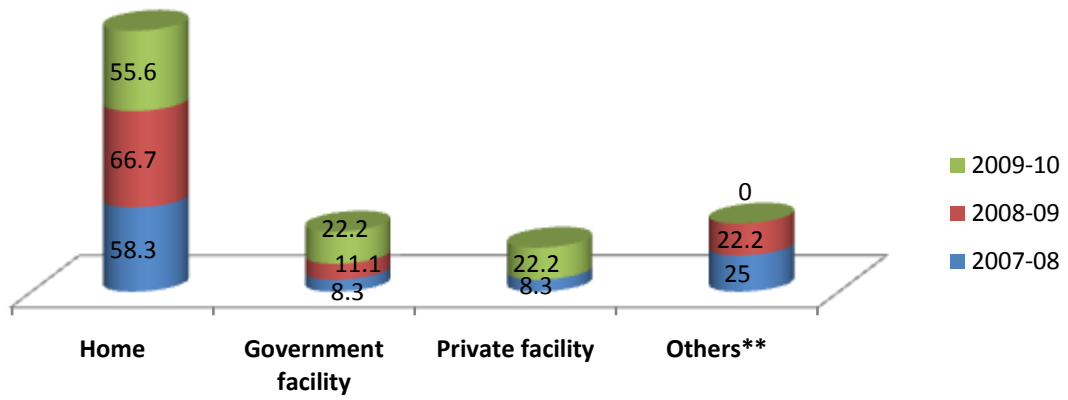
Fig. 12
PERCENT DISTRIBUTION OF DECEASED WOMEN SUFFERING FROM POSTNATAL COMPLICATIONS IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.



In 2007-08 half the deceased women had abdominal pain, convulsions and loss of consciousness before their death, just less half had fever or weakness and about 16percent had difficulty in delivering placenta or had some foul smelling discharge. In 2008-09, about two third of the deceased women had abdominal pain and weakness and about one third had convulsions. About 22 percent had bleeding, difficulty in delivering placenta and foul smelling discharge. In 2009-10, three quarters of the deceased women had abdominal pain, half had convulsions and close to two thirds had weakness before death (Fig. 12).

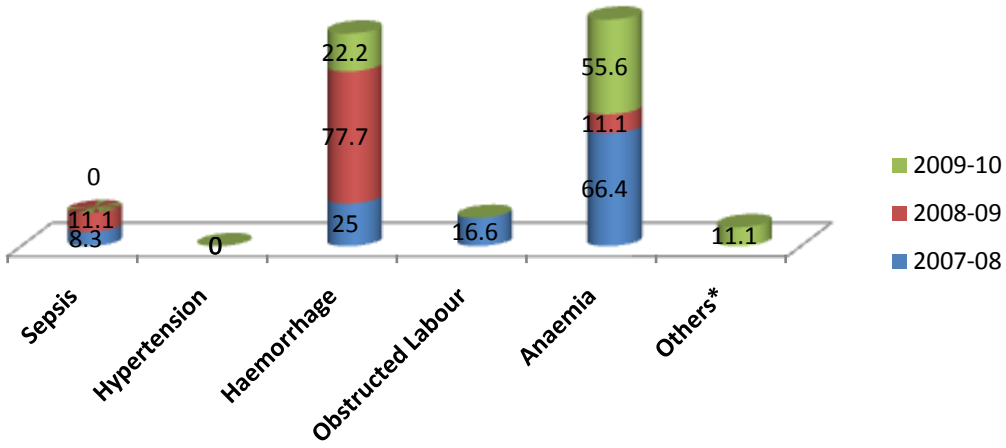
In 2007-08 two thirds of the deceased women died because of anemia, one fourth because of haemorrhage, and 16 percent due to obstructed labor. In 2008-09 close to one fifth died due to sepsis, another one fifth died due to anemia and just more than three fourth died due to haemorrhage. In 2009-10 about 55 percent women died due to anemia and 22 percent due to haemorrhage. About 11 percent died due to reasons other than sepsis, hypertension, anemia, hemorrhage or obstructed labor (Fig. 13).

Fig. 14
PERCENT DISTRIBUTION OF PLACE OF DEATH OF A DECEASED WOMEN IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.



**Others includes on the way, Trust/NGO Hospital.

Fig. 13
PERCENT DISTRIBUTION OF CAUSES OF DEATH OF DECEASED WOMEN IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.



*Others includes prolonged illness without treatment and postpartum psychosis.

In 2007-08 close to 60 percent of the maternal deaths occurred at the deceased's home and eight percent each at government and private hospitals. In 2008-09, about two thirds of the maternal deaths occurred at their homes, about one tenth at government hospitals and more than one fifth at places other than home or government or private hospitals. In 2009-10 more than half the maternal deaths occurred at the deceased's home and 22 percent each at government and private hospitals (Fig.14).

3.8. CAUSES OF NEWBORN DEATHS: VERBAL AUTOPSY

3.8.1. Background characteristics of deceased infant

The number of infant deaths in 2007-08, 2008-09 and 2009-10 were 158, 220 and 164 respectively. In more than half the cases the mothers of these infants were illiterate, about one fourth had primary education and the rest had secondary education or in very rare cases higher education too. In 2007-08 more than half mothers of the deceased infants were house wives, about one fourth worked out of home and about one fifth worked for own selves. In 2008-09 just less than half the mothers were house wives, just more than one fifth worked for own selves and more than one fourth worked out of home. In 2009-10 about two fifth were house wives and about 30 percent were working for themselves and 30 percent more out of home. In 2007-08 about one fourth of the infant deaths were in nuclear families and two thirds in joint families. In 2008-09 and 2009-10 close to 90 percent of the infant deaths were in joint families and less than 10 percent deaths in nuclear families. About 90 percent of the infant deaths were from scheduled tribes all the three years. Close to two fifths of the infant deaths were from families above poverty line

and three fifths from families below poverty line. 50-60 percent of the mothers of the deceased infant were from the age group of 18-19, 28-37 percent from the age group 20-24 and less than 10 percent each from the age groups below 18 and above 30. About 27-37 percent the women had one earlier pregnancy and 20-28 percent women had two pregnancies prior to this time. In 2007-08 about one third of the mothers had more than three pregnancies before this time and in 2008-09 and 2009-10 31-36 percent were first time mothers (Table 34).

54-60 percent deceased infants were males and 40-46 percent deceased infants were females. About 64-73 percent infant deaths occurred in the first four weeks of birth whereas 28-36 percent infant deaths happened between 5thweek to one year since birth. 66-72 percent times the deceased infants weighed less than 2.5 Kgs during birth, 13-15percent times weighed 2.5kg and rest of them were more than 2.5Kg during birth (Table 35).

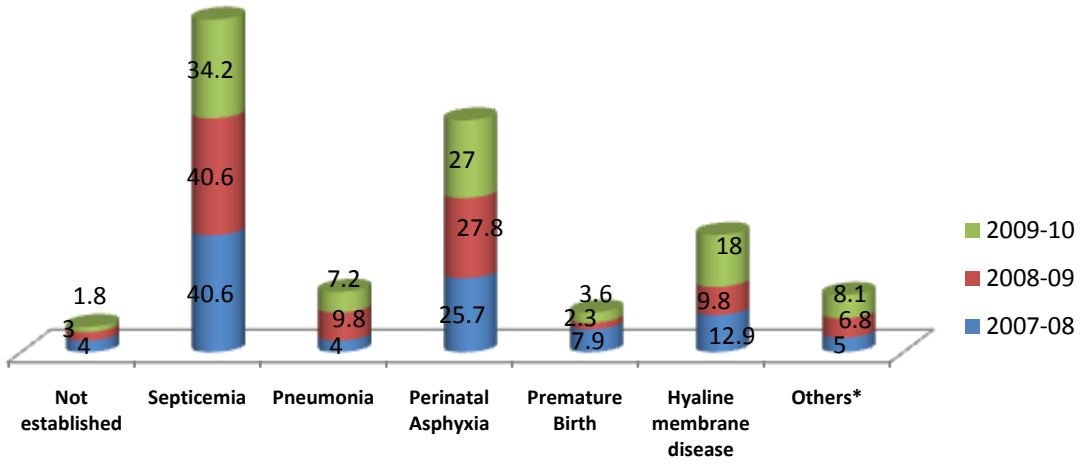
3.8.2. Care of the mother of deceased infant

51-62 percent ANC care was provided once or twice, 12-28 percent ANC care was provided thrice and around 21-27 percent ANC was provided more than thrice. In 2007-08 close to half the cases the delivery had taken place at the homes, around 16 percent in government hospitals, one fourth in private hospitals and seven percent at other places. In 2008-09 and 2009-10 around 30 percent were born at their homes, but the same amount (35 percent) of deliveries was done in government or private hospitals (Table 36).

3.8.3. Complications and causes of death of deceased newborn

Some very common complications had been seen in neonatal deaths. 45-55 percent of the infants stop breast feeding before death. In 2007-08 and 2009-10 about one third and in 2008-09 about one fourth infants stopped crying before death. Symptoms of Hypothermia were very common in most infant deaths too. 42-50 percent infants became cold before death and about one fifth of the infants grew a bluish coloration before death. About one third infants faced difficulty in breathing before death and the same amount started breathing faster. About one fifth to one fourth of the infants had severe chest in-drawing before death. About one tenth of the infants made grunting noise before death. Diarrhoea had also been seen in about one fifth of the infants before death (Table 37).

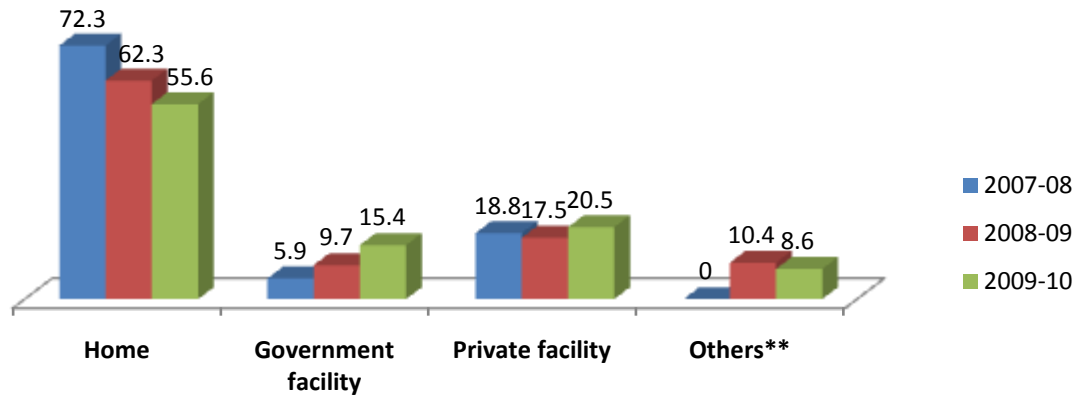
Fig. 15
PERCENT DISTRIBUTION OF CAUSES OF DEATH OF A DECEASED INFANT IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.



*Other includes Hypoglycaemia, Acute Gastroenteritis, Meconium Aspiration Syndrome, and Intracranial Haemorrhage.

In about two to four percent cases the cause of death could not be established. Among the other cases sepsis seems to be the most recurrent cause amounted up to two fifths of the infant deaths. Asphyxia had caused more than one fourth of the infant deaths during 2007-10. Hyaline membrane disease had caused 10-20 percent infant deaths. The rest of the infant deaths had been due to reasons like anemia, premature birth, and hypoglycaemia (Fig. 15).

Fig. 16
PERCENT DISTRIBUTION OF PLACE OF DEATH OF A DECEASED INFANT IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.



**Others includes on the way, Trust/NGO Hospital.

The place of death commonly was the home of the postpartum woman. In 2007-08 about three fourth, in 2008-09 more than three fifth and in 2009-10 more than half the infant

deaths had occurred at homes. Government hospitals had witnessed only six to fifteen percent of the infant deaths during 2007-10. Private hospitals had witnessed about one fifth of the infant deaths during this period. About 10 percent of the deaths had occurred at other places (Fig. 16).

FINDINGS

The average number of years since the ANMs had received training was 8 years. This seems to be quite a long time. As a result of this long gap in training most of the ANMs were confused about their responsibilities. Most think health education was their main responsibility, as a part of which they provided counseling regarding vaccination and family planning (Table 15).

The ASHAs and ANMs were of the opinion that services like IFA was availed by almost all PPW though services like counseling was totally neglected (Table 16). The concept of MAMTA cards for ensuring PPW got their postnatal check-ups done does not seem to had taken off as very few ASHAs and ANMs used it (Table 17). The percentage of private vehicles being used as a mode of transport to health facilities far outnumbers the percentage of ambulances, which was not a very encouraging fact (Fig.4). The number of ASHAs and ANMs who checked for high risk symptoms during home visit was despairingly low (Table 18). The percentage of ASHAs and ANMs who counseled the identified high risk women to undergo the necessary treatment or provide basic primary care at home was very low (Table 21).

Most of the births in the study area got registered right away. Few problems faced during birth registration was unavailability of Talati (Table 22). All the ASHAs and ANMs claimed they knew about KMC but on interrogation it was found only half the ASHAs knew the right method of providing KMC and very few think premature birth could call for KMC (Table 23). The reasons for the necessity of keeping the newborn warm was mostly not clear to the ASHAs (Fig.5). The knowledge about importance of breast feeding and the correct method of breast feeding was very good among all the ASHAs and ANMs. All the ASHAs and ANMs knew about the right time to bath the newborn. Most of the ASHAs and ANMs knew about the BCG vaccination but most of them were unaware of hepatitis vaccination, which was a very alarming fact (Table 24).

Very few ASHAs and ANMs tracked the movements of the newborn to look for danger signs. Irregularity in passage of urine/stool was not considered a danger sign by most of

the ASHAs and ANMs. This was a very risky situation as a lot of danger signs in newborns go unnoticed due to these practices (Table 27). ANMs directly check the newborn for identification of high risk cases which was a very good practice, but this was not seen in most of the ASHAs (Table 28). Awareness about common causes of newborn deaths was very low among the ASHAs and ANMs. Most of them knew only about low birth weight, premature birth, Asphyxia or Sepsis but were ignorant about other possible causes of newborn deaths. Similarly the knowledge about common causes of death among newborns was not very good in ANMs as well (Fig.6). The knowledge about symptoms of Asphyxia, Hypothermia or sepsis was very low among ASHAs and ANMs. Majority of them directly referred the identified case to nearby health facilities rather than providing basic primary care or suggesting any home remedies (Table 29). According to the survey most of the ASHAs and ANMs did not consider postpartum women to be at a high risk of death, which makes them concentrate less on risk identification (Fig.7).

The percentage of illiterate mothers was very high, which was not a good sign for the health of both, the mother and newborn (Table 1). Very few deliveries occurred in presence of ASHAs or other health care workers (Table 3). The number of ASHAs paying postnatal home visits for check-ups was good but the percentage of visits paid by ANMs was very low. The discussions during home visits by ASHA and ANM focused more on hygiene and sanitation than maternal health (Table 4). The number of check-ups at government facilities was really low. Only half the postpartum women got visited by ASHA/ANM for regular check-ups which might lead to high risk symptoms going unnoticed. Very few got counseled upon important things like iron supplementation and nutrition (Table 5). A lot of PPW seem to face lower abdominal pain though excessive bleeding and other complications were also seen. Most of these times, treatment was taken at government facilities. The average treatment cost was high which clearly showed the high number of BPL women avoiding taking treatment or could not afford it (Table 6). Though most of the PPW took IFA tablets, the knowledge about the reasons was really low. Most of the ASHAs and ANMs suggested IFA supplementation (Table 7). Knowledge of weighing the newborn immediately after birth and then weighing at regular intervals was universal among the study population. Most of the births were registered. Newborns were bathed at the right time. The knowledge of umbilical cord care was good and thus only a very few newborns got anything applied on the cord stump (Table 8). Knowledge about the importance of KMC was low and thus KMC was very rarely used to keep the newborn warm. Less than three fourth PPW knew the right way of giving

KMC. Most of the times newborns with low birth weight were provided KMC but newborns with premature birth were not (Table 9). Knowledge about breast feeding was good among the PPW. Most of them breast fed the newborn 2-3 times a day and realized that no complimentary feeding should be given till the first six months (Table 10). Knowledge about vaccination was really bad. Other than BCG and Polio0 most of the PPW did not know about other vaccinations like DPT and Hepatitis. This could lead to serious health issues in the life of the newborn later (Fig.2). A lot of times the newborns had some complications like breathing problem, skin rashes etc. Treatment for these complications were most of the times sought from private facilities rather than government either due to unavailability of the services or due to lack of faith (Table 11). Knowledge of the various danger signs in a newborn was very low. Most of the times treatment was not sought, and whenever they sought treatment most of the PPW preferred private facilities over government. ASHAs seem to be there to help PPWs seek treatment all the time but the presence of ANMs was still below expected levels (Table 12). Asphyxia seems to be the most common cause of death of newborns. The knowledge of common causes of death of newborns was very low among PPW (Table 13). The counseling PPW got from ASHAs was more than what they got from ANMs. This was not a good practice. During these counseling sessions breast feeding was the most discussed topic followed by hygiene and sanitation. Topics like vaccination, weight monitoring, infection control, keeping the newborn warm were not discussed enough (Fig.3).

