

IMPROVING WOMEN'S HEALTH THROUGH APPROPRIATE HOME DELIVERY

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INTRODUCTION

The Comprehensive Rural Health Project (CRHP), Jamkhed, India, began in 1970 as one of the pioneer programs that developed the principles of comprehensive, community-based primary health care (CCBPHC). Over the years it has developed a successful model that has empowered communities to take health into their own hands, especially through the leadership of Village Health Workers (VHWs). The experience of reducing maternal mortality and morbidity is an example of its accomplishments.

A study was conducted of all pregnancies in 18 project villages during the period 1996-99. A total of 2905 pregnancies had occurred in the villages, with 2861 deliveries (98.5%) and 44 abortions (22 or less gestational weeks). 2415 deliveries (84.4% of deliveries) were conducted at home. There were 2 deaths -- one due to post-partum hemorrhage; the other died during pregnancy due to being burned.

The pregnant population included women in three categories:

- 1- resided/delivered in project village,
- 2- resided in project village / delivered outside (usually at mother's home),
- 3- resided outside project area/delivered in project village (at mother's home).

Only 15.6% of deliveries were conducted at hospitals. This study looked into the health, socio-economic and obstetrical practice and its outcome in the 84.4% home deliveries.

Most causes of maternal mortality and morbidity can be addressed through simple methods – nutrition, prenatal care (including tetanus vaccination; checking for diabetes and hypertension; preventing, early detection or managing diseases (e.g. malaria), refer high risk, safe delivery using simple sterile technique. These methods can be easily used in the community and by the community.

The CRHP PROGRAM

The key component to the CCBPHC approach is the village health worker (VHW), who is chosen by her community and accountable to it. So she is accepted by the community, knows everyone, and has easy access to all. She deals with a variety of health problems, so is in constant contact with the whole community. She especially knows the women, is trusted, and can identify pregnancies early. In the CRHP project, most VHWs are illiterate and from the lower castes, so they can easily relate to the poor, who are the CRHP's priority population.

The VHW is trained in identifying risk factors, which she refers to the hospital for assessment and delivery. She is trained in providing prenatal care, for which she makes house visits. She knows how to conduct a safe delivery using a simple, sterile delivery kit. A major part of her role is sharing information she receives during training with the women's groups in her village, so others are knowledge-able and skilled. Thus pregnant women receive early and regular prenatal care, referral for high risk, safe delivery at home. The community is ready to provide emergency transportation if the need arises.

A mobile health team makes regular visits of villages, usually monthly, to assist and to continue training the VHWs. They visit all pregnant women.

The CRHP hospital provides prenatal care and delivery for high-risk pregnancies and delivery for complicated cases, including caesarian sections.

The CRHP or other hospital is within 40 km from villages (av. 15 km) and 1 hour travel time (av. 30 min.). Over the years 400 villages in the Jamkhed area with 500,000 population have been involved in the project. There are roads to all the villages, and most villages have at least one motorized vehicle (e.g. tractor, jeep, motorcycle). Some villages have a telephone.

The TRAINING

VHWs are trained at CRHP, initially for a week and then weekly. The weekly sessions are based on their need and experience, as well as learning about the problems of patients who are then in the hospital. Two VHWs are in the hospital for two weeks, on a rotation basis, which gives them a chance to learn more, especially about complications.

They are also trained in the village of an experienced VHW, who also will spend time with her in her own village. The mobile health team visits newer VHWs more often, and provides additional individualized training.

The training includes:

1) Prenatal Care:

- * How to 'diagnose' pregnancy – 3 months after missed period.
- * Taking blood pressure, testing urine for sugar and albumin.
- * General risk factors –
 - young (<18 years), old (>35 years), short, multiparity (>3), chronic disease (hypertension, jaundice, malaria), headache, TB, position of fetus, fetal shape/form, placenta previa, painless bleeding, Rh factor.
- * Risk factors during 3rd trimester –
 - edema, puffy face, anemia (look at nails, eyes and tongue), albumin in urine, injuries (e.g. fall, violence).
- * Conducting a physical exam:
 - what to do -- palpation by hand of abdomen for fetal size, shape, movement; listen to fetal heart sound (place ear on abdomen)
 - what to look for (normal, abnormal and referred)
- * Medical care – tetanus immunization (at 5-8 months given by government nurse), identify and treat anemia and vitamin deficiencies with pills and nutrition (as soon as pregnancy detected, give folic acid tablets); check blood pressure, test urine for sugar and albumen; check for health problems (e.g. jaundice, malaria, TB, injuries), check for pre-eclampsia (high blood pressure, edema in legs, headache).
- * Education -- nutrition, harmful traditional practices, family planning, prepare for delivery.

