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# **Assessing Maternal and Peri-Neonatal Health: Tools and Methods**

*The MotherCare Experience*



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**ASSESSING MATERNAL AND  
PERI-NEONATAL HEALTH:  
TOOLS AND METHODS**

***The MotherCare Experience***

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## Definitions

**Rates and Ratios:** To make comparison with international and national statistics possible, the rates and ratios used here are presented according to standard WHO definitions.

**Perinatal mortality** represents fetal and child mortality from 28 weeks of pregnancy through the first seven days of life. The rate is the number of deaths per thousand births, including stillbirths.

**Neonatal mortality** is a child's death that occurs in the first 28 days of life. The rate is the number of deaths per thousand live births.

**Maternal mortality** refers to maternal death during pregnancy, labor and delivery, the first 42 days after delivery, or abortion, from any cause that is associated with pregnancy, labor and/or delivery, excluding accidents that occur within this time period and lead to a woman's death. The ratio is the number of maternal deaths per thousand live births, due to the difficulty with measuring the number of pregnancies or abortions.

**Total Fertility Rate (TFR):** The total number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children at each age in accordance with prevailing age-specific fertility rates.

**Infant Mortality Rate:** The number of deaths in a year to children under one year of age, out of the total number of live births that year. Expressed as a rate per 1,000 live births.

**Contraceptive Prevalence Rate (CPR):** The number of women of reproductive age, 15-49, who are currently using a contraceptive method, expressed as a proportion of all women of reproductive age, times 1000.

**ICD-9 and ICD-10:** The ninth and tenth revisions of the International Classification of Disease, the standard source for case definitions.

## **INTRODUCTION**

The Safe Motherhood Initiative (SMI) grew out of the 1987 "Safe Motherhood" conference held in Nairobi, with participants from numerous countries committed to reducing levels of maternal mortality and morbidity. Although maternal mortality is difficult to measure, the situation is known to be severe, with the issue of maternal health a neglected priority for so long. The SMI targets a decrease in maternal deaths by half by the year 2000 and prevention of or reduction in the five major direct causes of maternal death: hemorrhage, sepsis, obstructed labor, hypertensive disorders of pregnancy, and septic abortion.

More generally, the goals of the Safe Motherhood Initiative are:

- o prevention of maternal mortality and related morbidities; and**
- o promotion of a healthy woman and newborn.**

To date, almost ninety countries have expressed an interest in starting some sort of safe motherhood program. The idea of improving maternal health strikes a responsive chord, yet the information and resources to do this often are considered lacking. In most countries, data to provide a good understanding of maternal health may be available but not gathered in a way that helps to establish priorities and develop programs.

The MotherCare Project was started as part of USAID's response to the Safe Motherhood Initiative. Since 1989, this project has sponsored activities in a number of countries, each beginning with an assessment of maternal and peri/neonatal health problems, followed by interventions to tackle them. This working paper contains tools and methodologies used by MotherCare to pull information together to establish a safe motherhood strategy.

What is a successful safe motherhood program? Knowing what we are aiming for helps to determine what is presently lacking. Specific activities necessary to support a safe motherhood program include:

- o Improved obstetrical and family planning services at all levels,**
- o a functioning referral system,**
- o a communications strategy to promote specific practices among women and their families, and**

- o **policy reform or formulation to support a safe motherhood effort.**

Many of these activities can be designed within already existing health services by redirecting and improving their content, mode of delivery, quality and coordination between the levels of care to focus on reducing maternal mortality. Box 1 below outlines these components in more detail.

### **Box 1: Elements of a Safe Motherhood Program**

- o **Information/Education/Communication Strategy**

Designed to:

- o increase awareness of danger signs during the maternal period;
- o mobilize communities for transport of women with obstetrical complications, and
- o increase appropriate and timely use of services, including family planning, prenatal, delivery and postpartum care;

- o **Community Based Family Planning and Obstetrics**

With trained medical staff or outreach by such staff to provide:

- o family planning and management of unwanted pregnancies;
- o prenatal screening, particularly in the last trimester;
- o case detection of complications close to term and during labor/delivery, and in the postpartum period;
- o normal delivery; and
- o obstetric first aid (including parenteral antibiotics, parenteral oxytocics, parenteral sedatives, manual removal of placenta and removal of retained products of the conceptus).

- o **First Referral-Level Facilities**

With 24 or more beds, to provide:

- o surgical obstetrics;
- o anesthesia;
- o medical treatment of sepsis, shock, eclampsia, etc.
- o blood replacement;
- o manual procedures and monitoring of labor;
- o management of women at high risk; and
- o neonatal resuscitation.

- o **Effective Referral**

Designed to establish:

- o a means of communication between staff at peripheral and referral levels;
- o a means of transporting complicated obstetrical and neonatal cases; and
- o a means of coordinating care among the levels of health providers, e.g. protocols.

**Source: Campbell, Kobinsky and Taylor. *Off To A Rapid Start: Appraising Maternal Health and Services*. London School of Hygiene and Tropical Medicine.**

We need to assess what exists against this list in order to determine what is needed.

This working paper presents assessment tools and methodologies used during the first phase of MotherCare (1989 - 1993). Part II presents rapid assessments which are conducted at the national level to plan overall strategies. These assessments are "primary" assessments which provide an overview of the general maternal and peri/neonatal health situation. Such assessments are conducted over a two to three week period of time with a team of two or three specialists from the fields of maternal and peri/neonatal health and communications. This manual includes three national level assessment tools used by MotherCare. Two of these tools elicit general information about maternal and peri/neonatal health status and health services. For one specific area, breastfeeding, MotherCare worked with the Manoff Group to develop a specific national level assessment tool.

After such initial assessments, more extensive and in-depth efforts are needed to refine intervention strategies. Part III outlines these "secondary" assessments including a **case review methodology** to identify causes of death (maternal and peri/neonatal) and the decision-making process associated with these causes; **survey questionnaires** and a method for validating women's self-reported illnesses; **participatory group assessment techniques**, designed to provide an understanding of group members' beliefs and practices; **qualitative assessment methods**, including question guidelines for maternal and peri/neonatal health, to develop an understanding of danger signs and behaviors during pregnancy, delivery and the first few weeks thereafter; and **training needs assessments** for different levels of providers and essential equipment and supplies.

Tools for this second level assessment are typically applied at the community level and aim to sharpen the focus of specific interventions including:

- o **a communications strategy designed through qualitative research;**
- o **improved services through training and site upgrading; and**
- o **an understanding of how referral is viewed and presently functioning.**

The tools and methods for both the primary and secondary level assessments are both qualitative and quantitative and are used together to provide a complete overview of maternal and peri/neonatal health status and health services in a given setting.

This manual presents an overview of each of the tools and methodologies used in both primary and secondary assessments. The complete version of

each assessment tool is available through MotherCare. Each tool is referenced by number in the text, with complete references given at the end of each section. For further reference, a list of useful assessment tools and methods not developed by MotherCare is included, along with references. A complete bibliography is provided at the end of the manual.

This working paper is designed to provide an idea of the areas covered by a safe motherhood program and question guides to assess these areas. It is not a prescription however, and each assessment tool needs to be adapted and pretested for the specific needs of each locale.

## **I. PAINTING THE BIG PICTURE: ASSESSMENT OF MATERNAL AND PERI/NEONATAL HEALTH AT THE COUNTRY LEVEL**

Obtaining the necessary information to gain a macro-level overview of safe motherhood efforts in a particular setting involves an interplay of information from all levels: national, district and community. This mix is critical in building a representative general picture of the maternal and peri/neonatal health situation in a given country. Various methodologies and tools are used to perform assessments at the national, district and community levels. These are discussed in separate sections below.

### **Country-Level Rapid Assessment**

MotherCare has participated in the development of a country-level rapid assessment strategy which provides a framework for obtaining quick and accurate information from a given country setting. This country-level assessment tool provides a blueprint from which to develop future safe motherhood programs and interventions. It must be emphasized that such a tool is an initial step toward planning a general safe motherhood strategy, and that it must be followed by more specific assessments for local programming (Tinker and Koblinsky, 1993; Ward et al., 1991).

### **Areas of Emphasis and Related Indicators**

Assessment of the maternal and peri/neonatal health situation at the country level involves the use of indicators from several different areas: health policy and finance, population and fertility, maternal mortality and morbidity, health services, community outreach and health promotion, and social and economic status. Assessment teams must include personnel with experience to cover these areas effectively. Different areas which need to be covered in assessments are detailed below.

#### **1. Health Policy**

Assessment at the policy level is important primarily for assessing the level of governmental commitment to a safe motherhood program. Indicators for assessing this commitment include:

- o previous hosting of a safe motherhood meeting or conference;**
- o the existence of formative research or initial data collection on maternal and peri/neonatal health issues;**

- o **an existing Action Plan;**
- o **a national group formed to work on safe motherhood activities;**
- o **the allocation of funds for safe motherhood.**

Further assessment at the policy level is required to determine the level of resources available to reduce maternal mortality and related morbidities. Questions for assessment at this level include:

- o **Which personnel currently in the health system can provide the needed services, such as family planning and management of unwanted pregnancies, case detection of complications through prenatal care and obstetrical care, and obstetric first aid (e.g., manual removal of placenta, parenteral administration of oxytocins, antibiotics and sedatives)?**
- o **What protocols for case management, and training of providers in the use of these protocols exist?**
- o **How is the identification and management of complications between the different levels of providers coordinated (e.g., telephone or two-way radios connecting health centers and hospitals; ambulance availability)?**
- o **How much does it cost to provide and use maternal and perinatal/neonatal health services?**

Refresher training and changes in basic training may be needed to improve the quality of care, particularly the skills of midwives and doctors in managing obstetrical complications and providing counseling to women about problems during pregnancy, labor and in the immediate postpartum period. These efforts are likely to require a re-allocation of resources within existing health services. Supervisory and information systems may also need to be changed, and appropriate supplies at all levels must be ensured. In addition, the resources to communicate effectively with women must be made available, and time and resources must be invested to determine the most beneficial ways to do this. If these changes are not mandated from the policy level, the necessary support to make them happen is not likely to exist.

A final area in the realm of health policy which needs to be addressed is that of legislation, regulations and traditional values and practices. Existing laws need to be examined for their position on abortion, age of marriage, and women's social, economic and educational mobility. Although not

explicitly stated, traditional beliefs and practices may also exert great influence over issues related to pregnancy and childbearing.

In addition, regulations governing the delegation of responsibility among health care providers may reserve some life-saving tasks associated with pregnancy labor and delivery and the puerperium, for a few highly skilled medical staff; these health services, however, may not be within easy reach of women with obstetric complications. Ensuring that the most peripheral staff with appropriate skills can carry out life saving efforts (e.g., manual removal of the placenta) is very important.

## **2. Population and Fertility**

A basic understanding of the demographic situation in a country is important for planning how many reproductive age women are considered "at risk" for maternal and peri/neonatal health problems. Also, data on population and fertility can be used to calculate the denominators of maternal and morbidity indicators. These are important steps in developing national-level statistics on maternal mortality and morbidity and can also give a rough estimate of the average number of pregnancies women experience in a given setting. The Total Fertility Rate (TFR), which is generally available from census or survey data, is an important indicator of pregnancies per woman per reproductive life. In essence, this is an indicator of the number of times a woman is exposed to the risk of maternal death. Data on the contraceptive prevalence rate (CPR), or the percent of women currently using contraceptives, provide a good indicator of fertility trends.

Questions guiding the assessment include:

- o What is the population of women at risk for what problems?**
- o Does the fertility pattern contribute to unsafe motherhood?**
- o What is being done to reduce fertility and to prevent unwanted pregnancy?**

National level statistics for assessment of maternal and peri/neonatal health may be available from the Ministry of Health, the Ministry of Planning, the Central Statistics Office, and international donors who fund such activities. Large scale surveys such as the World Fertility Survey, the Contraceptive Prevalence Surveys, the Demographic and Health Surveys, and other national or household level surveys are invaluable sources of information generated from the community level. UNICEF, the World Bank and the United Nations Development Programme (UNDP) also produce annual reports with basic

health and socio-economic indicators.

### **3. Maternal Mortality**

Knowing the approximate level of maternal mortality is useful in guiding development of safe motherhood programs. In some cases, a maternal mortality ratio or maternal mortality rate will have been calculated for the country in question. WHO has tabulated country-specific data on the maternal mortality ratio and on use of health services for pre-natal, delivery and postpartum care. Maternal mortality ratios from hospital studies tend to be overestimated, because in general only the most serious cases are treated there, but a comparatively small proportion of women deliver there. In contrast, vital registration systems tend to underestimate maternal deaths, often because death reporting is so poor and they fail to attribute the cause of death to pregnancy-related factors.

The following questions may help to obtain information about the sources of data and about the limitations of each source used to estimate maternal mortality:

- o What is civil and vital registration coverage and completeness?**
- o What household surveys exist or are planned in the near future?**
- o What is the number of female deaths in the 15-49 age group?**
- o What is the number of maternal deaths?**
- o What percentage of births are registered?**
- o What percentage of births take place in hospitals?**
- o What are the main causes of maternal death? Does this include indirect causes?**

Time permitting, families can be interviewed for further information about adult female deaths, providing that registration is complete enough to identify those families with adult female deaths. Causes of death should be checked for indirect maternal mortality, such as maternal deaths in conjunction with malaria, tuberculosis or other prevalent diseases. In addition, qualitative factors such as where the death occurred, by whom a woman was treated, and how long after admission to the health facility she died are useful in understanding the root causes of maternal mortality and can aid greatly in the development of an overall safe motherhood strategy.

#### 4. Maternal Morbidity

Quantitative data on the numbers of women affected by acute and long-term complications of pregnancy are virtually non-existent. International literature reviews and other sources can be used to get a general picture, but more specific data are needed. Box 2 below outlines methods for obtaining some of this information.

#### Box 2: Calculations for Main Quantitative Indicators<sup>1</sup>

**1. Number of live births per year.**

Population x Crude Birth Rate = Number of live births/year

Ex:  $12,500,000 \times 44/1000 = 550,000$  live births/year

**2. Approximate number of pregnancies per year.**

(Live births per year x 15%) + live births per year = approximate number of pregnancies per year.

The number of live births needs to be inflated because some pregnancies result in stillbirths, abortions and ectopic pregnancies (Campbell and Graham, 1990).

Ex:  $(550,000 \times 15/100) + 550,000 = 632,500$  pregnancies per year

**3. Approximate number of complicated pregnancies per year.**

Pregnancies per year x 40% = complicated pregnancies per year.  
 $632,500 \times .40 = 253,000$  complicated pregnancies per year.

**4. Approximate number of complicated pregnancies requiring referral per year, i.e. serious complications.**

Pregnancies per year x 9-15% = complicated pregnancies requiring referral per year.