An in depth interview with nine MOs, one BHO and a paediatrician clearly showed that the level of knowledge and understanding of PPC and NBC in them and in ASHAs and ANMs differed a lot. The MOs and BHO seem to be aware of all the right practices to be followed in PPC, NBC, high risk identification and managing them. The lacunae that the MOs, BHO and the paediatrician pointed out clearly stated lack of infrastructure and support staff, lack of awareness among the masses and insufficient service provided by ANMs and ASHAs. As was observed from quantitative survey of ASHAs and ANMs, FGD with ASHAs and IDI with ANMs stepped like making the sub-centres functional, improving facilities at PHCs, CHCs and improving awareness among masses through various BCC and IEC activities could help improve the situation a lot. The IDI with MOs, BHO and the paediatrician also confirmed these facts.

In depth interviews with ANMs clearly showed that the knowledge of postpartum and newborn care was very low. In case of identification of high risk, instead of providing any primary care they directly referred all the cases to nearby health facilities. The knowledge regarding possible danger signs and major causes of death among PPW and newborns was limited which leads to late identification of a lot of these cases.

The ANMs also faced constraints like lack of awareness among masses which made them complacent towards institutional deliveries. This made it difficult for the ANMs to be present during delivery and provide postnatal check-ups. Lack of specialized PPC and NBC facilities at local health care facilities like CHCs and PHCs also made the masses reluctant to visit these places even after referral from ANMs. A lot of times ANMs were not confident of the counseling they need to provide or the facilities they need to refer cases with particular complications due to lack of proper training. They felt regular and in depth training could help them deliver better service.

Focus group discussions with a group of ASHAs have brought out a lot of facts which were not clear from the quantitative survey done. A lot of ASHAs were from BPL families, which is why they were forced to spend more than the usual amount of time on household work. Most of the ASHAs did not provide basic primary care at home and directly referred them to health facilities. ASHAs listed different lacunae in service delivery like lack of nearby health facilities, limitation of the 108 service, lack of infrastructure and also lacunae from their side like untimely referral. They suggested that applications to government officials and bringing up these topics during VHSC meeting could help cover these gaps. The long overdue training sessions also came up during the discussions. The ASHAs felt that trainings at regular intervals could help them provide better service.

Discussion on newborn care brought out facts like: a lot of deliveries occurred at homes and due to lack of information ASHAs were not able to attend a lot of them. Their knowledge about measures to be taken just after birth, like weighing the newborn, birth registration etc, seemed very good. Discussion on newborn care services like KMC and necessity of keeping the newborn warm brought out facts like; a lot of them did not know the right procedure of giving KMC or the reasons why the newborn should be kept warm. Their knowledge on breast feeding was very satisfactory. The discussion on vaccinations though showed another conflict in information. The ASHAs seemed to be well informed

about most of the vaccinations, though during quantitative survey it was clear that most of them were aware of only BCG and the rest of the vaccination got neglected most of the time. Also none of the ASHAs provided any basic care to newborns identified with complications. They directly referred the newborns to private facilities or Jabugam. A lot of ASHAs did not check the newborn directly for danger signs or talked to the mother. This led to a lot of danger signs going unnoticed and thus untimely referrals. The knowledge about high risks in newborns was good, but the procedure of identifying those was not very clear to a lot of ASHAs, which was a point of serious concern. The knowledge of common causes of death like Asphyxia, Hypothermia was very poor among the ASHAs. Other than sepsis, ASHAs did not have much knowledge about other causes like umbilical cord care, asphyxia, hypothermia. This led to poor quality of counseling that they provided about NBC.

The ASHAs pointed the absence of proper newborn care facilities and lack of awareness among PPW as the biggest lacunae in newborn care. They felt awareness drive programmes and BCC activities would help alleviate the situation.

From the secondary data of verbal autopsy it was found that the number of postnatal deaths was three times the number of antenatal deaths. Most of these deaths was at the home of the deceased. All of these women had clear symptoms of complication prior to their death. Clearly different facts like high level illiteracy among these women, incapacity of ASHAs and ANMs to identify the complications and thus these women not being referred to health facilities in the right time. The percentage of women who got postnatal check-ups in time was very low. This also led to the high risk symptoms going unnoticed which led to maternal deaths.

The percentage of illiteracy among the mothers of the deceased newborns was high. More than half the deliveries were carried out at home due to which professional help was not always at hand. Most of the newborns weighed below 2.5 Kgs at the time of birth, which clearly showed antenatal care was not up to the mark. Most of the deaths were in the first month of birth. The reasons for death that were diagnosed later clearly showed the symptoms of these complications had not been read correctly and hence care was not provided in time which led to the deaths.

CHAPTER 4

DISCUSSION

One of the main indicators of the Millennium Development Goal 5 is to reduce maternal mortality ratio by three quarter with the help of skilled attendance at delivery between 1990 and 2015 (Un-MDG, 2011). The reason for skilled attendance is that the trained or skilled health worker is able to identify the danger sign of newborn and the mother and able to take the decision about when to refer the case to the higher level of health facility. But it was found in the study that only one third of the ANMs feel that maternal and new born child care was their responsibility. One of the reasons for this behaviour could be the one which came into existence from the survey that ANMs did not get any training since last 8 years, as a result of such a long gap in training most of the ANMs were confused about their roles and responsibilities. Very few deliveries occur in presence of ASHAs or other health care workers around. The number of check-ups at government facilities was really low. During these checkups PPW get counseling from ASHAs and ANMs. ASHAs counsel more than that of ANMs.

In addition to professional attention, it is important that mothers deliver their babies in an appropriate setting, where life saving equipment and hygienic conditions can also help reduce the risk of complications that may cause death or illness to mother and child (Campbell OM, Graham WJ, 2006). According to ASHAs in the study, half of the postpartum mothers used 108 service of the Government of Gujarat (GoG) and around 40 percent used private vehicle to reach the health facility for treatment of postpartum complications and other health related problems. Less than half of the ASHAs and three fifth of ANMs referred the identified women to the private facility. According to the two fifth of the ANMs the reason for this was the lack of government health facility. Very few ASHAs and ANMs tracked the movements of the newborn to look for danger signs. No passage of urine/stool was not considered a danger sign by most of the ASHAs and ANMs. This was a very risky situation as a lot of danger signs in newborns go unnoticed due to these practices. In India the public sector is perceived by many to be of low quality (ICMR, 1991). ANMs directly checked the newborns for identification of high risk cases which was a very good practice, but this was not seen in most of the ASHAs. Awareness about common causes of newborn deaths was very low among the ASHAs and ANMs. Most of them knew only about low birth weight, premature birth, Asphyxia or Sepsis but were ignorant about other possible causes of newborn deaths. Reluctance to use

institutional services may also be a problem with many mothers preferring to deliver at home even when services are affordable, accessible and of acceptable quality (Ray SK, Mukhopadhyay BB, 1984). The percentage of illiterate mothers was very high, which was not a good sign for the health of both, mother and the newborn. The percentage of private vehicles being used as a mode of transport to health facilities far outnumbered the percentage of ambulances, which was not a very encouraging fact. The percentage of ASHAs and ANMs who counseled the identified high risk women to undergo the necessary treatment or provide basic primary care at home was very low. The number of ASHAs paying home visits for postnatal check-ups was good but the percentage of visits paid by ANMs was very low. The discussions during home visits by ASHAs and ANMs focused more on hygiene and sanitation than maternal health. Newborn care practices at and immediately following delivery can contribute to morbidity and mortality of neonates (Darmstadt GL, Bhatta ZA, 2005). According to the survey most of the ASHAs and ANMs did not consider postpartum women to be at a high risk of death, which made them concentrate less on risk identification. Most of the births in the study area got registered right away. All the ASHAs and ANMs claimed they knew about KMC but on interrogation it was found only half the ASHAs knew the right method of providing KMC and very few think premature birth could call for KMC, The reasons for the necessity of keeping the newborn warm was mostly not clear to the ASHAs. Similarly the knowledge about common causes of death among newborns was not very good in ANMs as well. The knowledge about symptoms of Asphyxia, Hypothermia or Sepsis was very low among ASHAs and ANMs. Majority of them directly referred the identified case to nearby health facilities rather than providing basic primary care or suggesting any home remedies. The knowledge about importance of breast feeding and the correct method of breast feeding was very good among all the ASHAs and ANMs. All the ASHAs and ANMs knew about the right time to bath the newborn. Most of the ASHAs and ANMs knew about the BCG vaccination but most of them were unaware of hepatitis vaccination, which was a very alarming fact. The remarkable decline in neonatal mortality rates in the middle of the 20th century in high income countries has been commonly credited to the advent of hygienic childbirth practices and modern obstetric care (Piekkala P, Erkkola R, 1985). But it was found in the study that most of the times treatment was not sought, and whenever they sought treatment most of the PPW preferred private facilities over government. ASHAs seemed to be there to help PPWs seek treatment all the time but the presence of ANMs was still below expected levels. Only three fourth ANMs and half

ASHAs counseled them about hygiene and sanitation. If infection persisted one fourth of the ASHAs and one third ANMs referred the newborns to the healthcare facility.

The World Health Organization recommends dry cord care where nothing is applied on cord stump unless indicated (WHO, 1998). Various studies done in developing countries have reported mothers applying substances like mustard oil, turmeric, cow dung, antiseptic lotion etc on the cord stump (Kesterton AJ, Cleland J., 2009). Only three percent postpartum mothers applied some substance to the umbilical cord. According to the study high per cent of ASHAs and ANMs had knowledge about the infection and they counseled the postnatal mother and their families on the what follow up cord care is required to prevent infection in new born.

Thermal care is the component of essential newborn care which gets neglected (Baqui AH, Williams EK, 2007). One third of ASHAs and quarter of ANMs suggested providing KMC could be a good way of managing hypothermia. While 60 percent of mothers know about the KMC but only eight percent practiced kangaroo mother care with their child. Knowledge about the importance of KMC was low and thus KMC was very rarely used to keep the newborn warm. The knowledge of umbilical cord care was good and thus only a very few newborns got anything applied on the cord stump. Less than three fourth PPW knew the right way of giving KMC. Most of the times newborns with low birth weight were provided KMC but newborns with premature birth were not. Discussion on newborn care services like KMC and necessity of keeping the newborn warm brought out facts like; a lot of them do not knew the right procedure of giving KMC or the reasons why the newborn should be kept warm.

Breast feeding is the norm, giving prelacteal feeds is a deep-rooted custom in India and many studies have reported up to 100percent of mothers giving pre lacteal feeds (Banapurmath CR, Selvamuthukumarasamy A., 1995). Knowledge about breast feeding was good among the PPW. Most of them breast fed the newborn 2-3 times a day and realized that no complimentary feeding should be given till the first six months. During these counseling sessions breast feeding was the most discussed topic followed by hygiene and sanitation.

Very few got counseled upon important things like iron supplementation and nutrition. A lot of PPW seemed to face lower abdominal pain though excessive bleeding and other complications were also seen. Most of the times, treatment was taken at government

facilities. The average treatment cost was high which clearly showed the high number of BPL women avoid taking treatment or could not afford it. Though most of the PPW took IFA tablets, the knowledge about the reasons was really low. Most of the ASHAs and ANMs suggested IFA supplementation. Knowledge of weighing the newborn immediately after birth and then weighing them at regular intervals was universal among the study population.

Knowledge about vaccination was really bad. Other than BCG and Polio, most of the PPW did not know about other vaccinations like DPT and Hepatitis. This led to serious health issues for the newborn in his/her life later. A lot of times the newborns had some complications like breathing problem, skin rashes etc. Treatment for these complications were most of the times sought from private facilities rather than government either due to unavailability of the services or due to lack of faith. Knowledge of the various danger signs in a newborn was very low. Asphyxia seems to be the most common cause of death among newborns. The knowledge of common causes of death of newborns was very low among PPW.

Focus group discussions with a group of ASHAs and in-depth view of ANMs had brought out a lot of facts which were not clear from the quantitative survey done. A lot of ASHAs were from BPL families, which is why they were forced to spend more than the usual amount of time on household work. Most of the ASHAs did not provide basic primary care at home and directly referred them to health facilities. Different lacunae in service delivery like lack of nearby health facilities, limitation of the 108 service, lack of infrastructure and also lacunae from their side like untimely referral came into picture. They suggested that applications to government officials and bringing up these topics during VHSC meeting could help cover these gaps. The long overdue training sessions also came up during the discussions.

Discussion on newborn care brought out facts like: a lot of deliveries occurred at homes and due to lack of information. Their knowledge about measures to be taken just after birth, like weighing the newborn, birth registration etc, seemed very good. Their knowledge on breast feeding was very satisfactory. The discussion on vaccinations though showed another conflict in information. A lot of ASHAs did not check the newborn directly for danger signs or talk to the mother. This led to a lot of danger signs going unnoticed and thus untimely referrals. The knowledge about high risks in newborns

was good, but the procedure of identifying those was not very clear to a lot of health workers, which was a point of serious concern. The knowledge of common causes of death like asphyxia, hypothermia was very poor among the ASHAs. Other than sepsis, ASHAs did not have much knowledge about other causes like improper cord care, asphyxia, hypothermia. This led to poor quality of counseling that they provide about NBC.

CHAPTER 5

CONCLUSION & RECOMMENDATION

5.1. CONCLUSION

Even after years of efforts by government and nongovernmental sector to improve maternal and newborn morbidity and mortality in the country, we found that inadequate postpartum care, home deliveries and unhealthy newborn care practices by women were common in the tribal areas.

It seems that the interventions and related health messages implemented over the years have not trickled down to the poor population of tribal areas or probably they were not effective in bringing about behavioral change and awareness amongst the communities.

A closer look at both the quantitative survey and qualitative shows that, the biggest lacunae in postpartum and newborn care lies in the most basic of the service infrastructure. The lack of knowledge among ASHAs and ANMs, lack of support from government, like lack of infrastructure at healthcare facilities, lack of proper training for ASHAs and ANMs, lack of awareness in the society and reluctance to accept changes are clear examples. The knowledge regarding postpartum and newborn care services is pretty good among the health care functionaries, but somehow this has not been transferred to primary service providers like ASHAs and ANMs. Lack of specific facilities in PHCs, CHCs and SCs has rendered a deep blow to the reliability of these healthcare providers among the beneficiaries. As a result of this both the service providers as well as beneficiaries have largely not been able to reap the benefits of the healthcare services facilitated by the government.

It is alarming to note this inconsistency in practices and behaviour of women. We believe that this is due to health programs being vertical in nature, resources not being shared by various ministries and departments and multiple levels of quality of monitoring and implementation of programs.

These lacunae in practices are detrimental to the health of newborns and needs further research to determine, why such decisions are made at the household level. Also we need to change the approach adopted by current programs, which were not sufficient to bring

about the desired change. The poor performance could be related to either poor service provision or underutilization of services by the users or both.

Bringing about a change in such harmful practices requires an understanding of the deep rooted concepts of physical and spiritual benefits gained by such practices. An understanding of such phenomena and related interventions to bring behavior change in communities have shown reduction in maternal and newborn morbidity and mortality in various regions of developing world.

Clearly, the government has not been able to train and mobilize the ASHAs and ANMs in the right way leading to the lacunae in specific healthcare facilities like postpartum and newborn care in these areas. Also the authorities need to understand that the socio economic status of people in this area makes it difficult for them to accept new ways. Awareness drives organized by the government has not had enough traditional touch to it, thus the persistence of high social friction and lack of awareness in the society.

5.2. GAPS IDENTIFIED & RECOMMENDATIONS

Gaps Identified	Recommendations
Manpower 1. Inadequate medical and para-medical staff 2. No Gynaecologist and Paediatrician 3. Unavailability of skilled manpower to provide postpartum and newborn care (1 Paediatrician in private facility for 700,000 population)	• Posting of multipurpose worker (MPW) / ANM at sub-centres and PHCs
Infrastructure 1. Lack of Infrastructure	• Better infrastructure and facility provided with basic amenities • Equipments necessary providing RCH services are to be made available at PHC, FRU and CHC levels as per guidelines of GoI
Transport Facility 1. Lack of government transport system for referral in far flung areas. 2. Inaccessibility of the existing transport system.	• Ensuring transportation of women on EDD (expected date of delivery)

Service Delivery 1. Poor service delivery by key healthcare providers 2. ANMs unable to make home visits for postpartum care and newborn care affecting identification of high risk case and timely referral 3. Low postpartum and newborn referral 4. Poor outreach services 5. No blood bank facility	• Link up the AWW along with ANM, FHW to use IMNCI protocols and visit neonates and mother. • Alternative blood arrangements for anaemic mother (blood transfusion services to be made available)
Newborn care 1. Facility based newborn care not easily available.	• Effective implementation of facility based IMNCI • Institutionalize special newborn care unit at all levels of facilities.
BCC/IEC 1. BCC/IEC activities by healthcare providers has limited impact	• Undertake effective BCC activities among women on the need of contacting health personnels after home delivery
Training 1. Women volunteers neither trained nor equipped for providing IMNCI	• Train ASHA/TBA/MPW for BCC and home based postpartum and newborn care • Capacity building of medical and para-medical professionals for reduction maternal and newborn deaths (training of skilled birth attendant, EmOC, BEmOC, life saving anaesthesia skills etc.) • To increase PNC coverage, sensitize and conduct workshop for the MOs, ANM, Helper ANM, ASHA, AWW and LHV on the need for providing care to women and newborn during postpartum period • Institutionalize training plans from SC upwards Existing training programmes are vertical in nature, a paradigm shift is required – From vertical training to integrated training From knowledge transfer to skill upgradation
Monitoring & Follow-up 1. ANMs unable to monitor activities of ASHA due to increasing workload and improper distribution of work	• Systems for performance appraisal through appropriate monitoring system and use of e-governance • Closer monitoring of neonates till 28 days • Verbal Autopsy follow-up of maternal and infant deaths by matching data of

	maternal and infant death with ICDS and Talati every month • Maternal and Neonatal death review committee at district level under the chairmanship of district collector

APPENDIX 1

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APPENDIX 2

TABLES

Table 1. BACKGROUND CHARACTERISTICS

Percent distribution of PPW by selected background and household characteristics including their mean age in a tribal block (Pavi Jetpur) of Vadodara.

