Family Centered Safe Motherhood and Newborn Care

SEWA Rural (Society for Education Welfare and Action Rural)

Family-Centered

Safe Motherhood and Newborn Care

Published by : SEWA Rural (Society for Education, Welfare and Action Rural)
P. O : Jhagadia,
District : Bharuch
Gujarat (India) Pin-393 110

Tel. : + 91-02645-220021/ 220868
Fax : +91-02645-220313
E-mail : sewarural@ymail.com
Website : www.sewarural.org

Preface

In 2003, SEWA Rural began its Family Centered Safe Motherhood and New Born Care Project, a community-based endeavor funded by the John D. and Catherine T. Mac Arthur Foundation (USA) aimed at reducing maternal and newborn morbidity and mortality in the Jhagadia Block of Bharuch District in Gujarat, India. The initial proposed project was from 2003-2007 and due to initial success and desire to explore additional interventions; the project was later extended for an additional three years. We are delighted to share with you our experience throughout this nearly seven year endeavor. This final report details the prevailing status of mothers and young babies in Jhagadia prior to initiation of our project (2001 - 2003), our aims, the innovative model we created and implemented, and the eventual results from our efforts.

As with any major undertaking, success for our project required hard work, patience and dedication from our volunteers and staff, collaborations with other stakeholders (including government officials and PHC staff, field experts and professionals and NGO partners), and most importantly, cooperation and active participation from our community.

The village level cadre of frontline worker called "Arogya Sakhi" (meaning a friend) was established who took up the responsibility to manage basic aspects of healthcare for pregnant mothers and their newborn children. Along with this, other unique features of this project were establishing effective referral linkages, developing robust management information system, early detection and management of at risk mothers and babies. By pairing with the Dai and support of a functional FRU, Sakhis made birth preparedness and complication readiness a reality.

The results have surpassed our initial expectations; maternal and neonatal mortality have declined, the people have accepted Sakhis into their homes. Because of many efforts throughout India similar to ours, the Government has accepted the community-based health worker model as a vital part of health care in India. Though these sakhis now fall under a different name (Accredited Social Health Activist or ASHA), these government-appointed health promoters inspire confidence that the successes of our efforts will continue despite the fact that our project has ended. Over 70% of our Sakhis were accepted as ASHAs, which serves as a testament to their hard work and competency in maternal and newborn care.

We hope that sharing our experience through this report will inspire similar endeavors and will further the development of community-based models. We are hopeful that our newly build state of art health training and resource centre would facilitate this process by training and strengthening village level health workers. We are committed to continuing our efforts to save lives of mothers and babies by sharing our experiences with wider audience in form of research, networking and advocacy.

We are thankful to all supporters and well-wishers who were instrumental in success of the project. We are especially grateful to the Mac Arthur Foundation for their generous support.

Dr. Lata Desai
Founding Trustee

November-2011

Dr. Pankaj Shah
Director, Community Health

Contents

Abbreviations

ANC- Antenatal Care

ASHA- Accredited Social Health Activist

BPL-Below Poverty Line

BT-Blood Transfusion

FHW-Female Health Worker

FRU- First Referral Unit

HMIS- Health Management and Information System

HQ- Headquarters

IMNCI- Integrated Management of Neonatal and Childhood Illnesses

MCH- Maternal Child Health

MDG- Millennium Development Goals

NICU-Neonatal Intensive Care Unit

NRHM-National Rural Health Mission

PHC- Primary Health Center

PNC-Postnatal Care

SEWA-Society for Education, Welfare and Action

SR- SEWA Rural

TBA- Trained Birth Attendant

TT Injection-Tetanus Toxoid Injection

VHSC- Village Health and Sanitation Committee

WHO-World Health Organization

Background and Baseline Situation

A. About SEWA Rural :

SEWA Rural (Society for Education, Welfare and ActionRural) is a voluntary development organization involved in health and development activities in rural tribal areas in the Jhagadia block in southern Gujarat since 1980. The activities were initiated by a group of professionals drawn primarily from the health and education field. The organization's work draws inspiration from the ideals and ideas of Swami Vivekananda and Mahatma Gandhi.

SEWA Rural's Head Quarter in Jhagadia

SEWA Rural endeavours to reach out and assist the poorest of poor through various health and development programmes based on the community needs and available manpower. While involved in such activities, it also seeks to ensure that the values are preserved and self-development, in true spirit of those involved in the work is achieved simultaneously. The focus of all programmes has been vulnerable members of family i.e. the women, children & elderly especially belonging to the poor sections of society. In all these activities, an attempt is made to incorporate as well as balance the three basic principles: Social Service, Scientific Approach & Spiritual Outlook.

Aiming for overall development of the rural, poor and tribal population Bharuch Dist., the organisation has encompassed various fields including hospital, community based outreach health care, comprehensive eye care, health training centre, vocational training institute for rural youth and women development center for promoting women empowerment. Some more information about SEWA Rural will be available in our website www.sewarural.org. SEWA Rural's activities include: direct patient care at the 100-bed General Hospital (since 1980), recognised as a First Referral Unit (FRU) by UNICEF and the Government of Gujarat since 1999; community health programming through our Community Health Project (CHP) (includes the Family Centred Safe Motherhood Project); practical and field training to various levels of health providers and students at the Health Training Centre (since 1990); Secondary and Tertiary level eye care through our Comprehensive Eye Care Programme (since 1988) and our Community Based Rehabilitation for the blind (since 1990); skill-based training to local youths through our Vocational Training Centre (since 1986); and child development and women's income generation and micro-credit programmes through our sister organization “Sharada Mahila Vikas Society” (since 1985).

The organization believes in taking cooperation & support from all sectors of civil society which includes local community, individual well wishers and donors, voluntary organizations, State and Central Government, industries, charitable trusts, and academic institutions from India & abroad. Their whole hearted support & encouragement have ensured that fruits of development & growth ultimately reach the marginalized and underserved sections of societies i. e. women, children, tribals and the poor.

B. Maternal and Neonatal Mortality and Morbidity: A Global and national Issue

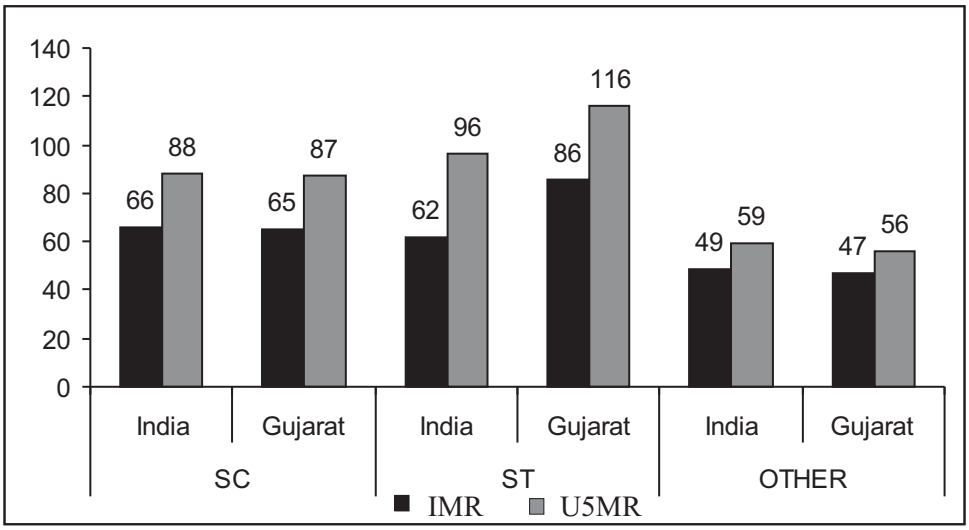
An estimated 210 million women have life-threatening complications of pregnancy annually, and half a million women die every year in pregnancy and childbirth due to largely preventable causes (WHO, 2004). Four million newborn infants also die each year, and 4 million are stillborn; the vast majority of these deaths directly reflect women's poor health during pregnancy or inadequate care during and immediately after childbirth, or both (World Bank, 1999). In light of these disturbing statistics, in 2000 the United Nations included improving maternal health and reducing child mortality rate as two of their eight Millennium Development Goals (United Nations, 2000).

The problem is especially grave in India. Over 100, 000 maternal deaths used to occur in India annually which accounted for more than one-fifth of all pregnancy and childbirth-related deaths worldwide (Registrar General of India, 1999). Despite efforts by the Indian Government and large NGO's to decentralize healthcare the maternal mortality ratio (MMR) had showed no decline over the last three decades and the infant mortality rates had remained by and large stagnant since the 1990s. At the outset of our project, the Registrar General of India estimated the maternal mortality ratio (MMR) in 1999 to be 400 to 407 per 100,000 live births throughout India. In Gujarat, the MMR was also considerably high at an estimated 390/100,000 live births (Registrar General of India, 1999). Also, maternal mortality reflected tip of the iceberg if morbidities are considered. A recent systematic review showed that prevalence/incidence ratio of near miss deaths were ranging from 1.1% - 10.1%.

Table 1: Comparison of health indicators for tribal community and India (NFHS-3)

Health Indicator	India (Over all)	India-tribal
Under 5 Mortality Rate	59	96
Infant Mortality Rate	49	62
No ANC visit	27.9%	43.1%
Institutional delivery rate	41%	19%
No. Tetanus toxoid injection taken	19.2%	38.7%

The health indicators vary a lot between different states and among various ethnicities. The tribal community have worse health indicators as seen in Table- 1. Figure 1 provides statistics IMR and Under 5 mortality rate in India and Gujarat for various ethnicities. As indicated, tribal infants and children have significantly high mortality compared to others.



Source: NHFS-3 (2005 -06)

C. Maternal and Neonatal Mortality and Morbidity in the Jhagadia Block, Bharuch District, Gujarat

Location of Jhagadia on map of Gujarat State

In order to understand the root causes and possible solutions for this national and global issue, SEWA Rural looked to our area of work in Gujarat. The Jhagadia block is located in the Bharuch District and consists of 168 villages with a population of over 171,000 (Registrar General of India, 2001). This is a rural, predominantly tribal area consisting largely of marginal farmers and landless labourers with more than one-third below the poverty line. Literacy rates among females were 55% versus 76% among males in 2001 (Registrar General of India, 2001).

Jhagadia At-a-Glance (2001 Census)

Population: 171,553
Sex Ratio: 937 Females (per 1000 males)
Female Literacy Rate : 55%
Household size : 5
67.5% Tribals
100% Rural

Baseline Figures: Jhagadia block: (2002 03)
MMR : 594
NMR : 47
Inst. Delivery: 23%
ANC Care: <25%

Estimated MMR in 2002 was 594 deaths/100,000 live births. The state-wide data showed estimates of institutional deliveries as 46% as well as a fertility rate of 2.7% (National Family Health Survey-2, 2000). SEWA Rural's in-service data from 2003 showed Neonatal Mortality Rate (NMR) of 47 deaths/1000 live births and Institutional delivery in our area to be 23%. SEWA Rural's baseline data showed high prevalence of maternal morbidities such as eclampsia, anaemia, prolonged labor, post-partum sepsis etc.

Despite the well-conceptualised Government sponsored primary health care model sub centres linked with Primary Health Centre (PHC) with option to refer to larger urban centres, these linkages were not strong in Jhagadia. The Female Health Workers (FHWs) were not from the villages, and relationships between FHWs and the community were weak. Subsequently, normal deliveries were not occurring at sub centres and PHCs, and appropriate referrals for high risk deliveries were not being made. Considering that a majority of the deliveries were being conducted at home, the need for appropriate training and support for Trained Birth Attendants (TBAs or Dais) seemed logical. Unfortunately, we observed that little effort was being made to replace old TBAs, ongoing training for them was lacking, incentives were not being given in a timely fashion, and health kits were not being replenished. Both TBAs and families lacked awareness about emergency preparedness including knowledge about where to go, need for provisions for transport, money for hospital stay, etc.

Knowledge about birth preparedness and newborn care was also lacking. A baseline survey performed by SEWA Rural showed low occurrence of appropriate TT injection (54%) and iron supplementation (61%) during prenatal care. For newborn care, there was a low percentage of breast-feeding within the first hour of delivery (49%), common practice of bathing on the first day of delivery (80%), and high occurrence of pre-lacteal feeding (59%).

For those wh were able to make it to referral centres, timely and quality care was not always available. Lack of obstetricians or anaesthetists, shortage of essential medications or non-functional equipment served as reasons for a non-functional referral centre. Also, referral to higher centres meant very high out of pocket expenditure which would further worsen economic status of already marginalized family. Additionally, care provided by such referral centred including some of the local health practitioners was of sub-optimal quality.

In short, being pregnant and getting delivered was a risky and costly affair for the mother and baby before the project began. Under these circumstances, SEWA Rural set out to find innovative solutions to improve the state of health of mothers and their newborn children in the Jhagadia Block.

D. Paradigm Shift in the Maternal Child Health Care in India and Gujarat

India and its states started paying more attention and focus to Human Development Index (HDI) and Millennium Development Goals (MDGs) promoted by UNDP. Emphasis on indicators like maternal mortality, neonatal and infant mortality, malnutrition, sex ratio came into limelight and many initiatives were launched by different stake holders. It would be important to understand the changes in maternal and newborn healthcare policies that occurred throughout the course of this project; many of these are directed towards increasing institutional deliveries.

Government sponsored new schemes since start of project:

- National Rural Health Mission (NRHM)
- Janani Suraksha Yojana
- Chiranjeevi Scheme
- Balsakha Yojana
- Rashtriya Swathya Bima Yojana
- 108Free Emergency Ambulance Service

The Janani Suraksha Yojana (JSY), Chiranjeevi scheme, Balsakha Yojana, the Rashtriya Swathya Bima Yojana (RSBY) and free emergency transportation services (108 emergency services) are some of the government sponsored schemes. The JSY provides aid in the form of cash to all pregnant women belonging to households below the poverty line, above 19 years of age and up to two live births for delivering in public hospital, though implementation of JSY was modified so that it was not linked to place of delivery (Government Resolution number: JSY/102005/1898/G, 11th October 2006). The Chiranjeevi scheme offers financial protection to below poverty line (BPL) families by covering their out-of-pocket healthcare costs for delivering at public and selected private healthcare facilities (Government Resolution number: FPW/102005/614G, 9th November 2005). The scheme also provides for financial support to the accompanying person. Under the Balsakha Yojana, all babies born to BPL mothers are covered for neonatal care by partnering with pediatricians from private healthcare facilities, including care in their Neonatal Intensive Care Unit (level 2) at no cost to the beneficiary (Government Resolution number: FPW/102008/1782/B1, 22nd January 2009). The RSBY provides basic health insurance to BPL patients for inpatient medical and surgical care including maternity and newborn health services. The 108 emergency services provided free of cost transportation for all patients who require emergency care. The pregnant women in labor are the most frequent users of 108 services.

Under the National Rural Health Mission (NRHM), frontline workers called Accredited Social Health Activists (ASHAs) are deployed in every village to apply community-based interventions. Village Health and Sanitation Committees were also started to allow for community participation in improving health and sanitation in their communities. The Mamta Divas (motherhood day) was started, a monthly meeting where health education, vaccinations and basic examinations could be performed to monitor a pregnant mother's health status. All of these schemes have served to help us in SEWA Rural's aims, and we made great efforts to integrate these initiatives into our initial strategies and plans.

E. Launching of Safe Motherhood and New Born Care Project(2003):

With such a background and status of mothers and newborns ,SEWA Rural introduced a family centered safe motherhood and newborn care project covering entire 168 villages (171,000 populations) of Jhagadia block in 2003. This project included comprehensive community level interventions by establishing a cadre of village level front line health workers which were complemented by First Referral Unit (FRU) providing Comprehensive Emergency Obstetric and Newborn Care (CEmONC) services. Supported generously by the John D. & Catherine T. Mac Arthur Foundation, the main goal of this project was reduction of maternal and neonatal mortality and morbidity by developing evidence based model in resource poor settings. Detailed description of this community health project strategy and micro level interventions for improving maternal and child health outcomes are described in this document.

Project Objectives

General Objectives

1) To reduce maternal and neonatal morbidity and mortality in the Jhagadia Block by creating community-based interventions focused around training and utilizing front-line workers to provide care at the individual and family level, with support of a functional base hospital providing Comprehensive Emergency Obstetric and Neonatal Care (CEmONC).
2) To demonstrate with data the effectiveness of our interventions so our model can be disseminated and replicated in other regions.

Specific Objectives

1) To estimate the true status of maternal and neonatal morbidity and mortality in the project area by documenting each and every pregnancy outcome and the factors influencing its positive or negative outcome both for mothers and newborn.
2) To develop an Evidence Based Model to reduce maternal and neonatal morbidity and mortality in a resource poor setting, through the following interventions:

   - To make the families and community aware and ready with the aspects of birth preparedness and complication readiness.
   - To ensure that trained /skilled personnel attend each home delivery and to ensure safe and clean newborn care.
   - To ensure effective follow up for postpartum (up to six weeks after delivery).
   - To establish effective referral linkages at the community level for timely referral of complicated cases to the base hospital

3) To complement the efforts of our Training and Resource Centre by providing active support towards hands-on training and practical demonstrations at the field level.

4) To actively participate in networking with other voluntary organizations for advocating and in policy framing for the issues related to reproductive & child health including emergency obstetric and new born care and other aspects of primary health care.

5) To establish effective linkages with local Government and health providers at the Primary Health centers (PHCs) at block and district level to aid in promoting community involvement and ownership of health-related issues.

6) To collaborate with academic and scientific organization for strengthening our skills in monitoring, evaluation, documentation and publication of articles and papers in various print media.

Methodology and Interventions: Our Model

The following section outlines the approach to our ***family-centered model for safe motherhood and newborn care.*** It begins with the overall basic structure, followed basic strategies for training of workers, data collection, education and awareness building, providing direct healthcare and networking.

A. Baseline Survey and Comparison with Control Villages:

Previous to our project there was very little data about habits and behaviors regarding maternal and newborn care. To gain a sense of where to focus our efforts we developed a house to house baseline survey in 2003 that detailed information in both our villages and control villages including demographics, housing situation, education, and habits during antenatal, intranatal, postnatal care, newborn Care, and health seeking behaviors, common signs/symptoms of pregnancy and among newborns for past two years.This was a comprehensive effort that spanned the entire population of these blocks. This gave us a starting point from which we could compare the results after our interventions.

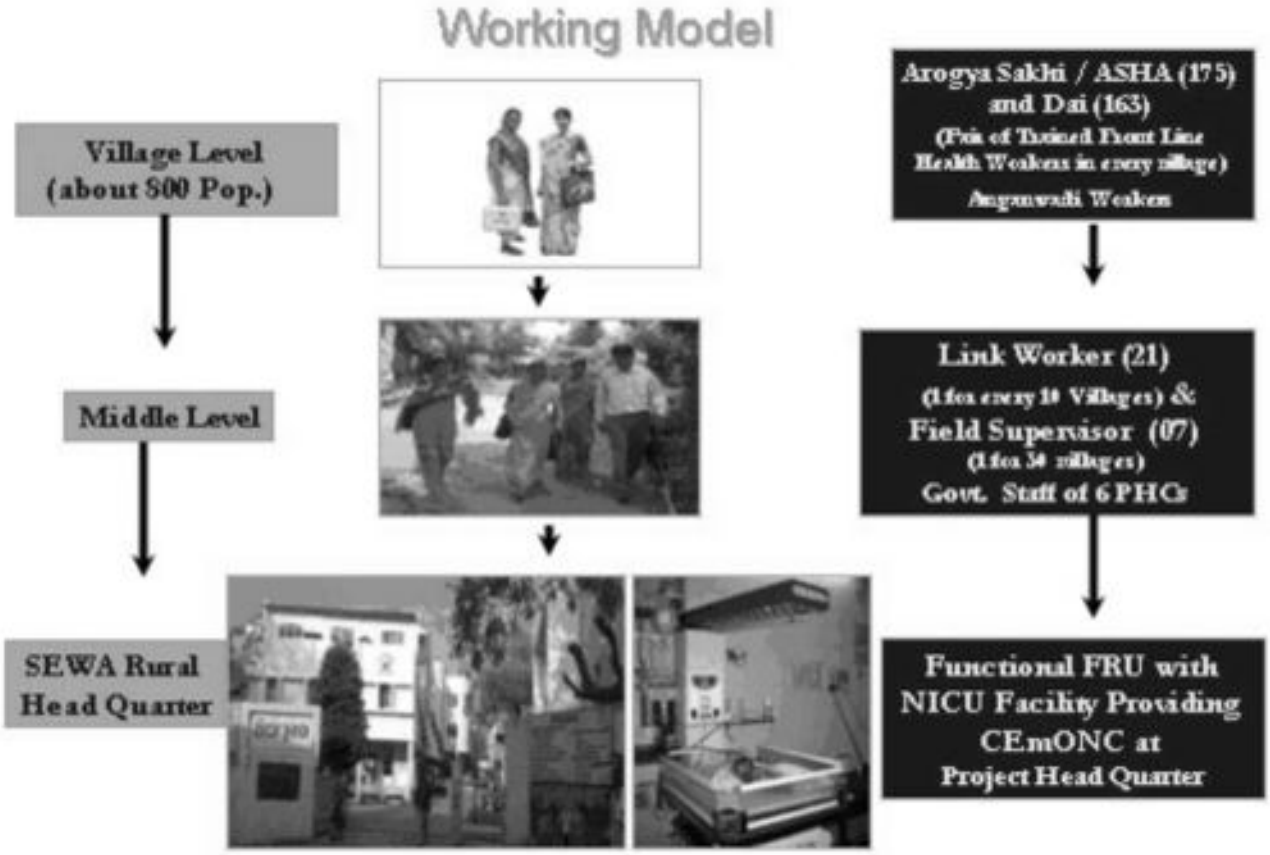
Sr. No.	Particulars	Project 2001- 03	Control 2001- 03
	Basic Information		
1.	Number of villages	168	61
2.	Surveyed Population	1,61,000	50,000
3.	Proportion of tribal population	67.5%	86.5%
4.	Proportion of women population aged 15 to 45 yrs	22.1%	21.5%
5.	Proportion of Illiterate population	52%	58.4%
6.	Proportion of Laborers	39.5%	43.4%
	Maternal Care		
7.	Iron Folic Acid Completion rate	61.4%	49.2%
8.	TT Completion rate	81.8%	76.8%
9.	Proportion of pregnant women who had BP Measurement	44.4%	21.1%
10.	Proportion of pregnant women who had Per Abdomen Examination	39.9%	18.7%
11.	Proportion of deliveries occurring at home	77.9%	87.3%
12.	Use of delivery pack among home delivery	6.1%	1%

The control group comprises of 61 villages (pop. 55,752) located about 5 k.m. away from the border of project villages for comparing the outcomes and process indicators with intervention area over the project period. The technical help in selection of control villages and in designing methodology for comparison parameters and contents of the base line survey forms was sought from Gujarat Institute of Development Research (GIDR) in Ahmedabad, Population Research Centre in Baroda and SEARCH in Gadchiroli. Following table:2 highlights some of the key factors considered for selection of control area having almost similar geographical and demographical characteristics in 2002 - 03.