Ex:  $632,500 \times .15 = 94,875$  complicated pregnancies per year

**5. Number of maternal deaths per year.**

Maternal mortality ratio x number of live births = number of maternal deaths.

Ex:  $143 \text{ maternal deaths}/100,000 \text{ live births} \times 550,000 = 787$  maternal deaths per year

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<sup>1</sup>This table is adapted from Campbell, Koblinsky and Taylor, 1992. Data are from Syria (WHO, 1991). Assumptions for calculation number 2 are cited in Campbell and Graham, 1990. Assumptions for calculations 3 and 4 are cited in Koblinsky et al., 1993.

Questions to elicit indicators of maternal morbidity include:

- o **What are the level of maternal morbidities (i.e., hemorrhage, sepsis, eclampsia, vesicovaginal fistula, uterine prolapse)?**
- o **What is the level of maternal malnutrition, especially anemia (moderate, severe) and underweight women?**
- o **What are other possible indicators of maternal and peri/neonatal health (e.g., malaria, cardiac disease)?**

Other indicators of maternal and peri/neonatal health are potentially valuable sources of information about the overall health status of women in a country, and include the prevalence of sexually transmitted diseases and other gynecological infections, violence to women, female genital mutilation, diabetes, rheumatic heart disease, essential hypertension, smoking, and tranquilizer use. Perinatal mortality can also be used as an indicator of maternal health and maternal health care status and as a proxy for maternal mortality.

## **5. Health Services**

Available information about health services often exists in the form of national plans and government documents. Observations of facilities where women are treated during pregnancy and delivery, and discussions with both trained and untrained health care providers and with women themselves are needed to assess the situation more critically.

Assessment questions include:

- o **Who delivers the woman and where does the delivery take place?**
- o **What is the proportion of women delivered by community members (e.g., trained or untrained TBAs, relatives) and by trained health care staff (e.g., midwives/doctors)? (Keep these data separate by type of provider as their skills to manage obstetrical complications are different.)**
- o **Are these providers in the private or public sector?**
- o **Who handles obstetrical complications, and what protocols exist for such situations?**
- o **Where referral services are available, how accessible are they to**

**women? What costs are involved, both for the health system and for consumers? (First referral-level facilities provide services including:**

- surgical obstetrics;**
- anesthesia;**
- medical treatment of sepsis, shock, eclampsia, etc.;**
- blood replacement;**
- manual procedures and monitoring of labor;**
- management of women at high risk; and**
- neonatal resuscitation.**

- o What formal linkages exist between the traditional provider and the referral services if complications exist?**
- o What barriers to the use of these services exist?**
- o What is the general quality of these services?**

Who is responsible for the delivery and how this person is trained and supervised is very important. In addition, it is equally important for purposes of training and providing supportive services to know what the burden on this provider is, particularly how many deliveries that person is responsible for during the course of a year.

If the numbers of cases in the health centers are low, it may be more important to ensure outreach by better trained staff than further training of the community-level providers. The certified or enrolled midwife is especially important to safe motherhood programs. Where and when available, a midwife typically functions as the center of a maternal-peri/neonatal health care team, coordinating outreach to women with home births, managing health center and hospital births, and ensuring referral for complications which she is not trained to manage. The role of the midwife is particularly important in isolated and remote areas, where doctors are scarce.

A functioning referral system means linking a pregnant woman and her provider to a place for delivery where complications can be monitored and managed by trained staff. Assessment of the capability of a referral system requires identifying such facilities. Examples of parts of a referral system may include: maternity waiting homes, the presence of trained midwives at the community or health center level, a means of communicating between health centers and referral hospitals, and of transporting women to such facilities.

## **6. Community Outreach and Health Promotion**

Promoting healthy practices during pregnancy, including recognizing possible danger signs to women is an essential component of a safe motherhood program. Assessment should include a review of possible channels through which to communicate with women, including the availability and credibility of print, traditional media, radio and television; qualitative research to determine what shapes local beliefs and practices related to pregnancy; and the investigation of alternative means to reach women if access to information is limited. Such methods include collaboration with women's organizations, market cooperatives, and credit organizations focused on women. Attention must also be paid to the lower mobility and educational levels of women in many locations, and the need to emphasize reaching vulnerable sub-groups.

In particular, it is important to remember that women have their own perceptions of what health problems matter to them, and often prioritize their problems differently than medical staff would (Griffiths *et al.*, 1990). Beliefs and practices surrounding birth and delivery, nutrition, complications of mothers and young infants, ill health and the perceived quality of services have a direct impact on women's behaviors during pregnancy and delivery, including willingness to use services.

## **7. Social and Economic Status**

The status of women sets the framework for programmatic activity on safe motherhood issues. In particular, levels of female education serve as an indicator of the status of women and may impact on health through use of services and self-care. Also, women's mobility is crucial to successful intervention in times of crisis. Women must be able to get transportation and make the decision to seek emergency care when needed.

Assessment questions should include:

- o What aspects of women's social and economic status adversely affect safe motherhood?**
- o What are the social and economic consequences of a mother's illness or death? What are the consequences for her children?**

It should be noted that maternal mortality in the short term is more sensitive to improved medical care than to strategies to improve women's status, which is a long term process.

**For more information on the country level rapid assessment tool, see reference #1 at the end of this section. References for this tool and others contained in this section on "macro-level" approaches are detailed on page 24.**

## **Maternal and Perinatal Health Assessment**

The experiences of MotherCare and other maternal and peri-neonatal health projects led to the development of a more detailed assessment tool aimed at national planning and focused specifically on maternal and perinatal health. This tool, which is presented below, provides a series of general questions to guide a two or three person assessment team exploring the maternal and perinatal health status at a national and local level during a two to three week assessment visit. These question areas cover the seven areas of emphasis outlined in the previous section. **Only the questions are listed here; for background information on use of this assessment for programming, see reference #2 at the end of this section, page 24.**

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### **Maternal and Perinatal Health Status Assessment Tool**

What is the estimated fertility rate, contraceptive prevalence rate, maternal mortality rate or ratio, infant mortality rate, neonatal mortality rate, and perinatal mortality rate for urban and rural areas?

#### **Maternal Mortality and Morbidity**

1. What is the estimated national prevalence of the following morbidities:
  - Anemia
  - Malaria
  - Hepatitis
  - Tuberculosis
  - Reproductive tract infections (HIV, syphilis, gonorrhea)
  - Hypertension
  - Diabetes
2. What are the principal causes of death in hospital/in the community of women, stillbirths, neonates?
3. What is the relative importance of each of the following as an immediate cause of death:
  - Maternal mortality:
    - Abortion complication
    - Eclampsia
    - Hemorrhage
    - Puerperal Infection
    - Obstructed labor
    - Other pre-existing conditions and infectious processes
    - Anemia as a factor
    - Maternal undernutrition and workload as a factor
    - Violence
  - Peri/neonatal mortality:
    - Birth injury
    - Asphyxia
    - Prematurity/low birth weight (rate in hospital)

- Sepsis (general, acute lower respiratory infection, other)
  - Neonatal tetanus
  - Complicated labors (prolonged, obstructed, breech, transverse)
  - Mismanagement of labor
  - Violence
4. Why do women and infants die of these causes? What are the factors surrounding pregnancy, management of labor and delivery, and care of the newborn that contribute to high mortality rates?
  5. What is the cesarean section rate?
  6. What are the fresh stillborn levels (died during delivery) and macerated levels (intrauterine deaths)?
  7. What is the ratio of emergency deliveries to scheduled registered deliveries in hospitals?

## **Health Services**

### **Utilization**

8. What are the patterns of service utilization for:
  - Family planning
  - Prenatal care
  - Assisted delivery (home, clinic or hospital)
  - Postpartum care for mother and newborn
9. Why don't women use modern medical services? (How do women perceive the quality of their care within these medical services?)
10. When do they use them?
11. Which danger signs are recognized? For what and from whom do women and their families seek care? At what point during an episode do women seek care?

### **Access**

12. How physically accessible are services to the population (e.g., distance, transport, etc.)?
13. What are the physical constraints to use of family planning, prenatal/postnatal services?
14. What are the sociocultural constraints to service use? What services are perceived as being "worth paying for"?
15. What are the costs to clients of care?

### **Pregnancy/Birth/Neonatal Home Care**

16. What are the roles of the traditional birth attendant, other traditional practitioners, and members of the family?
17. What are the common practices that contribute to poor outcome? (prenatal, birth, postpartum).
18. What are the common home birth practices?
  - Management of labor
  - Use of oxytocics and other methods for speeding labor
  - Perceptions of duration of labor
  - Cord care - are there safe birth kits available for families?
  - Neonatal care (warming, feeding, swaddling, and the like)
19. What are the pregnancy and postpartum taboos and prescriptions for behavior that affect outcome?

20. What are the beliefs and conditions that dictate these practices?
21. What are the breastfeeding patterns?
  - Immediate
  - Exclusive
  - When are other liquids and solids introduced? What are they? Why?

### **Health Policy and Finance**

#### **Content and Quality of Clinical Care (Ministry of Health, nongovernmental organizations)**

22. What government regulations and practices govern which level of worker has responsibility for types of relevant work (e.g., cesarean sections, manual removal of placenta)?
23. What does prenatal care consist of?
  - What information and services are provided? What is not provided?
  - Are women screened for risk using a standard tool? (get copy)
  - When found to be high risk, are there high risk clinics?
24. Are food or micronutrient supplementation programs targeted to pregnant women? to women of reproductive age? And if so by what criteria?
25. What is the national goal for prenatal care (# of visits)?
26. What is the average number of visits per woman prior to delivery? On average, when do they initiate visits?
27. What are the roles of the different health providers during pregnancy, labor and delivery, and in the postpartum/neonatal period?
28. Is there a functioning referral system?
29. Are there norms, protocols, forms available? If non-functional, why?
30. Is there a means of communication between levels of transport?
31. Who obstetrical emergencies (urban/rural)? Have they had training for this? Are there norms, protocols, forms available?
32. Where are obstetrical emergencies managed (facilities per population level)?
33. Are the equipment and supplies in place to ensure ready response? What is the catchment area of this facility? Map the areas with and without access to a referral facility (WHO specifies that one should exist per 500,000 population although urban/rural needs may modify this ratio).
34. Does postnatal care routinely include:
  - Advice on breastfeeding/family planning/neonatal care?
  - Physical exam of mother and infant?
  - Food/iron supplementation?
35. What are the knowledge, attitudes and practices of health providers on:
  - Abortion?
  - Adolescent fertility?
  - Sexually Transmitted Diseases (STDs)?
36. What is the relationship between the Ministry of Health, the hospitals, the public health facilities (health posts, health centers, hospitals), the private sector providers, and the community health agents?
37. How are resources allocated and family planning, maternity and neonatal care organized?

#### **Human Resources Development**

38. What are health providers taught about family planning, maternal and perinatal health?
39. What materials are used for training? Assess the adequacy of those materials.
40. How do traditional birth attendants and other health providers rate their own knowledge and skills? How do their superiors rate their skills?
41. What types of additional training do they ask for?

42. What organizations and training entities have on-going training in family planning and maternal-peri/neonatal health? Get copies of curricula and manuals, if possible.

### **Community Outreach and Health Promotion**

43. Is there any outreach into the community to find and monitor pregnant and postpartum women? Who conducts it? How often?
44. What is the role of the traditional birth attendant, community health worker or clinic-based staff?
45. What educational materials exist on (get copies and analyze):
- Pregnancy/prenatal care
  - Safe birth
  - Postpartum care
  - Care of newborn
  - TT immunization
  - Prevention and treatment of sexually transmitted disease (STD)
  - Maternal nutrition
  - Anemia
  - Breastfeeding
  - Family planning

### **Social and Economic Status**

#### **Women's Status**

46. What are the school enrollment and literacy rates for women?
47. What is their rate of participation in the formal labor force?
48. What is their level of isolation from information, credit and health services (e.g., religious, cultural)?

#### **Nongovernmental Organizations, Women's Groups, and Other Channels for Education and Services**

49. Are there women's groups at the community level?
50. What is their principal function and their coverage?
51. Are they or have they provided health education? or community support for maternal or other health interventions?
52. What role are nongovernmental organizations playing in education and services? What is their relationship with the Ministry of Health?
53. Do they have the capacity to take on additional maternal-peri/neonatal health activities?

## **Population and Fertility**

Describe the on-going and planned programs of the Ministry of Health, other national organizations, and those of the international agencies that are relevant to family planning and maternal and perinatal health.

For each include:

- o Location
- o Time frame
- o Implementing organization as well as funding organization(s) purpose
- o Goals
- o Current status

### **For All of the Above**

- o Identify existing research and information that has been collected and try to obtain copies of reports for review.
- o Identify local experts and resource persons who could be involved in training/programming in maternal and peri/neonatal health.
- o Identify materials (management information system, health education) that have been developed that could be duplicated and used.
- o Identify innovative programs and techniques that have been tried with apparent success in the country; these make good case studies and presentations in workshops, and may be replicable.
- o Identify programs that could be tapped to strengthen on-going family planning and maternal-peri/neonatal health activities.

## **Country Guide for Breastfeeding Assessment**

In addition to general assessments of maternal and peri/neonatal health status, assessments of specific topical areas are often needed. This section contains an example of a country-level assessment for breastfeeding. This particular tool may be adapted for use when more information is needed about a certain topic, or when a national strategy has already determined a specific area of intervention, such as iron deficiency, syphilis, or tetanus toxoid immunization.

MotherCare participated in the development of a country-level tool for assessing activities and practices that support breastfeeding entitled **Guide for Country Assessment of Breastfeeding Practices and Promotion**. Each section of the guide is devoted to a single area of investigation related to an important aspect of a comprehensive country breastfeeding strategy. A combination of several approaches to gathering information is recommended to optimize the reliability of the resulting country profile.

The assessment tool is designed to elucidate information about current breastfeeding activities and practices, to identify supportive factors and obstacles, and to outline the gaps requiring further investigation or immediate, direct action. The assessment should lay the groundwork for an action plan which details further assessments that need to be conducted, and describes an implementation process for direct project activities. It can also function as a qualitative program "baseline" and thus can be used for a mid-term program review.

This tool offers a comprehensive reference list of important points and activities, although it is not expected that all sections will be used in each situation or country. It has been used in four countries: Ghana, Uganda, the Dominican Republic, and Bolivia. **The assessment tool plus summaries or full reports of the country assessments can be ordered from MotherCare; see references 3-7 at the end of this section for more information.**

A summary of steps from the breastfeeding guide follows. **For more information about the breastfeeding assessment guide, see reference #3 at the end of this section, page 24.**

### **STEP ONE: OBTAIN AN OVERVIEW OF THE COUNTRY CONTEXT AND REVIEW EXISTING DATA ON THE BREASTFEEDING SITUATION**

The objective of this process is to compile available statistical information

that describes the country context for assessment in order to identify the limitations and possibilities for program design within the country. Areas to be examined include the socio-economic and demographic profile; the health profile, including mortality, morbidity and nutritional status of women; and contraception and fertility.