	(N=117)
Mean Age	24.5
Economic characteristics	
APL	47.4
BPL	50.0
Do not have card	2.6
Educational Qualification	
Illiterate	44.0
Primary	23.3
Secondary	20.7
Higher & others	12.1
Marital Status	
Married	94.8
Others*	5.2
Caste	
ST	84.7
SC	7.2
Others**	8.1

*Other includes Unmarried, Divorcee, Separated, and Widow.
**Other includes OBC and General.

Table 2. REPRODUCTIVE HISTORY

Percent PPW reproductive history including their mean age at first pregnancy, mean no. of past pregnancies and their outcome of pregnancy in a tribal block (Pavi Jetpur) of Vadodara.

	(N=117)
Mean age at first pregnancy	21.5
Mean no. of pregnancies	2.0
Outcome of pregnancy (percent)[1]	
Live Birth	92.6
Still Birth	4.5
Miscarriage	2.5
Abortion	0.4

Table 3. DELIVERY

Percent PPW place of delivery and presence of ASHA at the time of delivery in a tribal block (Pavi Jetpur) of Vadodara.

	(N=117)
Presence of ASHA at the time of delivery	57.4
Place of Delivery	
Home	15.9
Government Facility*	49.6
Private Facility	34.5

* Government Hospital includes PHC, CHC, SC.

Table 4. HOME VISITS	
Percent PPW home visits within 7 days of delivery, healthcare provider visited to provide postnatal check-ups and the topics discussed about postpartum care in a tribal block (Pavi Jetpur) of Vadodara.	
	(N=117)
Postnatal Home Visits within 7 days of delivery	94.0
Mean no. of visits within 7 days of delivery	4.2
Health care provider visited to provide postnatal check up	
ASHA	83.8
ANM	39.3
Others*	17.1
Topics discussed about postpartum care	
Nutrition	47.0
Hygiene and Sanitation	64.1
Maternal Health	12.0
Family Planning	4.3
*Other includes AWW, Dai, Outreach workers	

Table 5. POSTNATAL CHECK UP	
Percent PPW visit to health facility after delivery, place and reason of visit in a tribal block (Pavi Jetpur) of Vadodara.	
	(N=117)
Health Facility visited after delivery	69.3
Health Facility	**(N=79)**
Government Facility*	35.6
Private Facility	35.4
Jabugam	41.8
Reason of visit	
Routine check-up	50.6
Complication/Health problems	27.8
Advised/Counseled on	
Iron Supplementation	22.8
Nutrition	46.8
Hygiene and Sanitation	39.2
Referral if complication arises	19.0
Assisted by health care provider to the health facility	82.1
Assisted by	
ASHA	48.1
Family Members	43.0
Others**	7.6
* Government Facility includes PHC, CHC, SC. **Other includes ANM, Dai.	

Table 6. COMPLICATIONS	
Percent PPW faced complications during postpartum period, type of complications, place where treatment was sought and the average treatment cost in a tribal block (Pavi Jetpur) of Vadodara.	
	(N=117)
Complications during postpartum period	30.8
Type of Complications	**(N=36)**
Excessive Bleeding	14.0
Lower Abdominal Pain	77.8
Others*	26.1
Treatment taken	91.7
Place where treatment was sought	
Government Facility**	92.2
Private Facility	30.6
Others***	5.6
Average treatment cost	3231.9
Reasons for not seeking treatment	
Migration	11.1
*Other includes Severe Headache, Fever, Foul vaginal discharge, Low BP. ** Government Facility includes PHC, CHC, SC/Camp. ***Other includes At home from Dai and At home from ANM	

Table 7. IFA SUPPLEMENTATION	
Percent PPW taking IFA supplementation during their postpartum period, reasons for consuming IFA tablets in a tribal block (Pavi Jetpur) of Vadodara.	
	(N=117)
IFA tablets taken after delivery	94.0
Reason for IFA supplementation	**(N=109)**
To increase weight	14.7
To increase the Hb level To increase the milk secretion	47.7
To increase the milk secretion	48.6
Advised by	
ASHA	96.3
ANM	89.0
AWW	43.1
ORW	31.2
Others*	3.7
*Other includes Doctor, Dai.	

Table 8. NEWBORN CARE PRACTICES	
Percent PPW knowledge and practice about various newborn care services like birth weight, birth registration, bathing practices, keeping the newborn warm, cord care practices in a tribal block (Pavi Jetpur) of Vadodara.	
	N=117
Birth Weight	
Newborn weighed immediately after birth	100.0
Average birth weight of newborn	1.8
Timing of the newborn weighed	
Within 24 hrs	97.4
After 24 hrs	2.6
Full term birth of newborn	99.1
Birth Registration	
Birth registration of the newborn	99.1
Name of the document where birth of the newborn is registered	
Birth Certificate	97.4
Janmakshar	88.9
Bathing	
Average timing (in days)when newborn was bathed	4.77
Maintenance of warmth	
Newborn kept warm immediately after birth	**75.4**
Maintenance of warmth	**(N=86)**
Wrapped in clean, dry cloth	75.6
Provided KMC	8.1
Use of warmer	16.3
Cord Care	
Substance applied on umbilical cord stump	2.6

Table 9. KANGAROO MOTHER CARE (KMC)	
Percent PPW knowledge about KMC, the correct method of giving it, reason of giving KMC to newborns and their practice in a tribal block (Pavi Jetpur) of Vadodara.	
Knowledge	**(N=117)**
Knowledge about KMC	70.7
Correct method of giving KMC*	
Put the naked child on the bare chest so that direct skin to skin contact takes place and cover properly with cloth	70.7
Reason when KMC to a newborn be given	80.5
Low Birth Weight	6.1
Premature Birth	
Practice	
Newborn provided KMC	31.2
Reasons of not providing KMC	
The weight was normal	7.3
No complications/health problems	1.2
*** Among who have knowledge about KMC**	

Table 10. BREAST FEEDING		
Percent PPW breast feeding practices, timing, frequency, feeding colostrum to the newborn, complementary feeding given to the newborn and their knowledge about exclusive breast feeding in a tribal block (Pavi Jetpur) of Vadodara.		
	N=117	
	Knowledge	Practice
Colostrums fed	**na**	99.1
Timing of breast feeding		
Within half an hour	93.1	81.2
Frequency of breast feeding a newborn		
2-3 times	28.2	3.4
4-6 times	7.7	19.8
7-10 times	0.9	58.6
Others*	2.6	18.1
Complementary Feeding		
Animal Milk	6.8	2.6
Others**	4.4	12.1
Nothing to be given	53.8	0.0
Knowledge on exclusive breast feeding	99.0	
*Other includes More than 10 times and On demand. **Other includes Janam Ghutti and water		

Table 11. COMPLICATIONS	
Percent complications seen in a newborn immediately after birth, type of sickness, treatment sought and place of referral in a tribal block (Pavi Jetpur) of Vadodara.	
	(N=117)
Sickness after birth	13.8
Type of sickness	**(N=16)**
Breathing problem	18.8
Skin Rashes	18.8
Others*	68.8
Treatment taken	100.0
Place where treatment was sought	
PHC	25.0
Private Hospital	75.0
Jabugam	12.5
*Other includes fever, cough, cold, Infection etc.	

Table 12. DANGER SIGNS	
Percent PPW knowledge about danger signs seen in a newborn immediately after birth, the treatment sought, place of referral and help sought by healthcare providers in a tribal block (Pavi Jetpur) of Vadodara.	
	(N=117)
Knowledge of danger signs in a newborn	
Breathing problem	2.6
Others*	2.6
Danger signs seen in the newborn within 10 days of birth	4.3
Treatment taken	**(N=5)**
Place where treatment was sought	
Government Facility	20.0
Private Facility	20.0
Jabugam	40.0
Help sought from health care provider	100.0
Helped by	
ASHA	100.0
ANM	60.0
ORW	40.0
*Other includes newborn not crying after birth and not responding to Breast Feeding.	

Table 13. MAJOR CAUSES OF NEWBORN DEATHS : KNOWLEDGE & PRACTICE

Percent PPW knowledge about major causes of newborn deaths, no. of newborn identified with these causes, their management and place of referral in a tribal block (Pavi Jetpur) of Vadodara.

	Asphyxia (N=117)	Hypothermia (N=117)	Sepsis (N=117)
Knowledge	51.3	43.6	43.6
	(N=5)	**(N=0)**	**(N=0)**
No. of newborn suffered	10.6	0.0	0.0
Actions taken			
Took the baby to a health facility	100.0	0.0	0.0
Treatment sought			
Government Hospital	20.0	0.0	0.0
Private Hospital	40.0	0.0	0.0
Jabugam	40.0	0.0	0.0

Table 14. BACKGROUND CHARACTERISTICS

Percent distribution of ASHAs by selected background characteristics including their mean age and average population size covered in a tribal block (Pavi Jetpur) of Vadodara.

	ASHA (N=57)	ANM (N=21)
Mean Age (in years)	28.9	37.71
Economic characteristics of Household		
APL	53.7	81.0
BPL	42.6	4.8
Do not have card	3.7	14.3
Educational Qualification		
Illiterate	12.3	0.0
Primary	45.6	30.0
Secondary	26.3	45.0
Graduates	15.8	25.0
Marital Status		
Unmarried	11.1	35.0
Married	85.2	65.0
Widow	3.7	0.0
Average no. of villages services provided	na	3.4
Average Population covered	2714.1	4524.2

Table 15. TRAINING AND ROLES AND RESPONSIBILITIES OF ANM

Percent distribution of ANMs received trainings on postpartum care, average number of years and the confidence in their abilities and percent ANMs roles and responsibilities in a tribal block (Pavi Jetpur) of Vadodara.

TRAINING	ANM (N=21)
Training received on postpartum care	85.7
Average no. of years since training received	8.3
Confidence in the abilities	
I feel confident	78.9
Want more training	21.1
ROLES AND RESPONSIBILITIES	**ANM (N=21)**
Role as an ANM	
Vaccination	66.7
Family Planning	81.0
Delivery	23.8
Maternal and Child care	33.3
Health Education	81.0
Conduct surveys	33.3

Table 16. TYPES OF POSTPARTUM CARE SERVICES

Percent ASHAs knowledge on types of health services to be availed by postpartum women in a tribal block (Pavi Jetpur) of Vadodara.

	ASHA (N=57)	ANM (N=21)
Health services to be availed by postpartum women		
Check-Ups	66.7	76.2
Iron Supplementation	89.5	95.2
Family Planning services	33.3	76.2
Counseling	5.3	85.7

Table 17. POSTNATAL CHECK-UP

Percent ASHAs knowledge about timing of postnatal check up , place of availability of postnatal check up, reasons women do not seek postnatal check up within 7 days of delivery, average number of postpartum women in a tribal block (Pavi Jetpur) of Vadodara

	ASHA (N=57)	ANM (N=21)
Timing advised for postnatal check up		
1st check up within 24-48 hrs even if she has no problem	61.4	95.2
2nd check up by day 7 even if she has no problem	63.2	95.2
3rd check up by 42 days whenever she has any problems	35.1	81.0
Check-ups available		
CHC	84.2	81.0
SC/camp	47.4	95.2
PHC	86.0	95.2
Government hospital	59.6	61.9
Private/NGO hospital	66.7	61.9
Home*	7.1	76.2
Mean no. of postpartum women in the coverage area during the preceding 1 month of survey	2.62	Na
Reasons women do not seek postnatal check up within 7 days of delivery		
Superstitious Belief/Social customs	56.1	76.2
Financial constraints	57.9	52.4
Lack of Transportation facility	1.8	9.5
Irregular visits of ANM	3.5	0.0
Migration	0.0	14.3
Ensuring postpartum women to get their PNC checkups done		
Through regular home visits	59.6	33.3
Asking the family members	19.3	14.3
Asking the mother herself	22.8	38.1
Through checking the MAMTA card	1.8	0.0
Key health providers to provide postnatal care		
ASHA	na	85.7
ANM	na	52.4
AWW	na	66.7
Trained Dai	na	33.3
Out Reach Workers	na	23.8

* Home includes check-ups available at home from Dai and ANM.

Table 18. HOME VISITS

Percent ASHAs making home visits to postpartum women and counseling on postpartum care services in a tribal block (Pavi Jetpur) of Vadodara.

	ASHA (N=57)	ANM (N=21)
Postnatal Home Visits	100.0	100.0
Mean postpartum women visited preceding 1 week of conducting the survey	2.6	5.5
When you make home visits what do you do		
Enquire about menstrual cycle	19.3	14.3
Hygiene and Sanitation	36.8	66.7
Referral if complication after delivery	22.8	
Check high risk symptoms	7.0	4.8
Topics discussed about postpartum care		
Nutrition	45.6	0.0
Hygiene and Sanitation	54.4	0.0
Maternal Health	19.3	0.0
Family Planning	3.5	0.0

Table 19. RECORDS/REGISTERS		
Percent ASHAs maintaining registers of postpartum women in a tribal block (Pavi Jetpur) of Vadodara.		
	ASHA (N=57)	**ANM (N=21)**
Maintenance of registers of postpartum women	100.0	100.0
Details of postpartum women recorded		
During home visits	68.4	57.1
After asking the family members	21.1	42.9
Case paper	10.5	52.4
After asking the PPW herself	5.3	0.0

Table 20. COMPLICATIONS		
Percent ASHAs knowledge about identifying possible complications, its management among postpartum women and their place of referral in a tribal block (Pavi Jetpur) of Vadodara.		
	ASHA (N=57)	**ANM (N=21)**
Identification of Complications during postpartum period	89.1	100.0
Knowledge about possible Complications during postpartum period		
Excessive Bleeding	69.4	47.6
Lower Abdominal Pain	26.5	52.4
Convulsions	30.6	9.5
Low BP	14.3	9.5
High Fever	20.4	23.8
Foul Vaginal Discharge	32.7	14.3
Actions to be taken if any complications observed		
Refer to a health facility	85.7	100.0
Ask her to undergo required treatment	6.1	4.8
Aware/Counsel family members to seek treatment	6.1	4.8
Advise regular check-ups	8.2	4.8
Place of referral for identified women		
PHC	71.4	61.9
CHC	49.0	38.1
SC/Camp	2.0	9.5
Govt. Hospital	51.0	14.3
Private Hospital	46.9	61.9
Jabugam	57.1	81.0

Table 21. HIGH RISK		
Percent ASHAs knowledge about the timing when postpartum woman is at high risk and its appropriate referral in a tribal block (Pavi Jetpur) of Vadodara.		
	ASHA (N=57)	**ANM (N=21)**
Period when PPW are at higher risk of death		
1st day of delivery	24.6	0.0
1-3days after delivery	52.6	0.0
Within 7 days of delivery	12.3	14.3
Up to 42 days after delivery	78.9	85.7
More than 42 days after delivery	7.0	0.0
Place of referral for identified high risk women		
PHC	59.6	52.4
CHC	54.4	28.6
SC/Camp	1.8	9.5
Govt. Hospital	50.9	9.5
Private Hospital	36.8	47.6
Jabugam	71.9	52.4

Table 22. PRACTICE OF BIRTH REGISTRATION		
Percent ASHAs practicing birth registration of newborns in their coverage area in a tribal block (Pavi Jetpur) of Vadodara.		
	ASHA (N=57)	**ANM (N=21)**
Birth Registration in the coverage area	100.0	95.2
Average no. of births registered	2.7	6.8
Facing difficulties in registering births	28.1	Na
Problems faced at the time of birth registration		
Unavailability of Talati	26.3	Na

Table 23. KNOWLEDGE ON KANGAROO MOTHER CARE (KMC)		
Percent ASHAs knowledge about the correct method and reason of giving KMC to newborns in a tribal block (Pavi Jetpur) of Vadodara.		
	ASHA (N=57)	**ANM (N=21)**
Knowledge about KMC	100.0	100.0
Correct method of giving KMC		
Put the naked child on the bare chest so that direct skin to skin contact takes place and cover properly with cloth	52.6	81.0
Reason when KMC to a newborn be given		
Low Birth Weight	96.5	90.5
Premature Birth	3.5	9.5

Table 24. KNOWLEDGE ON VACCINATION		
Percent ASHAs knowledge on Vaccinations given to newborns in a tribal block (Pavi Jetpur) of Vadodara.		
	ASHA (N=57)	**ANM (N=21)**
Knowledge about vaccinations given to newborn	100.0	100.0
List of vaccines given		
BCG	100.0	100.0
Polio0	84.2	76.2
Polio	8.8	23.8
DPT	5.3	85.7
Hepatitis	0.0	28.6

Table 25. NEWBORN CARE		
Percent ASHAs knowledge on the areas where a newborn needs care and the constraints in availing it in a tribal block (Pavi Jetpur) of Vadodara.		
	ASHA (N=57)	**ANM (N=21)**
Knowledge about areas needing care in a newborn		
Umbilical cord care	94.7	100.0
Temperature of baby	78.9	85.7
Infection control	64.9	66.7
Constraints in availing care		
No nearby health facility	12.3	38.1
Financial constraints	35.1	33.3
Superstitious Belief	24.6	9.5
Lack of family support	8.8	14.3
Others*	5.3	0.0
Others* include No Paediatrician at PHC and Lack of awareness in the mother		

Table 26. COMPLICATIONS		
Percent ASHAs knowledge on identification of complications and actions taken to address it among newborns in a tribal block (Pavi Jetpur) of Vadodara.		
	ASHA (N=57)	**ANM (N=21)**
Knowledge about common health problems in a newborn		
Breathing problem	61.4	71.4
Sepsis	29.8	61.9
Convulsions	8.8	14.3
Weakness	14.0	19.0
Skin Rashes	21.1	0.0

Table 26. COMPLICATIONS (CONTD……)

Percent ASHAs knowledge on identification of complications and actions taken to address it among newborns in a tribal block (Pavi Jetpur) of Vadodara.