2) Conducting a safe delivery:

sterile techniques, position of woman, identifying factors (e.g. placenta previa, face presentation, transverse, excessive bleeding) that require immediate referral to the hospital.

3) Post-partum care:

Immediate medical care:

- Woman - check for bleeding, clots, fever, chill, infection, repair small tear, retained placenta (try breastfeeding and abdominal massage for 1 hour), condition of nipples (e.g. cracked, inverted)
- Infant - asphyxiated or does not cry (try mouth to mouth resuscitation; if doesn't breathe, refer), sucking reflex, organs, congenital deformities, birth weight

Postnatal:

- * Medical Care -
 - Woman - problems to look for, how to treat (vaginal discharge, engorged breast, fever, infections) and what needs to be referred (severe problems, convulsions, bleeding she can't stop)
 - Infant - problems to look for, how to treat (sucking and feeding well, umbilical cord) and what needs to be referred (pneumonia or other respiratory complications)
- * Education -- nutrition, breastfeeding, infant care.

The CARE

1) Prenatal:

All high-risk pregnant women are referred to the hospital as soon as pregnancy is determined.

Pregnant women with general risk factors are seen at the hospital at least twice. The decision regarding the place of delivery is made by the VHW; if she has any doubt, she consults with the mobile health team or refers to the hospital. About half of primipara deliver in the hospital.

During regular village visits, at least monthly, mobile health team, with the VHW, visits all pregnant women. Also when government nurses visit a village, they check pregnant women, referred by the VHW.

VHWs conduct regular visits, at least monthly or more often if a special case, in the woman's home, to make sure every pregnant woman is seen and in an environment that is comfortable for the woman. The VHW can also assess the home situation and discuss nutrition and other health matters. The VHW also meets the pregnant women during the routine of their daily lives.

During the last month, the VHW visits more often, depending on the woman's condition. At

36 weeks she assesses the position of the fetus for delivery. She assures that a sterilized delivery kit will be available. The delivery kit consists of 2 pieces of cloth (2'x2'), several gauzes, string and new razor blade. The cloth and string are boiled and dried in the sun; then wrapped and stored in a clean place.

2) Labor and Delivery:

The attendant (VHW or trained family member) conducts a pelvic exam to see the size of dilation and to check fetal position and heart sound for normal delivery. The VHW is called if the family member is not confident. (If the VHW is not present for the home delivery, she visits as soon as she knows about it.) During and after delivery, if there is a problem the VHW cannot handle, mother and infant are transported immediately to the hospital, e.g. placenta previa, face presentation, prolonged labor, etc. As the VHWs become more experienced, they are able to handle situations like cord around baby's neck, legs first and breach -- otherwise, these are also referred to the hospital. The community is ready to provide emergency transportation.

During 2 hours post-partum, the VHW stays in the home and checks the woman and baby.

3) Postnatal Care:

The VHW visits daily for a week to check mother and baby, and refers to the mobile health team or hospital if necessary.

Then she visits weekly up to 40 days, for clinical care, as well as health education (infant care, nutrition) and family planning. If the woman wants a tubectomy, it is performed after 12 days. Temporary methods, usually pills, are started after 6 months. And the VHW will see the woman in her daily life routine.

During regular village visits the mobile health team visits all newborns.

The COMMUNITY

One of the main roles of the VHW is to share the knowledge and skills she learns with all in the village -- men and women. She usually does this through the women's groups (e.g. Mahila Mandals/MM) and men's groups. She also organizes training and seminars, to which she invites the Mobile Health Team. When VHWs come to CRHP for their weekly training, they are encouraged to bring some MM members. So through these

various ways, women learn how to conduct a safe delivery, as well as the importance of pre-natal care and high-risk symptoms. The men learn and understand the importance of safe delivery and how to do it, so they can make sure their wives are properly cared for and can even give directions to someone else.