## **STEP TWO: REVIEW THE POLICIES, PROGRAMS AND COMMERCIAL ACTIVITIES WHICH AFFECT BREASTFEEDING PRACTICES**

This step includes a review of the policy, legal and work environment which can influence breastfeeding practices, the health services sector, training programs for health care providers, information, education and communication activities, community outreach and support activities for women, financial support for breastfeeding activities, and completion of the "breastfeeding country score sheet".

Reviewing each sector means obtaining information about each component that may have an impact on breastfeeding. The breastfeeding guide contains objectives to be met for each sector, and a checklist to complete to move toward these objectives.

For instance, in the health services sector, the objective is to summarize health service delivery statistical indicators and describe prenatal, maternity, and immediate postpartum and/or infant health services delivery systems as these pertain to breastfeeding behaviors; and to assess the relative importance of the role of traditional health providers.

These objectives help to identify areas for policy change to: 1) improve the availability, content and accessibility of services supportive of breastfeeding; 2) identify the kind of work that needs to be done to know more about health services and breastfeeding practices; and 3) to identify potential areas for programmatic intervention targeted to traditional providers or their clients.

In order to achieve these objectives, the following topics are reviewed: patterns of prenatal care; protocols/norms for prenatal visits; patterns for hospital or clinic-based deliveries; summary of statistical indicators; protocols/norms for breastfeeding; existence of a teaching or model maternity hospital; patterns for immediate postpartum and infant care; items in protocol for postpartum/infant visits; knowledge, attitudes, practices (KAP) of health staff; patterns of prenatal care, deliveries and postpartum care among traditional providers; and the existence of professional associations among traditional providers.

### **STEP THREE: SUMMARIZE THE FINDINGS AND MAKE RECOMMENDATIONS**

The key to the team approach to assessment is to bring all of these individual assessments together into a single paper or final report, and then make recommendations based on these integrated findings. A summary document and workshop for disseminating the findings should be planned from the beginning. The entire process can be expected to take several months from the initiation of the preliminary literature review to a finished report from the team, with field visits and interviews confined to approximately a three week period.

#### **COMMENT:**

Lessons from experience with the breastfeeding assessment guide are relevant to team assessment approaches in general. Use of the guide shows that the best team size is generally in the range of three to four people, including a local person as team leader; another local person who works well with the team leader; and an outside person who is familiar with the process and can assist with finalizing the report. A fourth person can be involved, if necessary, for review of the final report. Areas of expertise on the team should complement each other, with one team member having strong clinical skills and experience.

This tool for conducting country-level assessments makes use of existing information to lay the groundwork for the development of a national breastfeeding program. The questions outlined below are a guide to the steps involved in assessment, but require adaptation for local use. Although many of the indicators outlined below are useful when applied to a community setting, there are also methodologies which are designed specifically for use at the national level.

**A section of the breastfeeding guide is contained as an appendix to this section, followed by the list of references on page 24.**

## COMMUNITY OUTREACH AND SUPPORT ACTIVITIES FOR WOMEN

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**OBJECTIVE:** To identify and evaluate women's support groups for their importance in supporting breastfeeding.

**USE:** To identify the types of groups and activities which are effective in supporting breastfeeding and the potential gaps in this area.

---

### ASSESSMENT TOPICS:

#### A. Support systems for women

1. Inventory different types of support systems for:
  - women in general
  - mothers with children
  - working women
2. Which of the support systems above is involved in any kind of breastfeeding support?
3. Within these systems, how is perinatal and ongoing breastfeeding support handled?
  - informal counselling
  - peer group pressure
  - formal group meetings
4. Looking at specific organizations, how do NGOs give ongoing support to breastfeeding?
  - mothers' clubs, promoters, community distributors or other mechanisms
  - home health visits
  - other?
5. How does the formal health system give ongoing support to breastfeeding?
  - Is there formal interest/commitment to breastfeeding mothers' support by health system?

- Are breastfeeding mothers' support groups involved in formal MCH programs? (e.g., nutritional supplements distribution program—coverage of lower SES women, clinic, hospital outreach, health worker training?)
6. What kind of training do those in the breastfeeding support network receive?
- traditional, observational
  - apprenticeship
  - formal training course? Type? Who does training?
7. Are there formal breastfeeding mothers' support groups?
- How are groups/meetings set up?
  - Who runs them?
  - How are groups organized?
  - Is there any coordination with BMSG networks?
  - Is BMSG work funded or not?
  - Sources of funds?
  - Are counsellors/facilitators volunteers or paid?
  - Who are the targets for breastfeeding mothers' support group work?
8. How is breastfeeding mothers' support tracked?
- Are any process evaluation indicators in place in formal health system/in breastfeeding mothers' support system?
  - Is there information on:
    - meetings, informal counselling, other activities
    - training
    - other services (documentation, referrals, education, etc.)

## **B. Conclusions**

Suggestion: Refer to guidance in section I.1, part D for writing this section.

## **C. Recommendations**

Refer to guidance given in section I.1, part E for writing this section.

## **SUGGESTED SOURCES OF INFORMATION AND METHODS:**

### **Bibliographic search**

**Bibliographic search including the legislative review done by The Clearinghouse on Maternal Nutrition and Infant Feeding and ILO and IOCU documents.**

### **Key informant interviews with:**

- **Ministry of Women's Affairs**
- **researchers (sociologists, economists)**
- **La Leche League representative**
- **local consumer group representative**
- **local breastfeeding promotion and support group representatives**

## References

1. Campbell, Koblinsky and Taylor. **Off To A Rapid Start: Appraising Maternal Health and Services.** London School of Hygiene and Tropical Medicine.
2. Tinker and Koblinsky. **Making Motherhood Safe.** World Bank Discussion Paper #202, 1993.
3. Marcia Griffiths and Mary Ann Anderson. **Guide for Country Assessment of Practices and Promotion.** MotherCare, 1993.
4. **The State of Breastfeeding in Bolivia: Practices and Promotion. Final Report.** USAID, MotherCare, the Manoff Group and LAC Health and Nutrition Sustainability. July 1992.
5. **The State of Breastfeeding in the Dominican Republic: Practices and Promotion.** USAID, MotherCare, the Manoff Group and LAC Health and Nutrition Sustainability. May 1992.
6. **The State of Breastfeeding in Ghana: Practices and Promotion.** MotherCare, John Snow, Inc. and the Manoff Group. April 1993.
7. **The State of Breastfeeding in Uganda: Practices and Promotion.** USAID, MotherCare, Manoff Group and Wellstart International. August 1993.

## **II. METHODOLOGIES FOR ASSESSING MATERNAL AND PERI/NEONATAL HEALTH AT THE COMMUNITY LEVEL**

Conducting assessments at the community level provides the micro-level perspective on maternal and peri/neonatal health. Short term assessment at the national level involves the use of existing data to plan action strategies, but such information generally does not exist at the community level.

Community level assessments generally rely on techniques that elicit information directly from community members, such as interviews, observations, the use of questionnaires, review of maternal deaths, focus group discussions, participatory research techniques, and community surveys. Qualitative methods are useful in investigating what problems exist in a community, what local perceptions of maternal and peri/neonatal health problems are, and why certain behaviors are related to these problems, while quantitative methods can be used to determine the prevalence of a particular health problem, or patterns and trends in various maternal and peri/neonatal health conditions. Community level information is often more time consuming to gather, and involves a larger commitment to collecting and analyzing data.

National programs and the assessments on which they are based rely on community level data to provide an accurate picture of the maternal and peri/neonatal health setting at the local level. As with the macro-level assessment, all possible sources of information and data should be reviewed, including hospital or health facility records, anthropological literature and existing survey data. In addition, several other factors should be considered. These include: the levels of service availability, service quality, accessibility to health services by women, the use and success of referrals for emergencies, attitudes and practices of women, practitioners and the community at large regarding maternal and peri/neonatal health issues, and the actual utilization of services by women.

This section outlines several basic methodologies and tools used to assess maternal and peri/neonatal health and to develop an information base at the community level.

## Case Review

The case review is a powerful tool for assessing the causes and conditions surrounding maternal and peri/neonatal death. Case reviews help to identify causes contributing to a maternal or peri/neonatal death and events leading up to the death through an in-depth review of these events.

The tool consists of a questionnaire used to ask family members questions about conditions surrounding a death. Each case is reviewed to determine the cause of death and is evaluated on a number of variables such as socio-economic status, number of previous births, education level, nutritional status, and most importantly, the process of decision making in recognizing and responding to the signs of serious complications. Cases are then compared to each other to determine the proportion that are affected by similar causes and identify variables which are significantly associated with the death.

In Bangladesh and Bolivia, MotherCare used a case review questionnaire designed to identify causes of still births and maternal and peri/neonatal mortality.

Box 4 provides an example of how cases were identified in Bangladesh. In particular, it is important to look for existing databases, previous community surveys, and any other sources of readily available information to identify the death cases. The questionnaire should be administered to the families of all cases. The questionnaire consists of three sections: history, verbal autopsy and process diagnosis. The purpose of each section is described below.

The **history** section of the questionnaire captures basic socio-economic and demographic information. The **verbal autopsy** involves a review of the circumstances surrounding the death of a woman of reproductive age or the death of a child in the peri-neonatal period, in order to determine the precise causes of that death. In contrast to a traditional medical autopsy, in which a medical practitioner completes a standard form certifying the cause of death, the verbal autopsy involves the use of a questionnaire to be administered to family or community members who were present.

Also, the verbal autopsy provides for a complete description of the maternal, infant or fetal deaths and thus allows a more accurate classification by medical personnel. Verbal autopsies have been done repeatedly to determine the cause of children's death and rely on an interview with the mother of the child who died. Similarly, a retrospective diagnosis of the probable cause of mortality can be obtained through a review of the circumstances surrounding pregnancy, labor, delivery and the condition of the newborn obtained through interviews with family members or others

present at the maternal death, to ascertain the cause of a maternal death.

In Inquisivi, Bolivia a similar questionnaire was used in a two year retrospective case-control study to investigate factors contributing to maternal and peri/neonatal mortality. Cases were defined as incidents of maternal and peri/neonatal mortality. Persons selected as controls were basically similar and comparable to cases but had lived following delivery. Random sampling among the list of potential controls was used to identify the final list of controls. Box 3 presents some of the findings from the study.

### **Box 3. The Inquisivi Case-Control Study**

The objectives of this two year retrospective case-control study were to identify characteristics associated with maternal and peri/neonatal mortality and stillbirths and to identify the relationship between birth and neonatal care--who attends and what specific practices are used and the deaths. The study tested the hypotheses that:

- o there are several maternal and peri/neonatal characteristics that are significantly associated with the risk of maternal mortality, stillbirths, and neonatal mortality; and
- o there is a significant relationship between certain aspects of labor and neonatal health care and the risk of stillbirth and neonatal mortality.

The study population consisted of families of all maternal and per/neonatal deaths who live in the project areas of Inquisivi, Circuata and Licoma. Cases were identified as stillbirths, maternal and peri/neonatal deaths within the previous two years. The controls were selected randomly from each sub-area, based on registration of children during the project's two years of duration. Two controls were selected for each case to increase the statistical power of the study given the small number of cases.

The case-control study results showed that mortality rates were extremely high in this population. For the two year period of study, perinatal mortality was 103/1000 births, neonatal mortality 69/1000 births, and maternal mortality 140/10,000 births. The analysis also showed that better general development characteristics of communities and families were not associated with protection from risk of perinatal and neonatal mortality. Certain maternal characteristics, including lower educational level, illiteracy and an inability to speak Spanish, were significantly associated with risk, but did not account for a substantial proportion of risk. History of a previous stillbirth or neonatal death were significantly associated with risk. Over half of women received no prenatal care. Specific complications during pregnancy and childbirth, particularly hemorrhage, were significantly associated with risk of perinatal and neonatal mortality.

Review of the process diagnosis component of the study revealed that families' decision making in the face of life-threatening maternal or peri/neonatal complications was extremely inadequate. Only one-fourth of families recognized when symptoms of a life-threatening condition appeared, and the majority of families who took some action either tried to treat the problem at home or sought inadequate care sources.

**Source: Bartlett, Alfred. *Inquisivi, Bolivia Technical Report #2*. March 23-April 3, 1991. MotherCare.**

The **process diagnosis** reviews a basic model of decision-making and health care seeking behavior, and attempts to identify both the gaps and the strengths in the process of problem recognition, decision making, logistics and service delivery which occurred along the path to the maternal or peri/neonatal death. Survey questions are asked to determine if the mother or child who died sought care, and if so, where. The process diagnosis also tries to determine who advised this type of care, if the advice was followed, and how long the mother or child was sick before given the treatment. This approach helps to determine which "system failures" are most prevalent in cases of maternal and peri/neonatal death. Box 4 contains some of the results from the questionnaire used in Bangladesh.

#### **Box 4. Results from Interviews about Cases, Bangladesh**

All cases of stillbirth and neonatal mortality which occurred in Nasirnagar in 1989 and 1990 were identified from the Save the Children (SCF) computer data base and reviewed using the verbal autopsy section of the questionnaire. In the two year study period, a total of 214 stillbirths and neonatal deaths occurred within the project area: 100 were stillbirths and 114 were neonatal deaths of infants born live. Interviewers were able to question 87 mothers of stillborn infants, 87%, and 110 mothers of infants who died in the neonatal period, 97%. Among this group of 197, two mothers had died in the two days following labor. Case histories were also obtained from their families. Considering the extremely limited case management and referral capacity in Nasirnagar at the outset of the study, it was likely that many of these deaths arose from obstetric complications and infection.

Of the 197 cases, 44.2% were classified as stillbirths, with 53% of these considered intrauterine deaths and 47% intrapartum deaths. Fifty-four percent of cases were classified as early or late neonatal deaths of infants born alive. Of these, 17% occurred on the first day, 38% on the second through the sixth day, and 45% on the seventh through the twenty-eighth days. When the cases are analyzed by maternal socioeconomic class, stillbirths and neonatal deaths are distributed fairly evenly across class. Stillbirths, in fact, appear to be concentrated among the highest socio-economic classes. When the distribution of cases is looked at by age of mother, it is clear that most of the deaths occur to women aged 20-25 years and to teenage mothers. In fact, the number of perinatal and neonatal deaths among teenage mothers is extremely high, with 44% of the total pregnancies reported in this age group resulting in such an outcome. Furthermore, the highest proportion of deaths was among first pregnancies. Of the total 784 pregnancies, only 49.2% resulted in an infant who was still alive at the conclusion of the study.