	ASHA (N=57)	ANM (N=21)
Addressing the problems identified		
Provide primary care	12.3	14.3
Refer to a health facility	68.4	81.0
Advise home remedies	10.5	0.0
Counseling	3.5	9.5

Table 27. DANGER SIGNS

Percent ASHAs identifying danger signs in a new born, percent ASHA identifying danger signs in a new born by process and their appropriate place of referral in a tribal block (Pavi Jetpur) of Vadodara.

	ASHA (N=57)	ANM (N=21)
Identification of danger signs in a newborn	100.0	100.0
Procedure of identification of danger signs		
After checking the newborn	52.6	66.7
After asking the mother	19.3	23.8
Whether the newborn responds to breast feeding or not	38.6	28.6
Seeing the dull movements of the newborn	3.5	9.5
Major danger signs seen in a newborn		
Not responding to breast feeding	31.6	23.8
No passage of urine/stool	3.5	23.8
Breathing Rate	47.4	33.3
Convulsions	17.5	23.8
High Fever	21.1	19.0
The newborn doesn't cry after birth	12.3	0.0
Addressing the problem identified in the newborn		
Provide basic primary care	14.0	19.0
Refer to a health facility	94.7	85.7
Counsel family members	12.3	14.3
Place of referral of the identified newborn		
PHC	56.1	85.7
CHC	50.9	28.6
SC/Camp	1.8	4.8
Govt. Hospital	43.9	9.5
Private Hospital	49.1	57.1
Children's Hospital	21.1	19.0
Jabugam	64.9	33.3

Table 28. HIGH RISK NEWBORN

Percent ASHAs identifying high risk new born, percent ASHA identifying high risk new born by process and place of referral in a tribal block (Pavi Jetpur) of Vadodara.

	ASHA (N=57)	ANM (N=21)
Identification of high risk in a newborn	98.2	100.0
Procedure of identification of high risk		
After checking the newborn	42.1	
After asking the mother	24.6	81.0
Whether the newborn responds to breast feeding or not	42.1	38.1
Seeing the dull movements of the newborn	7.0	9.5
Place of referral of the identified newborn		
PHC	45.6	61.9
CHC	33.3	19.0
SC/Camp	7.0	4.8
Govt. Hospital	42.1	14.3
Private Hospital	42.1	57.1
Children's Hospital	15.8	9.5
Jabugam	54.4	14.3

Table 29. SYMPTOMS AND ITS MANAGEMENT

Percent ASHAs knowledge about Asphyxia, Hypothermia and Sepsis: major causes of newborn deaths, its symptoms and management in a tribal block (Pavi Jetpur) of Vadodara.

ASHA (N=57)

Asphyxia		Hypothermia		Sepsis	
Knowledge	96.4	**Knowledge**	57.9	**Knowledge**	100.0
Symptoms		**Symptoms**		**Symptoms**	
1. Fast/Slow Breathing Rate	21.1	1. Temperature goes down	14.0	1. Oozing out of pus	54.4
2. Severe chest in-drawing	17.5	2. Bluish coloration of the body	21.1	2. Skin Rashes	17.5
3. High Fever	14.0	3. The body becomes cold	19.3	3. Fever	15.8
4. Grunting Noise	19.3	4. Others*	8.8	4. Pain at the site of infection	7.0
5. The child do not suck	14.0	**Management**		5. Improper hygiene and sanitation	24.6
Management		1. Not to bathe the newborn till 7 days	14.0	**Management**	
1. Mouth to mouth respiration	3.5	2. Maintenance of warmth	17.5	1. Nothing to apply on the cord	10.5
2. Refer to a health facility	52.6	3. Provide KMC	33.3	2. Use of Antiseptic/ Antibiotics	7.0
		4. Refer to a health facility	7.0	3. If Infection persist refer to a health facility	24.6
				4. Proper hygiene and sanitation	47.4

ANM (N=21)

Knowledge	100.0	**Knowledge**	100.0	**Knowledge**	100.0
Symptoms		**Symptoms**		**Symptoms**	
1. Fast/Slow Breathing Rate	71.4	1. Temperature goes down	9.5	1. Oozing out of pus	38.1
2. Severe chest in-drawing	9.5	2. Bluish coloration of the body	57.1	2. Skin Rashes	4.8
Management		3. The body becomes cold	4.8	3. Fever	19.0
1. Mouth to mouth respiration	14.3	4. The child becomes dull	14.3	4. Pain at the site of infection	14.3
2. Refer to a health facility	38.1	**Management**		5. Improper hygiene and sanitation	9.5
		1. Not to bathe the newborn till 7 days	4.8	**Management**	
		2. Maintenance of warmth	9.5	1. Nothing to apply on the cord	9.5
		3. Provide KMC	28.6	2. Use of Antiseptic/ Antibiotics	9.5
				3. If Infection persist refer to a health facility	33.3
				4. Proper hygiene and sanitation	4.8

* Other includes Fever and the child becomes dull.

Table 30. MAJOR CAUSES OF NEWBORN DEATHS : KNOWLEDGE & PRACTICE

No. of cases identified by ASHAs preceding to 1 month of conducting survey and percent cases referred to in a tribal block (Pavi Jetpur) of Vadodara.

	Asphyxia (N=57)		Hypothermia (N=57)		Sepsis (N=57)	
	ASHA (N=57)	**ANM (N=21)**	**ASHA (N=57)**	**ANM (N=21)**	**ASHA (N=57)**	**ANM (N=21)**
No. of cases identified preceding to 1 month of conducting survey	8		5		9	
Place of referral of identified cases						
PHC	75.0	42.9	22.2	38.1	80.0	47.6
CHC	12.5	9.5	55.6	9.5	60.0	9.5
Govt. Hospital	12.5	23.8	66.7	19.0	20.0	19.0
Private Hospital	25.0	23.8	55.6	23.8	60.0	14.3
Jabugam	25.0	9.5	77.8	9.5	80.0	9.5

Table 31. BACKGROUND CHARACTERISTICS

Percent distribution of deceased women by their background characteristics including socio-economic and household characteristics in a tribal block (Pavi Jetpur) of Vadodara.

	2007-08 (N=16)	2008-09 (N=15)	2009-10 (N=12)
Socio-economic characteristics			
Caste			
Scheduled Tribe	100.0	86.7	83.3
Scheduled Caste	0.0	13.3	16.7
Economic characteristics			
APL	43.8	33.3	50.0
BPL	56.2	66.7	50.0
Household Characteristics			
Average income of Household	1.1	1.3	1.5
Average household member	2.1	2.0	1.7
Type of household			
Nuclear	31.3	13.3	33.3
Joint	62.5	73.3	66.7
Extended	6.3	13.3	0.0

Table 32. INDIVIDUAL CHARACTERISTICS OF DECEASED WOMAN

Percent distribution of deceased women by their individual characteristics in a tribal block (Pavi Jetpur) of Vadodara.

	2007-08 (N=16)	2008-09 (N=15)	2009-10 (N=12)
Age of the woman			
<18	6.7	7.1	0.0
18-19	53.3	57.1	58.3
20-24	26.7	21.4	16.7
25-29	0.0	7.1	16.7
30+	13.3	7.1	8.3
Education of the woman			
Illiterate	68.8	66.7	41.7
Primary	18.8	20.0	8.3
Secondary	12.5	13.3	50.0
Occupation of the woman			
Household chores	18.8	6.7	0.0
Work for own	18.8	53.3	50.0
Others*	62.5	40.0	50.0

*Other includes laborer, service, not employed currently, any other work.

Table 33. CARE OF THE DECEASED WOMAN

Percent distribution of Ante natal and Post natal care taken before and after delivery by the deceased women in a tribal block (Pavi Jetpur) of Vadodara.

	2007-08 (N=16)	2008-09 (N=15)	2009-10 (N=12)
ANC Care			
	percent	percent	percent
Number of ANC received			
1-2	68.8	26.7	45.5
3	12.5	13.3	27.3
More than 3	0.0	13.3	18.2
No ANC received	18.8	46.7	9.1
TT Injections			
<2 doses	50.0	33.3	41.7
2 doses	37.5	60.0	33.3
Did not receive	12.5	6.7	25.0
IFA Supplementation	62.5	73.3	83.3

Table 34. BACKGROUND CHARACTERISTICS

Frequency and Percent distribution of deceased infant by their background, household and demographic characteristics in a tribal block (Pavi Jetpur) of Vadodara.

	2007-08 (N=158)		2008-09 (N=220)		2009-10 (N=164)	
Socio-economic characteristics						
	N	**%**	**N**	**%**	**N**	**%**
Educational level of mother						
Illiterate	88	55.7	117	53.4	83	50.9
Primary	43	27.2	62	28.3	42	25.8
Secondary	26	16.5	31	14.2	30	18.4
Higher	1	0.6	9	4.1	8	4.9
Working status of mother						
Household chores	89	56.7	107	48.9	63	39.4
Work for own	30	19.1	50	22.8	47	29.4
Others	38	24.2	62	28.4	50	31.3
Household Characteristics						
Average income of Household	137	1018.9	198	1413.4	160	3175.6
Average household member	156	6.8	215	6.6	162	7.5
	N	**%**	**N**	**%**	**N**	**%**
Type of household						
Nuclear	42	27.6	16	7.3	9	5.6
Joint	103	67.8	200	90.9	149	92.5
Extended	7	4.6	4	1.8	3	1.9
Caste						
Scheduled Tribe	128	84.8	196	89.1	153	93.3
Others	23	15.3	24	10.9	11	6.7
Economic characteristics						
APL	65	41.7	95	43.2	58	35.6
BPL	91	58.3	125	56.8	105	64.4
Demographic characteristics						
Age of mother						
<18	12	7.8	4	1.8	6	3.7
18-19	80	52.3	114	52.5	99	60.7
20-24	43	28.1	81	37.3	42	25.8
25-29	10	6.5	13	6.0	9	5.5
30+	8	5.2	5	2.3	7	4.3
No. of past pregnancies						
0	4	2.5	68	30.9	59	36.0
1	59	37.3	68	30.9	44	26.8
2	45	28.5	45	20.5	35	21.3
3+	50	31.6	39	17.7	26	15.9

*Other includes laborer, service, not employed currently, any other work.

Table 35. INDIVIDUAL CHARACTERISTICS OF DECEASED INFANT

Frequency and Percent distribution of deceased infant by their individual characteristics in a tribal block (Pavi Jetpur) of Vadodara.

	2007-08 (N=158)		2008-09 (N=220)		2009-10 (N=164)	
	N	%	N	%	N	%
Sex of the deceased infant						
Male	85	53.8	133	60.5	89	54.3
Female	73	46.2	87	39.5	74	45.1
Month of death						
0-28 days	101	63.9	154	70.0	118	72.4
29-365 Days	57	36.1	66	30.0	45	27.6
Birth weight						
<2.5	58	71.6	104	68.4	91	66.4
2.5	12	14.8	21	13.8	18	13.1
>2.5	11	13.6	27	17.8	28	20.4

Table 36. CARE OF MOTHER

Frequency and Percent distribution of mother of the deceased infant by their ANC care and place of delivery in a tribal block (Pavi Jetpur) of Vadodara.

	2007-08 (N=158)		2008-09 (N=220)		2009-10 (N=164)	
ANC Care						
	N	percent	N	percent	N	percent
Number of ANC received						
1-2	98	62.0	121	55.0	83	50.9
3	18	11.4	44	20.0	46	28.2
>3	42	26.6	55	25.0	34	20.9
Delivery						
Place of delivery						
Home	81	51.8	72	32.7	49	29.9
Government facility	26	16.7	78	35.5	57	34.8
Private facility	38	24.4	57	25.9	55	33.5
Others*	11	7.1	12	5.5	3	1.8

*Other includes on the way, Trust/NGO Hospital.

Table 37. DEATH OF THE NEWBORN

Percent distribution of deceased infant suffering from complications, cause and place of death in a tribal block (Pavi Jetpur) of Vadodara.

	2007-08 (N=101)	2008-09 (N=154)	2009-10 (N=118)
Complications			
Bruises or signs of injury at birth	5.0	1.3	4.2
Deformity at birth	4.0	9.1	4.2
Stopped crying before death	33.7	26.8	33.1
Stopped Breast Feeding	54.2	58.0	45.1
Convulsions	10.2	9.7	17.8
Unconscious	28.6	33.8	39.8
Bulging forehead	5.1	2.6	3.4
Sunken Fontenelle	5.5	2.6	3.4
Child become cold	45.4	42.2	50.0
Child become blue	19.8	12.4	23.7
Difficulty in Breathing	32.0	47.1	48.7
Fast Breathing	33.0	32.5	36.2
Chest in drawing	24.7	20.9	18.6
Grunting Noise	11.2	11.8	8.5
Cough	4.0	7.2	7.6
Fever	6.1	7.8	11.1
Diarrhoea	11.1	5.2	7.6
Vomiting	3.1	1.9	8.5
Pallor of skin	6.1	10.4	3.4

APPENDIX 3

TRANSCRIPT OF IDIs AND FGDs

Table 38. IN-DEPTH INTERVIEW OF MEDICAL OFFICERS AND BHO ABOUT PPC AND NBC IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.

	M1	M2	M3	M4	M5
Postnatal home visits	compulsory visits - 1st, 3rd and 7th day after delivery	compulsory visits - 1st, 3rd, 7th day and 28th day after delivery	compulsory visits - 1st, 3rd and 7th day after delivery	compulsory visits - 1st, 3rd and 7th day after delivery	compulsory visits - 1st, 3rd and 7th day after delivery
Importance of postnatal care	All the maternal complications occur in the first 7 days after delivery and the women is at high risk during that period.		Early detection of complications, timely referral to improve the health of PPW.	Postpartum period is very critical because maternal complications occur during that period which requires immediate intervention.	It is the postpartum period during which the women are at high risk of death and postnatal check-ups are very important for early identification of complications.
Facility offering postpartum care	Postpartum care is provided during home visits.	Postpartum care is provided during home visits.	Postpartum care is provided during home visits.	On the 1st day of delivery the women is provided postpartum care in the healthcare facility itself.	Postpartum care is provided during home visits.
Services provided by	ASHA, FHW	ASHA, ANM	ASHA, ANM	ASHA, FHW	ASHA, ANM
Types of postpartum care services	Hygiene and sanitation, iron supplementation, routine examination.	Counseling on family planning.	Nutrition, counseling on maternal health.	Routine management of complications, health education, nutrition, iron supplementation.	Abdominal check-up, vaginal check up, BP, body fluid, skin test, iron supplementation.
Services offered at facility	Examination of BP, pulse, respiration rate, skin test is done at the health facility.	Family Planning services are provided at the health facility.	Services are provided during home visits.	Routine management of health problems are done at the health facility.	Services are provided during home visits.
Ensuring women for postnatal check-ups	Through regular home visits by the healthcare provider and counseling the family members and importance of postnatal check-ups.	Through regular home visits by the healthcare provider and health education.	Through IEC activities PPW are being counseled about maternal health and importance of postnatal check-ups.	Through regular home visits by the healthcare provider.	Through regular home visits by the healthcare provider.
Timing during which a women is at high risk	Within 7 days of delivery.	Up to 42 days after delivery.	Within 7 days of delivery.	Within 7 days of delivery.	1-3 days after delivery.