There were 8 data collection workers who made regular fortnightly visits to every village. A system has been in place to record the events from selected control villages by the specially trained village supervisors on on-going basis. These workers would come to head-quarter every month for compiling collected data.

B. Overview of Project's Structure and Roles of Workers :

The core of our family-centered model for safe motherhood and newborn care at the community level are trained front line workers who directly interact with our target population on a regular basis to ensure they are getting the attention they need. These include 175 Arogya Sakhis (about one per village), About 250 Trained Birth Attendants (TBA) or Dais, 21 Setus or link workers (one per 8-10 villages, each sector is called a Seja) and seven field supervisors. They all have the ability to refer to our base hospital functioning as FRU. With varying roles and responsibilities based on their training and expertise, the synergy among these groups has ensured our project's success. The following section details the selection and roles of each field-level worker.



Working model for Family Centered Safe Motherhood and Newborn Care Project

B1:Arogya Sakhis : About *175* Arogya Sakhis are providing al l the critical inputs for effective maternal and newborn care at the community level in each village. Selection criteria for Sakhis include: a married woman in her thirties, educated at least up to primary schooling, having family support to work for the welfare of village community and most importantly, they should be well-accepted by the villagers. The initial training lasts for about a month in short sessions of three to four days and they receive ongoing training at three month intervals.

They are advised to make at least 7 visits (2 visits during second trimester and 5 visits during third trimester) to the pregnant mothers' home and provide necessary antenatal are and counseling. She interacts not only with pregnant mother *but with the family members as well*. The topics of counseling include aspects about appropriate Antenatal Care, Nutrition, Birth Planning and Complication Readiness.

Role of Arogya Sakhis through

Pre natal Care:
- Ensuring Antenatal Care Services
- Counseling for Nutrition
- Ensuring Birth Preparedness
- Ensuring Complication Readiness and High Risk Referral

Intranatal Care:
- Promoting Institutional Delivery
- Assisting Dai in case of Home Delivery
- Immediate Home based New Born Care
- Timely Detection of Maternal and Neonatal Complications and ensuring prompt transfer of such cases

Postnatal Follow up for Mothers and Neonates

Counseling for Family Planning methods

Contributing to Mamta Divas (MCH Day) in coordination with Female Health Worker

Treatment of Minor Ailments (with User Fee)

Promote Community Involvement

Detailed Recording of all the Events

Their Husbands' Support and Involvement is Encouraging

Gets Rs. 350 as a monthly token honorarium plus about Rs. 150 as performance based incentives for her part-time services (Appendix-1)

Aspects covered under **birth preparedness** include knowledge about expected date of delivery, planning about place of delivery, procurement of pre-sterilized delivery pack, packet of clean clothes made handy, rapport made with active TBA of the village and understanding about importance of nutritious diet based on poster (Appendix-2 & 3). A checklist was made to serve as a tool to remind Sakhis of important points and to monitor adequate counseling per our indicators (see Appendix-4 for checklist on a MCH card). Eligible mothers and their family members are advised about various Government schemes like Janani Suraksha and Chiranjivi schemes and to complete the necessary formalities in advance so that they can receive the benefits in time.

Family centered Counseling by Sakhi. The EDD is written on wall next to educational poster

The aspects of complication readiness include awareness and understanding about signs and symptoms of different pregnancy / delivery related complications, reserve pool of money in case of emergency, availability of vehicle and arrangement for transport in case of emergency, awareness about nearby hospitals along with its contact phone number that have adequate facility to handle pregnancy /delivery-related complications including conducting procedures like caesarean section if required, and awareness and availability of voluntary blood donors in such emergency.

Along with the desired package of services and care along with appropriate counseling, she joins the Dai in promoting institutional delivery and in case of home delivery; she assists Dais in conducting normal deliveries safely and cleanly. She is also trained to provide immediate newborn care including *resuscitation, initiation of breastfeeding and ensuring warmth to the baby*. She also ensures postpartum care both for mothers and neonates through daily visits during first week and weekly thereafter up to two months.

Pre Sterilized Delivery Pack

Most of the Sakhis received Integrated Management of Neonatal and Childhood Illnesses (IMNCI) training from SR. The Sakhi also asks and looks for the signs and symptoms of any of morbidity / illness the woman is suffering during the antenatal, intranatal or post partum period. She provides the necessary care at the home level and in cases of severe morbidities; she refers the mother to higher centers for proper consultation, investigations and necessary treatment.

She mobilizes the available resources at village level to ensure that a referred woman reaches the appropriate hospital in time. Once the woman is discharged, she also does the necessary follow-up to ensure that the patient is taking proper care as per the advice of doctor. Following Figure :2 describes interventions implemented by the Sakhis to reduce neonatal mortality.

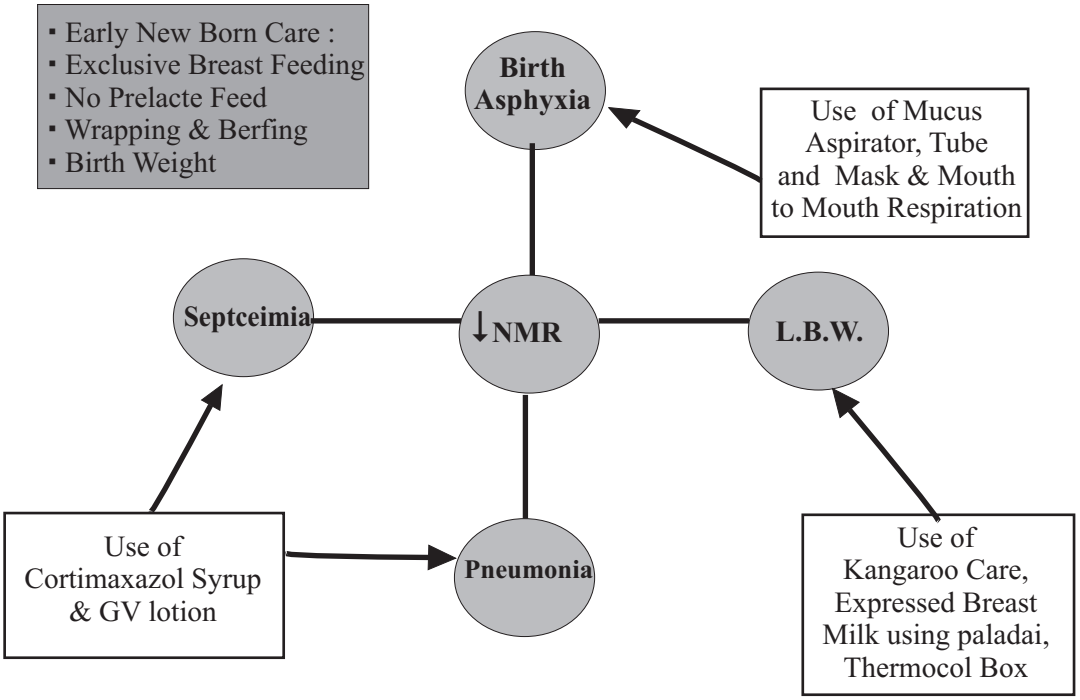


Figure: 2 Home Based Interventions to reduce Neonatal Mortality

The Arogya Sakhis also provide primary care by treating minor ailments at a token cost. They procure necessary medicines from the SR headquarter at a subsidized cost. The Sakhis receive a token honorarium of about Rs. 350 a month. In addition, they are given performance-based incentives (on an average Rs. 150 a month) which depend on the quality of their performance.

Education Tools used by Sakhis

Poster: Educational Posters were developed by SEWA Rural to serve as informational tools for expecting mothers. They were sold for Rs. 5 and were placed in the mother's home (See Appendix-2 & 3)

Pictorial flipbook: Each Sakhi carried a pictorial flipbook that contained pictures and information necessary in educating expecting mothers.

Delivery Pack Package : No space was wasted as even the packaging of the delivery pack contained important information regarding newborn care.

Pictorial flipbook

Patient Care Tools for Sakhi

For Physical Exam : Thermometer, Watch, Weighing Scale

Delivery Pack : The delivery kit was developed to ensure safe and clean home deliveries. Adequate supply is ensured by SR Headquarters who provide to Sakhis on an as needed basis during every three month meetings. These kits are sold to Dais at a minimal cost (Rs.5).

Medicine Pack: Each Sakhi keeps basic medicines which she can provide to mothers at an affordable cost. These include: Calcium, Iron, Folate, Paracetamol, GV Lotion, Cotri Syrup, an antacid, Vitamin A, and Chloroquine.

Kangaroo Sling : Available to mothers at a reduced cost.

IMNCI/Sakhi Manual : Each Sakhi carries around specially developed manuals that contain reference materials to aid in practical management decisions in field.

B-2. Trained Birth Attendants (TBAs) or Dais

Previously, Dais served as the primary healthcare provider for mothers delivering babies at home. In our model, their role has slightly changed, primarily to promoting institutional deliveries, and when necessary, ensuring safe home deliveries. The exception is in very remote areas, where they still have the critical role of ensuring safe home deliveries. About 250 dais are trained and retrained in safe and clean low-risk deliveries at home with immediate newborn care, timely risk identification and ensuring prompt referral in the company of Arogya Sakhis. Practical training & live demonstrations conducted at the SR head quarter having the support of a functional FRU are essential in keeping the Dais up to date on safe practices and management skills.

Core and Expanded Role of a Dai

- Promoting Institutional Delivery as Birth Companions
- Safe and Clean Normal Delivery at Home
- Identification of Delivery Complications and Ensuring Timely Referral
- Immediate New Born Care
- Motivating Families for Birth Preparedness and Complication Readiness during Antenatal Care
- Promoting Family Planning
- Contributing to Mamta Divas (MCH Day) in coordination with Female Health Worker, Anganwadi Worker and Arogya Sakhi
- Gets a token amount of Rs. 50 for promoting Hospital delivery and Rs. 25 for conducting safe home delivery

The Dais have been replenished on the regular basis with the Delivery Kit consisting of required equipments and items for conducting safe delivery at home including mucus aspirator and torch. Measures are taken to preserve their dignity and respect not only by the field staff but the hospital staff as well. They are well supported in their work by the Aroghya Sakhis. The performance based incentives are an additional boon to them. Now in the era of increase emphasis in promoting institutional deliveries, the role of dai is changing. Their acceptance and respect in community is being harvested in expanding their role into true birth companions at the institutions and as health promoters at the community level.

B-3. Link Workers (Setus)

Each of the 21 link workers supervise and support about 10 Arogya Sakhis, one from each of the villages in the sector. Their selection criteria includes: a married woman from one of the ten villages of the sector and in her thirties, educated up to secondary level and ready to move around in her sector villages. They spend about six hours per day in fieldwork, visiting one to two villages per day (assigned by SR).

Role of Link Workers

- Visiting one to two Villages every day
- Ongoing Support, Guidance and Monitoring of Aroghya Sakhis and Dais
- Support for Building Community Awareness
- Data Collection and Reporting
- Attends Weekly Review Meetings at Head Quarter
- Important Link between Head Quarter and Field
- Attending the Mamta Divas (MCH Day) in coordination with Female Health Worker, Anganwadi Worker, Arogya Sakhi and Dai
- Gets a token honorarium of about 2000 Rs. per month

Besides the five days fieldwork per week, the link workers spend one day a week in the SR HQ for meetings, reporting data, group discussions, continuing training and visiting referred mothers in hospital. In addition to providing feedback from her cluster of villages, she also provides feedback in sensitizing the FRU staff about the field situation, community needs, family circumstances and women's perplexity.

Thus the whole cadre of workers at village level mainly consists of female workers, which considerably strengthens the female force within the project. This creates a closer rapport with pregnant women at field-level and facilitates access to maternal information from the field. Through this strategy the interactions with the community leaders and the people are becoming more friendly, wholesome and mutually beneficial. Sector meetings are held monthly for a day in one of the sector villages and quarterly at SR headquarters for two days.

performance, there is a specific training component to each sector meeting held at SR headquarters with more informal trainings held at village sector meetings. Most of the link workers received IMNCI training from SEWA- Rural.

B-4. Supervisors

Seven senior and experienced health supervisors were assigned the responsibility to coordinate, monitor and support the field staff. Supervisors focus on high-risk women and newborns in addition to unmarried pregnancies. Initially, supervisors had fixed cluster of villages to supervise. We quickly learned that due to friendships forged with link-workers and Sakhis in those villages, supervisors had a tendency to be more lenient in their monitoring. For this reason, the new strategy dictated that any supervisor could be asked to monitor any village throughout the Jhagadia block. This has improved monitoring and quality of work. They cover each village at least every two months on a routine basis and ensure that the front line workers including Dais and Arogya Sakhis are satisfactorily completing their tasks under guidance and support of Setus. The supervisors also interact with community leaders to promote their participation in improving maternal and child healthcare. This includes vehicle owners, voluntary blood donors, local leaders, support groups etc. Supervisors also organise and mobilise community during health education and awareness camps that are described later. The supervisors also coordinate with local government health staff including female and male multi-purpose health workers and medical officers of respective PHCs. Various maternal and child health services are converged during Mamta Day being organized by government staff on a monthly basis in every village. The supervisors ensure that SR field staff of respective village also joins hands in mobilizing the beneficiaries to avail the services and provide necessary support to government staff. Supervisors also monitor and follow-up and the critical mothers or babies.

C. Supporting Field Activities and Programmes

C. 1) Education and Awareness Building

Apart from the work being done by Sakhis and Dais on an individual level, several larger group activities were planned on a regular basis in our project area.

Arogya Melas (Health Camps)

Health Awareness Camps were held on regular basis in project villages to promote awareness about different aspects of Safe Motherhood, roles and responsibilities of different cadres of workers and active community involvement.

Adolescent Awareness Meetings

These activities were started to increase awareness among adolescents regarding reproductive health by SEWA Rural's sister organization Sharda Mahila Vikas Society. Apart from regular school activities, separate activities are organized for non-school going adolescents. Topics such human anatomy, reproductive physiology, effects of love and relationships, contraception, Hazards of addiction etc. are being discussed.

Awareness among Newly Married Couple

Every year, we planned approximately four regional awareness camps of newlywed couples (in 2010, total number of about attendees were 255) for sensitizing both the partners about aspects of reproductive health, conception, contraceptive methods, control of anemia and sickle cell disease, harmful effects of tobacco and smoking, nutrition, issues related to gender, importance of saving and also about the couple getting socially accepted in a family in a new environment.

Awareness about Family Planning

In Jhaghadia block, 3.78% of all pregnancies are multiparas having 5 or more pregnancies. It is a vicious cycle for the poverty, anemia, multiple pregnancies, and malnutrition leading to maternal and newborn mortality and morbidity. We initiated the process so that all the recently delivered women and their partners of the project are appropriately counseled about various family planning methods in a cafeteria approach and also about various incentives offered by government for the same. We also made efforts to ensure that couples motivated to accept either Cu T or permanent methods get the desired services from the nearby government PHC staff. As the government was supplying condoms and Cu-T in sufficient number, we decided not to duplicate their efforts.

C-2) Special Focus on Anemia

Iron Deficiency Anemia

The majority of the population of Jhagadia Block is rural, tribal and poor. Iron deficiency anemia due to malnutrition is higher compare to other areas. We introduced diagnostic testing such as blood hemoglobin estimation at the field level. In addition, prophylactic anti-worms treatment (Tablet Mebendazole one tab. two times in day for three days) was given to all the pregnant women. Tab Vitamin C was distributed to severely anemic patients for the better absorption and bioavailability of iron.

As seen in following table, 79% of women were found to be anemic whose hemoglobin was tested with almost 5% women were suffering from severe anemia. There is a reduction in moderate and severe anemia compared to previous years but overall prevalence of anemia still very high.

	2008-09	2009-10	2010-11
Haemoglobin less 7 gm/dl	206 (9.6%)	183 (9.3%)	97(5.2%)
Haemoglobin 7.0 to 10.0	1286 (59.6%)	1034 (53%)	976(51.9%)
Haemoglobin 10.1 to 11	305 (14.1)	384 (19.7)	416(22.2%)
Haemoglobin more than 11	359 (16.7 %)	351 (18%)	389(20.7%)
Total	2156 (100%)	1952 (100%)	1878(100%)

Prevalence of anemia among pregnant women from the years 2008-09 to 2010-11 Source: In-service Data

Sickle Cell Anemia

We also introduced Sickle Cell Disease testing at the field level. Additionally, we started appropriate counseling to mothers and their family members about special care necessary in women with Sickle Cell Disease. Special protocols were also utilized at the base hospital for pregnant women presenting with Sickle Cell Disease, and there is a designated "Sickle Cell Bed" in the base hospital reserved for pregnant women with the disease.

In last 5 years, 15,602 sickle cell tests were performed at SEWA Rural hospital; 2381 (15.3%) were sickle cell trait and 310 (2%) were identified as having sickle cell disease. Total 2639 sickle cell tests were performed at field level in mobile clinic; 338 (12.8%) had trait and 26 (1%) had sickle cell disease.

Maternal deaths due to sickle cell disease remains a major challenge as indicated in data shown in maternal mortality section.

Increasing Blood Group Analysis Testing for Blood Availability

Blood grouping camps were successful at the village level to promote enlisting of voluntary donors. We have list of donors which is very helpful when emergency blood transfusion is required. Here are some data regarding number of blood transfusions per year:

C-3) Mobile Health Clinics and Gynecological Camps

Mobile health clinics and Gynecological Camps were held in various villages throughout the years. Mobile clinics were conducted twice a week while gynec camp were held twice a month. Patients examination, Lab investigations, distribution of medicines. Alongwith counseling and health education were conducated at such clinics at a token price. These provided pregnant mothers with easy access to healthcare professionals for their various stages of pregnancy. It also allowed SR to create a better rapport with the communities it wishes to serve.

Doctor evaluating a patient in a mobile health clinic

C-4. Referral Linkages:

Transportation

Though most of the villages of the Jhagadia block are now well connected with the base hospital through better roads, few villages (no. 19) are disconnected particularly during monsoon season. In addition, few villages (no. 14) do not have local vehicle owners willing to come forward to provide their vehicle support during emergency for transferring a complicated delivery case. Thus through a village wise mapping exercise, we tried to link villages having no vehicle facility with nearby villages having vehicle facility.

Our field supervisors have regularly maintained the contact with private vehicle owners and have appreciated their support in case of emergency. The free Emergency 108 ambulance system was also introduced during our project period, and has been a great help in improving transportation. According to our data, 83% of mothers used the Emergency 108 service for delivery in our project area for year 2010-11.

The Emergency 108 System has improved issues of transportation for patients from remote areas

Telecommunication linkages

Though most of the villages of the Jhagadia block are having telephone connectivity, few do not have such land line telephone connectivity. In addition, some villages (no. 14), our arogya sakhis find it difficult to communicate with us even though the facility exists in the villages.

A hotline was established during the project period. Field level workers regularly contact head quarter staff using this hotline to report at risk mothers, newborn or any other information that needs immediate attention.

Regarding our CHP hotline, a total 3925 calls were received in 2010-11. It continues to serve as an effective telecommunication linkage between the village level workers and experts at the base hospital.

Assessment was done by a team from mPower Health (formerly, Click diagnostics) in February 2011 regarding feasibility of mobile technology in hands of frontline workers. The team spent a month to examine the issue and prepared a feasibility report. Findings of this assessment have led to initiation of m-Health project during later part of 2011. After their initial visit and assessment, SEWA Rural is in the process of partnering with mPower Health to initiate a new project from September 2011 onward to establish surveillance and service delivery model for maternal and child care based on mHealth solutions.

D : SEWA Rural's Hospital (FRU)

Kusturba Hospital (FRU) Offers:

- Blood Transfusion facility
- NICU
- Full time Obstetrician, Pediatrician, physician
- General Surgery once weekly
- X-Ray and Sonography
- Basic Blood Examinations

SEWA Rural has been running a model FRU for the whole Jhagadia block since 1999, with grants from UNICEF and the Government of Gujarat, and assistance from the Mac Arthur Foundation. This is a well-equipped hospital, with the FRU infrastructure already in place. Facilities for labor room, maternity wards, operation theatre, blood bank, sonography and life saving medicines have been renovated and expanded. The SR FRU is providing Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) to any delivery complications referred from the field. Linkages with the private practitioners and PHC staff of the local area continued to ensure referral of complicated cases. SR is recognized Chiranjeevi, Bal-Sakha and RSBY provider. Complicated maternal patients get referred to SR FRU from surrounding 4-5 CHC's, coverage area for more than 500,000 population. SR is now conducting around 2500 deliveries every year, with about 10% cesarean section rate.