Other findings of note were that most women delivered in the homes of the husband's family (69%), but almost one third (26.4%) returned to their father's home for delivery. Sixty-two percent of all mothers reported having problems during labor. The majority of mothers (68%) reported that they had received a pelvic or vaginal exam during labor, and 48.2% had received an abdominal massage. Almost twenty-five percent had received some type of folk remedy. The main cause of intrapartum death was most commonly identified as asphyxia (76% of stillbirths). On the first day of life, prematurity and low birth weight together are responsible for the great majority of infant deaths (79%). In the two to seven day period, these continued to be important factors but acute respiratory infection (ARI) remains an important cause, and in the seven to twenty-eight day period, infection became the major cause of death.

The sources of treatment during labor and delivery demonstrate problems in health care seeking behavior. TBAs provided most of the services received by mothers during labor, with village doctors and/or traditional practitioners summoned only when the TBA encountered an unmanageable complication. Twenty-one percent of all women reported problems of malpresentation during labor, 5% reported cord compression, 5% reported antepartum hemorrhage, 9% reported fever, and 2% reported seizures. For treatment of these complications, 82.2% of women reported they were assisted only by TBAs, 10.7% reported the services of a village doctor, and 22.8 % reported the services of traditional practitioners.

**Source: Katherine Kaye. *MotherCare/Save the Children Bangladesh Project, Trip Report.* October 18-November 7, 1991.**

MotherCare experience with the case-control study in Bolivia highlighted some of the difficulties of using the case-control methodology in resource-poor settings. Findings from the Bolivia MotherCare project indicated that the type of risk factors identified in a case-control study, for instance, pregnancy at a very young age, were not necessarily those that could be addressed programmatically in countries with scarce health care resources.

Classification of risk factors included a broad range of variables which could contribute to adverse pregnancy outcomes. Unfortunately, primary referral centers did not have the capability to handle all the women identified as at risk. When the criteria for risk are too broadly defined, they cease to be closely linked with adverse outcome. In addition, concentrating medical attention only on women identified as "at risk" has not proved effective. Recent studies have found that many of the women who are identified as having "risk factors" do not actually develop life-threatening complications and that a majority of pregnancy-related deaths result from unpredicted complications, i.e. among women not identified as "at risk". Thus, MotherCare has focussed on monitoring, appropriate referral, and prompt treatment to deal with complications as they develop, whether predicted or not (World Bank, 1993).

Consequently, the MotherCare Project in Bangladesh believed that it was more practical to seek out those factors which contribute most immediately to intra- and postpartum deaths through a review of individual cases. This was done using the "verbal autopsy" and "process diagnosis" methodologies contained in the Bangladesh questionnaire as a case review technique. This methodology was found to be more time efficient, less costly and as useful as the case control study to determine specific interventions.

**In Bangladesh, the original questionnaire consisted of 174 questions and took at least one hour to complete. The questionnaire is included below, pages 30-58. The results demonstrated the usefulness of a careful review of cases for focusing interventions. A shortened version, used in Bolivia, is found on pages 59-63. References are listed at the end of this section.**

**Questionnaire: Peri/Neonatal Mortality Survey  
(Bangladesh)**

1. Name of interviewer: \_\_\_\_\_
2. Community: \_\_\_\_\_
3. Number of Household (if available): \_\_\_\_\_
4. Name of Head of Household: \_\_\_\_\_
5. Name of Informant: \_\_\_\_\_  
Relation of Informant to Infant who died: \_\_\_\_\_
6. Date of Interview: \_\_\_\_\_
7. How many living children does the mother have? \_\_\_\_\_
8. Did the last child born die? yes \_\_\_\_ no \_\_\_\_
9. If the answer to question 8 is yes, did the baby die within the first month of life?  
yes \_\_\_\_ no \_\_\_\_
10. Age of mother at time of last birth: \_\_\_\_ years
11. How many days old was the baby when s/he died? \_\_\_\_ days
12. When did the baby die?  $\frac{\quad}{\text{day}} / \frac{\quad}{\text{mo}} / \frac{\quad}{\text{yr}}$

**NOTE:** If the answers to the above questions indicate that there was no death of a child less than one month old or if the death occurred more than two years ago, you may stop the interview here. If there was an infant death within the first month of life and it occurred less than two years ago, continue with the interview.

Inform the interviewee that all questions which follow will focus on the perinatal period surrounding this infant's death. Only that pregnancy should be considered when responding to these questions.

13. When was the baby born?  $\frac{\quad}{\text{day}} / \frac{\quad}{\text{mo}} / \frac{\quad}{\text{yr}}$
14. When did you first know you were pregnant?  $\frac{\quad}{\text{mo}} / \frac{\quad}{\text{yr}}$
15. How did you know you were pregnant?
16. Did you receive any prenatal care? yes no  
If yes, proceed to questions 17 and 18. If no, skip to 19.

17. Who provided the prenatal care?

1. Government facility (Doctor)
2. Government facility (nurse)
3. Government facility (auxiliary)
4. Private doctor
5. Private nurse
6. Midwife
7. Traditional healer
8. Family member (husband, mother, mother-in-law, etc.)
9. Other

18. When did prenatal care begin? \_\_\_\_\_ months gestation

19. Did you have any problems during your pregnancy, such as:

1. Hemorrhage
2. Swelling of the face, hands and feet (3rd trimester)
3. Bad persistent headache (3rd trimester)
4. Urinary tract infection
5. Convulsions (attacks)
6. Exaggerated vomiting during the 3rd trimester
7. Other problems?

20. Did you receive any tetanus toxoid injections before the birth?

yes \_\_\_\_\_ no \_\_\_\_\_

How many doses? 1 2 3 4 5      When?

21. Are there any foods that you did not eat because you were pregnant? yes \_\_\_\_\_ no \_\_\_\_\_

If yes, what couldn't you eat?

22. Where was the baby born?

1. Hospital
2. Clinic/health center
3. Health post
4. Home
5. Other \_\_\_\_\_

23. Who attended the birth?

1. Doctor
2. Nurse
3. Auxiliary or promotor
4. Midwife
5. Husband
6. Woman herself
7. Other \_\_\_\_\_

24. Did you choose this person to attend your birth? yes no Why?

25. How long were you in labor before you gave birth?

1. less than 12 hours
2. 13-24 hours
3. 25-36 hours
4. 37-48 hours
5. 49 or more hours

26. What did the person who attended your birth do? (If the husband, other family member or the woman herself delivered the baby and this person is available to respond, ask the birth attendant directly how they delivered the baby. What did they do?)

Person responding:

1. Mother
2. Birth Attendant
3. Mother who delivered alone

How was the cord cut?

What did the attendant do to the cord after the it was cut

27. Did you or your birth attendant notice any problems while you were in labor or during the baby's delivery? Yes \_\_\_\_\_ No \_\_\_\_\_ If yes, describe.

27a. Review the following list of possible problems that may have occurred during labor with the informant. Did any of the following problems occur?

1. Breech birth (baby bottom first)
2. Transverse birth (baby sideways)
3. Cord wrapped around baby's neck
4. Baby's hand or foot first
5. Umbilical cord first
6. Hemorrhage (heavy bleeding)
7. Fever
8. Meconium (green or brown liquid)
9. Convulsions (attacks)
10. Other \_\_\_\_\_

28. Did anyone provide medical care for you and the baby during the first days after the birth? Yes \_\_\_\_\_ No \_\_\_\_\_ Who? What did they do?

29. Did you breastfeed the baby? Yes \_\_\_\_\_ No \_\_\_\_\_

When did you begin to breastfeed the baby:

Within 1st hour \_\_\_ Within 1st day \_\_\_ After 1st day \_\_\_

If breastfeeding was not begun during the first day, ask why the mother began when she did.

30. When did the mother/parents notice that there was a problem with the infant's health?

31. How did they know there was a problem? What symptoms or conditions did they notice?

- 31a. Symptoms. Review with the informant the following list of symptoms and circle the numbers of those that were present.

**GENERAL**

1. Irritable
2. Much crying
3. Weak crying
4. Difficulty nursing (due to something other than weakness)
5. Nursed weakly
6. Depressed
7. Fever
8. Hypothermia (cold)
9. Whining/ moaning
10. Apnea (stopped breathing)

**NEUROMUSCULAR**

11. Could not swallow
12. Muscular spasms
13. Rigidity
14. Convulsions (attacks)
15. Abnormal movements

**RESPIRATORY**

16. Cough
17. Nasal secretions
18. Nasal flaring
19. Noisy breathing
20. Rapid breathing
21. Breathing fatigue
22. Chest retractions (caving-in of chest cavity)

**DERMATOLOGICAL**

23. Cyanosis (purple, blue)
24. Pallid
25. Jaundiced (yellow)
26. Red skin
27. Red umbilical cord
28. Pus on umbilical cord
29. Bad odor of umbilical cord
30. Blisters
31. Blood blisters
32. Rash

**BLOOD**

33. Hemorrhage Where?

**DIGESTIVE**

34. Abdominal distention
35. No bowel movements

32. What did she/they do once they noticed that there was a problem? Did they go to a hospital, clinic, health post, traditional healer? Did they stay home and try to treat the infant

there? How? What kind of care did the infant receive? How long was this care received before the infant died?

33. Why do(es) the mother/parents think the baby died?

**IDENTIFICATION OF CASE AND FAMILY**

(to be completed at office before going to field and verified in field)

1. Category of case: \_\_\_\_\_ (1=infant death, 2=maternal death)
2. If infant death occurred after birth, age in days at death \_\_\_\_\_  
Record all relevant dates:
3. Date of infant death (dd/mm/yy): \_\_\_\_\_
4. Date of maternal death (dd/mm/yy): \_\_\_\_\_
5. Date of infant birth (dd/mm/yy): \_\_\_\_\_
6. Questionnaire number: \_\_\_\_\_
7. Impact Area Name and Code: \_\_\_\_\_
8. Village Name and Code: \_\_\_\_\_
9. House number: \_\_\_\_\_
10. Family nuclear unit number: \_\_\_\_\_
11. Individual number of mother: \_\_\_\_\_  
(and, if this is a case of maternal mortality, of relative who is responding \_\_\_\_\_)
12. Mother's first and last name: \_\_\_\_\_  
(or if this is a case of maternal mortality, first and last names of relative who is responding)
13. Father's first and last name: \_\_\_\_\_
14. Mother's age at time of case pregnancy: \_\_\_\_\_
15. Name of TBA who attended during case pregnancy:
16. Indicate whether TBA was trained or untrained: \_\_\_\_\_  
(code: 1=trained 2=untrained 3=no TBA attended)
17. Indicate number of tetanus shots mother had received before pregnancy.
18. Indicate number of tetanus shots mother received during case pregnancy.

**SOCIO-ECONOMIC STATUS AND FAMILY PLANNING INFORMATION**

(The questions in this section are to be answered for all cases. Questions 16-22 are to be answered by the PDW from her knowledge of the family and from observation.)

19. How many people eat together? \_\_\_\_\_
20. Does mother belong at this time to a Women's Savings Group?  
code: 1=yes 2=no 3=unknown

Answer the next questions by consulting VDW:

21. How is this family's present socioeconomic status classified? \_\_\_\_\_  
code: 1=A 2=B 3=C 4=D
22. Does the PDW think this is still appropriate? \_\_\_\_\_  
code: 1=yes 2=no
23. If not, what should the family's status be? \_\_\_\_\_  
code: 1=A 2=B 3=c 4=D
24. Who is head of household? \_\_\_\_\_  
code: 1=husband; 2=father-in-law; 3=father; 4=other  
specify: \_\_\_\_\_; 5=unknown
25. Indicate all occupations of household head:  
code: 1=yes 2=no  
household work \_\_\_\_\_  
farmer \_\_\_\_\_  
service \_\_\_\_\_  
trade \_\_\_\_\_  
day laborer \_\_\_\_\_  
beggar \_\_\_\_\_  
unemployed \_\_\_\_\_  
student \_\_\_\_\_  
retired \_\_\_\_\_  
unknown \_\_\_\_\_  
other: \_\_\_\_\_
26. How many additional earning members of the household are there, in addition to household head? \_\_\_\_\_

(The next questions are to be answered by asking mother.)

27. Indicate which of these places mother goes to:  
code: 1=yes 2=no  
never leaves home \_\_\_\_\_  
to WSG meeting \_\_\_\_\_  
to PHC clinic \_\_\_\_\_  
to immunization camp \_\_\_\_\_  
to market \_\_\_\_\_  
other \_\_\_\_\_

28. Answer this question by asking PDW privately:  
 Does mother use family planning? \_\_\_\_\_  
 code: 1 = yes; 2 = no; 3 = unknown

**OBSTETRIC HISTORY BEFORE THE SUBJECT PREGNANCY**

(This section refers to history before the case pregnancy, not before any more recent pregnancies. It is to be filled out for all infant and maternal cases.)

29. For each previous pregnancy, use the following codes to indicate outcome of pregnancy in terms of occurrence and time of infant death. Then, beside each code designation, indicate total number of pregnancies with that specific outcome. Indicate here total number of pregnancies: \_\_\_\_\_

codes	total with code
1 = born dead before 8 lunar months	_____
2 = born dead after 8 lunar months	_____
3 = died during labor/delivery	_____
4 = died in first 7 days of life	_____
5 = died in first 28 days of life	_____
6 = died in first year of life	_____
7 = died before 5 years	_____
8 = died at other time	_____
9 = still alive	_____

pregnancy #:                      code

30. For each previous pregnancy, use the following codes to indicate outcome of pregnancy. Beside each code designation, indicate number of pregnancies with given:

code	total with code
1 = born before its time	_____
2 = smaller than a normal baby when born	_____

total with code

code	total with code
1 = born before its time	
2 = smaller than a normal baby when born	

pregnancy #:                      code

31. What is interval in months between previous birth and case birth? (to calculate:  
 enter birth date of case birth (dd/mm/yy): \_\_\_\_\_  
 enter birth date of previous birth (dd/mm/yy) \_\_\_\_\_)

**MOTHER'S PRESENT NUTRITIONAL AND PREGNANCY STATUS**

(This section should be filled out for all case mothers who are still alive.)

32. (The PDW should enter the mother's upper arm circumference or color code) \_\_\_\_\_
33. Is mother pregnant now? \_\_\_\_\_ (code: 1=yes 2=no 3=unknown)
34. If yes, how many months? \_\_\_\_\_
35. Were any children born to this mother after her case pregnancy? \_\_\_\_  
(code: 1=yes 2=no)
36. What is mother's present age? \_\_\_\_\_

**INFORMATION ABOUT THE CASE**

(As much of this information as possible should be obtained for all infant and maternal cases, even if mother and fetus died during pregnancy.)