Table 38. CONTD…

	M1	M2	M3	M4	M5
Identification of high risk in PPW	Anaemia, excessive bleeding.	Severe anaemia, low Hb level, sepsis, shock.	Hypertension, postpartum haemorrhage (PPH), difficulty in delivering placenta, diabetes, sickle cell anaemia, heart disease.	Severe anaemia (nutritional), sepsis, shock, PPH.	Eclampsia, PPH, Anaemia, convulsions, excessive bleeding.
Treatment sought/place of referral	CHC, government facility.	CHC, government facility.	CHC, government facility.	CHC, government facility.	Private facility, government facility.
Causes of maternal deaths	Sickle cell anaemia, premature delivery, obstructed labour.	Severe infection, shock, convulsions, severe anaemia.	Heavy bleeding, heart disease, prolonged labour, septicemia.	Sepsis, anaemia, injury to genital organs.	Severe anaemia, septicemia.
Lacunae in postpartum care service delivery	Lack of facilities at the PHC, delivery by untrained staff.	No blood bank facility, no proper roads in the interior tribal areas , no transportation, no manpower, no facilities at PHC, no gynaecologist, lack of infrastructure, poor decission making, no political mobilization, lacunae in the government set up.	No delivery room, untimely referral, SC has been made PHC, lack of facilities at PHC, lack of awareness among PPW.	No manpower, no training of the existing manpower, poor transportation, lack of infrastructure, no medical supplies and equipments at PHC.	No manpower, no training of the healthcare providers, one staff is used as multipurpose worker, lack of awareness in the community.
Bridging the gaps observed in the service delivery	Facility to be provided at PHC.	Government support.	Proposal sent to the higher authority, mass awareness.	Promoting institutional delivery, strengthening postpartum visits, training to the healthcare providers for early detection of complications.	Posting of AYUSH doctor at PHC, field visits of MOs, conducting training sessions, ORWs to be put in the PHC, distribution of work should be there, BCC activities to generate awareness in the community.
Suggestions to improve the health of PPW	Health education.	Regular check-ups, proper nutritious diet, iron supplementation.	Counseling and awareness among the PPW.	Early detection of the complications, management of health problems at the primary level, strengthening postpartum visits.	Counseling each and every PPW about the complications.

Table 38. CONTD…

	M1	M2	M3	M4	M5
Facility offering newborn care	No newborn care service available in the facility.	No newborn care service available in the facility.	No newborn care service available in the facility.	No newborn care service available in the facility.	24x7 newborn care available in the facility.
Types of newborn care services	Hygiene and sanitation, cord care practices to prevent infection, breast feeding practices, bathing practices.	Practices on maintenance of warmth, vaccination, breast feeding practices.	Kangaroo mother care, breast feeding techniques, maintenance of warmth.	Kangaroo mother care, breast feeding techniques.	Maintenance of warmth, breast feeding techniques.
Complications in newborn	Breathing problem, convulsions, infection.	High fever, not responding to breast feeding,	Neonatal jaundice, diabetes, low birth weight, pneumonia.	Low birth weight, hypothermia, hypoglycemia, acute respiratory infection.	Congenital abnormality, low birth weight, septicemia,
Treatment taken	Referred to health facility.	Provide basic primary care, refer to health facility	Refer to health facility.	Initial treatment is provided at PHC.	Counsel the mothers about exclusive breast feeding for 6 months, refer to a health facility.
Procedure of identification of danger signs in newborn	After checking the newborn.	After examining the newborn.	After examining the newborn.	After examining the newborn.	After examining the newborn.
Major danger signs	Temperature goes down, bluish colouration of the body, skin rashes, convulsions.	Convulsions, high fever, breathlessness, infection, unconsciousness.	Bluish colouration of the body, temperature of the newborn goes down, difficulty in passage of urine/stool.	Dull movements of the newborn, not crying after birth, respiratory distress, fever, cough, difficulty in breathing.	Difficulty in breathing, not responding to breast feeding, fever, cough.
Management of the identified problem/place of referral	Providing KMC, keeping the baby warm, refer to private hospitals, CHC.	Try to stabilize the newborn by providing primary care, if nor then referred to CHC, private facilities.	Refer to CHC, private and government facilities.	Initial treatment is provided at PHC.	Initial treatment is provided at PHC.
Identification of high risk in a newborn	Umbilical cord infection, Hypothermia.	Premature birth, Low birth weight, mal nourishment, anaemia, congenital abnormalities.	Low birth weight, congenital abnormality, neonatal jaundice.	Low birth weight, acute respiratory infection, sepsis.	Low birth weight, anaemia, septicemia.
Treatment sought/place of referral	Referred to CHC and private facilities.	CHC, private hospitals, government facilities.	Refer to CHC, private and government facilities.	Initial treatment is provided at PHC, and then referred to CHC, private facilities.	Homeopathy treatment is provided, if not cured then referred to CHC, government facilities.

Table 38. CONTD…

	M1	M2	M3	M4	M5
Causes of newborn deaths	Low Birth Weight, Sepsis, congenital abnormalities.	Sepsis, low birth weight, extreme prematurity, congenital abnormality.	Acute pneumonia, low birth weight, asphyxia, premature birth.	Birth asphyxia, hypothermia, sepsis, low birth weight.	Premature birth, pneumonia, low birth weight, anaemia.
Care provided for Premature Birth	Referred to health facility.	Referred to health facility.	Referred to health facility.	Referred to health facility.	Referred to health facility.
Care provided for Low Birth Weight	Provide KMC.	Maintenance of warmth.	Referred to health facility.	Provide KMC.	Maintenance of warmth.
Common myths and misconception	Rather than breast milk newborns are fed other fluids.	Colostrum is not fed to the newborn, separate mother and child after birth.	Newborns are fed other fluids/liquids like animal milk.	Newborns are bathed immediately after birth, colostrum is not fed.	Apply ash in the umbilical cord stump.
Suggestions to improve the health of newborn	Counseling postnatal mothers about exclusive breast feeding, awareness about newborn health, family education.	Improve literacy, strengthen the service delivery mechanism.	Basic newborn care facilities must be provided at PHC.	Health education, counseling about newborn care.	Counseling about newborn care.

Table 38. CONTD…

	M6	M7	M8	M9	BHO
Postnatal home visits	compulsory visits - 1st, 3rd and 7th day after delivery	compulsory visits - 1st, 3rd, 5th and 7th day after delivery	compulsory visits - 3rd, and 7th day after delivery	compulsory visits - 1st, 3rd and 7th day after delivery	1st and 3rd day after delivery.
Importance of postnatal care	Postpartum visit is necessary during this postpartum period to identify the complications/health problems and timely referral can be done.	During postpartum visits regular body examination is done to examine the complications and accordingly proper monitoring and extra care could be taken.	Complete body examination is done to identify the complications and appropriate timely referral could be done.	Postpartum visits are important during the 1st week so that the complications/health problems can be timely referred and treated.	For early identification of complications and health problems.

Table 38. CONTD…

	M6	M7	M8	M9	BHO
Facility offering postpartum care	On the 1st day of delivery the women is provided postpartum care in the healthcare facility itself.	Postpartum care is provided during home visits.	On the 1st day of delivery the women is provided postpartum care in the healthcare facility itself.	Postpartum care is provided during home visits.	Postpartum care is provided on the 1st day of delivery at the healthcare facility then subsequent care is given during home visits by ASHA, ANM.
Services provided by	ASHA, ANM	ASHA, FHW	ASHA, ANM	ASHA, FHW, AWW	ASHA, ANM.
Types of postpartum care services	Routine examination like BP, pulse, temperature, counseling on maternal health.	Routine check-ups to examine bleeding, complications, counseling on family planning methods.	Iron and Calcium supplementation,	Hygiene and sanitation, Nutrition.	Nutrition, family planning, hygiene and sanitation, iron supplementation.
Services offered at facility	Routine check up and examination of complications are done at the health facility.	Routine examination is done at the health facility.	Routine examination is done at the health facility.	Examination of BP, temperature, respiration rate is done at the health facility.	Complete body examination to identify complications if any.
Ensuring women for postnatal check-ups	Through regular home visits by the healthcare provider.	Through regular home visits by the healthcare provider.	Through regular home visits by the healthcare provider.	Through generating awareness among the postpartum women and their family members.	BCC/IEC activities to generate more and more awareness among the mass.
Timing during which a women is at high risk	Up to 45 days after delivery.	Within 7 days of delivery.	1-3days after delivery.	1-3days after delivery.	Up to 42 days of delivery.
Identification of high risk in PPW	PPH, septicemia, Eclampsia, low weight.	PPH, hypoglycemia, excessive blood loss, low BP.	PPH, hypertension, pre Eclampsia, severe anaemia, short stature, premature delivery, delivery at a higher age.	Twin delivery, premature birth, anaemia, PPH/Eclampsia, short stature.	Excessive bleeding, weakness, anaemia.
Treatment sought/place of referral	Private facility, government facility, CHC.	Private facility, CHC.	Private facility, CHC.	Private facility, CHC.	PHC, CHC, government facility.

Table 38. CONTD…

	M6	M7	M8	M9	BHO
Causes of maternal deaths	Eclampsia, PPH, septicemia.	PPH, anaemia.	PPH, anaemia.	Anaemia, PPH, septicemia, congenital abnormality.	Anaemia, congenital abnormality, prolonged labour, difficulty in delivering placenta.
Lacunae in postpartum care service delivery	Lack of awareness, financial constraints, superstitious belief among the family members.	Unwillingness of the PPW to got ot the facility, prefer home delivery, no proper ANC check-ups.	Untimely referral, prefer home delivery, no transportation, no blood bank facility at PHC, no gynaecologist, no training to healthcare providers.	Migrations, delivery conducted by untrained Dai, lack of awareness regarding complications, prefer home delivery.	No nearby healthcare facility, lack of basic facilities at these health centres.
Bridging the gaps observed in the service delivery	Health education, BCC/IEC activities.	Timely referral, mass awareness, treatment follow up, proper monitoring by healthcare providers, regular Hb check-ups.	Mass awareness, BCC/IEC, more training to be provided, application sent to Zilla Panchayat for blood bank facility and gynaecologist, health education.	IEC/BCC activities, more and more awareness campaigns.	SC to be made functional, more facilities to be provided at PHC, CHC.
Suggestions to improve the health of PPW	Mass education, awareness of the possible complications among the PPW.	Intake of nutritious diet, iron supplementation.	Intake of nutritious diet, iron supplementation, birth spacing, awareness about complications.	Timely referral, promoting institutional delivery.	Proper check up, regular monitoring by doctor.
Facility offering newborn care	No newborn care service available in the facility.	No newborn care service available in the facility.	Newborn care service available at the facility.	No newborn care service available in the facility.	Special newborn care unit not available in the existing facilities.
Types of newborn care services	Kangaroo mother care, breast feeding techniques, maintenance of warmth, bathing practices.	Breast feeding techniques, hygiene and sanitation, bathing practices.	Maintenance of warmth, vaccination, breast feeding practices, weight monitoring.	Breast feeding techniques, umbilical cord care, and vaccination.	Breast feeding techniques, umbilical cord care, vaccination, bathing practices, hygiene and sanitation.
Complications in newborn	Low birth weight, Fever.	Low birth weight, weakness, asphyxia.	Problem in sucking, low birth weight, convulsions.	Acute respiratory infection, low birth weight, umbilical sepsis, skin rashes.	Respiratory infection, sepsis, skin rashes.

Table 38. CONTD…

	M6	M7	M8	M9	BHO
Treatment taken	Refer to health facility.	Refer to health facility.	Initial treatment is provided at PHC.	Refer to health facility.	At PHC, CHC and government facilities.
Procedure of identification of danger signs in newborn	After seeing the dull movements of the newborn.	After examining the newborn.	After examining the newborn.	After examining the newborn.	After examining the newborn.
Major danger signs	Neonatal jaundice, convulsions, bronchitis, diarrhoea.	Low birth weight, temperature of the newborn goes down, not crying after birth, breathing problem, not responding to breast feeding.	Breathlessness, convulsions, no passage of urine/stool, not crying after birth.	Breathing problem, infection, pneumonia, not responding to breast feeding.	Pallor of the skin, difficulty in breathing, convulsions.
Management of the identified problem/place of referral	Referred to CHC and private facilities.	Referred to CHC, government and private facilities.	Referred to CHC and private facilities.	Initial treatment is provided at PHC.	Initial treatment is provided at PHC, if acute condition then referred to CHC and government facility.
Identification of high risk in a newborn	Low birth weight, asphyxia.	Hypothermia, low birth weight.	Hypothermia, low birth weight.	Asphyxia, sepsis, pneumonia.	Congenital abnormalities, hypothermia, acute respiratory infection.
Treatment sought/place of referral	Initial treatment is provided at PHC, then referred to CHC, private facilities.	Referred to CHC, government and private facilities.	Referred to CHC, government and private facilities.	Referred to CHC, government and private facilities.	Referred to CHC and government facilities.
Causes of newborn deaths	Low birth weight, sepsis, asphyxia. Hypothermia.	Infection, diarrhoea, asphyxia, low birth weight, premature birth.	Acute respiratory infection, low birth weight.	Sepsis, hypothermia, asphyxia, pneumonia.	Asphyxia, sepsis, hypothermia, pneumonia.
Care provided for Premature Birth	Referred to health facility.	Referred to health facility.	Referred to health facility.	Referred to health facility.	Provide KMC, maintenance of warmth, wrapping the newborn to mother's chest.

Table 38. CONTD…

	M6	M7	M8	M9	BHO
Care provided for Low Birth Weight	Referred to health facility.	Referred to health facility.	Exclusive breast feeding for 6 months, provide KMC, and then referred to healthcare facility.	Referred to health facility.	Advise regular breast feeding, else refer to health centres.
Common myths and misconception	Nothing as such.	Newborn is given complementary feeding, mother do not breast feed due to blind belief, traditional way of treating the newborn if he suffers from fever.	Nothing as such.	Not fed colostrum, complementary feeding.	Nothing as such.
Suggestions to improve the health of newborn	Basic newborn care facilities to be provided at the PHC, Awareness campaigns, IEC/BCC activities.	Hygiene and sanitation to prevent infection, proper breast feeding at regular intervals, and timely referral of the newborn identified with complication.	Posting of neonatologist, basic newborn care facilities to be provided at the PHC.	Newborn care facility to be provided at the PHC.	Regular breast feeding, vaccination of the newborn, counseling postnatal mothers on newborn care practices by healthcare providers.

Table 39. IN-DEPTH INTERVIEW OF ANMs ABOUT PPC AND NBC IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.			
	ANM 1	**ANM 2**	**ANM 3**
Types of postpartum care services	Hygiene and sanitation, Iron and Calcium supplementation.	Nutrition, family planning, hygiene and sanitation.	Nutrition, Iron supplementation, hygiene and sanitation.
Ensuring women for postnatal check-ups	Through proper counseling on maternal health and generating awareness.	Health education.	Counseling the postpartum women as well as her family members.
Postnatal home visits	1st, 3rd and 7th day after delivery.	1st, 3rd and 7th day after delivery.	1st, 3rd and 7th day after delivery.
Records/registers	Maternal and child care register, IMNCI register.	Maternal and child care register.	Maternal and child care register, weight monitoring register, ANC/PNC register.
Complications in PPW	Excessive bleeding, weakness.	Heavy bleeding, PPH, sepsis.	Convulsions, excessive bleeding, congenital abnormality.
Actions taken	Refer to healthcare facility.	Refer to healthcare facility.	Refer to healthcare facility.
Place of referral of identified complications	CHC and government facilities.	CHC and private facilities.	CHC and private facilities.
Timing of the PPW at high risk	Within 42 days of delivery.	Within 7 days of delivery.	In the first 15 days after delivery.
Identification of high risk in PPW	Heavy bleeding, anaemia, sepsis, PPH, high BP.	Difficulty in delivering placenta, PPH, hypertension.	Anaemia, short stature, delivery at a higher age, low BP.
Place of referral of identified high risk cases	CHC and government facilities.	CHC and private facilities.	PHC, CHC and private facilities.
Causes of maternal deaths	PPH, anaemia, sepsis.	PPH, anaemia, septicemia, prolonged labour.	Anaemia, heavy bleeding, PPH.
Lacunae in postpartum care service delivery	Delivery conducted by untrained dai, no postnatal check-ups.	No Sub centre, no delivery room at PHC.	Lack of knowledge and awareness among the mass, no blood bank facility, untimely referral, lack of facility at PHC.
Bridging the gaps observed in the service delivery	Early risk identification, health education, mass awareness, promoting institutional delivery.	Application to the government to provide the services.	Application to government for providing basic facilities at PHC.
Details of training received on postpartum care	21 days training on postpartum care at Jamnabai.	No training was made available on postpartum care.	No training was made available on postpartum care.
Confidence in abilities	More technical and specific training required on newborn care services.	Require training.	Require training.
Presence at the time of birth of newborn	Only at CHC.		Doesn’t assist the pregnant women to the healthcare facility.

Table 39. IN-DEPTH INTERVIEW OF ANMs ABOUT PPC AND NBC IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.