Pregnant women getting registered for ANC Visit at Base Hospital.

SR runs Antenatal Clinic thrice a week and about 800-900 patients are seen on monthly basis. USG with color Doppler facility is available and more than 150 ANC sonography tests are done monthly. The documentation of each maternal admission and its outcome is thoroughly maintained, reviewed and analyzed on regular basis so as to assess the quality of services and to initiate appropriate interventions. Emphasis has been to develop, practice and promote rational therapy with standard protocols and treatment guidelines This includes the management protocols for Sickle Cell Anemia - a widely prevalent among tribal women belonging to tribal community in particular and many a times resulting into Sickle Cell Crisis.

SEWA Rural has full time staff of three gynecologists, three public health experts, two pediatricians, two physicians, one anesthetist and seven medical officers assigned to various departments alongwith other 50 supporting paramedical, nursing and counseling staff. In addition, we have sent one of our senior medical officers for a special training for giving anesthesia during LSCS surgeries offered by government and since then he has given anesthesia in more than 250 LSCS surgeries. All these staff members are full time most of them are residing in the hospital campus or near by around Jhagadia.

D-1. Emergency and Complications

When a Sakhi visits a family in the field, she must identify whether the patient is routine, or facing a complication or emergency. In the case of an emergency, she may 1) Accompany patient to the hospital or 2) Call the Emergency 108 service. In case of a complication, she has the decision to 1) handle the complication by herself, 2) call a Setu or 3) call the CHP office hotline. The hotline was developed for those cases that a Setu or Sakhi are unsure of the next management decision and can verify plan directly with someone on a supervisory level. A complete decision tree until a final management decision is made is outlined in the chart (Appendix:12)

D-2. FRU Review Meeting

The FRU meeting is a weekly meeting that allows community health doctors to meet with hospital doctors to discuss the comprehensive management of complicated or high risk cases. This interaction is highly important as it allows for collaboration among doctors who view care in a slightly different manner (i.e., preventive vs. acute care) and provides an opportunity not only to improve long-term patient care but also for team building and learning.

Figure 1 FRU Meeting Opportunity to improve communication between community and hospital doctors.

E. Health Training and Resource Centre For Providing Hands-On and Technical Training :

SEWA Rural was successful in improving its training capacity during the course of the project period. A new state of art training center was built with help of funds received from the MacArthur Award. SEWA Rural became first NGO in Gujarat to have UNICEF and Gujarat government-approved training center for conducting IMNCI training for the Anganwadi workers and health staff placed at SEWA-Rural from different districts. SEWA Rural also hosted students from India and abroad. Some of these academic institutions include the London school of Tropical Medicine, Liverpool School of Tropical Medicine, Emory University, Tata Institute of Social Studies (TISS), M.S. University etc.

New state of art Health Resource & Training Centre

IMNCI Training in the Field

Every year more than 1000 trainees from different voluntary organisations, govt. sector and students from different academic institutions avail the benefit of this center. Total 13,345 trainees from 610 organizations received training (including orientation programs and field placements) at SEWA Rural during last seven years as seen in appendix 5 . Some of the training programs offered were IMNCI training, dai training, sakhi training, counseling and communication training etc.

Training and Continuing Education of Workers

After an intensive initial training, Sakhis, TBAs and Link Workers were made stronger and effective through conduction of training and refreshing / orientation sessions on regular intervals. The topics include prenatal care, safe deliveries at home, timely risk identification, referral procedures, treatment of minor ailments, record-keeping, and newborn care. At times, help of outside consultants are taken for the training of field workers. About 150 active TBAs are called upon every six months for two days, 165 Arogya Sakhis are called upon every three months and 21 Setus every week for reporting, orientation training, planning meetings and problem solving. Such efforts help in bringing out the true potential of such front line workers and ultimately the mothers, newborns and community at large is benefited. In addition, special emphasis is placed on ensuring regular follow up and support in the field, timely distribution of delivery incentives and replenishment of various items. Efforts will be made to provide advance training to selected Arogya Sakhis in primary management of antenatal, delivery & postnatal complications at home and during transfer.

Involvement of Field Staff in Knowledge Sharing

- Demonstrating field level interventions
- Sharing the realities of community based work
- How the decentralized supervision, monitoring & evaluation and management information system is actually practiced at the grass roots level
- How the linkages and coordination with govt. staff is maintained
- Different types of govt. schemes and its operational issues
- How different level of staff is positively motivated and
- How the problems are actually shared, discussed and amicably solved

F. Linkages and Co ordination with Different Stake Holders :

F.1 Government

At SR we believe in the importance of collaborating with local government to work towards finding solutions for our community's problems. Collaborations were started prior to the project period and were continued throughout the project period. Key targets were the district and block health department. Coordination and monitoring meetings at the interval of every two months were held at SEWA Rural head quarter between SEWA Rural staff and government health staff which include all the FHWs, their supervisors as well as the medical officers of the eight PHCs of the Jhagadia block. The emphasis of these meetings is on **Fact Finding and not on Fault Finding**.

Meeting with government staff

During the project period, the government created Village Health and Sanitation Committees. SR took on the responsibility of training and mentoring members of all 87 VHSCs. This training includes orienting VHSC members regarding important aspects of maternal and newborn care in addition to addressing other issues of community.

The government-sponsored Mamta Divas was a great opportunity for collaboration. We attend many Mamta Divas to supplement the services provided by government staff with our own counseling, monitoring and addressing issues the mothers may have.

Village Health & Nutrtion Day

SEWA Rural has long tradition to work with local government staff so that its efforts could be complimentary rather than duplicative. Quarterly meetings were held with PHC staff including medical officers, FHWs and MPHWs. SEWA Rural discuss areas of mutual concern and shares information regardin maternal and child health issues with PHC staff. Such meetings created ideal environment to coordinate our efforts with the government. SEWA Rural supervisors participate actively to celebrate Mamta day (monthly health and nutrition days). SEWA Rural conduct quarterly meetings with PHC staff for better coordination.

Table: 3 Details about regular meetings with the PHC staff

	2006-07	2007-08	2008-09	2009-10	2010-11
Total Meetings	8	6	3	4	3
Total PHC Workers	45	45	48	43	51
Avg Attendence	34	35	32	35	40

SEWA Rural was selected for the Service NGO project under the public private initiative of RCH II and NRHM initiative by dist. and state govt. Under this project, SEWA Rural selected some 30 villages of Jhagadia block, which were 100% tribal, poor and most interior & underserved. Extra interventions including selection of additional village level and middle level staff, introduction of special mobile dispensary clinics on weekly basis, frequent meetings and close coordination with respective Moriyana PHC staff. Efforts are made towards health education and awareness drive alongwith activation of village health and sanitation committees in this area. Additionally, mobile clinics are organized in remote villages, especially belonging to SNGO areas.

F-2. Scientific and Academic Institutions

To strengthen our skills in monitoring and evaluation process and get involved in research activities, we sought to collaborate with academic centers. Some groups include Center for Science and Ethics, Mumbai and Achuta Menon Centre of Sri Chitra Institute of Medical Science, Trivendram, London School of Tropical Medicine, Liverpool School of Tropical Medicine and Emory University, Atlanta.

Collaboration with Centre for Studies in Ethics and Rights (CSER), Mumbai and Achuta Menon Centre of Sri Chitra Institute of Medical Science, Trivendram is helping SEWA Rural in strengthening its skills on monitoring & evaluation process, which includes data analysis and inferences. SEWA Rural's data

entry and documentation process became more refined through frequent visits of CSER members to SEWA Rural. Expert faculty at the Achuta Menon Centre of Sri Chitra Institute of Medical Science, Trivendrum are regularly visiting SR with their research team to jointly develop research papers some of key issues related to maternal and neonatal care.

G. Sharing our Knowledge and Experience:

An important aspect of any large undertaking is sharing our experience with others. Educating, training and networking with individuals, NGOs, academic institutions and Governmental organizations was a priority during our project. For this reason, different cadres of workers from voluntary organizations, Government staff and students from varied academic institutions from India and abroad were invited to learn about SEWA Rural's rich grass roots level experience. Different types of tailor made courses were offered relevant to the needs and interest of the trainees which includes Traditional Birth Attendants, Community Health Volunteers, Paramedic and Multipurpose Health Workers and Supervisors, Project Managers, Medical Interns, Residents, Government Health Officials and students from faculty of medicine, social work, rural studies and health management. Our field staff actively join in demonstrating field level interventions, sharing intricacies of community based work, how the decentralized supervision, monitoring & evaluation and management information system is actually practiced at the grass roots level, how different level of staff is positively motivated and how the problems are actually shared, discussed and amicably solved.

Additionally, members of SR traveled the globe to share our findings with like-minded groups and to learn from the experience of others. Please refer to Results by Specific Objectives section for further details on specific forums attended and groups with whom we worked.

The SR team has been successful in networking and advocating for the health of mothers and their children. We have shared our experiences and learned from others throughout the globe. Below are some highlights of our activities.

SEWA Rural is activity supporting and involving in an initiative taken by Jashoda Narottam Trust at Dharampur in Valsad District towards improving the status of mothers and children belonging to rural, poor and tribal communities. Their program covers a population of about 30,000 and having about 90 % home delivery. Like SEWA Rural's project, it is also centred on front line workers at the village level with back up referral support provided by the charitable hospital at Dharampur. The results are encouraging and promising in saving the lives of mothers and newborns. Different cadres of their staff is now being trained and oriented at SEWA Rural at regular intervals. Similarly SEWA Rural's project staffs makes regular visits at the Trust's project site in Dharampur for on the spot appraisal and to provide necessary guidance, support and encouragement to the staff. SEWA Rural provides expert guidance to their staff in form of field visits, data analysis and training.

SEWA Rural continued to participate in the Dai Sangathan, Gujarat initiative to strengthen and expand the role of TBAs for supporting maternal and child care activities.

SEWA Rural continued to participate in the Jan Swasthya Abhiyan (JSA) initiative taken up by a group of like minded NGOs of the state towards bringing out health concerns particularly that of marginalised and underserved community and to suggest ways and means to improve the same.

SEWA Rural is regularly invited to share its experiences at national and global level; this includes the Women Deliver conference, Washington, 2010 and first Global Maternal Health Conference, New Delhi in 2010.

H. Health Management Information Systems (HMIS)

The collection of accurate data was paramount to understanding the realities in our area. This section details our system for collection of data and the flow of information from Sakhis to Setu to supervisor and eventually to our computerized record keeping system at SR Headquarters.

Our process can best be understood the different forms of documents filled on three different levels: village-level (Sakhis), Seja-level (Setus) and headquarter/hospital level (supervisors, directors, nurses, physicians). Prior to detailing these documents is a brief discussion of our baseline survey.

H-1. Village level (Sakhis)

Maternal and Child Health (MCH) Card

The MCH card serves as a primary source of information on each individual mother's history, from registration until two months postpartum. The information is recorded by the Sakhi during detailed interview with the mother and is maintained by the Sakhi at all times. It allows the Sakhi to monitor the mother's progress throughout the course of the pregnancy and respond appropriately in case of emergency. It also serves as the basis for all forms of data-analysis on maternal child health at the organizational level. A copy of MCH cad can be found in Appendix-4.

Key information found in the MCH card includes:

Part I Antenatal Care: Mother's general background information, pregnancy-related history, maternal death related information, maternal risk assessment/follow-up, clinic information (collected from third party such as FHW, mobile clinics, antenatal clinics, etc), documentation of dates that counseling/awareness building offered by Sakhi and monitoring/supervision by third party.

Part II Postnatal Care: General delivery information, infant death related information, neonatal risk assessment/routine follow up, maternal/infant morbidities, complications during and after delivery to mother, complications after delivery (child), and new mother and baby information.

Maternal and Child death information on these cards are supplemented by a more complete "Death Form," a detailed verbal autopsy filled out by a supervisor or doctor.

Sakhi Register

While the MCH card tracks information of individuals, the Sakhi register compiles maternal and child health information on a village level in the form of lists, including names of pregnant mothers, recent deliveries, hospital admissions, complications, etc. It also serves to record administrative information related to Sakhi job performance, such as incentives, absences, total number of medicines dispensed, etc. There is an additional notes section in which Setus and Supervisors can comment on the Sakhi's performance. Appendix-6 contains index of Sakhi register.

Mamta Card (Government-sponsored)

The Mamta card is a village level card that is provided by the government for all registered pregnant mothers. It is maintained by the mothers themselves, and is filled out during the Mamta Divas (Motherhood Day). The card contains general health information regarding mother and child. The Mamta card may contain new information for the Sakhis such as BP readings, Hb level, sickle cell testing which they can add to their own MCH card.

Mamta Card

H-2. Seja (Cluster) Level

Setu Register

Key information in the Setu Register includes 1) list of Sakhis, 2) list of pregnant mothers, 3) list of maternal and neonatal complications, 4) list of types of maternal and infant deaths, and 5) referrals, special programs, clinics and maternal/neonatal hospital visits in a specific Seja. Most of this information is obtained through visits with the Sakhi, through the MCH card, and through the hospital. Appendix-7 contains a copy of content from the Setu register.

H-3. Hospital / Head Quarter Level

Seja Reports and Headquarter Reports

Cluster reports are generated on a monthly basis through all-day Seja meetings with Setus and supervisors, where information from all Setu registers are compiled into a master list.

Headquarter Reports are generated on a three month basis when Sakhis, Setus and supervisors meet for training and monitoring purposes. The report generally contains less detailed data (i.e., no names), but rather actual numbers regarding various subjects.

Verbal Autopsy and the Maternal and Neonatal Death Form :

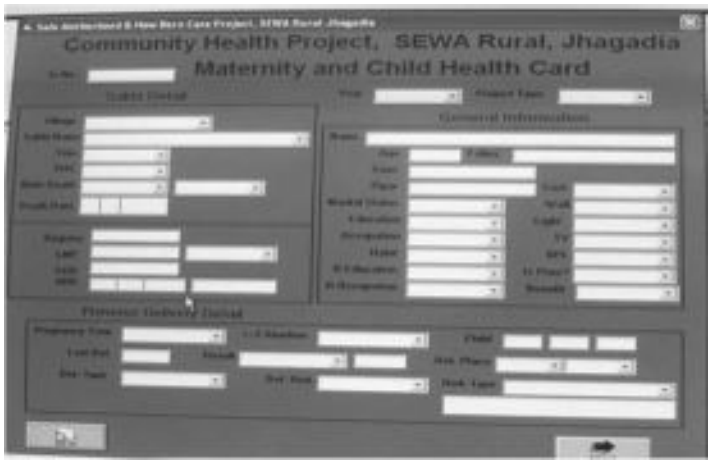
Every maternal and infant death in our project area was followed by a verbal autopsy. This is a detailed history of the mother and child and the factors relating to an individual's death. Forms were developed based on the period (i.e., antenatal, intranatal or postnatal) for mothers and age for infants. Sample for Neonatal Death form can be found in the appendix-8. These forms are filled out by supervisors and varified by doctors.

ANC Clinic Card

This contains basic clinical information regarding a mother's pregnancy. It remains in the possession of the mother, and she is responsible to bring it to all visitations with a healthcare professional. It contains information such as blood grouping, EDD, Vaccinations, vital signs and lab investigations.

SR Electronic Database

All information compiled from the above sources of data is eventually put into a comprehensive computerized database at the SR headquarters. The data are entered by SR staff in a user-friendly data entry program that compiles the days in Microsoft Access.



Screenshot of SR Electronic Database Data Input Program

FRU Register

The FRU Register remains in the possession of the hospital and serves the function of maintaining an in-depth record of clinical information of admitted mothers. It contains information from the ANC card, detailed background information, description of diagnosis, medical procedures, treatment, and notes on outcome.

There is also a list of hospital admissions compiled daily and aggregated on a weekly basis. These are sent to the CHP office for review and development of an action plan for mothers recently admitted. A copy of FRU register can be found in Appendix 9.

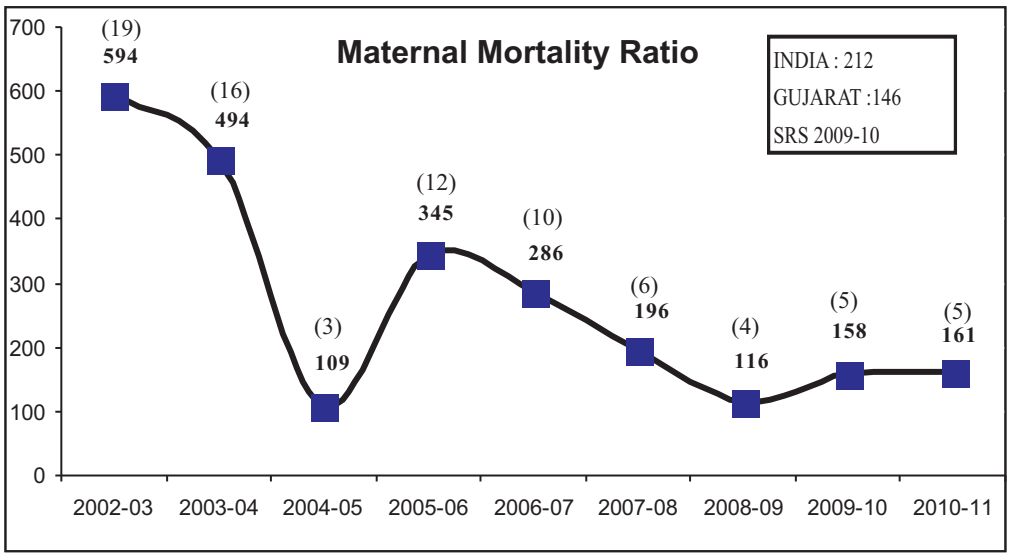
Results by Specific Objectives

A. Estimating Maternal and Newborn Mortality and Morbidity

During the project period about 33,681 new pregnancies were recorded and followed up. Due to spontaneous abortions, medical termination of pregnancies and still births, about 10% of pregnancies did not go to completion. Thus, 29,486 live births were followed up in total. The trends in maternal & neonatal mortality and morbidity are as follows.

A-1. Maternal Mortality:

Total cases of maternal deaths showed a continuous decline until 2008-09 and have since remained stable. There has been about 75 % reduction (from 19 to 5) among cases of maternal deaths as compared to baseline information, with the MMR decreasing from 594 to 161.



Maternal Mortality Ratio, Jhagadia Block (about 3500 Live Births/Year). Source: In-service data, SEWA Rural

It is important to note that as total number of deaths due to direct causes has reduced, the proportion of deaths due to indirect causes have increased significantly. Eighty percent of deaths were due to indirect (medical) causes in 2010-11. Additionally, we have observed that only 13% of maternal deaths occurred in intranatal period. 38% of deaths occurred during ante partum period. Over the entire project period, hemorrhage was the most common cause of death at 24%, but the combined deaths caused from severe anemia and Sickle Cell disease contributed to 24% as well.

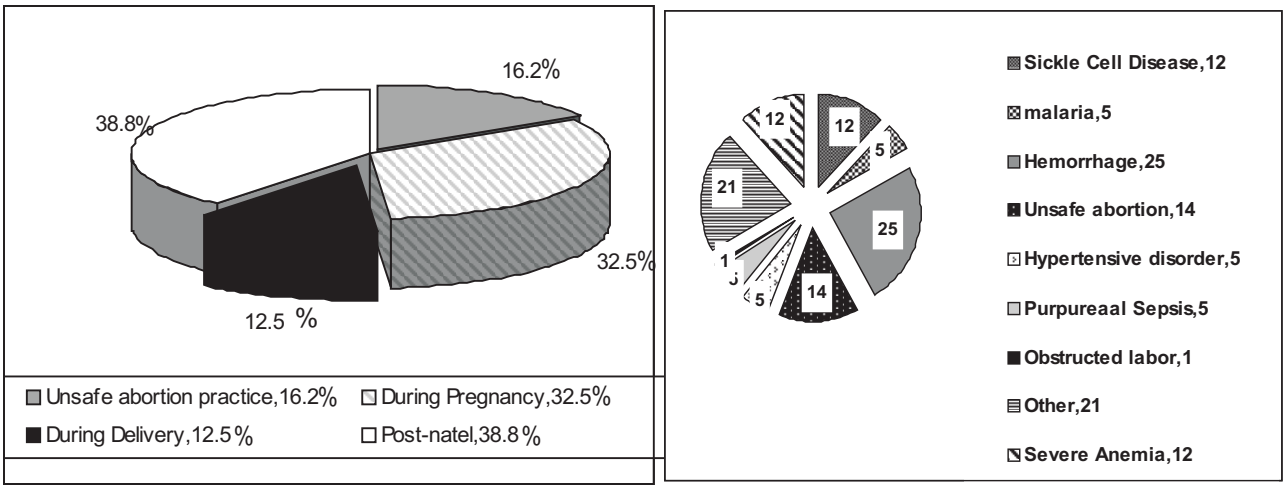
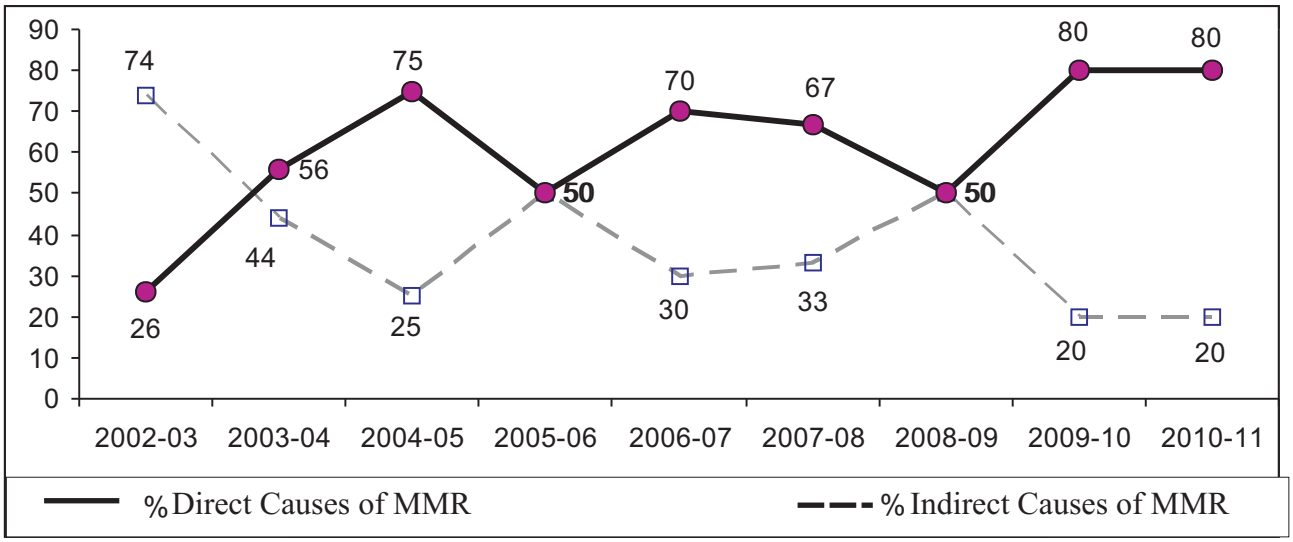


Figure 1 Time and causes of maternal death in Jhagadia block, 2002-2011 (n=80) Source: In-service data, SEWA Rural



Proportion of direct and indirect causes of maternal death in Jhagadia block, 2020-2011 (n=80) Source: In-service data, SEWA Rural

A-2. **Maternal Risks and Morbidities:**

This has been grouped into four categories, namely: 1. risks at antenatal registration based on past obstetric history, 2. morbidity pattern during current pregnancy, 3. Morbidity pattern during intranatal period and 4. morbidity pattern during postnatal period.