**PREGNANCY**

37. Indicate with the following codes whether any of the following problems occurred during the case pregnancy: code: 1=yes 2=no 3=cannot remember

- |   |       |
|---|-------|
| no problems in pregnancy                      | _____ |
| hemorrhage before third trimester             | _____ |
| hemorrhage after third trimester              | _____ |
| facial and hand edema (3rd trimester)         | _____ |
| strong and permanent headache (3rd trimester) | _____ |
| urinary tract infection (pain on urination)   | _____ |
| vaginal infection                             | _____ |
| dizziness                                     | _____ |
| more than normal vomiting                     | _____ |
| more than normal nausea/loss of appetite      | _____ |
| seizures                                      | _____ |
| fever   | _____ |
| falls   | _____ |
| <u>shutika</u>                                | _____ |

38. if shutika occurred, indicate which of the following symptoms were present:  
code: 1=yes 2=no 3=cannot remember

- |             |       |
|-------------|-------|
| indigestion | _____ |
| diarrhea    | _____ |
| weakness    | _____ |
| dizziness   | _____ |
| leukorrhea  | _____ |

39. Ask PDW privately if mother was ever beaten during pregnancy. code: 1=yes 2=no
40. Did mother have any problems before pregnancy that continued during pregnancy? code:  
1=yes 2=no
41. If mother had problems before pregnancy that continued during pregnancy, please specify:  
(develop code after reviewing answers)

42. If any problems occurred during pregnancy, indicate from whom mother sought advice.  
code: 1=yes 2=no 3=cannot remember

- mother-in-law \_\_\_\_\_
- MCH PC \_\_\_\_\_
- mother \_\_\_\_\_
- sister-in-law \_\_\_\_\_
- husband \_\_\_\_\_
- other relative \_\_\_\_\_
- friend \_\_\_\_\_
- TBA \_\_\_\_\_
- PDW \_\_\_\_\_
- other \_\_\_\_\_
- (specify other: \_\_\_\_\_)

43. If mother received any treatments during pregnancy, indicate in the following chart from whom she received them (using the codes given below), and verbally describe treatment and reason administered. code: 1=yes 2=no

<u>person who administered treatment</u>	<u>code</u>	<u>describe treatment</u>	<u>indicate reason for treatment</u>
MCH PC			
MA			
hospital M.D.			
village doctor			
TBA			
<u>kobiraj</u>			
<u>mullah/pir</u>			

44. Did mother spend most of pregnancy (i.e., more than five months) living in impact area or elsewhere? code: 1=in impact area; 2=elsewhere; 3=unknown

45. If mother spent most of pregnancy living outside of impact area, specify place. (code after examining answers to this question.)

46. Was mother invited to participate in SCF prenatal care program?  
code: 1=yes 2=no 3=unknown

47. Did mother attend SCF prenatal care program?  
code: 1=yes 2=no 3=unknown

48. What did mother think about prenatal care?  
code: 1=useful 2=not useful 3=no opinion 4=unknown

**LABOR AND DELIVERY**

(This section should be filled out for all cases of infant death, unless the infant died during pregnancy, and for all cases of maternal death, unless mother died before entering labor.)

49. Did the baby move in the days just before labor? code: 1=yes 2=no 3=unknown

50. How many months did the pregnancy last?
51. Was this a multiple pregnancy? code: 1=yes 2=no 3=unknown
52. Where was the baby born?  
code: 1=at the husband's family home  
2=at the home of mother's father  
3=Upazilla hospital  
4=District hospital  
5=other \_\_\_\_\_
53. If baby was not born in village (at home of husband's family), how many weeks before delivery did mother move to where baby was born?
54. Indicate with the codes below what made the mother think that what she identified as labor pains had started: code: 1=yes 2=no  
pain describe: \_\_\_\_\_  
show  
contractions  
other  
unknown
55. How long by the mother's perception did labor pains last?  
code: 1= one-fourth day  
2= one-half day  
3= three-quarters day  
4= one day  
5= one and one-half days  
6= two days  
7= more than two days  
8= unknown
56. How long did the mother experience regular, strong contractions which increased in frequency? code: as above
57. How long before labor did the fetal membranes (water) break?  
code: 1=during delivery  
2=less than one-fourth day before delivery  
3=one-fourth to one-half day before delivery  
4=one-half to one day before delivery  
5=more than one day before delivery
58. Indicate with the codes below all those who spent time in the room with the mother during labor.  
code: 1=not present 2=present and actively helped  
3=present but did not actively help

mother-in-law	_____
mother	_____
sister-in-law	_____
other relative	_____
friend	_____
TBA	_____

VDW \_\_\_\_\_  
 MCH PC \_\_\_\_\_  
 husband \_\_\_\_\_  
 no one \_\_\_\_\_  
 other \_\_\_\_\_ (specify: \_\_\_\_\_)

59. Was mother given anything to eat or drink during labor?  
 code: 1=yes 2=no 3=unknown

60. Indicate with codes below all present with mother during delivery.  
 code: 1=not present 2=present and actively helped  
 3=present but did not actively help

mother-in-law \_\_\_\_\_  
 mother \_\_\_\_\_  
 sister-in-law \_\_\_\_\_  
 other relative \_\_\_\_\_  
 friend \_\_\_\_\_  
 TBA \_\_\_\_\_  
 VDW \_\_\_\_\_  
 MCH PC \_\_\_\_\_  
 husband \_\_\_\_\_  
 no one \_\_\_\_\_  
 other \_\_\_\_\_ (specify: \_\_\_\_\_)

61. How long before delivery did mother begin to push down?  
 code:  
 1=from the very first moment the contraction started (pushed all through labor)  
 2=only when the baby was about to come out  
 3=a few hours before birth  
 4=started to push but stopped later  
 5=she did not push  
 6=unknown

Indicate who advised mother on when to start pushing, using the codes below.  
 code: 1=gave advice 2=did not give advice

mother-in-law \_\_\_\_\_  
 mother \_\_\_\_\_  
 sister-in-law \_\_\_\_\_  
 other relative \_\_\_\_\_  
 friend \_\_\_\_\_  
 TBA \_\_\_\_\_  
 VDW \_\_\_\_\_  
 MCH PC \_\_\_\_\_  
 husband \_\_\_\_\_  
 no one \_\_\_\_\_  
 other \_\_\_\_\_ (specify: \_\_\_\_\_)

62. Indicate with codes below whether mother had any of the following problems during labor and delivery. code: 1=yes 2=no 3=cannot remember  
 no problem \_\_\_\_\_  
 abnormal breech (buttocks) presentation \_\_\_\_\_  
 abnormal breech (podalic) presentation \_\_\_\_\_

prolapse of extremity (hand or foot) \_\_\_\_\_  
 meconium staining of amniotic fluid \_\_\_\_\_  
 transverse lie \_\_\_\_\_  
 umbilical cord wrapped around baby's neck \_\_\_\_\_  
 umbilical cord prolapse \_\_\_\_\_  
 hemorrhage \_\_\_\_\_  
 fever \_\_\_\_\_  
 seizures \_\_\_\_\_  
 exhaustion \_\_\_\_\_  
 other \_\_\_\_\_ (specify: \_\_\_\_\_)

63. Next to each of the following treatments that the mother might have received during labor and delivery, indicate in the table all persons who administered the treatment (using the codes below): codes: 1=yes 2=no

treatments:	TBA	MCH	village	kobir-	mother-	other
	—	PC	doctor	al	in-law	—

massage  
 abdominal  
 binding  
 external  
 version  
 vaginal  
 examination  
 pressure on  
 uterine fundus  
 internal version  
 pulling on pro-  
 lapsed body parts  
 injection for  
 pushing  
 oral medicine  
 for pushing  
 other injection  
 specify \_\_\_\_\_  
 other oral medicine  
 specify \_\_\_\_\_  
 folk remedy  
 specify \_\_\_\_\_  
 other  
 specify \_\_\_\_\_

Indicate here if no treatment administered

64. In what maternal position was labor and delivery conducted?

code: 1=lying down on her back  
 2=kneeling down  
 3=on hands and knees  
 4=squatting down  
 5=other  
 6=unknown

65. What was baby born on to? \_\_\_\_\_

- code: 1=gunny bags  
2=clean kantha  
3=dirty kantha  
4=washed saris  
5=unwashed saris  
6=bed  
7=other  
8=unknown

66. Where did delivery occur? \_\_\_\_\_

- code: 1=in un-partitioned room of house  
2=behind partition in house  
3=in separate hut  
4=other  
8=unknown

67. When was TBA called? \_\_\_\_\_ (code after reviewing responses)

68. What did TBA do upon arrival? \_\_\_\_\_ (code after reviewing responses)

69. What things did the TBA ask for on arrival? \_\_\_\_\_  
(code after reviewing responses)

**DELIVERY OF THE PLACENTA**

(This section should be filled out for all cases except those where death of mother or infant occurred during pregnancy, or during labor/delivery before expulsion of placenta.)

70. How long was it before the placenta was ejected?  
code: 1=very quickly after baby (faster than usual)  
2=normal time  
3=slower than normal  
4=unknown

71. Indicate what routine assistance was given to help eject the placenta using codes below.  
code: 1=yes 2=no

provoke nausea \_\_\_\_\_  
specify how \_\_\_\_\_  
provoke cough \_\_\_\_\_  
specify how \_\_\_\_\_

pull cord \_\_\_\_\_  
manual extraction \_\_\_\_\_  
drink water left from washing husband's feet \_\_\_\_\_  
apply pressure to (step on) abdomen \_\_\_\_\_  
other \_\_\_\_\_  
specify what \_\_\_\_\_

72. Indicate what was done to help expel a delayed placenta, using codes below.  
code: 1=yes 2=no

provoke nausea \_\_\_\_\_  
specify \_\_\_\_\_  
provoke cough \_\_\_\_\_  
specify \_\_\_\_\_  
pull cord \_\_\_\_\_  
drink water left from washing husband's feet \_\_\_\_\_  
apply pressure to (step on) abdomen \_\_\_\_\_  
manual extraction (intra-uterine) \_\_\_\_\_  
other \_\_\_\_\_  
specify what \_\_\_\_\_

73. If manual extraction of delayed placenta was done, who did it? \_\_\_\_\_

code: 1=same TBA who delivered baby  
2=a different TBA  
3=other \_\_\_\_\_  
4=unknown

74. If different TBA was called to help with delayed

code 1=she was perceived as being more experienced due to training  
2=she was perceived as being more experienced due to age/years of practice  
3=other (specify: \_\_\_\_\_ )

75. If manual extraction of delayed placenta was done, how was it done?  
(code after examining answers)

76. If placenta was delayed and was not removed by efforts of TBA, who first decided help was needed?  
code: 1=TBA  
2=VDW  
3=mother-in-law  
4=husband  
5=other relative  
6=friend  
7=other (specify: \_\_\_\_\_)  
8=unknown
77. If the decision was made that help was needed for a delayed placenta, who first decided to seek help? code: as in #
78. If the decision was made to seek help for a delayed placenta, who first decided to bring help?  
code: as in #
79. If help for a delayed placenta was sought, was the MCH PC, MA, or hospital eventually contacted? code: 1=yes 2=no
80. Did the TBA check to see if the entire placenta was expelled?  
code: 1=yes 2=no
81. If the placenta was not completely expelled, did the TBA try any additional measures?  
code: 1=yes 2=no
82. If the TBA tried additional measures to obtain complete expulsion of the placenta, specify those measures: (code after examining answers.)
83. If the placenta was not completely expelled, who first decided that there was a problem?  
code: as in #
84. If it was decided that incomplete expulsion of the placenta was a problem, who first decided to seek help? code: as in #
85. If it was decided to seek help for incomplete expulsion of the placenta, who decided to bring help? code: as in #
86. If help for an incompletely expelled placenta was sought, was the MCH PC, MA or hospital eventually contacted? code: 1=yes 2=no
87. Was there bleeding after delivery of baby? code: 1=yes 2=no
88. How much blood was lost?  
code: 1=very little; stopped spontaneously  
2=normal amount  
3=just a little, but it didn't stop  
4=uncontrollable  
5=unknown

89. If bleeding was severe, who decided it was severe?  
 code: 1=TBA  
 2=VDW  
 3=mother-in-law  
 4=husband  
 5=other relative  
 6=friend  
 7=other  
 8=no help was sought  
 9=unknown
90. If bleeding after delivery of baby was severe, how long after bleeding started was the decision to seek help made?  
 code: 1=immediately  
 2=after only a few other things were done  
 3=a long time after baby was delivered  
 4=no help was sought  
 5=unknown
91. Who decided that help was needed if bleeding was severe? code as in #
92. Who decided to get help if bleeding was severe? code as in #
93. If help was sought because of bleeding after delivery of placenta, from whom was help first sought?  
 code: 1=VDW  
 2=MCH PC  
 3=village doctor  
 4=another TBA  
 5=kobiraj  
 6=provider of means of transport to carry mother to hospital  
 7=other \_\_\_\_\_  
 8=unknown
94. If help was sought because of bleeding after delivery, did the family eventually go to the MCH PC, MA or hospital? code: 1=yes 2=no
95. If help was sought because of bleeding after delivery, what was done to control the bleeding?  
 code: 1=uterine massage (describe \_\_\_\_\_)  
 2= injection (specify: \_\_\_\_\_)  
 3=oral medicine (specify: \_\_\_\_\_)  
 4=folk medicine (specify: \_\_\_\_\_)  
 5=other (specify: \_\_\_\_\_)

#### **POSTPARTUM AND PUERPERIUM MATERNAL CARE**

96. What type of care was given to the mother after the delivery?  
 code: 1=yes 2=no 3=cannot remember

mother was bathed \_\_\_\_\_  
 extra clothes were wrapped around mother \_\_\_\_\_

abdominal binding \_\_\_\_\_  
 (specify how \_\_\_\_\_)  
 mother was fed \_\_\_\_\_  
 (specify if any traditional food \_\_\_\_\_)  
 nothing was done \_\_\_\_\_  
 other \_\_\_\_\_  
 (specify \_\_\_\_\_)

97. Were mother's surroundings cleaned? code: 1=yes 2=no 3=cannot remember

98. How many days did lochia last? \_\_\_\_\_

99. Were the lochia foul smelling? \_\_\_\_\_

100. Was there fever in the first week after delivery? \_\_\_\_\_  
 code: 1=yes 2=no

101. If there was fever after delivery, how many days after delivery did it start?

102. If there was fever after delivery, how many days did last? \_\_\_\_\_

103. If there was fever after delivery, was it a high fever? code: 1=yes 2=no

104. If there was fever after delivery, was it accompanied by chills?  
 code: 1=yes 2=no

105. If there was fever after delivery, did it end when the mother's milk came in?  
 code: 1=yes 2=no

106. For each of the following activities that might have been performed to treat fever, indicate in the table below using the codes given who performed the activity:  
 code: 1=yes 2=no

activity	person performing activity					
	TBA	MCHPC	village doctor	kobiraj	mother-in-law	other
medicine						
special food						
local remedy						
specify:						
other						
specify:						

107. If treatment for fever was sought, who recommended treatment be sought?  
 code: 1=TBA  
 2=PDW/VDT  
 3=mother-in-law  
 4=husband  
 5=other relative or friend

6=village doctor  
7=other (specify: \_\_\_\_\_)

108. How many days after birth passed before mother started walking about?  
(Indicate 0 if same day.)
109. What materials were used to absorb postpartum discharge?  
(code after seeing responses.)
110. Did the mother suffer from breast engorgement? code: 1=yes 2=no
111. If the mother had breast engorgement, was the condition treated? code: 1=yes 2=no
112. If breast engorgement was treated, specify how:  
code: 1=hot compresses  
2=expressed milk  
3=medicine from MCH PC  
4=medicine from village doctor  
5=folk remedy (specify: \_\_\_\_\_ )  
6=other (specify: \_\_\_\_\_ )
113. If breast engorgement occurred, describe what happened to feeding of child.  
(code after seeing responses.)