When the VHW conducts a delivery, she takes another woman from the village with her, as well as the family members in attendance, and shows them how to conduct a safe delivery.

The STUDY

Method of Data Collection --

The VHWs' record books for the preceding 3 1/2 years were reviewed with the VHWs who had followed the pregnancies. Information regarding 2905 pregnancies entered in these books between Jan. 1, 1996 and July 1, 1999, and followed to term were recorded. All pregnancies of the residents of the CRHP villages were included in the study, regardless of whether the birth took place in a CRHP village or outside. The VHWs had full details of the outcomes of pregnancies before, during and after deliveries, and the health of the baby until one year.

The reliability of the information given by the VHWs was checked in the 18 villages to look for undetected pregnancies and mortalities of the infants and mothers. Three reliability tests were used:

- (1) Randomly select 10% of households to look for undetected pregnancies and morbidities and mortalities in general. Village maps and listing of the heads of household were made with the help of the community; the sample houses were selected using stratified simple random sampling method.
- (2) Rapid rural appraisal was used to elicit maternal mortality.
- (3) All the morbidities and mortalities reported by the VHWs were tallied with the family members.

Less than 10% error was considered acceptable; if higher, a 100% check was carried out using primary data collection methods. Only two villages had more than 10% error, where house-to-house surveys were conducted. The data were updated with the information obtained during the reliability testing.

A database file was created using EpiInfo 6.04b software, and frequency and chi square

tests for significance were performed. Maternal health indicators were analyzed using rate calculation.

Results --

All the 2905 women were under VHWs' care during some or all of their pregnancy. There were 2 maternal deaths, one due to obstetric causes (post-partum hemorrhage in the village, woman of a nomadic tribe, who got lost to follow up); other death was due to being burned during pregnancy. There were 44 abortions (1.5%) and 2861 deliveries (2415 at home).

There are three categories of women:

- 994 (34.7%) resided in project village and delivered there
- 797 (27.9%) came from elsewhere to deliver in project village
- 1070 (37.4%) resided in project village, delivered in a village outside the project area

Among 2905 pregnancies, 266 were detected with high risk before delivery:

#	%	Condition
38	14.3	abortion
44	16.5	anemia
27	10.2	pre-eclampsia
66	24.8	other (e.g. eclampsia, diab.)
91	34.2	grand multipara (5+)
266	100.0	total

In this group the VHWs referred the following patients to the hospital for delivery:

- 9/ 91 (9.9%) grand multipara
- 72/175 (41.1%) of the others

Home Deliveries:

#	%	Who Attended
1763	74.4	Family member
20	.7	Trained dai
550	21.0	VHW
38	2.3	doctor
44	1.5	other
2415	100.0	total

Obstetric problems of home deliveries attended by:

	Family members	VHWs
Referred #	340	38
% of their deliveries	16.0%	6.3%
Obstetric problems #	280	63
% of their deliveries	13.2%	10.5%
Prolonged labor #	229	33
% of problems	81.8%	52.4%
Bleeding #	8	6
% of problems	2.9%	9.5%
Other #	43	24
% of problems	15.3%	38.1%

Of the deliveries attended by family members, 340 were referred to a hospital, despite the fact that only 280 had problems.

CONCLUSIONS

Because of the role of the VHW in her community, her acceptance and confidence by the community, the VHW has easy access to pregnant women, is always available to them, assures regular prenatal care and referral of high risk. Her training and practice assure that she is competent. She learns to make appropriate decisions about medical care, what she can treat and when referral is necessary. The mobile health team monitors the quality of her work, and provides additional training as needed. The hospital is available for high-risk pregnancies and complications during delivery.

Any pregnancy is a risk to the health of a woman, and some women experience high risk factors. All these risks are reduced through the work of the VHWs, with their knowledge and skills in providing care, identifying high risk factors during pregnancy, conducting safe deliveries, as well as sharing their knowledge and skills with other women in their village.

Because of the ongoing work of the VHW and the support of the mobile health team in the community, village people are aware of health matters and are knowledgeable about the importance of maternal health. The families are involved in the care of the pregnant women; informed appropriate decision making by the VHW and family members ensure safe delivery. As women are empowered, they have more control over their bodies as well as their lives.