Though above information was obtained every year, following findings are related to maternal morbidities based on the complete information recorded for all those 3420 pregnant mothers belonging to in our project villages for year 2010-11. Common morbidities included anemia and gestational hypertension.

Maternal Risks and Morbidities (Based on Reporting by Arogya Sakhis)

- Risks at Antenatal Registration Based on Past Obstetrics History
- Morbidity Pattern during Current Pregnancy
  - Obstetric Morbidities
  - Non Obstetric Morbidities
- Morbidity Pattern during Intranatal Period
  - Maternal Morbidities
  - Fetal Morbidities
- Morbidity Pattern during Postnatal Period

About 17.8% of pregnant women (excluding Primis) had one or other risks at antenatal registration based on past obstetrics history.

About 28% of the women suffered from one or more morbidities during entire antenatal period.

36.2% of the mothers had one or more morbidities during intranatal period (delivery). 23.8% of mothers had maternal morbidities, while 12.4% of the mothers had fetal morbidities during intranatal period.

11.8% of the mothers had one or other types of postnatal morbidities during six weeks of post partum period, excluding anemia.

A study was conducted by the team of SEWA Rural and Achuta Menon Centre of Sri Chitra Institute of Medical Science (Trivendram) to estimate prevalence of post-partum morbidities. Following table was briefly summarizes results.

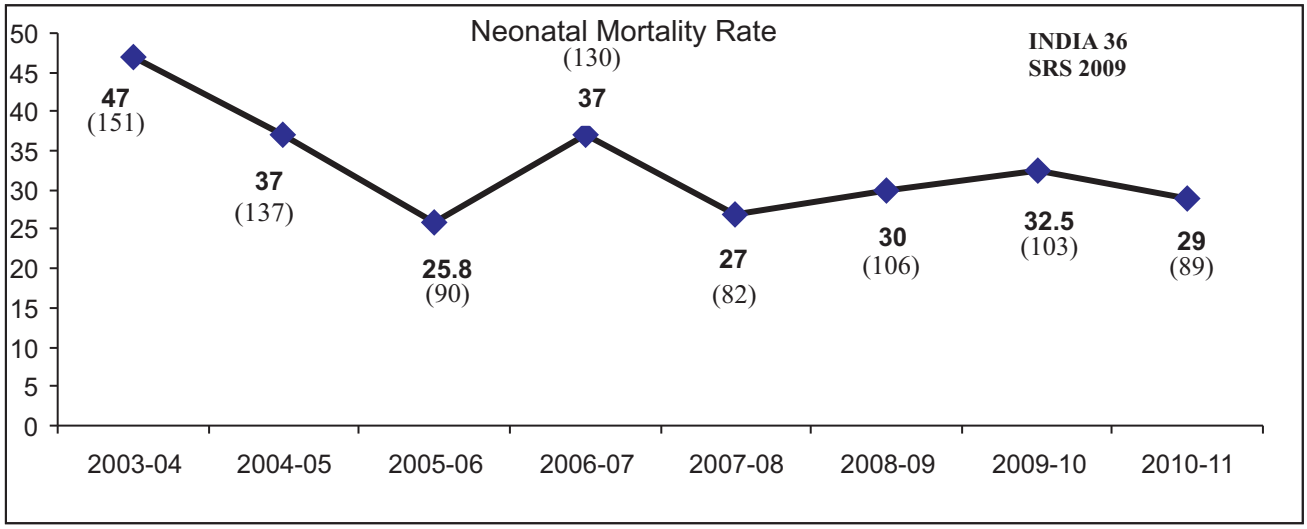
Prevalence of post-partum morbidity, Jhagadia, 2009 (n-250)

Morbidity conditions	No. of women$ (%)
Anaemia	152(29.6)
Fever	46(8.9)
Breast problem	39(7.6)
Infection	29(5.6)
Postpartum haemorrhage	19(3.7)
Urinary tract infection	17(3.3)
Other postpartum morbidities	84(16.3)

$- multiple morbidities existed Source: Primary survey, 2009 Jhagadia

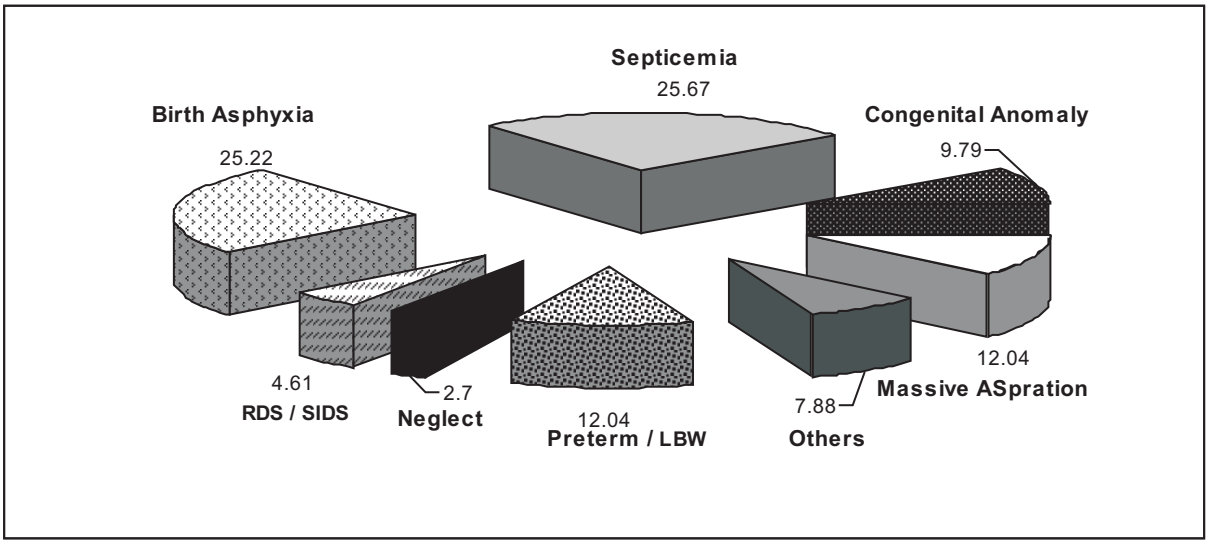
A-3. Neonatal Mortality:

Neonatal Mortality Rate showed continuous decline over first 3 years of project but has almost remained static over last 4 years. There has been about a 38 % reduction (from 47 to 29) in Neonatal Mortality Rate as compared to baseline information.

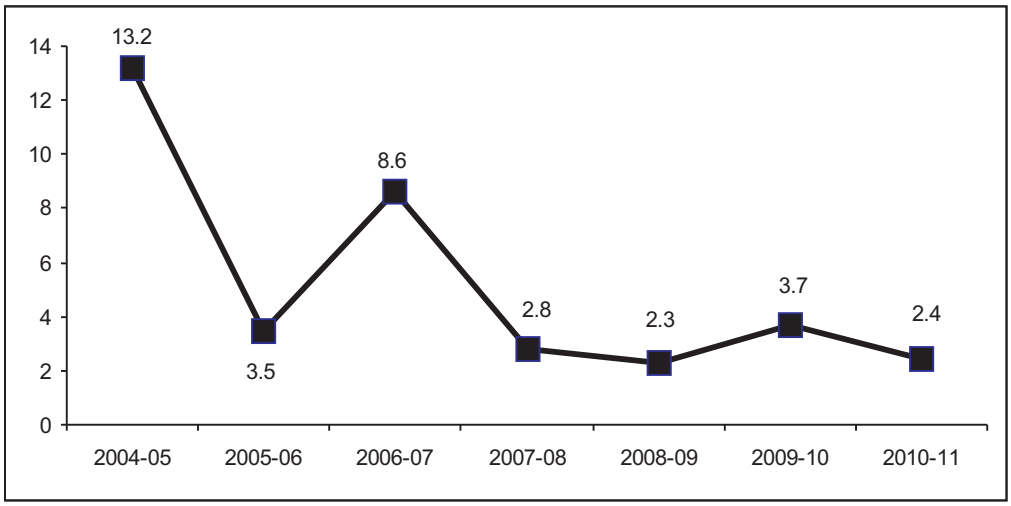


Neonatal Mortality Rate (NMR), Jhagadia Block (about 3200 Live Births a year), Source: In-service data, SEWA Rural

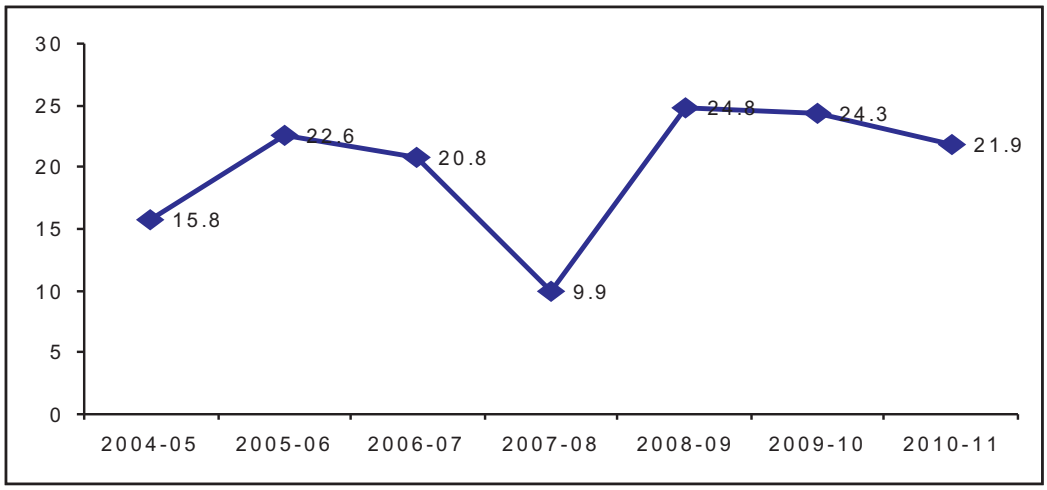
Septicemia (26%) and birth asphyxia (25%) proved to be the most common causes of death among newborns in the project period were analyzed (total 888 deaths). It is important to note that deaths due to sepsis declined by when compared to baseline data.



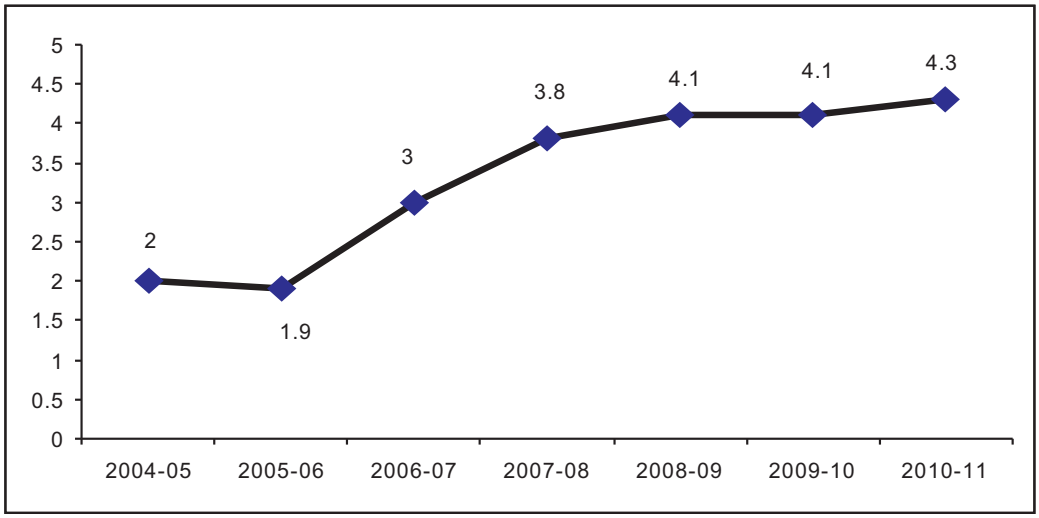
Cause of neonatal deaths in Jhagadia block, 2003-2011 (n=888). Source: In-service data, SEWA Rural



Case Specific Fatality Rate: Septicemia Source: In-service data, SEWA Rural



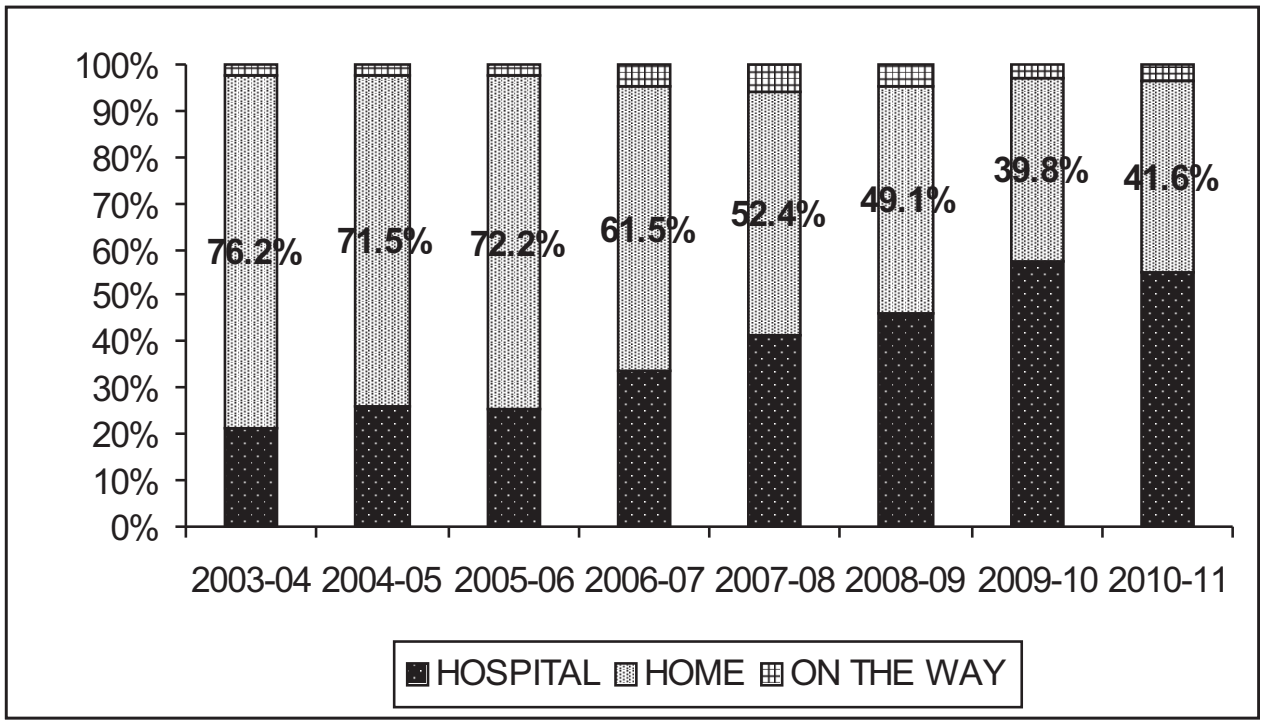
Case Specific Fatality Rate: Birth Asphyxia Source: In-service data, SEWA Rural



Case Specific Fatality Rate: Low Birth Weight (<2.0 Kg.) Source: In-service data, SEWA Rural

There was overall reduction in fatality rate for the Septicemia cause. Despite other successes, case specific fatality rate for birth asphyxia could not be much reduced inspite of increase in institutional deliveries while fatality rate for low birth weight/pre-term is on the rise.

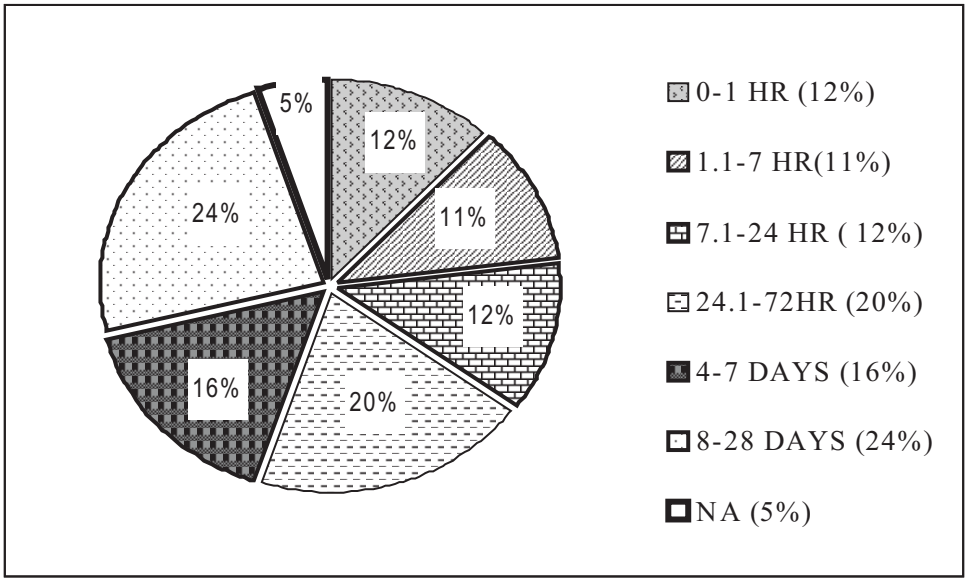
The most common place of death for most newborns throughout the project period was at home (60%). But, proportion of deaths occurring at home has gradually declined over the years with increasing institutional deliveries as seen in following figure. For last 2 years, more deaths occur at hospital compared to home.



Trend of place of neonatal deaths in Jhagadia block, 2003-2011 (n=888). Source: In-service data, SEWA Rural

Approximately 35% of deaths in the neonatal period occurred in the first 24 hours within our project period

Death Pattern According to Age Group (2003-11) (n=888)



Time of death for all neonatal deaths in Jhagadia block, 2003-2011. Source: SR In-service Data

4. Neonatal Risks and Morbidities:

Findings related to Neonatal morbidity are based on the complete information reporting for all the 3104 Live Births in 2010-11 belonging to our project villages.

2.9 % of neonates had Birth Asphyxia.
31.5% of neonates had LBW / Prematurity. Of these, 2.5% had Very Low Birth Weight (<1.5 kg)
24% of neonates had signs of Septicemia.

B. Developing an Evidence-Based Model to Reduce Morbidity and Mortality

The previous section summarized the trends of maternal and neonatal morbidity and mortality through our community-based interventions. This section will detail additional indicators demonstrating success of our program, including trends in registration, referrals, institutional deliveries and other health worker performance measures.