#### NEONATAL CARE

(Questions 100-102 should be filled out for all infants, whether the infant was born alive or dead.)

114. What was infant's sex? code: 1=female 2=male
115. How did this baby's size seem to you compared to size of most other babies you have seen? \_\_\_\_\_  
code: 1=much smaller  
2=a little smaller  
3=same size  
4=a little larger  
5=much larger  
6=do not remember
116. Indicate if any of the following abnormalities were present in the newborn:  
code: 1=yes 2=no
- |                        |       |
|------------------------|-------|
| no abnormalities       | _____ |
| bad odor               | _____ |
| bruises, cuts, scrapes | _____ |
| maceration (wet baby)  | _____ |
| broken bone            | _____ |
| collapse of cranium    | _____ |
| congenital deformities | _____ |
| (specify: _____)       |       |

(All other questions in this section should be filled out only if the infant was born alive.)

117. For each of the following activities that might have been performed after birth, indicate in the following table when the activity was performed and who performed it, using the codes below:

- codes for when: 1=immediately after birth  
 2=not immediately after birth but before delivery of placenta  
 3=shortly after delivery of placenta  
 4=long after delivery of placenta  
 5=do not remember
- codes for who: 6=TBA  
 7=MCH PC  
 8=PDW  
 9=mother-in-law  
 10=husband  
 11=other relative or friend  
 12=other (specify: \_\_\_\_\_)  
 13=do not remember

Indicate here if none of these activities were done

activity	when	who
cleaned out mouth	_____	_____
wrapped in cloth	_____	_____
bathed	_____	_____
placed next to mother	_____	_____
other (specify: _____)	_____	_____

118. Indicate which of the following were done to stimulate the baby to cry or to resuscitate it. Use the same codes as above.

activity	when	who
breathing into baby's mouth	_____	_____
milking cord	_____	_____
heating placenta	_____	_____
sprinkling water on umbilicus or head	_____	_____
other (specify: _____)	_____	_____

If nothing was done to stimulate baby to breathe on its own or to resuscitate it, indicate which of the following applied:

- code: 1=baby breathed on its own; no resuscitation needed  
 2=baby did not breathe on its own, but no resuscitation was attempted

119. Where was baby placed after birth?

- code: 1=beside mother  
 2=in same room as mother but different area  
 3=other (specify: \_\_\_\_\_)

120. What was the baby's condition with respect to the following activities at birth and shortly after birth (about 5 minutes after birth)?

at birth

shortly after

crying

code: 0=none; 1=weak; 2=strong; 3=cannot remember

movements

code: 0=none; 1=very little; 2=normal; 3=cannot remember

skin color

code: 0=pale; 1=blue (dark); 2=normal; 3=cannot remember

breathing

code: 0=did not breathe;

1=very shallow;

2=with grunting;

3=normal; 4=cannot remember)

121. When was the umbilical cord cut?

code: 1=immediately after birth

2=not immediately (but before placenta expelled)

3=after the placenta was delivered

122. What was used to cut the cord?

code: 1=broken glass, bangle

2=knife

3=new razor blade

4=old razor blade

5=scissors

6=split bamboo

7=other (specify: \_\_\_\_\_)

123. How was the instrument used to cut the cord disinfected?

code: 1=with alcohol or other antiseptic

2=washed with water

3="boiled" in water which really was not boiling

4=truly boiled

5=wiped with a piece of cloth

6=did not disinfect at all

7=cannot remember

124. When was the instrument used to cut the cord disinfected?

code: 1=immediately before delivery

2=during labor

3=before day of labor

125. Who disinfected the instrument used to cut cord?

code: 1=TBA

2=mother

3=mother-in-law or other relative

4=other (specify: \_\_\_\_\_)

5=unknown

126. What was used to tie the cord?  
code: 1=thread  
2=other material (specify):
127. How was the material used to tie the cord disinfected? code: as in #
128. When was the material used to tie the cord disinfected? code: as in #
129. Who disinfected the material used to tie the cord? code: as in #

130. What was placed on the umbilical cord stump? \_\_\_\_\_  
code: 1=nothing  
2=gencian violet  
3=vermillion  
4=ash  
5=sulfa powders  
6=bacitracin (antibiotic ointment)  
7=other (specify: \_\_\_\_\_)

131. How did baby suck on first day? \_\_\_\_\_  
code: 0=baby did not suck  
1=baby sucked weakly  
2=baby sucked vigorously  
3=baby was not offered breast or other object  
4=unknown

132. Indicate how any of the materials listed in the table below were given to the baby to suck during the first three days, using codes below:  
code: 1=from breast  
2=spoon  
3=dropper  
4=artificial nipple  
5=finger  
6=moist cloth

material	method by which given
colostrum	_____
honey	_____
sugar water	_____
cow's/goat's milk	_____
cow's/goat's milk + water	_____
other (specify: _____)	_____

133. During day 1 did baby urinate? code: 1=yes 2=no 3=unknown
134. During day 1 did baby defecate? code: 1=yes 2=no 3=unknown

**NEONATAL CARE IN THE FIRST MONTH OF LIFE**

(This section should be answered for all infants who were born live.)

135. How many days after birth did breastfeeding begin?  
code: 1=immediately after birth  
2=on the first day after birth  
3=on the second day  
4=on the third day  
5=after the third day  
6=baby was never breast fed because of maternal or congenital problems  
7=baby was never breast fed, no maternal or congenital problems  
8=unknown

136. If one or more of the following substances were given to the baby during the first month of life, indicate how they were given using the codes below:

code: 1=from breast  
2=spoon  
3=dropper  
4=artificial nipple  
5=finger  
6=moist cloth  
7=other (specify: \_\_\_\_\_)

material	how given
breast milk	_____
water + sugar	_____
honey	_____
cow's or goat's milk only	_____
cow's or goat's milk + water	_____
barley water	_____
another woman's milk	_____
other (specify: _____)	_____

137. Did mother completely stop breastfeeding her baby at any point in the first month?  
code: 1=yes 2=no 3=unknown

138. If mother completely stopped breastfeeding at any point in the first month, why did she stop? code: 1=mother was sick (specify: \_\_\_\_\_)

2=breasts were sore

3=mother died

4=she was advised not to continue

(specify who gave her this advice and for what reason):

5=mother died

6=other (specify: \_\_\_\_\_)

139. If mother completely stopped breastfeeding at any point in the first month, how long was it before she resumed breast feeding?

code: 1=never resumed

2=one day

3=one week

4=more than one week

140. If mother completely stopped breastfeeding at any point, indicate how any of the following substances were given to the infant. (code as in # )

breast milk from another woman \_\_\_\_\_  
sugar + water \_\_\_\_\_  
honey \_\_\_\_\_  
cow's or goat's milk only \_\_\_\_\_  
cow's or goat's milk + water \_\_\_\_\_  
barley water \_\_\_\_\_  
other (specify: \_\_\_\_\_ )

141. How was the umbilical cord cared for until it fell off? code: 1=yes 2=no

nothing \_\_\_\_\_  
gentian violet \_\_\_\_\_  
vermillion \_\_\_\_\_  
ash \_\_\_\_\_  
sulfa powder \_\_\_\_\_  
bacitracin (antibiotic ointment) \_\_\_\_\_  
hot compress made with heated material in sack \_\_\_\_\_  
hot compress (mother's warmed hand) \_\_\_\_\_  
other (specify: \_\_\_\_\_ )  
unknown \_\_\_\_\_

142. How many days after birth was the baby cleansed?

143. How was the baby cleansed?

code: 1=bathe with water  
2=bathed with water and soap or other cleaning agent (specify \_\_\_\_\_)  
3=wiped with damp cloth  
4=wiped with dry cloth  
5=other (specify \_\_\_\_\_)

144. How often was the baby bathed or cleansed?

code: 1=two times per day  
2=once each day  
3=every other day  
4=other (specify: \_\_\_\_\_)

145. Indicate which of the following people checked the baby during its first month of life (BEFORE the final illness, as part of a routine check).

code: 1=yes 2=no  
\_\_\_\_ MCH PC  
\_\_\_\_ MA  
\_\_\_\_ TBA  
\_\_\_\_ village doctor  
\_\_\_\_ PDW/VDT  
\_\_\_\_ traditional healer  
\_\_\_\_ pir/mullah  
\_\_\_\_ other (specify: \_\_\_\_\_)

146. If the baby suffered from any illness DIFFERENT from the one he or she died from, indicate which of the following illnesses the baby had:  
code: 1=yes 2=no

acute respiratory infection \_\_\_\_\_  
diarrhea \_\_\_\_\_  
jaundice \_\_\_\_\_  
conjunctivitis \_\_\_\_\_  
convulsions \_\_\_\_\_  
fever \_\_\_\_\_  
skin infection \_\_\_\_\_  
omphalitis \_\_\_\_\_  
thrush \_\_\_\_\_  
other = (specify: \_\_\_\_\_)

147. Indicate which of the following people saw the baby during any illnesses that preceded the illness which caused the baby's death: code: 1=yes 2=no

\_\_\_ PDW/VDT  
\_\_\_ TBA  
\_\_\_ MCH PC  
\_\_\_ MA  
\_\_\_ village doctor  
\_\_\_ kobiraj  
\_\_\_ mullah/pir  
\_\_\_ other (specify: \_\_\_\_\_)

148. If yes, who saw the child during this illness?

code: 1=PDW/VDT only  
2=MCH PC  
3=village doctor  
4=TBA  
5=traditional healer  
6=other (specify: \_\_\_\_\_)

**CHILD'S VERBAL AUTOPSY (DESCRIPTION OF ILLNESS THAT CAUSED DEATH OF CHILD)**

Fill this out for every newborn that survived labor and delivery but died on or before the 28th day of life.

149. At what age (in days) did the child die? \_\_\_\_\_

150. Indicate whether each of the following symptoms was present (code = 1) or absent (code = 0) during child's final illness.

For each symptom that was present, indicate the number of days before death that it started:

<b>SYMPTOMS</b>	<b>ABSENT</b>	<b>PRESENT</b>	<b>NUMBER OF DAYS BEFORE DEATH</b>
<b>GENERAL</b>			
difficulty sucking			
weak sucking			
stopped sucking			
too much crying			
weak crying			
generally inactive			
fever			
too cold			
fast breathing			
grunting/moaning during breathing			
moments without breathing			
thrush			

<b>SYMPTOMS</b>	<b>ABSENT</b>	<b>PRESENT</b>	<b>NUMBER OF DAYS BEFORE DEATH</b>
<b>NEUROMUSCULAR</b>			
trismus			
could not swallow			
muscular spasm			
muscular rigidity			
seizures			
abnormal movements			

<b>SYMPTOMS</b>	<b>ABSENT</b>	<b>PRESENT</b>	<b>NUMBER OF DAYS BEFORE DEATH</b>
<b>RESPIRATORY</b>			
coughing			
nasal secretion			
nasal flaring			
noisy breathing			
rapid breathing			
thirst for air (gaspng)			
intercostal retractions			

<b>SYMPTOMS</b>	<b>ABSENT</b>	<b>PRESENT</b>	<b>NUMBER OF DAYS BEFORE DEATH</b>
<b>DERMATOLOGIC</b>			
cyanosis (bluish)			
pale			
jaundice (skin and sclerae)			
red skin generally			
red umbilicus			
pus from umbilicus			
stench from umbilicus			
vesicles (blisters with clear fluid)			
pustules (blisters with pus or crusted lesions)			
petechia			
rash			

<b>SYMPTOMS</b>	<b>ABSENT</b>	<b>PRESENT</b>	<b>NUMBER OF DAYS BEFORE DEATH</b>
<b>BLOOD</b>			
hemorrhage (specify from where)			

<b>SYMPTOMS</b>	<b>ABSENT</b>	<b>PRESENT</b>	<b>NUMBER OF DAYS BEFORE DEATH</b>
<b>GASTROINTESTINAL</b>			
abdominal distension			
vomiting			
constipated			
diarrhea			
bloody stools			

Before writing a narrative of the Infant's final illness, answer the following questions:

151. Did baby cry at birth? If it cried, did it cry strongly or weakly?
152. Was this baby well for some time before its illness?
153. If convulsions were present, were they present since birth?
154. Did the baby suck well at any time after birth?
155. If the baby ever turned red, what else was happening at that time?
156. If the baby ever turned blue, what else was happening at that time?
157. When the baby died, was it convulsing or having spasms or was it apathetic and floppy?

Interviewer should write below a narrative of the lethal disease's history and give his or her personal opinion about its cause.

At central office, probable cause of death should be assigned to child's terminal illness based on the above symptoms and history.

158. Probable cause of death: \_\_\_\_\_  
(Develop codes for cause of death after reviewing data.)

**PROCESS DIAGNOSIS  
(STUDY OF THE DECISIONS MADE IN THE CASE OF SERIOUS MATERNAL OR INFANT ILLNESS)**

This section should be filled out for all infant and maternal deaths. In order to answer these questions, the interviewer may find it best to listen to the mother's story and answer the questions him- or herself.