	ANM 1	ANM 2	ANM 3
Birth weight	Taken within 24 hrs of birth.	Immediately after delivery.	During home visit, on the 2nd day weight of the newborn is taken.
Birth registration	Done by ASHA s at zilla Panchayat.	Done at the Panchayat.	ASHA goes to the Panchayat and do the birth registration of the newborn.
Advice on KMC	If LBW then KMC to be provided.	If LBW then KMC to be provided.	If LBW then KMC to be provided.
Advice about maintenance of warmth	To prevent the newborn from catching cold.	Cover with socks, cap, and blanket so that the newborn doesn't catch cold.	Cover with socks, cap, and blanket so that the newborn doesn't catch cold.
Bathing practices	7 days after birth.	8 days after birth.	7 days after birth.
Breast feeding practices	Breast feeding at regular intervals and counseling on techniques of breast feeding.	Breast feeding at regular intervals.	Breast feeding at regular intervals.
Colostrum	Colostrum to be fed within half an hour of birth.	Colostrum to be fed within half an hour of birth.	Colostrum to be fed within half an hour of birth to prevent against all diseases.
Complementary feeding	No complementary feeding till 6 months.	No complementary feeding till 6 months.	No complementary feeding till 6 months.
Vaccination	BCG, Polio0, Polio, DPT, Hepatitis.	BCG, Polio0, Polio, DPT, Hepatitis.	BCG, Polio0, Polio, DPT.
Complications in newborn	Pneumonia, diarrhoea, low birth weight.	Tetanus, skin rashes, infection, neonatal jaundice, hypothermia.	Pneumonia, low birth weight.
Treatment taken	Refer to healthcare facility.	Refer to healthcare facility.	Refer to healthcare facility.
Procedure of identification of danger signs in newborn	After checking the newborn and whether responding to breast feeding or not.	After examining the newborn.	After examining the newborn.
Major danger signs	Low birth weight, not crying after birth, not responding to breast feeding.	Hypothermia, congenital abnormality, asphyxia.	Not crying of the newborn after birth, low birth weight, not responding to breast feeding, fever/cold.
Management of the identified problem/place of referral	Refer to CHC and private facilities.	Refer to CHC and private facilities.	Refer to CHC.
Identification of high risk in a newborn	Pneumonia, diarrhoea, congenital abnormalities, anaemia.	Asphyxia, jaundice, hypothermia.	Sepsis, low birth weight.
Treatment sought/place of referral	Refer to CHC, government and private facilities.	Refer to CHC, government and private facilities.	Refer to CHC.
Causes of newborn deaths	Infection, low birth weight, hypothermia, asphyxia, pneumonia, premature birth.	Low birth weight, premature birth, pneumonia.	Twin delivery, low birth weight, premature birth.

Table 39. CONTD……..

	ANM 1	ANM 2	ANM 3
Care provided for Premature Birth	Refer to healthcare facility.	To keep the newborn in incubator, if extreme prematurity then refer to government facility.	Refer to healthcare facility.
Care provided for Low Birth Weight	Refer to healthcare facility.	Provide KMC, else refer to CHC for complete health check-up.	Refer to healthcare facility.
Umbilical cord care	Nothing to apply on the cord stump.	Nothing to apply on the cord stump to prevent infection.	Nothing to apply on the cord stump.
Asphyxia	Mouth to mouth respiration, else refer to healthcare facility.	Mouth to mouth respiration, else refer to healthcare facility.	Refer to healthcare facility.
Hypothermia	Provide maintenance of warmth else refer to healthcare facility.	Provide maintenance of warmth else refer to healthcare facility.	Provide maintenance of warmth else refer to healthcare facility.
Sepsis	Proper hygiene and sanitation, if infection persists refer to healthcare facility.	Refer to healthcare facility.	Refer to healthcare facility.
Lacunae in newborn care service delivery	Late follow up, Knowledge about which healthcare facility to refer for which complications is unknown, No transportation (108 don't reach to far flung areas), no blood bank facility, no nearby healthcare facility, no paedtrician, no newborn care facility available at the PHC/CHC.	No newborn care facility at PHC, no paedtrician, no transportation facility, no manpower, Sub centre not functional.	Untimely referral of the newborn, if girl child then ignorance towards her health, superstitious belief, no newborn care unit at PHC, no paedtrician, prefer home delivery.
Bridging the gaps observed in the service delivery	Government has to provide basic facilities at PHC/CHC for newborns, mass awareness about the causes of newborn deaths.	Application to the government to provide the services.	Application to the government to provide the services.
Details of training received on newborn care	2received days training on newborn care regarding vaccination and other newborn care practices.	No training was made available on newborn care.	No training was made available on newborn care.
Confidence in abilities	wish to have more training about the causes of newborn deaths, danger signs.	Require training.	Require training.
Individual at high risk	Postpartum women is at higher risk of death. According to her if a mother is at high risk, ultimately the child is also at higher risk.	Postpartum women are more at higher risk of death.	Postpartum women are at higher risk of death. According to her if a mother is at high risk, ultimately the child is also at higher risk.

FGD AMONG ASHAs ABOUT PPC AND NBC IN A TRIBAL BLOCK (PAVI JETPUR) OF VADODARA.

As part of the qualitative research, Focus Group Discussions (2) were conducted with the ASHA workers. The objective of conducting FGDs was to understand the knowledge, behaviors and perception of the health care providers regarding importance of post-partum care and newborn care services in the Pavi Jetpur block and understand their views in identifying the lacunae in these services due to which newborn and maternal death tolls are increasing alarmingly.

Knowledge and Practices of ASHA workers

1. Socio-economic profile of ASHAs

Two FGDs were conducted and a total of twenty three ASHAs participated from two clusters namely Suskal and Dungarvant of Pavi Jetpur block, Vadodara. The average age of the ASHAs was 30 years. Five of the ASHAs were graduates. 52percent of the ASHAs had studied till secondary section and 26percent had studied till primary section. All the ASHAs were married. Half of the ASHAs (50percent) socio-economic status is below poverty line.

2. Post-partum Care Services:

2.1. Types of services

After delivery ASHA go for home visits on the 1st, 3rd, 7th and 28th day and counsel them on various topics of post-partum care like Nutrition, Iron/Calcium Supplementation, Hygiene and Sanitation (++), Family Planning, Maternal Health, Early Risk Identification and immediate referral of the high risk cases. ASHA records details of all post-partum women in MIS register, Daily Diary, Eligible Couple register, Delivery register. Through Behavioral Communication Change (BCC) activities, health education, generating awareness counseling the family members about the benefits of maternal health, ASHA ensures that all the post-partum women have their PNC check-ups done.

"*Suhavadi ben ane balak ne davakhane javathi su faydo thay che te samjavie*"

(Counseling the postpartum women about the benefits of regular check-ups at the healthcare facility)

2.2. Complications in postpartum women

According to ASHAs some of the complications/health problems that postpartum women face during postnatal period are excessive bleeding (++), foul vaginal discharge (++), breathing problem, high fever, anaemia (++), swelling of the hands and legs (++), weakness (++). When such complications are observed in a postpartum woman, only one-third ASHAs provide basic primary care like Iron and Calcium supplementation. Rest of the ASHAs refer these cases to PHC (++), CHC and Jabugam (++).

2.3. High Risk among postpartum women

According to most of the ASHAs a postpartum woman is at high risk of death in the first 3 days after delivery. Only 10percent of the ASHAs realize that the first seven days are the most critical high risk period for a postnatal woman. Some of the high risk symptoms identified by the ASHAs were prolonged labour (++), premature delivery, sickle cell anaemia (++), low Hb level, heavy bleeding (++), and repeated delivery. Most of these identified high risk cases are referred to PHC, CHC, Private facilities and Jabugam.

Some of the common causes of maternal deaths after delivery are sickle cell anaemia (++), premature delivery (++), postpartum haemorrhage (++) and sepsis.

2.4. Lacunae in service delivery (PPC)

No nearby health facility (++), untimely referral, no delivery facility like equipments, sonography at PHC/CHC (++), lack of infrastructure, no manpower, no blood bank facility (++), no gynaecologist (++), lack of transportation like 108 dump the patients at the CHC and if further referred then either private vehicle or hospital ambulance (if available) is hired. 108 don't even go to the interior areas.
The ASHAs suggest application to the government officials, raising the issues during VHSC meeting and putting forth the solutions to bridge these gaps in the service delivery.

2.5. Training on PPC

ASHAs received general training for 23 days, out of which 5 days they were trained in postpartum care services. The training involved discussion on topics like PNC registration, nutrition (++), hygiene and sanitation (++), iron and calcium supplementation (++), counseling about institutional delivery (++), various complications during postpartum period, primary care to address those health problems, high risk identification (++), causes of maternal deaths (++). They wish to have more refresher trainings on postpartum care services in regular intervals so that it brushes the skills they received during the training. They also feel that more focus on early risk identification (++), common causes of maternal deaths would help them serve better.

3. Newborn Care Services:

3.1. During Birth

Most of the ASHAs are present if the birth takes place in a healthcare facility and when the birth takes place at home, the ASHAs are present if they are informed prior. All the ASHAs have knowledge about the normal birth weight of a newborn and the timing of weighing a newborn immediately after birth. Almost every ASHA ensures that the newborn is weighed immediately after birth (within 24 hours). About 95percent of the ASHAs register births in their areas.

"M*ahiti laine balak ni nodhni karava panchayat ma javanu*"

(ASHAs collect detailed information of the newborn and go to the Panchayat for birth registration)

Few common problems faced at the time of birth registration is either the unavailability of Talati or incomplete information about the newborn. The mother being at her maternal home is also considered to be one of the hindrances faced by ASHAs during birth registration.

3.2. Newborn care

Kangaroo Mother Care - All the ASHAs feel have knowledge about Kangaroo Mother Care. Whereas only half of the ASHAs are aware of the correct method of giving KMC and most of them consider KMC to be given only to LBW newborns.

Maintenance of warmth – Four fifths of the ASHAs know the importance of the keeping the newborn warm. They advise the mothers to cover their newborn with socks, cap, and blanket to prevent them from catching cold.

"*Balak ne garam ane swach kapda ma vitadine rakhie*"

(ASHAs counsel mothers to cover the newborn in a clean dry cloth to keep them warm)

Bathing the newborn – All the ASHAs know about bathing the newborn after 7 days of birth.

Breast Feeding – All the ASHAs know the importance of breast feeding and realize that the newborn should be breast fed immediately after birth, feeding the first thick yellow breast milk i.e. colostrum, and no complementary feeding till 6 months.

3.3. Vaccinations

All the ASHAs know the importance of vaccination of a newborn. Most of them have knowledge about the vaccines like BCG, Polio, DPT and Hepatitis along with their no. of doses, and the illness prevented.

3.4. Complications in newborn

According to the ASHAs the common health problems that are seen in a newborn are breathing problem (++), cold, cough, pneumonia, diarrhoea, convulsions. None of the ASHAs provide any primary care to stabilize the newborn, they refer the identified newborn to private facility and Jabugam.

3.5. Danger signs in newborn

Only two thirds of the ASHAs check the newborn directly to identify any danger signs whereas a quarter or less of the ASHAs consult the mother or check whether the newborn is responding properly to breast feeding, to find out any possible danger signs in the newborn. Only a few of them knew about the danger signs like difficulty in breathing, convulsions, high fever, infection, not crying of the newborn after birth. About 85percent of the ASHAs refer the newborns identified with danger signs to private facilities and Jabugam.

3.6. High Risk newborn

Although ASHAs have knowledge about identifying high risk in a newborn, but the process of identifying high risk in a newborn is less known. According to them the high risk symptoms that are seen in a newborn are birth asphyxia, umbilical cord infection, convulsions, pneumonia, low birth weight, not responding to breast feeding, diarrhoea, vomiting. ASHAs refer these high risk identified cases to children's hospital and private facilities.

The common causes of newborn deaths according to ASHAs are low birth weight, premature birth, sepsis, hypothermia, pneumonia.

3.7. Counseling

Cord care - All the ASHAs realize umbilical cord care is very important. About 85percent ASHAs think keeping the stump clean and dry is necessary for infection control in a newborn and nothing should be applied on the stump. Only about 15percent of the ASHAs feel that a solution prepared either by ANM or doctor should be provided.

Asphyxia – Most of the ASHAs were aware that asphyxia is a common cause of newborn death. But it was observed that the knowledge about symptoms of this diseases and its management is very poor. Only one or two ASHAs knew that Fast/Slow Breathing Rate is a symptom of Asphyxia.

Hypothermia – Only half of the ASHAs were aware about Hypothermia which is another most common cause of death in newborns. Out of which only 20percent knew about the symptoms like the body of the newborn becomes cold and turns blue. They immediately refer these cases to the health facility.

Sepsis – Almost all the ASHAs know about sepsis and its symptoms like oozing out of pus, fever. They ask the mother to maintain proper hygiene and sanitation to prevent infection. If infection persists they ask them to refer the cases to the health facility.

3.8. Lacunae in service delivery (NBC)

Lack of newborn care facility at the health centres like PHC and CHC, no special newborn care unit in any of the healthcare facility, no pediatrician.

There is lack of awareness among the postnatal mothers, they do not breast feed their newborn due to superstitious beliefs/social customs, peer pressure. Myths and misconception still persist in interior tribal areas. If the milk secretion is not there, mothers start giving their newborn complementary feeding.

More awareness drive programmes, BCC activities should be done to generate awareness among the postnatal mothers and their families.

3.9. Training on NBC

From 21 days of general training, 1day training was imparted on newborn care where ASHAs were given information on various topics like hygiene and sanitation, breast feeding techniques, to start complementary feeding after 6 months, cord care, weight monitoring.

They want more refresher trainings on newborn care services with focus on identification of danger signs, high risk cases, knowledge on providing primary treatment and proper referral of the identified cases.

3.10. High Risk of death

All the ASHAs believe that the newborn is at high risk of death which is a major concern.

"*Maa ane balak ma, balak vadhu jokhmi che*"

APPENDIX 4

TOOLS FOR DATA COLLECTION (ASHA)

Date: **Serial Number**

IDENTIFYING LACUNAE IN NEWBORN CARE AND POST PARTUM CARE SERVICES IN PAVI JETPUR BLOCK, VADODARA

KAP QUESTIONNAIRE CUM INTERVIEW SCHEDULE FOR ASHA

Name of the ASHA	
Village	
Cluster	
Name of the ORW	
PHC	
SC	

Informed consent

My name is **Swati Mahapatra**, final year student of Public Health at International Institute of health Management Research. I am here to conduct a study which is trying to understand the lacunae in newborn and postpartum care services in tribal areas of Vadodara District. In this context I would like to know about your background, your knowledge, attitude and practice on newborn and postpartum care services. This will take only 20-30 minutes of your time. I would very much appreciate your participation, as this discussion with you will put light on the current situation and help in proper planning for saving the lives of women and children in the area.

I can assure you that you are at no risk by participating in this survey. The information you provide will be kept confidential. It will also be made sure that your identity will not be revealed in any way.

Will you participate in this study? Yes / No

Signature **Thumb Impression**

Signature **Thumb Impression**

SECTION: I BACKGROUND INFORMATION

Q. No.	QUESTIONS	CATEGORIES	Code	SKIP TO
1.	Age (In Completed Years)	Years		
2.	Population of the village enumerated			
3.	Educational Qualification	Illiterate Up to Primary Education (1st- 5std) Up to Secondary Education (10th Std) Graduate Other (Specify)	1 2 3 4 5	
4.	Socio Economic Status (as per availability of card)	APL BPL Do not have card	1 2 3	
5.	Marital Status	Unmarried Married Separated Divorcee Widow	1 2 3 4 5	

SECTION: II KNOWLEDGE ABOUT POST PARTUM CARE SERVICES

Q. No.	QUESTIONS	CATEGORIES	Code	SKIP TO
6.	What are the health services that a postpartum woman should avail? *(MULTIPLE ANSWERS POSSIBLE. CIRCLE ALL THE RESPONSES)*	Check-Ups Iron Supplementation Family Planning services Counseling Others	A. B. C. D. E.	
7.	What do you advice a women about the timing of post natal check up? *(MULTIPLE ANSWERS POSSIBLE. CIRCLE ALL THE RESPONSES)*	1st check up within 24-48 hrs even if she has no problem 2nd check up by day 7 even if she has no problem 3rd check up by 42 days Whenever she has any problems Others	A. B. C. D. E.	
8.	Where are these checkups available? *(MULTIPLE ANSWERS POSSIBLE. CIRCLE ALL THE RESPONSES)*	At home from Dai At home from ANM SHC SC camp PHC Government hospital Private/NGO hospital Others	A. B. C. D. E. F. G. H.	
9.	Whom do you ask for postnatal check-up?	All postpartum women Women with complications during postpartum period Women who had complications during delivery High risk women	1 2 3 4	
10.	How many postpartum women are there in your village in the last 1 month?	No. of PP women		
11.	What do you do to ensure that women get the PNC check-ups done? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
12.	Do you assist the beneficiary in going to the health facility?	Yes No	1 2	→ Q 15
13.	Where do you take the beneficiaries? *(MULTIPLE ANSWERS POSSIBLE. CIRCLE ALL THE RESPONSES)*	CHC SC camp PHC Government hospital Private/NGO hospital Others	A. B. C. D. E. F.	
14.	Which mode of transport do you prefer? *(MULTIPLE ANSWERS POSSIBLE. CIRCLE ALL THE RESPONSES)*	Ambulance Private vehicle 108 Others	A. B. C. D.	
15.	Do you make home visits to post natal women?	Yes Sometimes No	1 2 3	→ Q 19
16.	How many home visits have you made in the past 1 week?	No. of postpartum women visited		
17.	When you make home visits what do you do? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____		

		E. _____		
18.	What topics do you discuss about postpartum care when you visit? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
19.	What are the reasons that many women do not seek post natal check up within 7 days of delivery by a trained provider? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
20.	Do you maintain records and registers of postpartum women?	Yes No	1 2	→Q22
21.	How do you record/register the details of postpartum women? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
22.	Do you identify the complications/health problems during postnatal period?	Yes No	1 2	→Q 26
23.	What are some of the complications/health problems which woman may face? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
24.	What are the actions to be taken if such complication is observed? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
25.	Where do you take the identified postpartum woman? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
26.	After delivery, when is the woman at higher risk of death?	1st day of delivery 1-3days after delivery Within 1st week of delivery Up to 42 days after delivery More than 42 days after delivery Do not know		Q28
27.	Where do you refer the woman identified with high risk? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
28.	Do you feel confident that you have the required skills or will you like more training in postpartum care?	I feel confident Want more training Cannot say	1 2 8	