Service Provided by Arogya Sakhi

Sr. No.	Particulars	2001 – 02 Base Line	2003-04	2004-05	2005–06	2006–07	2007-08	2008-09	2009-10	2010-11
1.	Registration of Pregnant Mothers	-	4956	4145	3976	3686	3554	3746	3402	3459
2.	Live births	3198	3236	3638	3336	3479	3058	3273	3164	3104
3.	Referral of Mothers with Complications	-	-	1014	636	885	914	1100	1955	
4.	Hospital Delivery (%)	-	22%	28%	29%	35%	44%	54%	63%	65%
5.	Presence of Arogya Sakhi at home Delivery	-	34%	42%	42%	40%	45%	45%	38%	39%
6.	Treatment of Minor Ailments provided by Arogya Sakhis	-	16725	14152	14864	15014	19102	20620	18227*	23529*
7.	Income in Rs.	-	-	26839	30964	30930	38131	40434	18891*	17742*
8.	Health Awareness Camps	-	3	24	27	18	29	23	13	0
9.	Gynec Camps	-	8	19	5	17	6	13	9	14

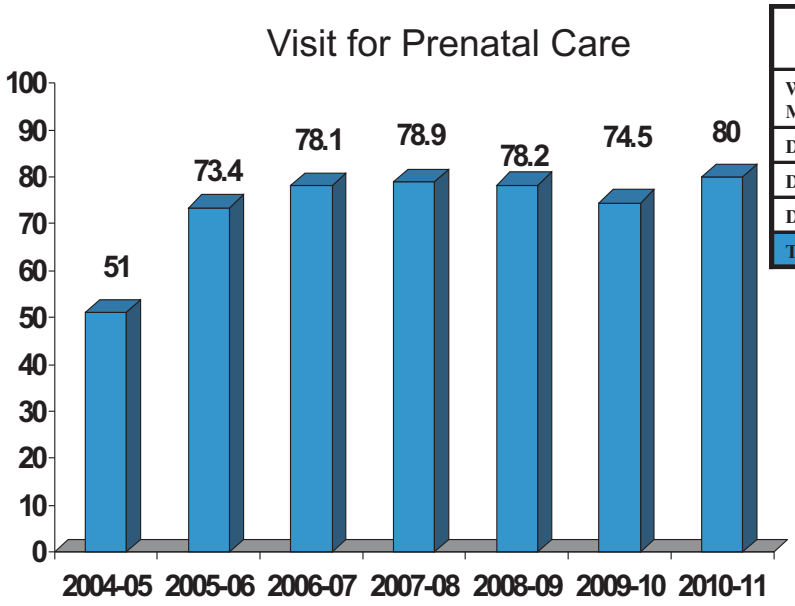
*** As many were provided Free Treatment by Sakhi - ASHA, (Source: SR In-service Data)**

Findings related to prenatal, intranatal and post partum care are based on the complete information reporting for all the 3416 pregnant mothers in 2010-11 belonging to our project villages.

B-1. Prenatal Care

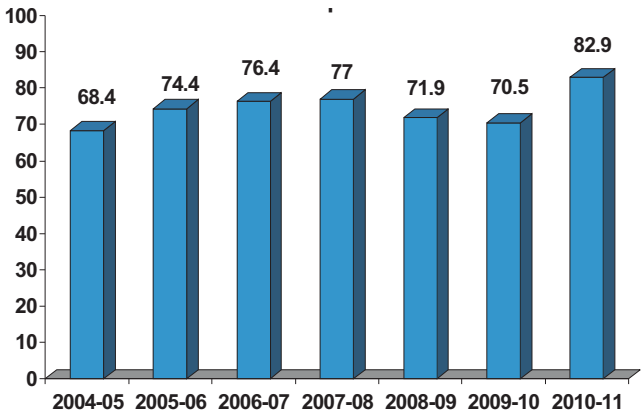
Following observations have been made regarding process indicators during antenatal period over the last seven years.

Satisfactory level of visits by Arogya Sakhis to pregnant mothers for Antenatal care and counseling: There is an increase in satisfactory level of visits (more than 7 as prescribed) by Arogya Sakhis to the pregnant mothers from 51% (2004) to 80% (2011)



	Desired Visits	Satisfactory Visits
Within First Three Months	1 Visit	–
During 4 to 6 Months	3 Visits	2 Visits
During 7 & 8 Months	4 Visits	5 Visits
During 9th Month	4 Visits	
Total Visits	12 Visits	7 Visits

Satisfactory visits by Arogya Sakhi (Source : SR inservice Data)

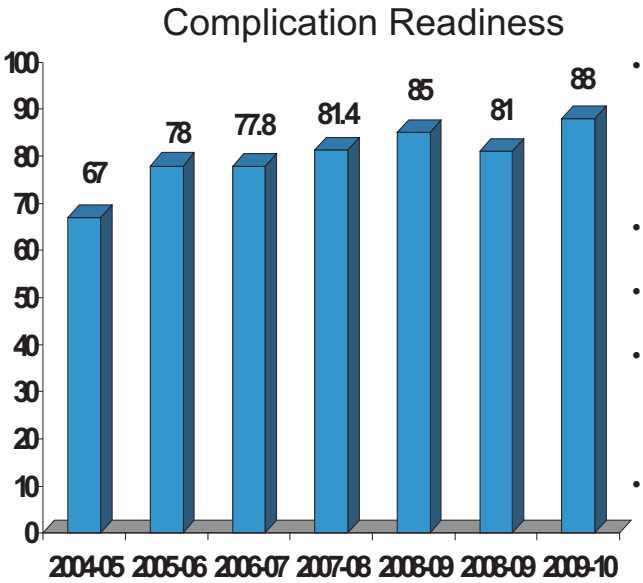


- Of Delivary (Written on Wall)
- Planning about Place of Delivery
- Procurement of Pre Sterilised Delivery Pack
- Packet of Clean Cloths Made Ready
- Rapport Made with Active Dai

Satisfactory Level of Birth Preparedness (Source : SR inservice Data)

Aspects about Birth Preparedness: There has been increase in the satisfactory level of birth preparedness by the family of pregnant mother from 63% (2004) to 82.9% (2011)

Complication Readiness : There has been increase in satisfactory level of complication Readiness from 67% (2004) to 88% (2011) by family & pregnant mothers. The family members are made aware that any complication may develop at the last in delivery in spite of everything progressing well during antenatal period.



- Awareness about Delivery Complications
- Arrangement for Money
- Arrangement for Transport
- Awareness about Proper Referral Facility
- Arrangement for Blood

Satisfactory Level of Complication Readiness (Source : SR inservice Data)

Unmarried Pregnancy and Illegal Abortions

Unmarried pregnancy continues to be one of the major social issues affecting maternal health in our area. All the staff are sensitized and trained in counseling the unmarried woman and their family members according to their situation and choices. Based on their inclination, some are counseled for marriage with father of the baby, some are counsel for the marriage to the other person after delivery, some are counsel for keeping the baby with the parents after delivery and some are counsel for the termination of the pregnancy. Efforts are made to preserve the confidentiality as far as possible throughout all the interactions.

Illegal abortions performed by self or private doctors and healers occurs in our area to the detriment of the woman involved. We give special counseling in termination practices and contraception.

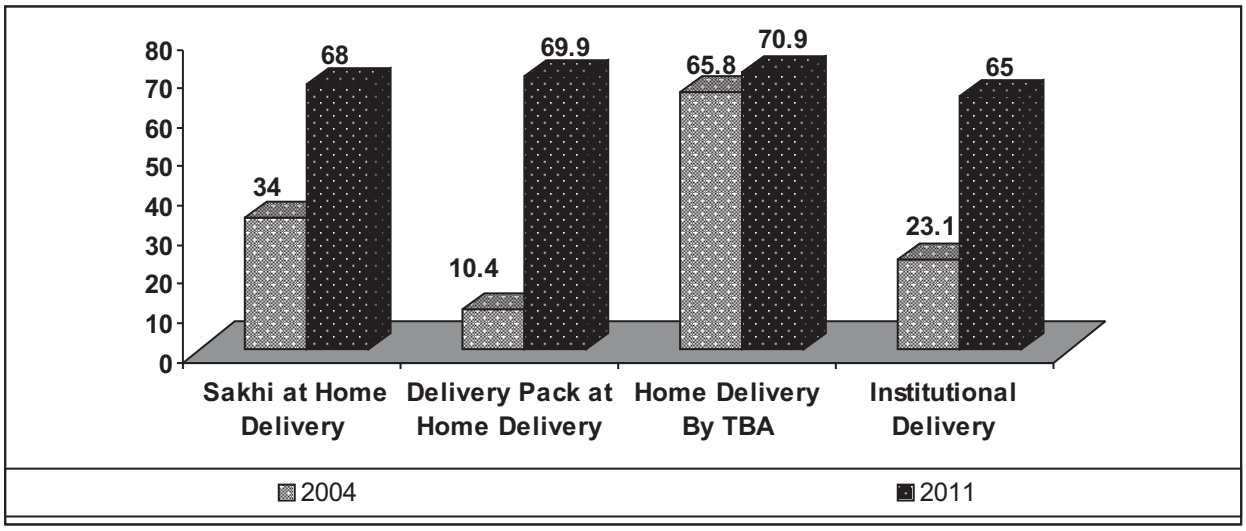
Early in our project, we found unmarried pregnancy were responsible for high numbers of morbidity and mortality for both mother and child. With focused interventions (described in Methodology), we have seen a sharp reduction in illegal abortions, and increase in number of marriages among unmarried women along with an increase in the number of women who continue their pregnancies. Number of deaths among unmarried women declined sharply. The comparative outcome of all unmarried pregnancies for last six years is described in following table:

	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Pregnancy Continued at the end of previous year	**-**	**6**	**10**	**15**	**4**	**7**
Newly Registered	**89**	**76**	**53**	**53**	**63**	**61**
Total Unmarried	**89**	**82**	**63**	**68**	**67**	**68**
Termination of Pregnancy	**53 (59%)**	**41 (54%)**	**22 (41%)**	**28 (41%)**	**24 (36%)**	**15 (22%)**
Hospital	**43**	**35**	**18**	**26**	**23**	**14**
Unsafe Practices	**10**	**06**	**4**	**2**	**1**	**1**
Continuation of pregnancy	**30 (33%)**	**31 (40%)**	**26 (49%)**	**36 (53%)**	**36 (64%)**	**49 (72%)**
With Marriage	**15**	**20**	**20**	**26**	**27**	**40**
Without Marriage	**15**	**11**	**6**	**10**	**9**	**9**
Still birth	-	-	1	2	0	3
Live Birth	15	11	5	8	9	6
o Kept the child	12	9	5	8	9	5
o Child was Handed over	3	2	0	-	0	1
Pregnancy continued at the end of the year	6	10	15	4	7	4
Number of maternal deaths among unmarried women	3	0	0	0	0	0

Outcomes of pregnancies among unmarried women in Jhagadia block.
Source: SEWA Rural in-service data

B-2. Intranatal Care for Safe and Clean Deliveries

The components of care & services provided during intranatal period along with the appropriate process indicators include following:

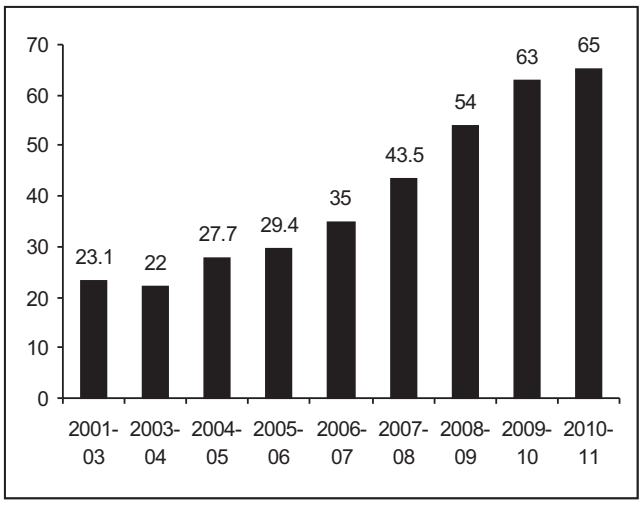


Process Indicators for Safe Delivery (Source : SR inservice Data)

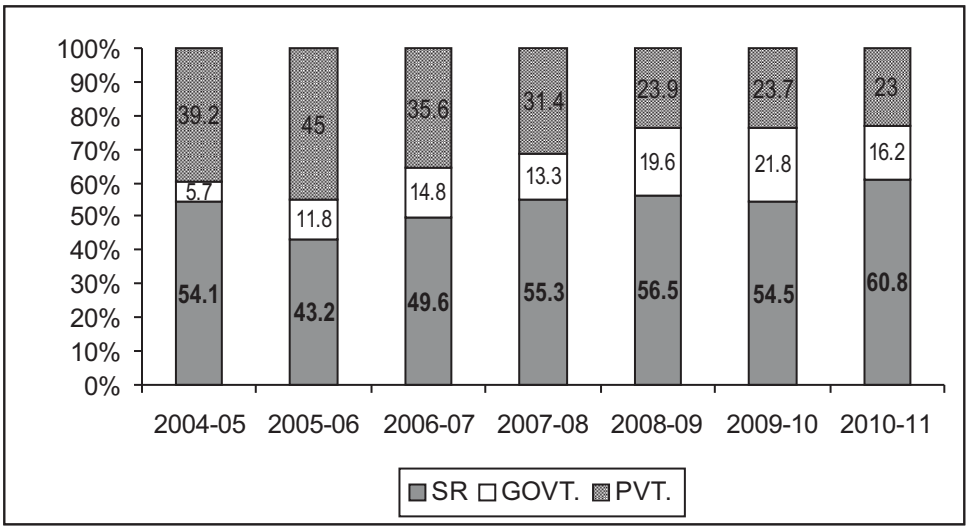
Use of pre sterilized delivery pack at home delivery: There has been substantial increase in use of pre sterilized delivery pack (Mamta Kit) during home delivery from 10.4 % (2004) to 72.2% (2011). There have been reports of irregular supply of Mamta Kits from government and during such period SEWA Rural procures the kits from open market and ensures supply to mothers through Arogya Sakhis at a token price.

Delivery by active TBAs: There is only a marginal increase in deliveries being conducted by trained and active TBAs from 65.8% (2004) to 70.9% (2011).

Institutional Delivery: During the project period the government put a new emphasis on institutional delivery. Through our efforts combined with previously mentioned government schemes we observed an increase in hospital delivery rate from 23.1% (2003) to 65% (2011).



Institutional Delivery (%) (Source : SR inservice Data)



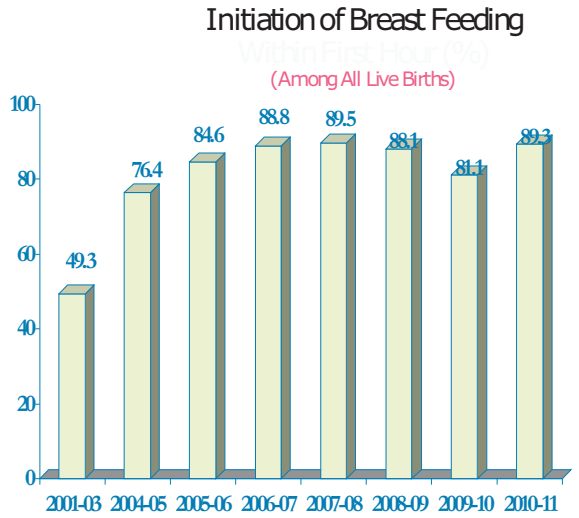
Types of Institutions (Source : SR inservice Data)

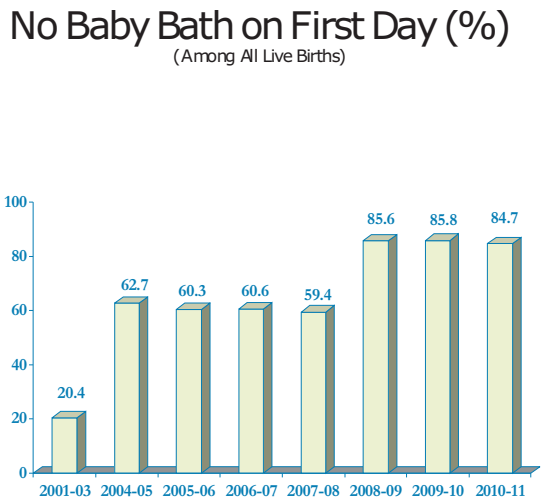
It is interesting to note that the increase in institutional delivery has jumped to almost 200% in last four years as compared to only 50% in first three years. Thanks to schemes like Janani, Chiranjivi and 108 free emergency ambulance facility. It is also encouraging to note that proportion of deliveries taking place at SEWA Rural hospital (from 54 to 61 %) and govt. institutions (6 to 16%) is increasing as compared to private hospitals.

B-3. Postpartum Follow-up for Mothers and New Born Babies

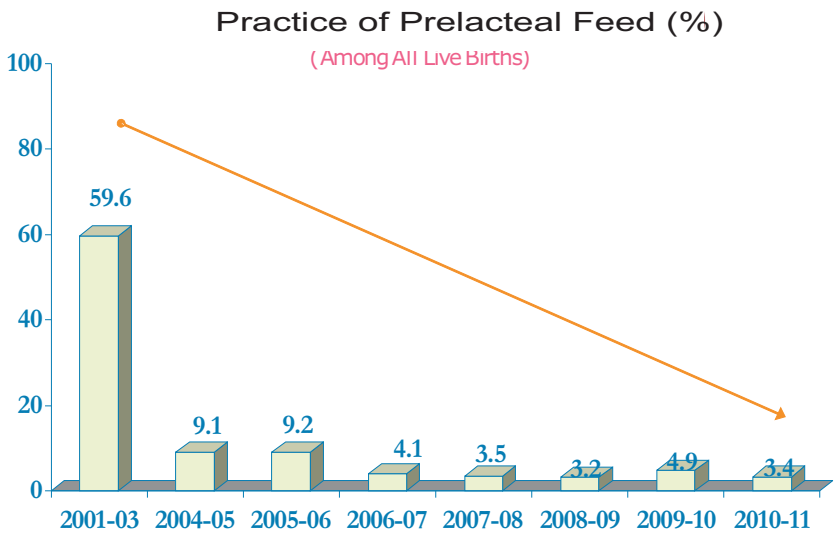
Postnatal visits by Arogya Sakhis : There were 81.2% adequate post partum visits by Arogya Sakhis during last one year for providing a package of home based maternal and neonatal care during post partum period.

Vitamin A distribution: Distribution of 2 lac units of Vitamin A to postnatal mothers after delivery has increased from 72.6% (2003) to 79.9% (2011).





There was 40 % increase in the initiation of breast feeding in the first hour of life for newborns. There was a 65% increase in the number newborns that did not have bath on first day.

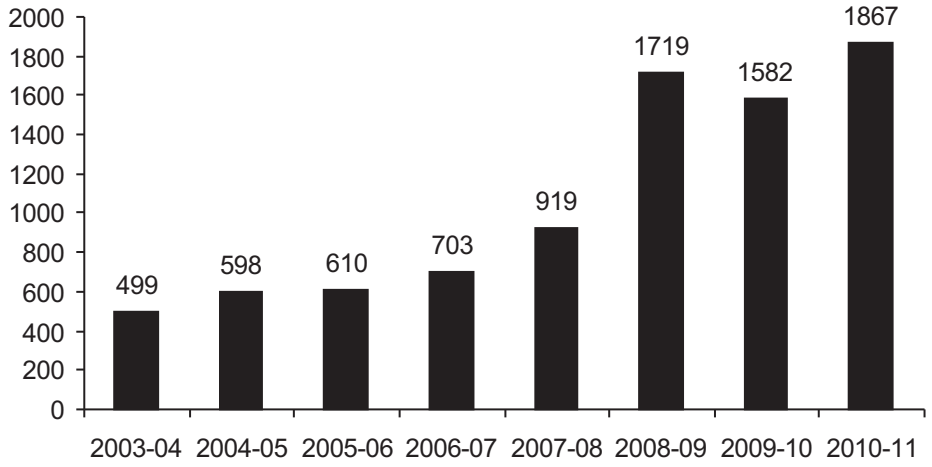


Practice of giving prelacteal Feed (Source : SR inservice Data)

Practice of giving Prelacteal feeds have almost been completely eliminated, with only 3.4 % of babies receiving prelacteal feeds last year compared to nearly 60% at baseline.

C. Improving Referral from Community to Base Hospital

The increase in our project area's mothers presenting to the base hospital for antenatal, intranatal and postnatal care is a testament to improved referral linkages from periphery to base hospital. It is seen that , There is a substantial increase in the numbers of cases referred by front line workers and reaching to hospial.



Referred to hospital by frontline Workers (Source : SR inservice Data)

C-1. Referral during Antenatal period:

- There has been increase from *25% (2004) to 79.9% (2011)* in referral of pregnant mothers having any kind of Prenatal risk factors which include Bad Obstetric History, primis, grand multis or having any morbidity during current pregnancy.
- Out of those pregnant women who availed the services of higher centres, 75% of the mothers chose SEWA Rural Hospital last year in comparison to other government or private hospitals.

C-2. Referral during Intranatal Period:

- 78.6% of the mothers having one or other types of complications during intranatal period actually reached and availed the services of institutions last year. Three-forth of the mothers preferred to come to SEWA Rural hospital for management of complications.
- The overall cesarean section rate among all the deliveries of the project area last year was 10 %.

Referral Data At-A-Glance

55% increase in referrals in the Antenatal period

78.6% of patients with intrapartum complications reached referral center

65% of mothers with postpartum complication reached hospital.

C-3. Referral during post natal period :

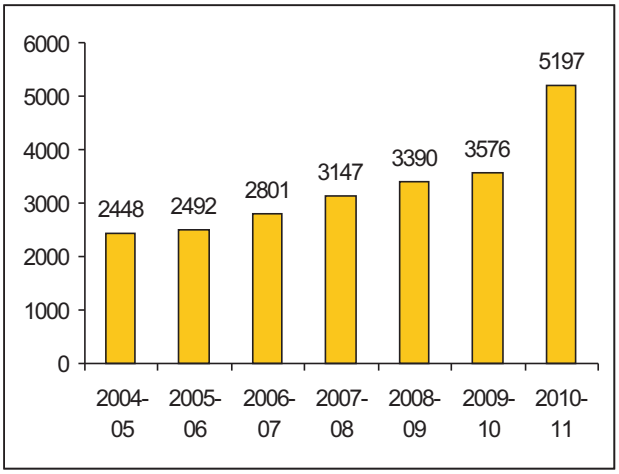
- 65% of mothers having morbidities during post natal period reached institutions last year and SEWA Rural Hospital was preferred by 75% of the mothers.