159. Identify type of case:  
 Infant death:  
 code: 1=Infant death before beginning of labor  
 2=stillborn:Infant death during labor/delivery  
 3=Infant death during first day of life  
 4=Infant death after first, up to and including seventh day  
 5=Infant death after seventh up to and including 28th day  
 Maternal death:  
 6=maternal death during pregnancy  
 7=maternal death during labor/delivery  
 8=maternal death in 40 days following pregnancy
156. Indicate the people who made decisions about treatments that the case did or did not receive. code: 1=yes 2=no
- \_\_\_ TBA  
 \_\_\_ MCH PC  
 \_\_\_ MA  
 \_\_\_ PDW/VDT  
 \_\_\_ other medical personnel \_ (specify: )  
 \_\_\_ village doctor  
 \_\_\_ mother-in-law  
 \_\_\_ husband  
 \_\_\_ other relative (specify: \_\_\_\_\_)  
 \_\_\_ friend \_\_\_ (specify: \_\_\_\_\_)  
 \_\_\_ other (specify: \_\_\_\_\_)
157. WHAT symptom(s) first made you think that the baby or mother was dangerously ill?  
 (code after reviewing answer at central office):  
 1=appropriate symptom was recognized as indicating danger  
 2=inappropriate symptom was recognized as indicating danger  
 3=no symptom was recognized as indicating danger
158. WHEN did you first recognize that the baby or mother was seriously ill?  
 (code after reviewing answer at central office):  
 1=baby or mother were recognized as being seriously ill in time for valid intervention to have occurred  
 2=baby or mother were NOT recognized as being seriously ill in time for valid intervention to have occurred  
 3=baby or mother were NEVER recognized as being seriously ill
159. When it was decided that the problem was serious (if this decision was made), who did family consult for advice?
160. After family consulted someone and if they decided help would be sought, from whom did they decide to seek help? (code after reviewing answer at central office):  
 1=source of help which family sought was appropriate  
 2=source of help which family sought was NOT appropriate  
 3=no help was sought
161. Why did you decide to seek help from this particular source?  
 code: 1=believed myself that it would be most effective  
 2=was advised that this was an effective source  
 3=other (specify: \_\_\_\_\_)

162. If the code for # is "source of help was not appropriate", indicate why did family not seek help from an appropriate source. code: 1=yes 2=no

- appropriate care was too expensive \_\_\_\_\_
- transportation was too expensive \_\_\_\_\_
- travel time to appropriate care too great \_\_\_\_\_
- believed inappropriate help would be adequate \_\_\_\_\_
- did not trust appropriate source of help \_\_\_\_\_
- other \_\_\_\_\_ (specify: \_\_\_\_\_)

163. At some point during the time family was looking for help, did it ever go to SCF personnel (e.g., MCH PC or MA)? code: 1=yes 2=no

164. If family did not go to SCF personnel, why did it decide not to use SCF services?

165. If family did not seek help from SCF personnel, would family have sought help at PHC center if appropriate services had been available there? code: 1=yes 2=no

166. If any treatment was given by MCH PC or other SCF personnel, what was that treatment? (code at central office after reviewing case):  
1=treatment was appropriate  
2=treatment was not appropriate

167. Was the family ever referred to a government hospital? code: 1=yes 2=no

168. If the family was referred to a government hospital, did it reach the hospital? code: 1=yes 2=no

169. If the family did not get to a government hospital, why not?

170. If the family was treated at a government hospital, specify type of treatment: (code at office after reviewing case):  
1=treatment was appropriate  
2=treatment was not appropriate

171. Indicate persons in who participated in decision of where care would be received: code: 1=yes 2=no

- \_\_\_\_\_ mother in law
- \_\_\_\_\_ husband
- \_\_\_\_\_ other relative
- \_\_\_\_\_ TBA
- \_\_\_\_\_ PDW/VDT
- \_\_\_\_\_ MCH PC
- \_\_\_\_\_ MA
- \_\_\_\_\_ village doctor
- \_\_\_\_\_ other (specify: \_\_\_\_\_)

FINISHED I

At end of interview, thank family for participating.

## Short Case Review Questionnaire

Another final consideration in the use of the case review method is the length of time required to complete the question and answer process. The questionnaire described above and used in the Bangladesh setting was found to be too time-consuming among several NGOs in Bolivia. Many women simply do not have the time to answer all questions. This led the Save the Children research staff in Bolivia to develop a shorter questionnaire containing the most essential questions about perinatal, neonatal and maternal mortality in that area. Basic background information was generally available from an existing database, and so questions related to this type of information could be eliminated from the survey. **The shortened version of the questionnaire is included below.**

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### QUESTIONS FOR RAPID PERI/NEONATAL MORTALITY SURVEY (Bolivia)

1. Name of Interviewer:
2. Community:
3. Number of Household (if available):
4. Name of Head of Household:
5. Name of Informant:  
Relation of Informant to Infant who died:
6. Date of interview: \_\_\_/\_\_\_/\_\_\_
7. How many living children does the mother have?
8. Did the last child born die?                      yes      no
9. If the answer to question 8 is yes, did the baby die within the first month of life?  
yes              no
10. Age of mother at time of last birth: \_\_\_\_\_ years
11. How many days old was the baby when s/he died?  
\_\_\_\_\_ days
12. When did the baby die? \_\_\_/\_\_\_/\_\_\_  
   day mo yr



When?      /  /        /  /        /  /    
              day mo yr    day mo yr    day mo yr

21. Are there any foods that you did not eat because you were pregnant?    yes    no

If yes, what couldn't you eat?

22. Where was the baby born?

1. Hospital
2. Clinic/health center
3. Health post
4. Home
5. Other

23. Who attended the birth?

1. Doctor
2. Nurse
3. Auxilliary or promotor
4. Midwife
5. Husband
6. Woman herself
7. Other

24. Did you choose this person to attend your birth?    Why?

25. How long were you in labor before you gave birth?

1. less than 12 hours
2. 13-24 hours
3. 25-36 hours
4. 37-48 hours
5. 49 or more hours

26. What did the person who attended your birth do? (If the husband, other family member or the woman herself delivered the baby and this person is available to respond, ask the birth attendant directly how they delivered the baby. What did they do?)

Person responding:    1. Mother    2. Birth Attendant    3. Mother who delivered alone

How was the cord cut?

What did the attendant do to the cord after it was cut?

27. Did you or your birth attendant notice any problems while you were in labor or during the baby's delivery?    yes    no    (If yes, describe)

27a. Review the following list of possible problems that may have occurred during labor with the informant. Did any of the following problems occur?

1. Breech birth (baby bottom first)
2. Transverse birth (baby sideways)
3. Cord wrapped around baby's neck

4. Baby's hand or foot first
5. Umbilical cord first
6. Hemorrhage (heavy bleeding)
7. Fever
8. Meconium (green or brown liquid)
9. Convulsions (attacks)
10. Other

28. Did anyone provide medical care for you and the baby during the first days after the birth?  
Who?      What did they do?

29. Did you breastfeed the baby?    yes    no

When did you begin to breastfeed the baby?

Within 1st hour \_\_\_ Within 1st day \_\_\_      After 1st day \_\_\_

If breastfeeding was not begun during the first day, ask why the mother began when she did.

30. When did the mother/parents notice that there was a problem with the infant's health?  
\_\_\_\_\_ hours old      \_\_\_\_\_ days old

31. How did they know there was a problem? What symptoms or conditions did they notice?

31a. Symptoms. Review with the informant the following list of symptoms and circle the numbers of those that were present.

#### GENERAL

1. Irritable
2. Much crying
3. Weak crying
4. Difficulty nursing (due to something other than weakness)
5. Nursed weakly
6. Depressed
7. Fever
8. Hypothermia (cold)
9. Whining/moaning
10. Apnea (stopped breathing)

#### NEUROMUSCULAR

11. Could not swallow
12. Muscular spasms
13. Rigidity
14. Convulsions (attacks)
15. Abnormal movements

#### RESPIRATORY

16. Cough
17. Nasal secretions
18. Nasal flaring
19. Noisy breathing
20. Rapid breathing
21. Breathing fatigue

22. Chest retractions (caving-in of chest cavity)

DERMATOLOGICAL

- 23. Cyanosis (purple, blue)
- 24. Pallid
- 25. Jaundiced (yellow)
- 26. Red skin
- 27. Red umbilical cord
- 28. Pus on umbilical cord
- 29. Bad odor of umbilical cord
- 30. Blisters
- 31. Blood blisters
- 32. Rash

BLOOD

- 33. Hemorrhage Where?

DIGESTIVE

- 34. Abdominal distention
- 35. No bowel movements

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### References

1. Kaye, Katherine. **MotherCare/Save the Children Bangladesh Project, Trip Report.** October 18-November 7, 1991. MotherCare.
2. Bartlett, Alfred. **Inquisivi, Bolivia Technical Report #2.** March 23-April 3, 1991. MotherCare.
3. Bartlett, Alfred. **The MotherCare Project/Save the Children, Bangladesh, Trip Report.** July 13 - 28, 1991. MotherCare/Johns Hopkins University.
4. Kaye, Katherine. **MotherCare Trip Report, Save the Children Bangladesh Field Office, Dhaka.** July 9-25, 1991. The MotherCare Project.
5. Bartlett, Alfred. **Inquisivi, Bolivia Technical Report.** September 24 - October 6, 1990. MotherCare/Johns Hopkins University/INCAP.

## **Survey Questionnaires**

MotherCare has used surveys in a number of sites to ask questions about various topics related to maternal and perinatal health. They were often used to obtain baseline information from a large number of subjects in a short period of time. In particular, surveys provide population level information that can establish quantifiable trends such as the incidence and prevalence of conditions in a population, coverage of services, and compliance with specific regimens. In settings where deliveries very often occur at home, collection of the necessary population-based data relies on self-reporting by women of any complications experienced and their awareness and use of services.

A major gap in understanding women's self-report of complications is that the accuracy of such accounts is highly dependent on both problem recognition and recall. Other potential sources of bias include over-reporting, particularly among young, first-time mothers; survivor bias; and reluctance to discuss sensitive concerns, such as complications of induced abortion.

### **Validation of Women's Self Reported Complications**

In the Philippines, MotherCare participated in a study to determine the accuracy with which women report pregnancy-related complications. This study is ongoing and fits into a larger project of the Demographic and Health Surveys (DHS) aimed at developing a "Safe Motherhood" module. The instrument could be used in a national, random, population-based survey of women about problems experienced in association with pregnancy and childbirth.

Drawing obstetrical cases from the medical records of the Philippine General Hospital in the previous four years, the general objective of the study is to compare women's reporting of obstetric complications in a previous pregnancy with the hospital data. Specific objectives are:

- o to quantify the sensitivity and specificity of interview questions for detection of specific diagnoses as recorded in clinical charts;
- o to measure differences in reporting for different recall periods;
- o to determine the best combination of questions to detect the history of a particular obstetric complication through interview;

- o to make recommendations for questionnaire design for a national safe motherhood survey of major obstetric complications;
- o to determine the problems encountered in studies relying on follow-up patient interviews and abstraction of data from medical charts.

The target sample was 100 non-cases and 100 cases for each of the four conditions of interest: hemorrhage, sepsis, obstructed labor, and eclampsia. The hospital registry is based on discharge diagnoses and has already been corrected for hospital case record numbers with diagnoses classified by International Classification of Diseases (ICD)-9 coding. Hence this registry was used to identify cases and non-cases.

Case definitions chosen for this study differed in some instances from case definitions used for the registry. Rather, specific criteria were outlined to define diagnostic labels for index conditions. This "gold standard" definition was then used to define the criteria for cases taken from abstracted records for use in the study. These criteria are described in Box 5 below.

In total, 632 records were abstracted from hospital records. From these records, 230 women were located and interviewed. The following distribution of complications was observed: dystocia (48), hemorrhage (53), sepsis (9), eclampsia (16), and non-cases (114); with some cases having more than one of the conditions of interest. For dystocia and hemorrhage, the signs and symptoms occur most frequently in the category in which they might be expected. This is not as true, however, in the cases of sepsis and eclampsia. For example, a number of women who were not septic did report having fever. Reporting of convulsions (or what patients describe as convulsions) was found in categories other than eclampsia.

The findings suggest that some complications, such as dystocia and hemorrhage, can be detected through retrospective interview with acceptable levels of over- and under-reporting. The conclusions on sepsis and eclampsia, however, are limited by the small number of cases available for analysis.

**Box 5. Criteria for defining "gold standard" cases based on data from medical records.**

**DYSTOCIA**

Women meeting the criteria for dystocia were those who had a caesarean section delivery after a trial of labor where surgical delivery was indicated because of obstructed labor. Obstructed labor included those diagnosed with cephalopelvic disproportion, transverse lie, and no progress of labor.

**HEMORRHAGE**

Women meeting the criteria for hemorrhage were those having an estimated blood loss greater than 500 ml. and a reported diagnosis of hemorrhage, or those with a diagnosis of retained placenta who had a manual extraction of the placenta, or those with a diagnosis of a postpartum hemorrhage on the chart.

**SEPSIS**

Women meeting the criteria for sepsis were those having a temperature of greater than 38 degrees centigrade during labor and delivery or after the first 24 hours after delivery, and a sign of infection. Signs of infection included a positive culture of the blood, endometrium, placenta, or endocervix, or an infection of a laceration or surgical wound; or an upper or lower reproductive tract infection, or a foul smelling vaginal discharge.

**ECLAMPSIA**

Women meeting the criteria for eclampsia were those having at least one sign of pre-eclampsia during pregnancy or labor and delivery, and at least one eclamptic seizure during pregnancy or labor and delivery. Signs of pre-eclampsia included severe generalized edema (3-4+), albuminuria (3-4+), or hypertension (greater than 140/90). Women with a history of seizures outside of pregnancy were excluded.

**NON-CASE**

Non-cases were drawn from a pool of women admitted for delivery who may or may not have had other complications, but which did not meet the criteria for any of the conditions of interest to the study.

**Source: Stewart and Peslin. Validation Study of Women's Reporting and Recall of Major Obstetric Complications Treated at the Philippines General Hospital. Macro International/Johns Hopkins University and Clinical Epidemiology Unit, Philippine General Hospital, October 1993.**

The findings indicate that **dystocia and prolonged labor** can best be detected through a combination of questions. The best set of questions include:

whether or not the woman experienced labor;

whether it lasted longer than a normal duration cut-off;

whether or not she had a caesarean section, and if so, why.

Detection of **hemorrhage** was best achieved by asking a combination of two questions:

whether or not she bled a lot around the time of delivery, and

whether or not the placenta had to be manually removed.

It is important here to specify in detail what is meant by **manual extraction** through a description of the process. That is, "did someone have to put their hand inside your womb to help deliver the placenta?"