SECTION-III: KNOWLEDGE ABOUT NEWBORN CARE SERVICES

Q. NO.	QUESTIONS	CATEGORIES	Code	SKIP TO
29.	Are you present at the time of birth of all newborns in your village?	Yes No	1 2	
30.	Do you insure that the newborn is weighed immediately after birth?	Yes No	1 2	
31.	When should a new born baby be weighed after delivery?	Within 24 hr Within 2 days Any time	1 2 3	
32.	What should be the normal birth weight of new born baby?	Less than 2 k.g 2.5 k.g More than 2.5 k.g	1 2 3	
33.	Do you register the births in your village?	Yes No	1 2	→Q 37
34.	In the last 1 month, how many births have been registered?	No. of birth registered	☐☐	
35.	Do you face any difficulty in registering the births?	Yes No	1 2	
36.	What are the problems faced at the time of birth registration? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
37.	Do you know about Kangaroo Mother Care Skin to Skin Care?	Yes No	1 2	→Q 40
38.	How is Kangaroo Mother Care given? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
39.	Give 1 reason when Kangaroo Mother Care for a newborn should be given?	A. _____		
40.	Is it necessary to keep the baby warm immediately after birth?	Yes No	1 2	→Q 42
41.	Why maintenance of warmth is necessary? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
42.	Should the child be bathed immediately after birth?	Yes No	1 2	→Q 44
43.	What are the benefits of bathing a newborn immediately after birth? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
44.	How soon after birth should a newborn be put to the breast?	Immediately after birth Within a day Within 3 days After 3 days Don't know	1 2 3 4 8	
45.	Should first breast milk (yellow milk of mother) be fed to the child?	Yes No	1 2	
46.	When the child should first be given any food or liquid other than breast milk?	Anytime after birth After 4 months After 6 months After 1 year Don't know Others	1 2 3 4 8 9	
47.	Do you know about vaccinations given to newborn?	Yes No	1 2	→Q 50

48.	Which are these vaccines? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	Vaccine A. B. C. D. E.	No. of doses	Illness Prevented		
49.	What are the 3 most common health problems seen in a newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____				
50.	What do you do to address those problems? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____				
51.	What are the areas that need care in a newborn? *(MULTIPLE ANSWERS POSSIBLE, CIRCLE ALL THE RESPONSES)*	Umbilical cord care Temperature of baby Infection control Others			A. B. C. D.	
52.	What are the constraints in availing care? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E.				

53.	What do you advise women/their families on what follow up cord care is required to prevent infection to the child? *(MULTIPLE ANSWERS POSSIBLE, CIRCLE ALL THE RESPONSES)*	Keep cord stump clean and dry Nothing should be applied Some oil to be applied Solution prepared by ANM/Provider should be provided Others	A. B. C. D. E.	
54.	Do you identify danger signs in a newborn?	Yes No	1 2 →	Q 60
55.	How do you identify the danger signs? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
56.	What are the 3 major danger signs you check for in a newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
57.	How do you manage the problem identified in the newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
58.	Where do you take the identified newborn?	A. _____ B.		

	(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]	C. _____ D. _____ E. _____		
59.	Do you identify high risk newborn?	Yes No	1 2 →	Q 63
60.	How do you identify high risk newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
61.	Where do you take the identified child? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
62.	What are the 3 most common causes of newborn deaths in your village? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
63.	Do you know about Hypothermia?	Yes No	1 2 →	Q 69
64.	What do you know about Hypothermia? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____		

		D. _____ E. _____		
65.	How many Hypothermia cases have you had in the last 1 month?	No. of Hypothermia cases	☐☐	
66.	What advice do you give for the management of Hypothermia? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
67.	Where do you refer these cases? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
68.	Do you know about Sepsis?	Yes No	1 2 →	Q 74
69.	What do you know about Sepsis? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
70.	How many Sepsis cases you had in the last 1 month?	No. of Sepsis cases	☐☐	
71.	What advice do you give for the management of	A. _____		

	Sepsis? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	B. _____ C. _____ D. _____ E. _____		
72.	Where do you refer these cases? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
73.	Do you know about Asphyxia?	Yes No	1 2 →	**Q 79**
74.	What do you know about Asphyxia? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
75.	How many Asphyxia cases have you had in the last 1 month?	No. of Asphyxia cases	☐☐	
76.	What advice do you give for the management of Asphyxia? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
77.	Where do you refer these cases?	A. _____ B. _____		

	(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]	C. _____ D. _____ E. _____		
78.	Do you counsel the postnatal mothers about newborn care services?	Yes No	1 2 →	**Q 81**
79.	What topics do you discuss about newborn care when you visit? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
80.	Who according to you are at high risk?	Postpartum women Newborn	1 2	

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Date: **Serial Number** ☐☐☐☐

IDENTIFYING LACUNAE IN NEWBORN CARE AND POST PARTUM CARE SERVICES IN PAVI JETPUR BLOCK, VADODARA

KAP QUESTIONNAIRE CUM INTERVIEW SCHEDULE FOR ANM

Name of the ANM	
Cluster	
PHC	
SC	

Informed consent

My name is **Swati Mahapatra**, final year student of Public Health at International Institute of health Management Research. I am here to conduct a study which is trying to understand the lacunae in newborn and postpartum care services in tribal areas of Vadodara District. In this context I would like to know about your background, your knowledge, attitude and practice on newborn and postpartum care services. This will take only 20-30 minutes of your time. I would very much appreciate your participation, as this discussion with you will put light on the current situation and help in proper planning for saving the lives of women and children in the area.

I can assure you that you are at no risk by participating in this survey. The information you provide will be kept confidential. It will also be made sure that your identity will not be revealed in any way.

Will you participate in this study? Yes / No

Signature **Thumb Impression**

SECTION- I: BACKGROUND INFORMATION

Q. NO.	QUESTIONS	CATEGORIES	Code	SKIP TO
1.	Age (In Completed Years)	Years	☐☐	
2.	Educational Qualification	Illiterate Up to Primary Education (7TH Std) Up to Secondary Education (10TH Std) Graduate Other (Specify)	1 2 3 4 9	
3.	Socio Economic Status (as per availability of card)	APL BPL Do not have card	1 2 3	
4.	Marital Status	Unmarried Married Separated Divorcee Widow	1 2 3 4 5	
5.	How many villages do you provide services to?	No. of Villages	☐☐	
6.	What is the population size that you are covering?	_____		
7.	Since when did you become the ANM?	Year _____		
8.	What is your role as an ANM?	A. _____ B. _____ C. _____ D. _____ E. _____		

SECTION-II: KNOWLEDGE ABOUT POST PARTUM CARE SERVICES

Q. NO.	QUESTIONS	CATEGORIES	Code	SKIP TO
9.	What are the health services that a postpartum woman should avail? *(MULTIPLE ANSWERS POSSIBLE. CIRCLE ALL THE RESPONSES)*	Check-Ups Iron Supplementation Calcium Supplementation Family Planning services Counseling Others	A. B. C. D. E. F.	
10.	When do you advise a postpartum woman to have a postnatal check-up?	1ST check up within 24-48 hrs even if she has no problem 2ND check up by day 7 even if she has no problem 3RD check up by 42 days Whenever she has any problems Others	1 2 3 4 5	
11.	Where are these checkups available?	At home from TBA At home from ANM CHC SC-camp PHC Government hospital Private/NGO hospital Others	A. B. C. D. E. F. G. H.	
12.	What do you do to ensure that women get the PNC check-ups done? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	F. _____ G. _____ H. _____ I. _____ J. _____		
13.	Do you make home visits to post natal women?	Yes Sometimes No	1 2 3 →Q17	
14.	How many postpartum women have you visited in the last 1 week?	No. of postpartum women visited	☐☐	
15.	When you make home visits what do you do? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		

16.	What topics do you discuss about postpartum care when you visit? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
17.	In your opinion who are the 3 key health providers who can provide postnatal care at home?	A. _____ B. _____ C. _____		
18.	What are the reasons that many women do not seek post natal check up within 7 days of delivery by a trained provider? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
19.	Do you maintain records and registers of postpartum women?	Yes No	1 2 →	Q21
20.	How do you record/register the details of postpartum women? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
21.	Do you identify the complications/health problems during postnatal period?	Yes No	1 2 →	Q 25

22.	What are some of the complications/health problems which woman may face soon after delivery? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
23.	What are the actions to be taken if such complication is observed? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
24.	Where do you take the identified postpartum woman? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
25.	After delivery, when is the woman at higher risk of death?	1st day of delivery 1-3days after delivery Within 1st week of delivery Up to 42 days after delivery More than 42 days after delivery Do not know	1 2 3 4 5 8 →	Q 27
26.	Where do you refer the woman identified with high risk? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
27.	Did you receive any training on postpartum care services?	Yes No	1 2 →	Q 29
28.	When did you receive training?	_____		

29.	Do you feel confident that you have the required skills or will you like more training in postpartum care?	I feel confident Want more training Cannot say	1 2 8	

SECTION-III: KNOWLEDGE ABOUT NEWBORN CARE SERVICES

Q. NO.	QUESTIONS	CATEGORIES	Code	SKIP TO
30.	Are you present at the time of birth of all newborns in your SC?	Yes No	1 2	
31.	Do you ensure that the newborn is weighed immediately after birth?	Yes No	1 2	
32.	When should a new born baby be weighed after delivery?	Within 24 hr Within 2 days Any time	1 2 3	
33.	What should be the normal birth weight of new born baby?	Less than 2.5 kg 2.5 kg More than 2.5 kg	1 2 3	
34.	Do you register the births in your coverage area?	Yes No	1 2 →	Q 36
35.	In the last 1 month, how many births have been registered?	No. of births registered	☐☐	
36.	Do you face any difficulty in registering the births?	Yes No	1 2 →	Q 38
37.	What are the problems faced at the time of birth registration? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
38.	Do you know about Kangaroo Mother Care/Skin to Skin Care?	Yes No	1 2 →	Q 41

39.	How is Kangaroo Mother Care given? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
40.	When Kangaroo Mother Care for a newborn should be started?	A. _____ B. _____		
41.	Is it necessary to keep the baby warm immediately after birth?	Yes No	1 2 →	Q 43
42.	Why maintenance of warmth is necessary? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
43.	Should the child be bathed immediately after birth?	Yes No	1 2 →	Q 45
44.	What are the benefits of bathing a newborn immediately after birth? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
45.	How soon after birth should a newborn be put to the breast?	Immediately after birth Within a day Within 3 days After 3 days Don't know	1 2 3 4 8	
46.	Should first breast milk (yellow milk of mother) be fed to the child?	Yes No	1 2	

47.	When the child should first be given any food or liquid other than breast milk?	Anytime after birth After 4 months After 6 months After 1 year Don't know Others	1 2 3 4 8 9	
48.	Do you know about vaccinations given to newborn?	Yes No	1 2 →	Q 50
49.	Which are these vaccines? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	**Vaccine** / **No. of doses** / **Illness Prevented** A. B. C. D. E.		
50.	What are the 3 most common health problems seen in a newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____		
51.	What do you do to address those problems? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
52.	What are the areas that need care in a newborn? *(MULTIPLE ANSWERS POSSIBLE, CIRCLE ALL THE RESPONSES)*	Umbilical cord care Temperature of baby Infection control Others	A. B. C. D.	

53.	What are the constraints in availing care? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
54.	What do you advise women/their families on what follow up cord care is required to prevent infection to the child? *(MULTIPLE ANSWERS POSSIBLE, CIRCLE ALL THE RESPONSES)*	Keep cord stump clean and dry Nothing should be applied Some oil to be applied Solution prepared by ANM/Provider should be provided Others	A. B. C. D. E.	
55.	Do you identify danger signs in a newborn?	Yes No	1 2 →	Q 60
56.	How do you identify the danger signs? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
57.	What are the 3 major danger signs you check for in a newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
58.	How do you manage the problem identified in the newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		

59.	Where do you take the identified newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
60.	Do you identify high risk newborn?	Yes No	1 2 →	Q 63
61.	How do you identify high risk newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
62.	Where do you take the identified child? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
63.	What are the 3 most common causes of newborn deaths in your village? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		

Mark (√) appropriately.

64.		**Asphyxia**	**Hypothermia**	**Sepsis**
(a)	Do you know about?			
(b)	What do you know? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. B. C. D. E.		
(c)	How many cases have you had in the last 1 month?	**Asphyxia** ☐☐	**Hypothermia** ☐☐	**Sepsis** ☐☐

Note : If no cases then skip to Q 65

			Asphyxia	**Hypothermia**	**Sepsis**
(d)	What advice do you give for the management of these problems? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. B. C. D. E.			

(e)	Where do you refer these cases? ***(MULTIPLE ANSWERS POSSIBLE)*** ***[RECORD VERBATIM]***		**Asphyxia**	**Hypothermia**	**Sepsis**		
		A. B. C. D. E.					
65.	Do you counsel the postnatal mothers about newborn care services?			Yes No		1 2→	**Q 67**
66.	What topics do you discuss about newborn care when you visit? ***(MULTIPLE ANSWERS POSSIBLE)*** ***[RECORD VERBATIM]***	A. _____ B. _____ C. _____ D. _____ E. _____					
67.	Who according to you are at high risk?			Postpartum women Newborn		1 2	

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Date: **Serial Number** ☐☐☐☐

IDENTIFYING LACUNAE IN NEWBORN CARE AND POST PARTUM CARE SERVICES IN PAVI JETPUR BLOCK, VADODARA

KAP QUESTIONNAIRE CUM INTERVIEW SCHEDULE FOR POSTPARTUM WOMEN

Name of the Postpartum woman	
Village	
Cluster	
Name of the ASHA of your village	

Informed consent

My name is **Swati Mahapatra**, working as **Research and Evaluation Officer** for Deepak Foundation. I am here to conduct a study which is trying to understand the lacunae in newborn and postpartum care services in tribal areas of Vadodara District. In this context I would like to know about your background, your knowledge, attitude and practice on newborn and postpartum care services. This will take only 20-30 minutes of your time. I would very much appreciate your participation, as this discussion with you will put light on the current situation and help in proper planning for saving the lives of women and children in the area.

I can assure you that you are at no risk by participating in this survey. The information you provide will be kept confidential. It will also be made sure that your identity will not be revealed in any way.

Will you participate in this study? Yes / No

Signature **Thumb Impression**

SECTION- I: BACKGROUND INFORMATION

Q. NO.	QUESTIONS	CATEGORIES	Code	SKIP TO
1.	Age (*In Completed Years*)	Years ☐☐		
2.	Caste	SC ST OBC General	1 2 3 4	
3.	Educational Qualification	Illiterate Up to Primary Education (7th Std) Up to Secondary Education (10th Std) Graduate Other (Specify)	1 2 3 4 9	
4.	Socio Economic Status (as per availability of card)	APL BPL Do not have card	1 2 3	
5.	Marital Status	Unmarried Married Separated Divorcee Widow	1 2 3 4 5	
6.	Have you been pregnant before?	Yes No	1 2	→Q 9
7.	What was your age at first pregnancy? (*In Completed years*)	Years ☐☐		
8.	How many times and what was the outcome of the pregnancy?			

	Live Birth	Still Birth	Mis carriage	Abortion
1.				
2.				
3.				
4.				
5.				