D. Utilization of SEWA Rural's Base Hospital FRU :

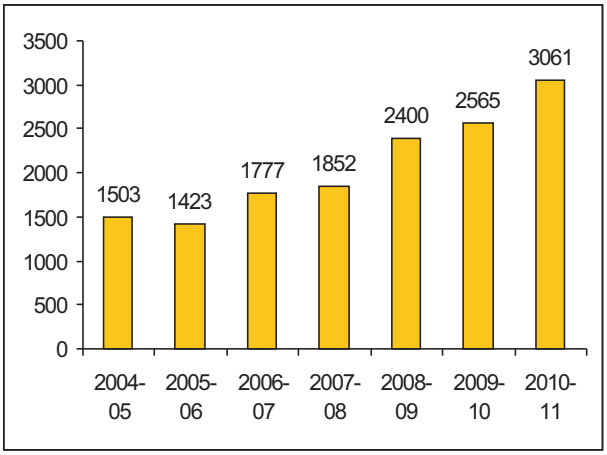
Our efforts of improving referral linkages have resulted in significant increase in utilization of hospital services as indicated in above table. Total 21131 new pregnancy registrations and 15807 maternal admissions occurred throughout the project period. Total 11165 deliveries occurred at the hospital 1043 LSCS were performed and 469 women were referred to higher centre. Total 1129 blood transfusions were provided.

The Improved linkages and referrals system through our community-based model has led to the following improvements in hospital utilization. Detailed information about achievements of SEWA Rural hospital can be found in Appendix- 8.

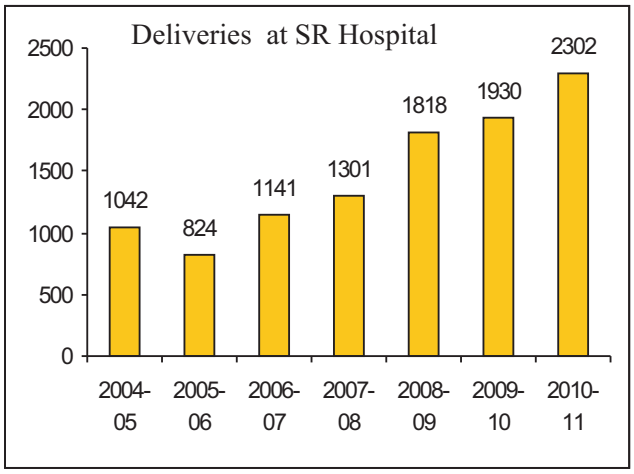
As seen from the following graphs, utilization of Hospital services is increasing year by year. Maternal admissions have increased to 3061 and deliveries have increased to 2302. 69.2% of maternal admissions are among tribal women. 14.7% of admissions were during antenatal period whereas 3% admissions were during postnatal period. Detailed information about type of all maternal admissions can be found in Appendix- 10.



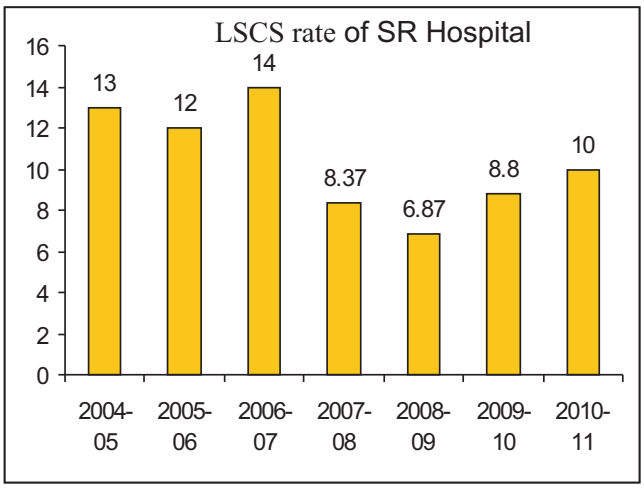
New ANC registration (Source : SR inservice Data)



Total maternal admissions(Source : SR inservice Data)

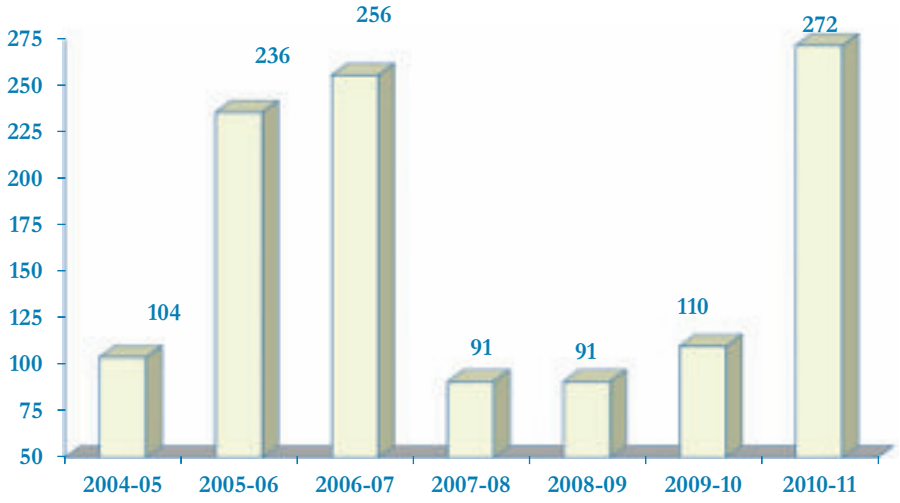


Total deliveries at SR hospital (Source : SR inservice Data)



LSCS rate (Source : SR inservice Data)

Blood Transfusions at SR Hospital



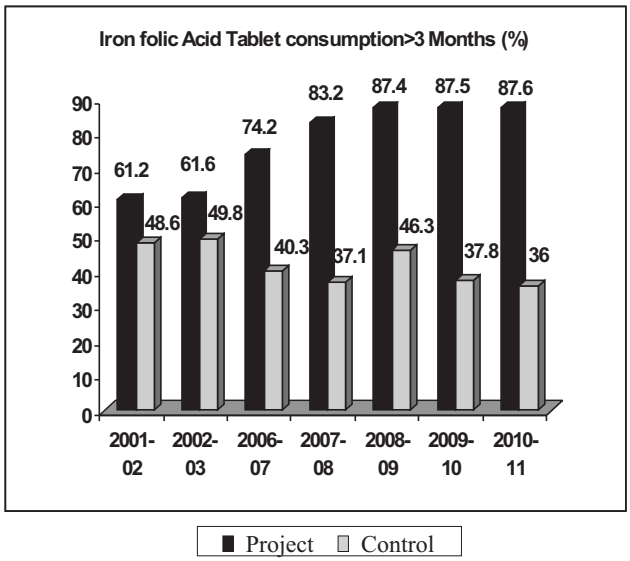
Moreover, benefits of different schemes like Chiranjeevi, Bal-Sakha and RSBY are now reaching out to most of the beneficiaries in time.

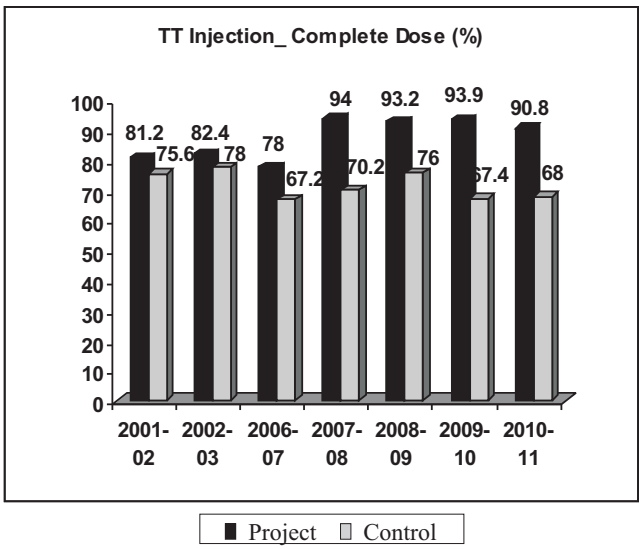
	2008-09	2009-10	2010-11
Chiranjivi Yojna	1187	1230	1566
RSBY Scheme	129	801	991
Bal Sakha Yojna	-	1155	1495

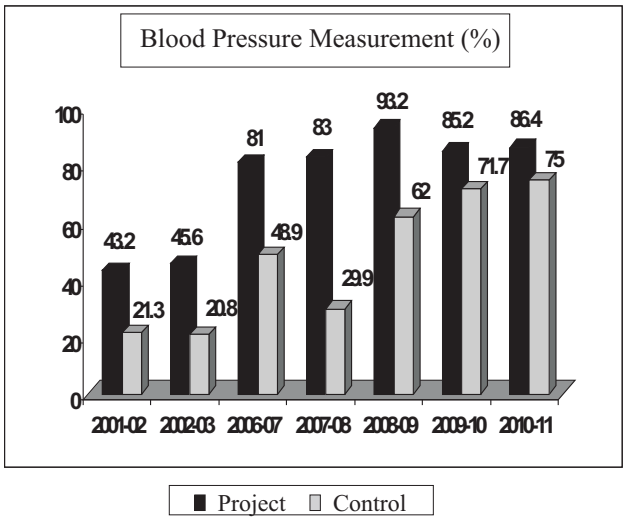
Number of beneficiaries at SR Hospital for various government schemes.
Source: In-service Data

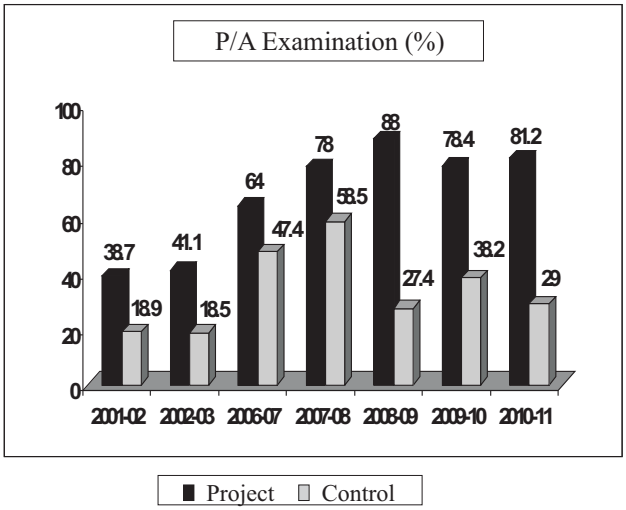
E. Comparison with Control Villages:

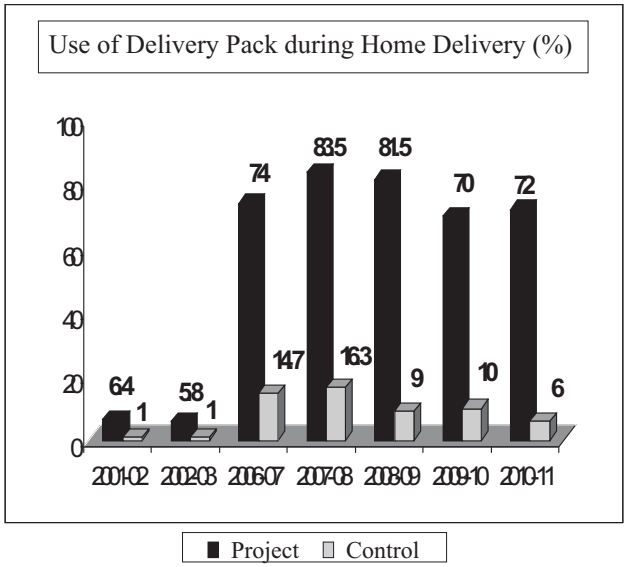
Comparison of some of the major process indicators between the project and control villages in the last year (April-2010 to March-2011) is reflected as below. Year wise detail information can be found in Appendix-11.

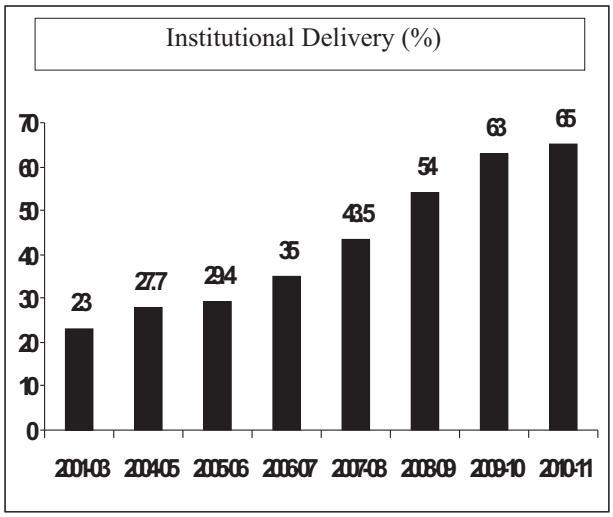












As seen from the above graphs, coverage indicators show better results in project area as compared to control villages in cases of Iron Folic Acid Tab. Completion (87.9% versus 36.5%), TT Coverage (91.1% versus 68%), Blood Pressure Measurement (86.5 versus 74%, Per Abdominal Examination (81.4% versus 26.5%) and Use of Delivery pack during Home Delivery 72.2 % versus 15%)

It is interesting to note that Institutional Delivery Rate has rather better increased in control villages (67%) as compared to 65% in project villages reflecting impact of easy availability of 108 free ambulance and various schemes like Chiranjivi, Janani and RSBY.

Information regarding maternal deaths, infant deaths and neonatal deaths could not be ascertained from the control villages with exact numbers and on regular basis. Secondly control area having small sample size, calculations regarding Maternal Mortality Ratio (MMR), Infant Mortality Rate (IMR) and Neonatal Mortality Rate (NMR) was not worth comparing.

E. Examples of Research Studies being carried out at SEWA Rural

SEWA Rural undertook various research programs during the course of the project. Additionally, students of medicine, public health and social sciences also conducted research studies. Following are some of the research projects that took place.

- Examine factors influencing place of delivery, a qualitative study.
- Assessing accuracy of the haemoglobin colour scale in real life settings.
- Factors influencing compliance with Directly Observed Treatment for TB.
- Prevalence of postpartum morbidities in Jhagadia block.
- Feasibility of directly observed iron-folic acid treatment (IFA-DOTS) to be delivered by the members of village health and sanitation committees.
- Promoting safe deliveries among below poverty line women: The process of social inclusion in Gujarat (Published by the UNICEF)
- Social determinants of neonatal deaths & traditional practices related to newborn
- Study of Intervention , utilization & perception about 108 Ambulance services
- Potential contribution of the village health worker in reducing maternal morbidity in Jhagadia
- Exploring challenges and successful strategies of kangaroo bag use at community level in rural Jhagadia, Gujarat state, western India
- Study to know the social determinants of high home delivery in certain areas of Jhagadia block
- Role of incentives in improving involvement of Frontline Workers to promote Family Planning Program
- Socioeconomic Factors Associated With Low Birth Weight Babies In Rural Tribal Area Of Jhagadia : Case Control Study
- Costing of a delivery at SEWA Rural
- Trend and determinants of infant mortality among tribals of Jhagadia block
- Prevalence of Post-partum morbidity in Jhagadia Block
- Determinants of institutional delivery
- Qualitative study on cultural practices among tribal community influencing newborn mortality

F. Awards and Honors

Since the initiation of our project, SR has been blessed to receive several awards and honors. These include:

1. "Best FRU Award for NGO" among tribal area in 2010.

   SEWA Rural hospital received Best FRU Award among tribal areas for offering quality care to beneficiaries, including CEmONC From State Government .

2. The "Best Service Provider among NGO Hospitals under Chirinjeevi Scheme" Award in 2010.

   SEWA Rural's FRU Hospital received this award From State Government for providing free maternal and delivery services under the Chiranjeevi scheme to large no. of tribal and BPL women.

3. Award for Best Trained Dai under Dai Sangathan Gujarat Initiative in 2006 07 :

   SEWA Rural was conferred this award From State Government in recognition for its long standing history of providing quality Dai training and its contribution towards Dai Sangathan Gujarat.

4. Mac Arthur Foundation USA conferred SEWA Rural an international **Mac Arthur Award** in the category of **Creative and Effective Institutions: 2007** in June 07 for its pioneering work in saving the lives of mothers and their babies in India. Its citation is shown in the text box as under.

Mac Arthur Award for Creative and Effective Institutions

Compassionate caregiver, incisive investigator, principled public health activist. For a quarter century, the Society for Education, Welfare, and Action - Rural has shown that good health is possible for the impoverished and the vulnerable, even in the most remote reaches of western India. You have demonstrated how family-focused healthcare rooted in community can save lives under the harshest conditions. You train village health workers, linking them to other professionals and institutions to create a network of competent care, ensuring that mothers can deliver their babies safely and that their newborns thrive. You help families and communities maintain good health by empowering them with the knowledge they need to prevent disease and improve their own well-being. Knowing that evidence matters, you carefully document the efficiency of your approach- and ensure that governments and policy makers are aware if its successes. That is why doctors, students, and activists from every corner of Gujarat, and indeed, from all of India - join you each year to study your work and learn how to replicate your methods, thereby multiplying your effect. The seamless integration of service and research in your work makes it a potent model of evidence-based community healthcare - one that is saving lives and promises to save even more. For championing the cause of equitable and effective health care for all Indian mothers and their families, we are proud to present you with the MacArthur Award for Creative and Effective Institutions.

June 7, 2007
Jonathan F. Fanton, President

Discussion

A. Overall Conclusions

The main aim of SEWA Rural's **Family-Centered Safe Motherhood and Newborn Care Project** which began in 2003 was to reduce maternal and neonatal morbidity and mortality in a resource poor, rural and tribal region covering entire Jhagadia block (1.71 Lac pop) in Bharuch dist. in south Gujarat. With an overall 75% reduction in MMR and 38% reduction in NMR over a period of seven years, we were successful in our primary objective. This has been primarily made possible because of establishing an effective cadre of village level front line workers (Arogya Sakhis and TBAs the dais) providing specific and family centred prenatal, intranatal and post partum services for mothers and new borns at their door steps on one side and ensuring prompt identification and referral of complicated cases to a nearby functional FRU established by SEWA Rural itself.

In recent years, to address the issue of persistent high level of MMR, the government has placed a special focus on promoting institutional deliveries across the country. Through our community-based interventions, the increase in our project area's institutional delivery rate for the last seven years has been quite significant (from 29 % to 65%).

As reflected in evidence over last decade, SEWA Rural also observed that village based frontline workers can identify and manage common, life threatening neonatal morbidities. We found that this is especially true for managing cases of neonatal septicemia and pneumonia though more efforts are required to reduce mortality from LBW/pre-term and birth asphyxia.

Overall conclusions

- Original objectives were met by achieving 75% reduction in MMR and 38% reduction in NMR.
- Village level health workers can identify and manage common maternal and newborn morbidities which can improve health outcomes even among areas which has low institutional deliveries rates.
- Clearly defining roles & responsibility of different Health & Anganwadi workers facilities the delivery of services at village level.
- Significant increase in institutional delivery rate was found.
- Successful collaboration with the Government has resulted in effective implementation of various schemes.

Interesting point to note that though major increase in institutional deliveries occurred over last few years, most of the reduction in maternal and neonatal mortality was brought about in the earlier years when institutional delivery rate were very low and now both have remained stagnant for last few years. Thus, even though 34% of deliveries continue to occur at home, major reduction in MMR and NMR has been achieved because of ensuring that the complicated maternal new born cases are identified and transported to functional First Referral Unit in time. With reducing numbers of home deliveries, the role of dais is changing from conducting deliveries at home to become a true birth companion. There are difficult and far off pockets with high rates of home deliveries due to various socio cultural and accessibility reasons, distance and lack of adequate transportation/roadways being the most important. Based on the feedback received by mothers, family members, our front line workers and trainees coming from different regions, it has been observed and experienced that all institutional deliveries conducted at private or government hospitals are not safe as skilled staff was not available, quality was not maintained and supportive infrastructure was lacking. New interventions should aim to tackle these problems, and also to further ensure proper antenatal, intranatal and postnatal care through educating and building up the Dais and Sakhis (now ASHAs). As presence of Sakhis at home deliveries is both only 39%, further projects should aim to improve this number. Health and Anganwadi staff at

village level will perform better if powers for their supervision, monitoring and disbursing honorarium are delegated to VHSC.

Other Important aspects were Birth Preparedness and Complication Readiness during family centred prenatal counselling, linkages with existing government health system, special focus and constant follow up of high risk cases, supportive supervision and close monitoring of front line workers with efforts for their sustained motivation and introduction of some micro level interventions.

Special efforts have been introduced towards anemia control, management of Sickle Cell disease, and promotion of family planning methods. It is encouraging to note that an ever increasing number of complicated high risk maternal and neonatal cases are reaching to the base hospital. Special attention for tracking and follow up its required for mother who might have missed maternal death but suffer a lot because of variety of morbidities.

In our community, we found unmarried pregnancies, Sickle Cell Disease, and Iron Deficiency Anemia increased the risk of poor outcomes. Interventions focused on improving their outcomes have reduced severity of anaemia and number of unsafe, illegal abortions and deaths due to sickle cell crisis, but there is still work to be done.

The introduction of the Accredited Social Health Activists (ASHA) worker is a testament to the value of village level health workers, and we are happy to report *70% of our Sakhis have been selected by government to serve as ASHAs*. We are certain that the training they have received through SR will serve the community well and that we will continue to see good health outcomes in our community's mothers despite our project having formally finished in 2011. They will continue to have assurance of a sound back up support provided by SR's base hospital providing comprehensive emergency obstetric and newborn care (CEmONC).

Backup support of SEWA Rural's mother and baby friendly hospital with a functional first referral unit (FRU) proved critical in effectively managing maternal and new born complications. Post of a nodal person in the hospital proved very effective in building strong link for the cases reaching in or getting discharge from the hospital. The quality of care at the base hospital has been recognized & the government of Gujarat awarded SEWA Rural hospital with “Best FRU Award” among tribal area for the year 2010-11. SEWA Rural is a service provider for various schemes under NGO GO Partnership such as Chiranjeevi, Bal-Sakha and RSBY. These schemes are boon to poor patients to achieve life saving maternal and newborn health services.

Compared to control area, the project area results have shown significant achievements. There has been significant improvement and a positive increase in coverage of various services and process indicators in aspects of all stages of care. Moreover, the involvement and support of community in aspects of voluntary blood donation, motivation and referral of complicated cases, vehicle support etc. continues to improve.

SEWA-Rural is effectively collaborating with government efforts to reduce maternal and newborn mortality by being a service provider for Chiranjeevi and Bal-Sakha Yojana. The 108 free emergency transportation services have positive impact on rates of institutional delivery. There continues to be close coordination with the all the government PHC staff of the Jhagadia block and Mamta divas has become important strategy to improve maternal health. We have improved capacity of the VHSCs and will continue to mentor them. Through these efforts, we are hopeful that our community will continue to see the positive health results that we experienced during the project period.

An important aspect of SR's work is sharing the experience with others. SEWA Rural has been regularly invited for various meetings, workshops and conferences at the state and national levels to share its learning on the ground realities in rural Gujarat and possible solutions. We continue to work with other NGOs to learn from each other. SR will continue training different levels of workers from other organizations, government staff and students from varied faculties from India and abroad. The demand is ever increasing and is welcomed. SEWA Rural will continue to play active role in various networking organization such as the Dai Sangathan, JSA and GVHA while proving technical assistance to various organizations involved in community based maternal and newborn health projects such as the Jashoda Narottam Trust.

The new state of art training centre is humming with trainees. Numbers of trainees are increasing every year which is a welcome development. We are happy to see that our efforts are being replicated in larger areas through these trainees.

B. Observations and Lessons learned

B-1. Regarding public health interventions to reduce maternal mortality

Observation 1: Although there has been reduction in deaths due to direct causes, there is significant number of maternal deaths occurring due to indirect (non-obstetric) causes.

Lessons learned 1: Comprehensive approach will be required to achieve MDG related to maternal mortality in addition to simply focusing on increasing institutional deliveries. Such comprehensive approach should include strategies to manage medical morbidities such as anaemia, sickle cell disease, malaria and jaundice.

Observation 2: Tribal communities seem to be having higher numbers of deaths during antenatal period due to illegal abortions.

Lessons learned : Maternal Health

Management of indirect causes of maternal deaths is required for further reduction in MMR.

Tribal communities seem to be having high numbers of maternal death among unmarried women for which sensitive approach is critical.

Early identification, intensive tracking and management of high risk mothers and babies should be essential part of any safe motherhood programme.

There are cost-effective strategies to make FRU effective and functional.

Lessons learned 2: Such deaths can be prevented by adopting sensitive community based strategies as illustrated by SEWA Rural. Early identification and counseling are key elements of such strategies.

Observation 3: Maternal mortality reduced significantly during first 3 years of project period when institutional delivery rate was lower than 50%.

Lessons learned 3: Many of the deaths can be prevented in areas with low levels of institutional deliveries by having effective community based programme where front-line workers can promote life saving preventive health behaviors, identify high risk mothers and ensure referral linkages for same. Early identification, intensive tracking and management of high risk mothers and babies should be essential part of any safe motherhood programme.

Observation 4: SEWA Rural was successful in establishing functional and effective FRU in resource poor setting.

Lessons learned 4: There are cost-effective solutions to make FRU effective and functional. Such solutions include regular FRU meetings (involving obstetricians, community health physicians, medical officers, hospital matron, and counselors), up to date record keeping of all maternal admissions and its review, building referral linkages for at risk mothers and babies, providing conducive environment for medical officers to provide anesthesia after he/she receives training for obstetric anesthesia, preparing blood donor list by conducting blood grouping and educations camps in villages and training local women for nursing care.

Observation 5 : High number of maternal deaths occurred during antenatal period.
Lessons learned 5: Though it is possible that this might be context specific situation in our tribal area, all concerned needs to have a re-look at their project areas as it is easy to miss such deaths. At the same time, comprehensive approach is required, both at community and facility level, to deal with such deaths (as with deaths due to indirect causes) instead of merely increasing institutional deliveries.

B-2.Regarding public health interventions to reduce neonatal mortality

Observation 1: SEWA Rural was able to achieve significant reduction in newborn mortality in first 3 years of project by reducing fatality rate among babies who had septicemia and pneumonia.
Lessons learned 1: Reduction of newborn mortality is possible by empowering frontline worker to detect and manage cases of septicemia and pneumonia.

Observation 2: Newborn mortality rate is almost static during last 3 years of project. SEWA Rural was not able to make significant improvement among deaths due to birth asphyxia and low birth weight/prematurity.

Lesson learned 2: Reduction of newborn mortality resulting from birth asphyxia and low-birth weight/pre-maturity would require more intensive and innovative efforts.

Lessons learned: Project management

There should be intensive efforts to *identify, track and manage high risk pregnant women and newborns.*

There are effective, low-cost strategies which can lead to low turn over of health workers.

Accurate, timely information available to individuals at every level of health system hierarchy is important to maintain quality of services and take corrective actions.

B-3. Regarding making community health programme management more effective for improving maternal and newborn health outcomes

Observation 1: Timely management of high risk maternal and newborn cases led to saving of many lives.
Lessons learned 1: There should be intensive efforts to identify, track and manage high risk pregnant women and newborns. Such efforts should be integrated into programme management framework by appropriate training, holding weekly at-risk patient reviews, line-listing at-risk patients at head-quarter/PHCs, operating a hotline, regular supervisors' visits and building effective referral linkages.

Observation 2: SEWA Rural observed low turn over among its field level health workers.
Lesson learned 2: There are strategies which could be useful to retain field level health workers. Such strategies include involving health-workers' spouses (by holding yearly “pati (husband) get-to gathers), allowing front-line workers/dais into labour room, regular motivational get-to-gathers, replenishment on regular basis, timely payment of salary and regular refreshers' training. Focus should be on fact finding rather than fault finding during regular discussions.

Observation 3: SEWA Rural was able to establish an effective surveillance / HMIS system which highlighted any changes in epidemiology of maternal and newborn health; hence, timely and appropriate corrective actions were implemented.

Lessons learned 3: Accurate, timely information available to individuals at every level of health system hierarchy is important to maintain quality of services and take corrective actions. Having complete and accurate health management information system and its regular review is essential for achieving health outcomes. Regular cluster meetings and monitoring visits by supervisors are important strategies to achieve above goals.

C. Future Directions

Despite our successes, there is much more work to be done. Despite decreases in both maternal and neonatal mortality, the trends have stabilized in the last few years. We need to take the next step in understanding how to reduce mortality even further. Birth asphyxia and low birth weight/pre-maturity continue to be the major causes of death, and as we improve utilization of hospital for newborn care we need to ensure better outcomes in this vulnerable population.

In mothers, we see that risk of deaths due to indirect causes is almost same as before. Risk factors such as anemia, sickle cell disease and maternal jaundice need to be managed more effectively. SEWA Rural has already started experimenting with innovative strategies such as community based diagnosis by use of WHO validated haemoglobin colour scale and directly observed iron-folic acid supplementation to reduce maternal mortality and morbidity due to anemia. Also, SEWA Rural has started a project to reduce prevalence of malnutrition among villages of Moriyana PHC.

In addition, we have realized that we have to do something more to further reduce newborn mortality rates. We are focusing on intensive management of low birth weight babies considering high prevalence of this issue among tribal community.

SEWA Rural have realized that having real time information by using information-technology solutions might be key to make further reduction in newborn and maternal mortality among project areas and for wider replication of its community based model. SEWA Rural wants to create a new model based on mHealth solutions (mobile phone technology based) for providing maternal and child health services and surveillance. SEWA Rural have partnered with mPower-Health which is social IT enterprise. SEWA Rural and mPower-Health have already completed preparatory work and are about to launch new project by end of year 2011. Such model would make it possible to hardwire strategies used by SEWA Rural among other service providers.

SEWA Rural has especially focused on 23 most remote villages (28000 Pop.) of Moriyana PHC due to its difficult terrain and mostly (99%) tribal population with worse health indicators even after 7 years of intensive efforts. This project, known as "Service NGO" project under public-private partnership is assisted by the Government. These efforts will continue in years to come.

SR plans to continue its exploration of the use of village level health workers to promote positive health outcomes in the community. We continue to use and develop our Sakhi model in our SNGO project in one of the more "high risk" and remote areas in the Jhagadia block. Through added intervention including focus on malnutrition, we hope to bring successful health outcomes to that area, just as we were able to do in the rest of the Jhagadia block.

SEWA Rural will continue to mentor all 87 VHSCs of Jhagadia block. Regular meetings are taking place at village level and there is growing enthusiasm among the members. We are hoping to implement best practices of build capacities of these VHSCs.

There will be increasing focus on research and documentation throughout all the projects described above. Focus of such research will be on finding effective solutions in real life situations that can save lives by empowering village level health workers for variety of health conditions. SEWA Rural will be involved in intensive advocacy to scale up effective solutions so that fruits of such research reaches the last person of society.

Acknowledgements

We would like to acknowledge several groups, organizations and individuals for their invaluable contributions, without whom this project would not have been successful. We sincerely thank the John D. and Catherine T. Mac Arthur Foundation for its generous financial support and technical guidance. We appreciate assistance received from the local government officials and staff with whom we have had successful collaborations. We thank the members of our advisory committee for their continued support and direction. We gratefully acknowledge the contribution made by different stakeholders (including Government officials and PHC staff, Field Experts and Professionals and NGO Partners), and most importantly, cooperation and active participation received from our local community members and husbands of Arogya Sakhis in particular. We would like to appreciate Dr. Nidhip Patel (of the Jay Weiss Center for Social Medicine and Health Equity, University of Miami) for his help in drafting this report.

References:

National Family Health Survey-2. Mumbai: International Institute of Population Sciences and ORC Macro.(2000).

Registrar General of India. (1999). *http://censusindia.gov.in/*. Retrieved October 2011, from Census of India.

Registrar General of India. (2001). *http://censusindia.gov.in/*. Retrieved October 2011, from Census of India.

United Nations. (2000). *http://www.un.org/millenniumgoals/*. Retrieved October 2011, from United Nations Millenium Development Goals.

WHO. (2004). *Maternal Mortality in 2000.*

World Bank. (1999). *Safe Motherhood and the World Bank: Lessons Learned from 10 years of Experience.*

Dan K Kaye, Othman Kakaire, Michael O Osinde. Systematic review of the magnitude and case fatality ratio for severe maternal morbidity in sub-Saharan Africa between 1995 and 2010. *BMC Pregnancy and Childbirth* 2011, **11:**65.

Appendix

Appendix:1 Performance based Incentive framework

1. Antenatal Visit : Rs. 20/-

-	First Trimester (3 Months)		- 1 Visit
-	Second Trimester	-	4th Month - 1 Visit
			5th Month - 1 Visit
			6th Month - 1 Visit
-	Third Trimester	-	7th Month - 2 Visits
			8th Month - 2 Visits
			9th Month - 4 Visits
			Total - 12 Visits

2. Complicated Antenatal Referred : Rs. 10/-

- If complicated antenatal patients referred by Arogya Sakhi with referral slip and she go for checkup in hospital than Arogya Sakhi get 10/- Rs. incentives.

3. Preparation of Delivery: : Rs. 5/-

- This incentives get those arogya sakhi, who take maximum antenatal visit than the another arogya sakhi who take less antenatal visits. (In case when pregnant woman registered in one village and delivered in another village)
  1. Expected date of delivery: If written on wall
  2. Place of Delivery: Circle on the maternal house / inlaw house, home / hospital for the preparation of delivery
  3. Cloths Bag: Write the date of prepare clean cloths bag by Link Worker
  4. Delivery pack: Write the date of delivery pack seen by Link Worker
  5. BP & P/A by FHW: Write the BP and results of P/A check up.
- For every above preparation, 1/- Rs. incentives.

4. Dai Visits : Rs. 3/-

- If write the TBA's (Dai) visit than

  Arogya Sakhi - 2/- Rs. & Dai - 3/- Rs. Incentives

5. Complication Readiness : Rs. 5/-

- Incentives given to both the arogya sakhis for Jhagadia block. (In case when pregnant woman registered in one village and delivered in another village)
- Counsel about complication readiness given both to pregnant women and family members.
  1. Information of Complication : **Rs. 2/-**

     After confirmation by Link Worker from pregnant woman and relatives
  2. Hospital Referral : **Rs. 1/-**

     It is written in which hospital, she go when required.
  3. Vehicle Arrangement : **Rs. 1/-**

     By which vehicle, by whom vehicle written
- If registration during Postnatal than cut the Rs. 5/-

6. Presence during delivery : Rs. 10/-

- If present in home delivery (All four stages) than she got
- If she referred for hospital delivery, counsel the family members, help them for this and write the referral slip than she got incentive
- If still birth is there, than no incentive for presence during delivery.

7. Refer to Hospital : Rs. 50/-

- Any complicated delivery referred by Arogya sakhi to SEWA Rural and Dai is not there than in that condition arogya sakhi got Rs. 50/- incentives.

8. Counsel about Immediate New Born care during pregnancy : Rs. 5/-

- In MCH card if Link Worker sign □□□after cross check for following five points and soon after delivery those five points really happened than only incentives given.
  - No Bathing Rs.1/-
  - Brest Feeding in 1 hr. Rs.1/-
  - Burping Rs.1/-
  - No pre lacteal feed Rs.1/-
  - Counsel about complication of new born Rs.1/-

9. Postnatal visit of Mother & New born : Rs. 25/-

- According to MCH card Rs. 2.50/- incentives for every visit but maximum Rs. 25/- incentives for that.
  - 1 to 7 days - 7 visits
  - 14, 21, 28, 42, 60 days visits - 5 visits

    (Out of 12 visits getting Rs. 20/- for 10 visits, Less than that than less Rs.)
  - Still Birth / Infant death : in that cases Rs. 1/- incentives for mother's postnatal visits
  - If write the refer slip to 0 to 1 year child and refer than Rs. 10/- incentives.
  - If she comes hospital with 0 to 2 months child for treatment than she got Rs. 20/- incentives plus travelling allowance

10. Gynec Camp/ MOBILE CLINIC : If arogya sakhi come with gynec patients from another village : Rs. 30/-

Same village than : Rs. 20/-

11. One rupees charge for new MCH card

12. No incentive for Non Project to Non Project Delivery

13. Night Health Awareness Camp presence : Rs. 10/-

14. Visitors in the field : Rs. 50/-

Dai : Rs. 20/-

Arogya Sakhi : Rs. 30/-

2. Educational Posters (Maternal)

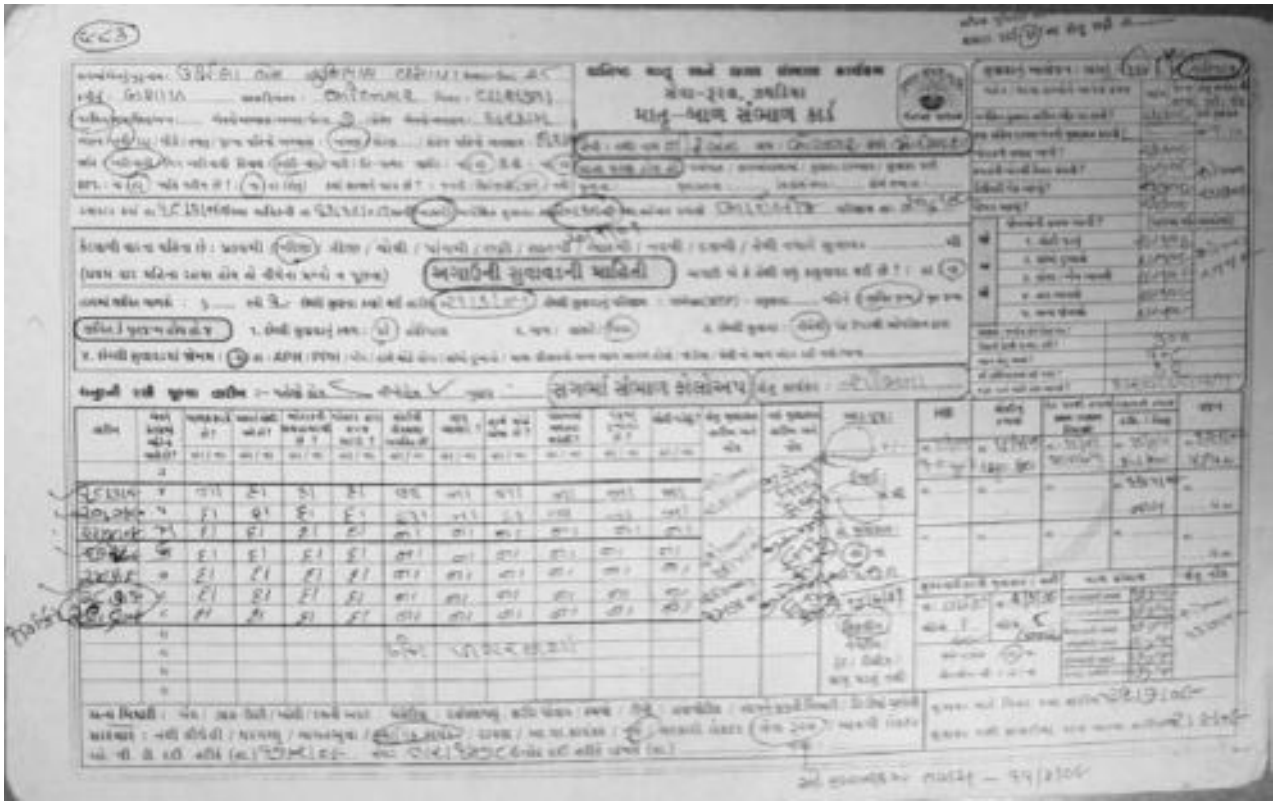
Appendix-2

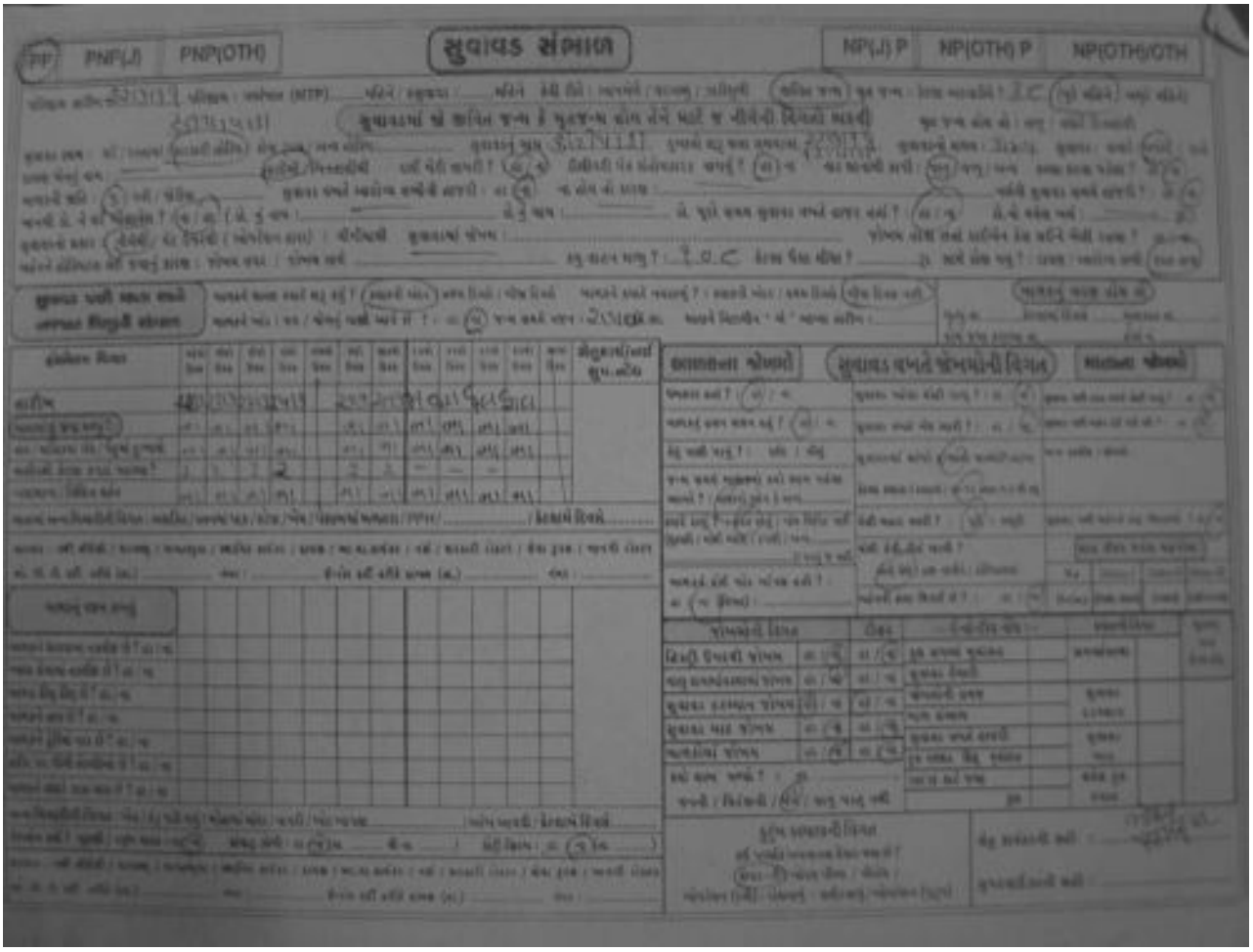
3. Educational Posters (Neonatal)