SECTION-II: KNOWLEDGE ABOUT POST PARTUM CARE SERVICES

Q. NO.	QUESTIONS	CATEGORIES	Code	SKIP TO
9.	Do you know the ASHA of your village?	Yes No	1 2	→Q 12
10.	What is the name of the ASHA?	_____		
11.	Was ASHA present at the time of delivery?	Yes No	1 2	
12.	Where did you deliver your child?	Home Govt. Hospital PHC CHC SC Private/NGO Hospital Others	A. B. C. D. E. F. G.	
13.	Who conducted the delivery? *(MULTIPLE ANSWERS POSSIBLE, CIRCLE ALL THE RESPONSES)*	ANM TBA Doctor Others	A. B. C. D.	
14.	What was the date of delivery?	MM / DD / YY ☐☐☐		
15.	Were you visited by any health care provider for post-natal check up within 7 days of delivery?	Yes No	1 2	→Q 21
16.	Who visited you to provide post natal check up after your delivery? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
17.	How many times did she visit you to provide post-natal check up within 7 days of delivery?	No. of times _____		

18.	Where did you undergo check up? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
19.	After delivery, when she visited you did she give you any message on postpartum care?	Yes No	1 2 →	Q 21
20.	On what topics did she discuss when she visited? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
21.	Did you ever visit any health facility after your delivery?	Yes No	1 2 →	Q 27
22.	Which health facility did you go to? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
23.	Why did you visit the health facility? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		

24.	What advice did the health care provider give? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
25.	Did someone assist you in going to the health facility?	Yes No	1 2 →	Q 27
26.	Who assisted you to the health facility? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
27.	Was there any complication during postnatal period?	Yes No	1 2 →	Q 33
28.	What type of complications did you have? *(MULTIPLE ANSWERS POSSIBLE. CIRCLE ALL THE RESPONSES)*	High Fever Lower abdominal pain Foul vaginal discharge Excessive bleeding Severe headache Convulsions Others	A. B. C. D. E. F. G.	
29.	Was any treatment taken?	Yes No	1 2 →	Q 32
30.	From where was the treatment taken? *(MULTIPLE ANSWERS POSSIBLE. CIRCLE ALL THE RESPONSES)*	At home from Dai At home from ANM OIC SC/Camp PHC Government hospital Private/ NGO hospital Others	A. B. C. D. E. F. G. H.	
31.	How much did the treatment cost?	_____		

32.	Why was no treatment taken? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
33.	Do you take Iron-Folic acid tablets after delivery?	Yes No	1 2 →	Q 36
34.	Why do you take IFA tablets? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
35.	Who advised you to take IFA tablets? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		

SECTION-III: KNOWLEDGE ABOUT NEWBORN CARE SERVICES

Q. NO.	QUESTIONS	CATEGORIES	Code	SKIP TO
36.	Was the child born full term?	Yes No	1 2	
37.	Was your child weighed after birth?	Yes No	1 2 →	Q 41
38.	When was your child weighed after birth?	Within 24 hrs After 24 hrs Others	1 2 9	
39.	What was the weight of the child during birth?	<2500 gms 2→2500 gms Do not know	1 2 8	

40.	Do you have MAMTA card where weight of the child is written?	Yes No	1 2	
41.	Why the baby was not weighed immediately after birth? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
42.	Have you received any document or certificate indicated that the birth of the child is registered?	Yes No	1 2 →	Q 44
43.	Which document have you received?	Birth Certificate Janmakshar Birth is registered but certificate not received	1 2 3	
44.	Why haven't you got the birth certificate? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
45.	What was done to clean the newborn?	Cleaned with dry cloth Cleaned with water Others	1 2 3	
46.	After birth when was your newborn given bath?	A. _____		
47.	Was anything done to keep the newborn warm immediately after birth?	Yes No	1 2 →	Q 49
48.	What was done to keep the newborn warm? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		

49.	Do you know about Kangaroo Mother Care/skin-to-skin care?	Yes 1 No 2		→Q 55
50.	How is Kangaroo Mother Care given? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
51.	When Kangaroo Mother Care for a newborn should be started? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
52.	Who informed you about Kangaroo Mother Care? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____	1 2	
53.	Did you practice Kangaroo Mother Care with your newborn?	Yes 1 No 2		→Q 55
54.	Why didn't you practice? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
55.	Did you feed your first breast milk to the child?	Yes 1 No 2		→Q 57

56.	Why the newborn was not fed first breast milk? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
57.	Who suggested you not to give the first breast milk to the newborn? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
58.	When the Breast feeding should be initiated?	Within half an hour after birth 1 Two hours after birth 2 One day after birth 3 Five days after birth 4 Do not know 8		
59.	How long after birth did you first put your child to the breast?	A. _____		
60.	When the newborn should normally be breastfed? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
61.	How many times did you breast feed your child in last 24 hours?	No. of times _____		
62.	Till when the newborn should be exclusively breast fed?	A. _____ B. _____		

63.	Other than the breast milk, what the neonate should be given? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
64.	Was your child given anything to drink/consume other than breast milk in the last 24 hours?	Yes 1 No 2		→Q 66
65.	What was given to your child to drink/consume? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
66.	Are you feeding water to the newborn?	Yes 1 No 2		
67.	Is your baby currently taking IFA syrup or pills?	Yes 1 No 2		→Q 69
68.	Who is giving the newborn IFA syrup or pills? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	F. _____ G. _____ H. _____ I. _____ J. _____		
69.	After birth, did your child ever become sick?	Yes 1 No 2		→Q 73
70.	Type of sickness. *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		

71.	Did the newborn receive any treatment?	Yes 1 No 2		→Q 73
72.	Where did you receive the treatment? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
73.	Has the newborn received any vaccinations?	Yes 1 No 2		→Q 75
74.	What were the vaccines did your newborn receive? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
75.	What are the danger signs that a newborn could experience in the first 10 days of birth? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
76.	Did your newborn experience any of these problems during the first 10 days of birth?	Yes 1 No 2		→Q 80
77.	Where was the treatment sought? *(MULTIPLE ANSWERS POSSIBLE) (RECORD VERBATIM)*	A. _____ B. _____ C. _____ D. _____ E. _____		
78.	Did you seek help from any health care provider?	Yes 1 No 2		→Q 80

79.	Who helped you in seeking the treatment? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
80.	Did you apply anything on the umbilical cord stump of your newborn for faster healing?	Yes No	1 2 →	**Q 82**
81.	What did you apply on the cord stump of your newborn? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		

		Asphyxia	**Hypothermia**	**Sepsis**		
82.						
a)	Do you know about?					
(b)	Did your child suffer from any of these complications?					

Note : If no complications then skip to Q 85

			Asphyxia	**Hypothermia**	**Sepsis**		
83.	What actions did you take when your child suffered from the above mentioned complications?	A. B. C.					
84.	Where was the treatment sought?	A. B. C.					

85.	Have you been informed about various practices of newborn care?	Yes No	1 2 →	**END**
86.	Who informed you regarding newborn care services? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		
87.	On what topics of newborn care did the health care provider discuss? *(MULTIPLE ANSWERS POSSIBLE) [RECORD VERBATIM]*	A. _____ B. _____ C. _____ D. _____ E. _____		

Guidelines for In-depth Interviews

IDI #1:

Target Group: MOs / BHO

Objective: To understand knowledge, behaviors and perceptions of the health care providers regarding importance of post-partum care and newborn care services in the Pavi Jetpur block and understand their views in identifying the lacunae in these services due to which newborn and maternal death tolls are increasing alarmingly.

Name of Facilitator:

Start Time: **End Time:**

1. **Profile of Key Informant:**
   1.1. Age:
   1.2. Education:

2. **Postpartum Care Services:**
   2.1. When do you think a woman who had a normal delivery should get postpartum care?
      2.1.1. Why do you think it is important for a woman to receive care at that point in time
      2.1.2. How many check-up visits do you think a woman should receive after delivery
   2.2. Does your facility offer early postpartum care (i.e. within 7 to 14 days after delivery)?
      2.2.1. Is this care being offered in the facility or home
      2.2.2. Who provide these services
      2.2.3. What type of services do you think should be provided to women
      2.2.4. What services are currently offered at your facility
      2.2.5. What do you do to ensure that women get the PNC check-ups done
   2.3. Do you think it is easy or difficult for mothers to make postpartum care visits to facilities in the first and second weeks after birth? Please explain.
      2.3.1. What do you think could be done to make it easier for women to receive postpartum care
      2.3.2. Are home visits an option
   2.4. After delivery, when is the women at high risk of death? Probe for with reasons:
      2.4.1. How do you identify woman with high risk
      2.4.2. What treatment is sought and where are the high risk cases referred
      2.4.3. What are the common causes of maternal deaths after delivery
   2.5. In your opinion, is there any lack in the service delivery that results in maternal deaths? Probe for with reasons:
      2.5.1. Where and what can be done to bridge the gap(s) observed in the service delivery
   2.6. What are your suggestions to improve the health of postpartum women?

3. **Newborn Care Services:**
   3.1. Does your facility offer newborn care services?
      3.1.1. What are the type of services that are currently offered at your facility
   3.2. What are the common health problems/complications seen in a newborn? Probe for with reasons:
      3.2.1. suffering from the complications
      3.2.2. what & where the treatment is sought
   3.3. Do you identify danger signs in a newborn? Probe for with reasons:
      3.3.1. How do you identify
      3.3.2. What are the major danger signs you check for in a newborn
      3.3.3. Management of the problem identified and referral of the cases
   3.4. Do you identify high risk newborn? Probe for with reasons:
      3.4.1. How do you identify
      3.4.2. What treatment is sought and where are the high risk cases referred
      3.4.3. What are the common causes of newborn deaths
   3.5. What is generally done for newborns who are (Probe for reasons for the same and treatment /care taken or available) :
      3.5.1. Premature birth
      3.5.2. Low birth weight
   3.6. What are the common myths and misconception related to new born care practices?
   3.7. What are your suggestions to improve the health of a newborn?

Guidelines for Key Informant Interview

IDI #1:

Target Group: Paedtrician

Objective: To know the perception of the key person regarding importance of newborn care services in the Pavi Jetpur block and understand their views in identifying the lacunae in the service delivery due to which newborn deaths are increasing alarmingly.

Name of Facilitator:

Start Time: **End Time:**

1. **Profile of Key Informant:**
   1.1. Age:
   1.2. Education:

2. **Newborn Care Services:**
   2.1. Does your facility offer newborn care services?
      2.1.1. What are the type of services that are currently offered at your facility
   2.2. What are the common health problems/complications seen in a newborn? Probe for with reasons:
      2.2.1. suffering from the complications
      2.2.2. what & where the treatment is sought
   2.3. Do you identify danger signs in a newborn? Probe for with reasons:
      2.3.1. How do you identify
      2.3.2. What are the major danger signs you check for in a newborn
      2.3.3. Management of the problem identified and referral of the cases
   2.4. Do you identify high risk newborn? Probe for with reasons:
      2.4.1. How do you identify
      2.4.2. What treatment is sought and where are the high risk cases referred
      2.4.3. What are the common causes of newborn deaths
   2.5. What is generally done for newborns who are (Probe for reasons for the same and treatment /care taken or available) :
      2.5.1. Premature birth
      2.5.2. Low birth weight
   2.6. What are the common myths and misconception related to new born care practices?
   2.7. What are your suggestions to improve the health of a newborn?

Guidelines for In-depth Interviews

IDI #2:

Target Group: ANMs

Objective: To understand knowledge, behaviors and perceptions of the health care providers regarding importance of post-partum care and newborn care services in the Pavi Jetpur block and understand their views in identifying the lacunae in these services due to which newborn and maternal death tolls are increasing alarmingly.

Name of Facilitator:

Start Time: **End Time:**

1. **Profile of Key Informant:**
   - 1.1. Age:
   - 1.2. Education:
   - 1.3. Occupation:
   - 1.4. APL/ BPL:
   - 1.5. SC/ ST/ OBC/General:
   - 1.6. Marital status:
   - 1.7. How many villages do you provide services to:
   - 1.8. Population size:
   - 1.9. When did you become ANM:

2. **Post-partum Care Services:**
   - 2.1. What services do you provide post-partum women immediately after delivery?
     - 2.1.1. Advice for post-partum check up
     - 2.1.2. What do you do to ensure that women get the PNC check-ups done?
     - 2.1.3. Home visits
     - 2.1.4. Records/Registers
   - 2.2. Do you identify the complications/health problems during postnatal period? Probe for with reasons:
     - 2.2.1. What are the complications
     - 2.2.2. What are the actions taken
     - 2.2.3. Where the identified cases are referred
   - 2.3. After delivery, when is the woman at high risk of death? Probe for with reasons:
     - 2.3.1. How do you identify woman with high risk
     - 2.3.2. What treatment is sought and where are the high risk cases referred
     - 2.3.3. What are the common causes of maternal deaths after delivery
   - 2.4. In your opinion, is there any lack in the service delivery that results in maternal deaths? Probe for with reasons:
     - 2.4.1. Where and What can be done to bridge the gap(s) observed in the service delivery
   - 2.5. Did you receive any training on postpartum care services? Probe for with reasons:
     - 2.5.1. Details of training received
     - 2.5.2. Do you wish to have more training in post-partum care

3. **Newborn Care Services:**
   - 3.1. Are you present at the time of birth of all newborns in your SC? Probe for with reasons what is done to ensure
     - 3.1.1. Birth weight of the newborn
     - 3.1.2. Birth Registration
   - 3.2. What advice do you give the mothers regarding newborn care? Probe for with reasons:
     - 3.2.1. Kangaroo Mother Care
     - 3.2.2. Maintenance of warmth
     - 3.2.3. Bathing the newborn
     - 3.2.4. Breast Feeding
     - 3.2.5. Colostrum
     - 3.2.6. Any other fluid other than Breast milk
   - 3.3. What are the vaccinations that a newborn should be given (along with the no. of doses and illness prevented)?
   - 3.4. What are the common health problems/complications seen in a newborn? Probe for with reasons:
     - 3.4.1. suffering from the complications
     - 3.4.2. what & where the treatment is sought
   - 3.5. Do you identify danger signs in a newborn? Probe for with reasons:
     - 3.5.1. How do you identify
     - 3.5.2. What are the major danger signs you check for in a newborn
     - 3.5.3. Management of the problem identified and referral of the cases
   - 3.6. Do you identify high risk newborn? Probe for with reasons:
     - 3.6.1. How do you identify
     - 3.6.2. What treatment is sought and where are the high risk cases referred
     - 3.6.3. What are the common causes of newborn deaths
   - 3.7. What is generally done for newborns who are (Probe for reasons for the same and treatment /care taken or available) :
     - 3.7.1. Premature birth
     - 3.7.2. Low birth weight
   - 3.8. What do you counsel the mothers regarding (Probe for with reasons for):
     - 3.8.1. Umbilical cord care (which is required to prevent infection)
     - 3.8.2. Asphyxia (Fast/slow breathing rate)
     - 3.8.3. Hypothermia (Temperature of the newborn)
     - 3.8.4. Sepsis (Infection control)
   - 3.9. In your opinion, is there any lack in the service delivery that results in newborn deaths?
     - 3.9.1. Where and What can be done to bridge the gap(s) observed in the service delivery
   - 3.10. Did you receive any training on newborn care services? Probe for with reasons:
     - 3.10.1. Details of training received
     - 3.10.2. Do you wish to have more training in newborn care
   - 3.11. Who according to you are at high risk?

Guidelines for Focus Group Discussions

FGD# 1

Target Group: ASHAs

Objective: To understand knowledge, behaviors and perceptions of the health care providers regarding importance of post-partum care and newborn care services in the Pavi Jetpur block and understand their views in identifying the lacunae in these services due to which newborn and maternal death tolls are increasing alarmingly.

Name of Facilitator:

Name of Recorder:

Start Time: **End Time:**

Detailed Question Guide

1. Socio-economic profile of participants

Sl.no.	Name of the ASHA	Age	Education	Marital status	APL/BPL	Population of the village enumerated
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						

2. Post-partum Care Services:

2.1. What services do you provide post-partum women immediately after delivery?
- 2.1.1. Advice for post-partum check up
- 2.1.2. What do you do to ensure that women get the PNC check-ups done?
- 2.1.3. Home visits
- 2.1.4. Records/Registers

2.2. Do you identify the complications/health problems during postnatal period? Probe for with reasons:
- 2.2.1. What are the complications
- 2.2.2. What are the actions taken
- 2.2.3. Where the identified cases are referred
- 2.2.4. Do you assist the beneficiary

2.3. After delivery, when is the woman at high risk of death? Probe for with reasons:
- 2.3.1. How do you identify woman with high risk
- 2.3.2. What treatment is sought and where are the high risk cases referred
- 2.3.3. What are the common causes of maternal deaths after delivery

2.4. In your opinion, is there any lack in the service delivery that results in maternal deaths? Probe for with reasons:
- 2.4.1. Where and What can be done to bridge the gap(s) observed in the service delivery

2.5. Did you receive any training on postpartum care services? Probe for with reasons:
- 2.5.1. Details of training received
- 2.5.2. Do you wish to have more training in post-partum care

3. Newborn Care Services:

3.1. Are you present at the time of birth of all newborns in your village? Probe for with reasons what is done to ensure
- 3.1.1. Birth weight of the newborn
- 3.1.2. Birth Registration

3.2. What advice do you give the mothers regarding newborn care? Probe for with reasons:
- 3.2.1. Kangaroo Mother Care
- 3.2.2. Maintenance of warmth
- 3.2.3. Bathing the newborn
- 3.2.4. Breast Feeding
- 3.2.5. Colostrum
- 3.2.6. Any other fluid other than Breast milk

3.3. What are the vaccinations that a newborn should be given (along with the no. of doses and illness prevented)?

3.4. What are the common health problems/complications seen in a newborn? Probe for with reasons:
- 3.4.1. suffering from the complications
- 3.4.2. what & where the treatment is sought

3.5. Do you identify danger signs in a newborn? Probe for with reasons:
- 3.5.1. How do you identify
- 3.5.2. What are the major danger signs you check for in a newborn
- 3.5.3. Management of the problem identified and referral of the cases

3.6. Do you identify high risk newbom? Probe for with reasons:
- 3.6.1. How do you identify
- 3.6.2. What treatment is sought and where are the high risk cases referred
- 3.6.3. What are the common causes of newborn deaths

3.7. What do you counsel the mothers regarding (Probe for with reasons for):
- 3.7.1. Umbilical cord care (which is required to prevent infection)
- 3.7.2. Asphyxia (Fast/slow breathing rate)
- 3.7.3. Hypothermia (Temperature of the newborn)
- 3.7.4. Sepsis (Infection control)

3.8. In your opinion, is there any lack in the service delivery that results in newborn deaths?
- 3.8.1. Where and What can be done to bridge the gap(s) observed in the service delivery

3.9. Did you receive any training on newborn care services? Probe for with reasons:
- 3.9.1. Details of training received
- 3.9.2. Do you wish to have more training in newborn care

3.10. Who according to you are at high risk?

APPENDIX 5

STUDY AREA