Appendix-3

4. MCH card

Appendix-4





Appendix-5

5. Trainings imparted at the SEWA Rural training centre 2003-11

Program	Details	Number (2003 to 2011)
Training program	Number of programs	425
	Number of participating organizations	327
	Number of trainees	9200
Orientation program	Number of programs	152
	Number of participating organizations	151
	Number of trainees	3631
Field placement	Number of programs	110
	Number of participating organizations	132
	Number of trainees	366
Intern doctors		166

Appendix-6

6. Sakhi register (Index only)

Description

1 Basic Information of Village
2 List of Pregnant Women (PP)
3. List of Pregnant Women (NP)
4 List of Delivered Women (PP)
5 List of Delivered Women (NP)
6 List of Still Birth
7 List of MTP
8 List of Abortion
9 List of Saved Women
10 List of Saved Children
11 List of Death (0 to 1 yrs.)
12 List of Women Death (Above 1 yrs.)
13 List of Infertility Patients
14 List of Gynec Camp Patients refered
15 List of Indor Patients
16 List of Cotri Syrup Used
17 List of Tube & Mask, Mucus Aspi. Used
18 List of any other special Programme
19 List of Purchased item from SR
20 List of Free items from SR
21 List of FHW Visits
22 List of LHW Absence
23 Payment Sheet
24 Supervisor's Remarks

Appendix-7

7. Setu register (Index only)

1 List of Saved Children
2 List of Unmarried Women
3 List of Very Poor Patients
4 List of Still Birth / Infant Death
5 List of Women Death (Above 1 to 14 yrs.)
6 List of Women Death (Above 15 to 45 yrs.)
7 List of Women Death (Above 45 yrs.)
8 List of TB Patients
9 List of Gynec Camp Referred Patients
10 List of Indor Patients
11 List of Free items given by SR
12 Details about getting help from Village people
13 Special Programme
14 Notes about attendance Arogya Sakhi
15 List of Pregnant Women
16 Daily Diary
17 Notes of Surprise Visit
18 Sign of Supervisor / Visitors

Appendix-8

8. Verbal Autopsy Death Form for Child by Age

Death form for 0 – 2 Months Child

Where Death ?	PP / PNP (J) / PNP (O) / NP(O)P	Sector Name	
Village Name		Street	

(A) Fundamental Detail

Name of Child	*Mother's Name*	Father's Name	Surname
Grand Father's Name	Child Sex : M / F	Caste : Tribal / Non Tribal	
Mother's Occu.	Father's Occu.	Mother's Edu.	Father's Edu.
Native Place		**P / NP**	
Birth Place		P / NP	Home / Pvt. Hospital / Govt. Hospital / SEWA Rural / In Vehicle / Other
Death Place		P / NP	Home / Pvt. Hospital / Govt. Hospital / SEWA Rural / In Vehicle / Other
Date of Birth :	Time of Birth :	Age _____ Hours _____ Days (If under 3 days, to write in hours)	
Date of Death :	Time of Death :		
Date of Visit with Supervisor after Death :		Date of Visit with Link Worker after Death :	

(B) Information about Sickness

What problems did the child have ?	Steps taken for treatment ? (Any kind of)
1. When did the problem start ? signs / Symptoms	1. What was the first step ?
2. What did happened after that ? signs / Symptoms	2. Later on … ?
3. Signs & symptoms on the last stage	3. Last thing to be done ?
Remarks for the above questions :	Remarks for above
Treatment taken : Domestic or Home remedy / Quacks / LHV / Nurse / Pvt. Doctor / Govt. Doctor / SEWA Rural / Other	

(C) Details of Visit before Death

No of Visit by LHW	Meeting with LHW before death : Met / Not Met …….. Last time met	
Last weight measurement by LHV	Date of Last weight measurement	Which day
Dead body seen by any body ? Y/N : If Yes ……..… Worker	Details	

(D) Detail of Birth

Delivery on which month	Premature / Mature	Child's weight at the time of Birth
Bath given after : 1 hour / 1 day / Later	***Delivery pack used : Y / N***	
Brest Feed : 1 hour / 1 day / Later	Anything given on it (Honey / Sugar or Jaggery water) : Y / N	
Delivery : Normal / LSCS / Forcep		
Which body part of baby came out first : Head / Forehead / Mouth / Face / Hand / Feet / Other		
Any other complications at time of Delivery :		

(E) Our Efforts

Our Efforts		Care to be taken ? Y / N, If No, then reason	
A	Did they take or follow your advice or treatment	A	Beliefs or superstitious
B	They did follow the advice or treatment	B	Social beliefs
C	It was not possible to give advice or treatment	C	No possibility of survival (any reason) kind of belief
D	Could they have given more information or treatment	D	Did not take any step or measures by relatives
		E	Reason why mother did not take any steps / measures If she know her Childs disease or symptoms
		F	Other reason

(F) Reason for Death

1	According to family	:					
2	According to LHV	:					
3	According to Doctor	:					

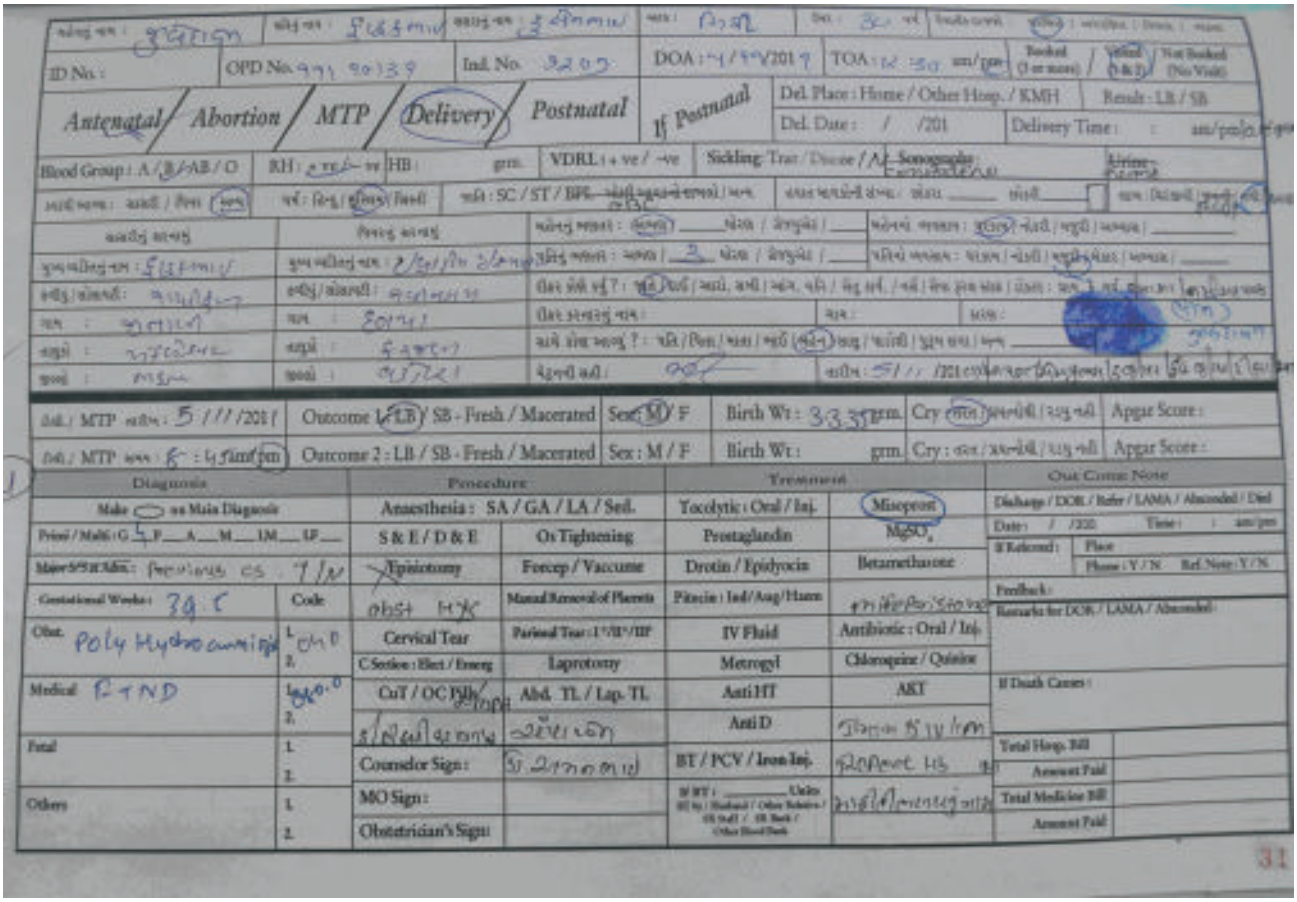
Note down the points from A to I

A	*Problem in Breast Feeding*		
1	*Child was taking milk properly since birth ? Y / N*	2	*Problems in Breast Feeding ? Y / N*
3	*Problem in nipple ? Y / N*	4	*Mother Neglecting the baby ? Y / N*
5	*Problem in breast feeding because the child was weak ? Y / N*	6	*Was the frothing from mouth ? Y / N*
7	*Was taking food properly but later on was not taking properly. Y / N*	8	*Ulcers in mouth ? Y / N*
9	*Mother's death ? Y / N*		
B	**Birth Asphyxia**		
1	Did baby cried after Birth : immediately / 1 min. / 5 min / Did not cry		
2	Did the baby get fits (in 12 hrs) : Y / N		
3	Did you try to make baby cry : Y / N Give details :		
4	Was the baby getting weak, dull or inactive : Y / N		
5	Prolong labor ? Y / N (Primi – More than 12 hrs & Multi – More than 6 hrs)		
6	*Swelling on head ? Y / N*		
7	*During delivery was there any blue – green discharge ? Y / N*		
8	*Was yellow thick discharge staking on child's body during birth ? Y / N*		
9	*Did child become blue after delivery ? Y / N*	10	*Any mark or scar of wound / Injury ? Y / N*
11	*Hiccups ? Y / N*	12	*Was umbilical cord tied around his / her neck ? Y / N*
13	*Twins ? Y / N*		
C	*Problem in Breathing*		
1	*Problem in breathing from days*	2	*Respiration rate / min*
3	*Child was breathing very fast ? Y / N*	4	*Child was remaining dull and inactive ? Y / N*
5	*Gap between two ribs ? Y / N*	6	*Whistling sound in breathing ? Y / N*
7	*Fever ? Y / N*	8	*Was milk entered the wind pipe ? Y / N*
9	*Consumed the discharge of delivery ? Y / N*	10	*Death after breast fed without burping ? Y / N*
11	*Problem in breast feeding ? Y / N Details :*		
D	*Sepsis (If there)*		
1	*Fever ? Y / N Since how many days ……*	2	*Infection in Umbilicus ? Y / N*
3	*Which tool used to cut the Umbilical cord ? Blade / Knife / Other*	4	*Boils / Yellow boils on child's body ? Y / N*
5	*Body turning pale or yellow ? Y / N*	6	*Since how many days ……..*
7	*Stopped breast feeding ? Y / N*	8	*Reduced the breast feeding ? Y / N*
9	*Child getting dull and inactive ? Y / N*	10	*Body getting cold ? Y / N*
11	*Fits ? Y / N*	12	*When / How many times fit occur ? _____*
E	*Congenital Disorder*		
1	*Disorder right from birth ? Y / N*		
	Details :		
F	*Vomiting / Diarrhea*		
1	*How many times stool (loose motion) / dysentery in a day ?*	2	*Since how many days _____*
3	*Which type ? Green / Blood / Smells*	4	*Vomiting ? Y / N*
5	*Since how many days ?*	6	*What are the reasons / Which it happens ?*
7	*Shrunken eyes ? Y / N*	8	*Mouth gets dried up ? Y / N*
9	*Stomach / Skin wrinkle ? Y / N*	10	*Fever ? Y / N*
11	*Taking only breast feeding ? Y / N*	12	*Bottle feeding ? Y / N*
G	*PEM*		
1	*Weight increasing properly ? Y / N*	2	*Weight decreasing ? Y / N*
3	*Last times weight _____*	4	*Weight at the time of Birth _____*
H	*Fits / Epilepsy*		
1	*When does the child get fits ?*	2	*How many times ?*
3	*Fever ? Y / N*	4	*Any other disease ? ? Y / N detail _____*
I	**Neglected Child**		
1	*Reason :*		
J	*Other Remarks :*		

Name of filled up form _____ Date of filled up form _____

Appendix-9

9. FRU Register



ID No.: | OPD No. 991 90139 | Ind. No. 3203 | DOA: 4/5/2019 | TOA: 12:50 am/pm | Booked (3 or more) / Booked (0 & 1) / Not Booked (No Visit)

Antenatal / Abortion / MTP / Delivery / Postnatal | If Postnatal | Del. Place: Home / Other Hosp. / KMH | Result: LB / SB | Del. Date: / /201 | Delivery Time: : am/pm

Blood Group: A / B / AB / O | RH: +ve / -ve | HB: gm. | VDRL: + ve / -ve | Sickling: Trait / Disease / Nil | Sonography: | Urine:

Diagnosis | Procedure | Treatment | Out Come Note

Make ◯ on Main Diagnosis

Prim / Multi: G 4 P ___ A ___ M ___ LM ___ LF ___

Major S/S if Adm.: Previous CS 9 M

Gestational Weeks: 39.5 | Code

Obst. Poly Hydroamnios | 1. OHD 2.

Medical R + ND | 1. 2.

Fetal | 1. 2.

Others | 1. 2.

Anaesthesia: SA / GA / LA / Sed.

S & E / D & E | Os Tightening

Episiotomy | Forcep / Vaccum

Obst HX | Manual Removal of Placenta

Cervical Tear | Parietal Tear: I°/II°/III°

C Section: Elect / Emerg | Laprotomy

CuT / OC Pill | Abd. TL / Lap. TL

Counselor Sign: | MO Sign: | Obstetrician's Sign:

Tocolytic: Oral / Inj. | Misoprost

Prostaglandin | $MgSO_4$

Drotin / Epidyocin | Betamethasone

Pitocin: Ind / Aug / Hum

IV Fluid | Antibiotic: Oral / Inj.

Metrogyl | Chloroquine / Quinine

Anti HT | AKT

Anti D

BT / PCV / Iron Inj.

Discharge / DOR / Refer / LAMA / Absconded / Died

Date: / /200 Time: : am/pm

If Referred: Place: Phone: Y / N Ref. Note: Y / N

Feedback:

Remarks for DOR / LAMA / Absconded:

If Death Causes:

Total Hosp. Bill | Amount Paid | Total Medicine Bill | Amount Paid

Date / MTP: 5/11/2019 | Outcome 1: LB / SB - Fresh / Macerated | Sex: M / F | Birth Wt.: 3.3 kgs gm. | Cry | Apgar Score:

Date / MTP: 5 : 45 am/pm | Outcome 2: LB / SB - Fresh / Macerated | Sex: M / F | Birth Wt.: gm. | Cry: | Apgar Score:

31

Appendix-10

10.Achievement of SEWA Rural hospital

	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
New ANC Cases	3277	2448	2492	2801	3147	3390	3576	5197
Total Maternal Admissions	1221	1503	1423	1777	1862	2397	2563	3061
With Complications	766	829	941	1274	1308	1433	1635	1259
Total Deliveries	808	1042	824	1141	1301	1815	1932	2302
Referred from Hospital	80	30	140	34	43	75	55	12
Blood Transfusion	89	104	116	256	91	91	110	272
MTPs	76	161	132	104	62	72	52	46
MTPs among Unmarried	27	49	40	65	12	45	15	14
Cesarean Section (LSCS)	53	95	99	160	109	125	171	231

10.1 Type of maternal admission

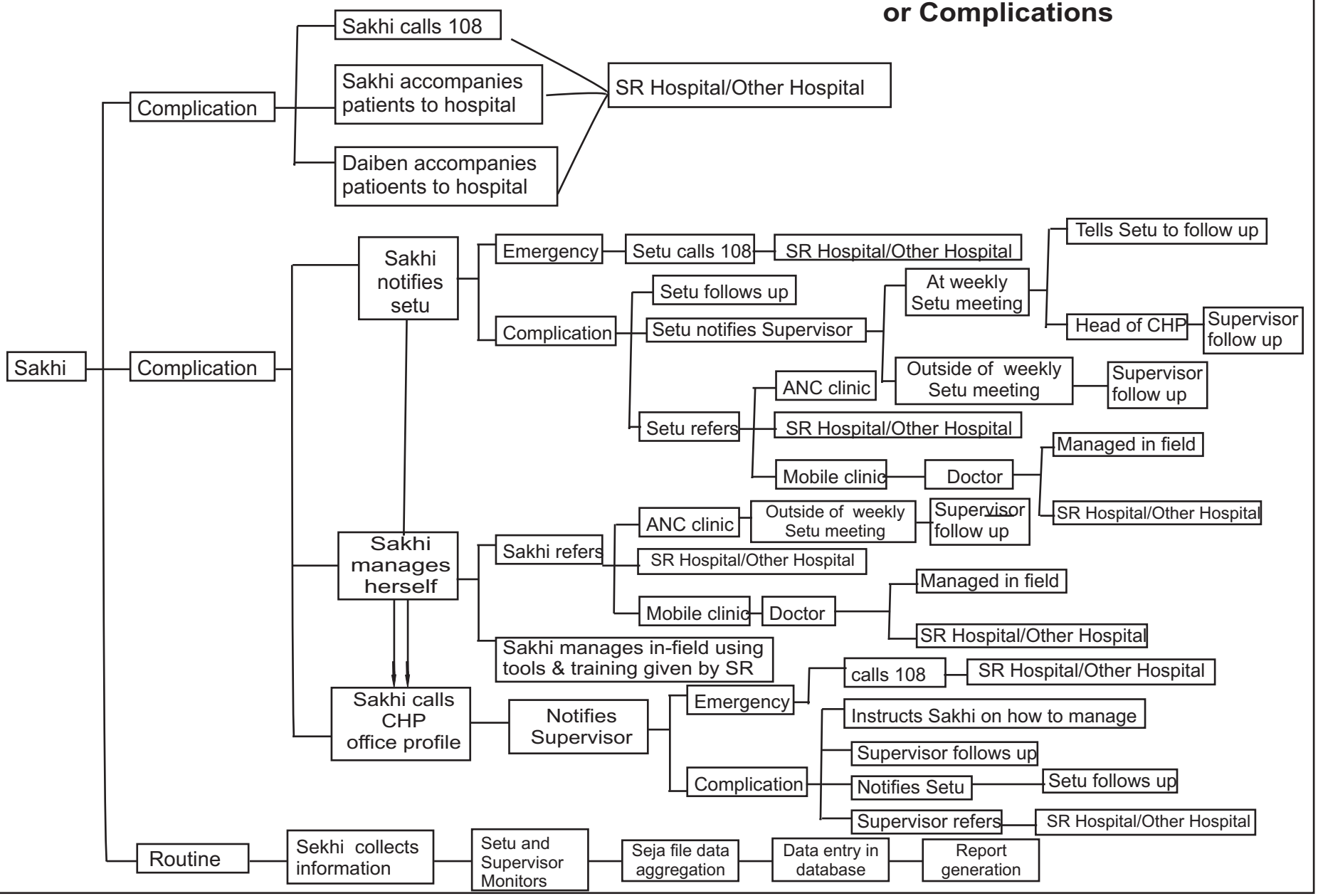
	2003-04		2004-05		2005-06		2006 -07		2007-08		2008-09		2009-10		2010-11	
Antenatal	220	18.00%	182	12.10%	340	24%	363	21%	333	18%	99	4%	387	15%	450	14.70%
Abortion	79	6.50%	87	5.80%	78	5.50%	116	6%	103	5.50%	338	14%	118	4.50%	171	5.60%
MTP	76	6.50%	161	10.80%	132	9%	104	6%	62	3.30%	72	3%	52	2%	46	1.50%
Delivery	808	66.00%	1042	69.30%	824	58%	1141	64%	1314	70.60%	1815	76%	1932	75%	2302	75.20%
Postnatal	38	3.00%	30	2.00%	49	3.50%	53	3%	50	2.70%	73	3%	74	2.50%	92	3%
Total	1221		1503		1423		1777		1862		2397		2563		3061	

Appendix-11

11 Comparison with Control area

	BLS	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	CONTROL (2010-11)
Complete Course of TT Injection (%)	82	53.8	77.8	78	94	93.5	93.9	91.1	53.4
Complete Course of IFA Tab Consumption(%)	61.2	78.5	67.8	74.2	83.2	87.4	87.5	87.9	36.5
Blood Pressure Measurment (%)	20	43.7	73.5	81	83	91.8	85.2	86.5	74
P/A Examination (%)	16	42.4	65.1	64	78	86.8	78.4	81.4	26.5
Use of Delivery Pack at Home Delivery (%)		71	82	74	83.4	80.6	69.9	72.2	15
Breast Feeding Given at First Hour (%)	49.3	75	80	85	86.4	90.6	93	82.7	62.9
Bathing after First Day (%)	20.4	59.1	72.4	79.5	79.6	88.4	89	79.7	51.5
Prelacteal Feed Given (%)	58.6	19.5	9.9	4.9	4.1	4	4	13	35

Managing Emergencies or Complications



SEWA Rural

(Society for Education , Welfare and Action- Rural)

PO:Jhagadia, District Bharuch
Gujarat (INDIA) PIN: 393110
Phone: +91-02645-220021/220868
Fax: +91-02645-220313
E-mail: sewarural@ ymail.com
Website: www.sewarural.org