Asking about symptoms of **hemorrhage**, such as dizziness and weakness was not useful because of the number of false-positives picked up with these questions. Questions about whether or not anyone thought the bleeding was a serious problem were not important in the absence of a positive response to the question about bleeding a lot. This suggests that women internalize others' recognition of their problem after the event, even though they may be too sick to know what is happening at the time.

Women reporting high fever or very foul smelling **vaginal discharge** had the best balance of over- and under-reporting for sepsis. Relatively few women interviewed reported a foul smelling discharge. This sign was not over-reported in this study and the findings suggest that this is an appropriate sign to inquire about on a survey interview. However, it is important to note that there were only nine sepsis cases in this study, which makes it difficult to draw definite conclusions on reporting of this diagnosis.

**Eclampsia** was chosen as a condition of interest because of the assumption that convulsions are among the more memorable events one might experience during pregnancy. Even though the woman herself may not remember her experience, as in the case of hemorrhage, her recognition retrospectively is most likely influenced by the descriptions she received from others who were present at the time. Though pre-eclampsia is a very important problem, it is difficult to detect through interview alone since hypertension is usually asymptomatic. In addition, associated symptoms such as headache and edema, which may occur, are also common among women without disease and are thus quite non-specific.

At the same time, several times in the interviews women mistakenly reported shakes and trembling associated with fever when asked about convulsions. This is the most likely explanation for the lower sensitivity associated with the set of questions about eclampsia. These anecdotal observations are in agreement with data collected separately through

qualitative research on women's perceptions of disease . These findings led to revisions in the safe motherhood questionnaire to ask instead about "convulsions not caused by fever."

Recall of up to four years after the event was not a problem. This is not surprising, given the focus on the more serious, memorable obstetric complications. These findings indicate that women's reporting of these events is reasonably accurate on retrospective interview up to four years after the event. Still, results of this study in the Philippines are not necessarily generalizable to other locations.

Other validation studies need to be designed to reflect local conceptualizations of illness and complications. This study can serve as a tool to guide the development of other questionnaires. Box 6 presents questions from the Philippines' questionnaire which may be useful in other contexts.

#### **Box 6. Recommended Questions from the Philippines Validation Study**

**Signs and Symptoms of Hemorrhage:**

Did you bleed during pregnancy? Did you lose a lot of blood around delivery? Did you experience excessive bleeding 6 weeks after delivery?

**Signs and Symptoms of Sepsis:**

High fever during labor and delivery? Postpartum lower abdominal pain? Severe pain in lower back? Very foul discharge or pus postpartum? Very high fever postpartum?

**Signs and Symptoms of Eclampsia:**

Convulsions during pregnancy, labor and/or delivery, not caused by fever? Post-partum convulsions, not caused by fever?

**Signs and Symptoms of Dystocia and Prolonged Labor:**

Did you experience labor? Did it last longer than the normal duration cut-off? Did you have a cesarean section?

**Source:** Stewart, K. *Questionnaire from Validation Study of Women's Reporting and Recall of Major Obstetrical Complications Treated at the Philippine General Hospital.* Summer, 1993.

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#### **References**

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## **The Save the Children/Bolivia "Autodiagnosis" Methodology.**

The "autodiagnosis" is a participatory research technique developed by Save the Children, Bolivia for use with the MotherCare project. It is an activity with several steps carried out within and by women's groups that allows both the community and Save the Children to learn about women's perceptions of maternal and peri/neonatal health problems and how they respond to them.

This technique relies on open ended discussions which facilitate the exploration of attitudes, experiences and practices. There are no "right answers", only what the women themselves believe and understand.

In addition to raising women's awareness of specific maternal and peri/neonatal health problems, a major goal of the process is to foster women's confidence in their ability to speak about their own problems, to motivate them to act upon these health problems, and to learn to prioritize the problems that are identified (**reference #1 at the end of this section**).

Save the Children pioneered the autodiagnosis technique in Inquisivi, a very remote area in the Andean mountains of Bolivia, to elicit information about cultural beliefs and practices surrounding maternal and peri/neonatal health issues. Although maternal deaths were known to be a problem, information on local perceptions and practices was non-existent. What was known was that the communities had few resources themselves and the health services infrastructure to serve them was very weak and difficult to reach for community members.

A key to this participatory research technique is that the learning process involves both interviewers and participants. The goal for women in the community is to raise their awareness of maternal and peri/neonatal health problems and for them to gain confidence in addressing these problems for themselves and the community. For the program staff, the goals are to gain a better understanding of how and why women attend to their own health needs and those of their newborn infants, and to develop a sound basis for planning interventions. Furthermore, such a method helps to develop trust and confidence between the program staff and the local communities.

There are nine steps to carrying out the complete autodiagnosis in a women's group. Save the Children staff served as facilitators, guiding questions to help the women discuss and prioritize their health problems and to select two or three problems they would like to address at the community level with other women and men, specifically those with positions of influence. This decision-making process then guided the development of interventions for

the remainder of the project. The autodiagnosis process varied from two sessions of approximately three hours each (in communities where virtually all women of reproductive age in the community attended the session and therefore the home visit sessions were not carried out) to four sessions of approximately two to three hours each, plus home visits over a period of one to two months. The following section describes the autodiagnosis process.

### **STEP ONE: ORIENT THE WOMEN TO SAVE THE CHILDREN'S PROJECT.**

This step describes to the women's groups how this self assessment fits into an overall health program. The group members analyze deaths in the community of women, especially those who were pregnant, and their newborn. The central topic is maternal and peri/neonatal health problems and the community's role in the search for solutions.

### **STEP TWO: EXPLORE ATTITUDES OF GROUP MEMBERS TOWARD PREGNANCY, BIRTH AND MOTHERHOOD.**

This step orients and motivates the women to begin talking about and sharing their health problems. Using pictures of happy and unhappy pregnant women, the facilitators pose questions such as the following:

- o How do you feel when you're pregnant?
- o What is your reaction as a woman at the time of delivery?
- o How do you feel toward the newborn baby?
- o During the time that you are giving birth and after birth what is your husband's role? What does he do? What is his attitude toward your pregnancy?

### **STEP THREE: LEARN WHAT THE GROUP MEMBERS KNOW AND DO ABOUT MATERNAL AND PERI/NEONATAL HEALTH PROBLEMS.**

Using role plays, this step demonstrates current knowledge, attitudes and practices during pregnancy, birth and postpartum. A pictorial dictionary of terms is developed to represent maternal and peri/neonatal health problems. Drawings are used to stimulate responses (see sample of pictorial cards on the following page). Then, a glossary of terms is developed in Aymara, everyday Spanish and technical Spanish.

The following are some of the attitudes and practices which were described through the role plays.

During Pregnancy: Gentle "manteco" (rolling a woman in a blanket); sobado de vientre (abdominal massage); drink soothing teas; no change in diet; using tight skirt; no hygiene.

During Labor: Husband prepares boiled water and food; gentle "manteo"; gentle abdominal massage; drink oxytocic teas; fill the room with herbal vapors; strap the mother with a woolen belt; husbands and TBAs cannot distinguish between false and real labor.

During the Delivery: The delivery is usually attended by the husband, and possibly a community birth attendant and the mother of the woman delivering; favorite position is squatting; the room where the baby is born lacks light and ventilation; the newborn is generally delivered onto an animal skin or dirty blanket, thinking that the blood from the birth will dirty everything, so they use dirty objects that later can be thrown away or washed.

The Newborn: The newborn does not receive immediate attention; they wait until the placenta is expelled, then attend the baby; very few mothers give colostrum to the newborn; the umbilical cord is usually cut with a broken piece of unwashed pottery after the placenta has been expelled.

Postpartum: The husband takes care of the other children, the animals, cleaning and the preparation of food; the mother's nutrition is based on carbohydrates--she is deprived of vegetables and protein; the mother does not wash or bathe until a week to two weeks after the birth.

#### **STEP FOUR: ENCOURAGE GROUP MEMBERS TO THINK ABOUT WHAT OTHER WOMEN IN THE COMMUNITY KNOW AND DO TO RESOLVE MATERNAL AND PERI/NEONATAL HEALTH PROBLEMS.**

The purpose of this step is to prepare the women to think about problems of other women in the community and motivate curiosity to know what other women think. First in small groups, then, in the larger group, members are asked whether they thought their problems are similar to the problems experienced by other women in the community who did not participate in the group.

#### **STEPS FIVE: EXPLORE AND DESIGN DIFFERENT WAYS TO COLLECT INFORMATION FROM OTHER WOMEN IN THE COMMUNITY.**

This step is crucial to the entire autodiagnosis process. Exploring with women how they communicate with other women to obtain answers to sensitive questions provides program staff with important insights into how to make this process more effective. Particularly when working with groups of non-literate women, advice on the use of visual keys and other means of non-written communication are extremely important. The key to doing this well is to work closely with the women's groups and to learn from them.

**STEP SIX: IMPLEMENT THE INTERVIEWS.**

During this step, the women go out into the community to conduct interviews with the "Instrument" they have developed. They visit and interview other women who did not participate in the group. They ask open ended questions, and use the drawings developed in their group to elicit responses.

**STEP SEVEN: SHARE RESULTS OF THE INTERVIEWS WITH THE GROUP.**

Both qualitative and quantitative results are presented. The quantitative results consist of how many women experience a particular problem. The qualitative results, which detail women's practices and beliefs, are discussed in the group.

**STEP EIGHT: PRIORITIZE THE PROBLEMS.**

Box 7 illustrates the process of prioritization. The box presents the first three priorities as determined through the autodiagnosis for each of 12 communities in Inquisivi. While each setting obviously provides unique responses to the interviews, the Inquisivi example is representative of the types of information that is elicited through this activity.

**Box 7. Example of Priorities as Determined by the Community Groups**

<b>Zone</b>	<b>Priority #1</b>	<b>Priority #2</b>	<b>Priority #3</b>
<b><u>Inquisivi Zone</u></b>			
Canqui Chico	Retained placenta	Transverse lie	Hemorrhage
Caychani	Too many children	Hemorrhage	Anemia
Chiji	Edema	Anemia	Sepsis
Chuallani	Malpresentation	Hemorrhage	Ret. Placenta
<b><u>Llcoma Zone</u></b>			
Espiga Pampa	Too many children	Malpresentation	Ret. Placenta
Lacayotini	Too many children	Hemorrhage	Malpresentation
Llcoma	Infection	Anemia	LBW
Pencaloma	Ret. Placenta	Edema	LBW
<b><u>Okreucata Zone</u></b>			
Miguilla	Too many children	Hemorrhage	Ret. Placenta
Polea	Edema (pre-eclam)	Hemorrhage	Malpresentation
Villa Khora	Hemorrhage	Anemia	Malpresentation
V. Barrientos	Stillborns	Hemorrhage	Infection

## **STEP NINE: EVALUATE THE AUTODIAGNOSIS PROCESS.**

### **NEXT STEPS**

When the autodiagnosis is completed, the group should proceed to the next phase, called "planning together". The planning phase consists of two to three sessions. The first session prepares the women's group for a presentation to the community of the results of the autodiagnosis and for the planning exercises. The second session involves the women's group, community authorities, teachers, health personnel and other community members. In this session, the women present their findings from the autodiagnosis. They then present a skit to help the audience identify barriers to solving the problems.

All the participants then develop concrete strategies aimed at removing or diminishing the identified barriers. A formal document is drafted containing all the agreements including who is responsible for each action and when the action is to take place. This document is then signed by all present at the meeting. **The planning process can be completed in one or two months.** After a period of three to six months, the community should meet again to evaluate the results of their actions based on the plans that they developed.

Details of this process are included in a manual available from MotherCare that describes the autodiagnosis and planning together strategy, and describes the Inquisivi results (**#2 in references below**).

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## **Qualitative Assessment Methods**

In general, qualitative methods of assessment focus on the whys of maternal and peri/neonatal health issues: why does maternal mortality occur at such high rates in a given area, and how and why do local beliefs and practices contribute to this situation? In qualitative research, the emphasis is not on prevalence and trends, but rather on the processes that lead to a particular health outcome.

Qualitative assessment can include focus group discussions; in-depth individual interviews; concept testing (observing the use of a product or service and related practices over a period of time to test its utility and sustainability); direct observations of clients and health care providers; and participatory methods that involve community members in defining and describing the factors that contribute to maternal and peri/neonatal health outcomes (see previous section on the "**autodiagnosis**"). Qualitative assessment draws heavily from the fields of qualitative research and social marketing in the development of these methodologies. MotherCare used combinations of these techniques to develop question guides in a number of settings. At the end of this section are examples of question areas and select responses given by various audiences.

**Ethnographic research** relies on the methods described above to provide detailed, comprehensive information about a culture and its beliefs and practices. MotherCare used ethnographic methods in Bolivia to explore women's attitudes toward pregnancy and childbearing, the health care system, and practices that resulted from prevailing cultural beliefs and attitudes. Qualitative research methods were used to document women's beliefs, attitudes and practices in relation to the reproductive cycle and the formal health system in order to achieve a better understanding of patterns of service utilization. These methods included focus groups, in-depth interviews, direct observation, and other forms of participatory research. Boxes 8 and 9 describe some of the results of this work during MotherCare I.

**Direct observation** is the method of gathering information traditionally used for ethnographic work. Ethnographers enter a setting and observe quietly, generally without taking notes, which are written from memory later. This methodology allows observers to see the daily practices and functions of a given community or family and to gain essential information about routines and ordinary practices that might be left out of a more formal interview. With regard to maternal and peri/neonatal mortality in particular, an observer may see activities which are considered routine, but which may have important ramifications for maternal and peri/neonatal health.

In Bangladesh, the MotherCare/Save the Children project in Nasirnagar used a six month anthropological study of women that provided the basis for a promotional campaign motivating women, their families and communities to practice better self-care techniques and service utilization (**see reference #4, page 87**). The **ethnographic research** was especially useful in eliciting information about local beliefs and practices. In particular, the study highlighted practices related to gender differences in the consumption of food and the extremely limited mobility of women, particularly young women, in rural areas.

**Focus group discussions** are conducted by a facilitator who "focuses" a group's discussion on various topics. In a focus group, all members of the group are encouraged to speak and to offer their opinions. The purpose is to elicit the opinions of group members on a variety of topics, for example reasons why mothers die during pregnancy. Through its project activities, MotherCare developed specific guidelines for conducting focus groups on topics related to maternal and perinatal health. Details of the methodologies and results can be found in the **MotherCare IEC Manual, reference #1 at the end of this section.**

#### **Box 8. Results of Qualitative Research from Cochabamba, Bolivia**

In Bolivia, qualitative research described the "ethnophysiology" of Quechua-Aymara women in urban Cochabamba, Bolivia, or the ways in which these women viewed their own bodies and the reproductive cycle. Findings showed that women believe that they are healthy when their important body parts are located and moving correctly. They are primarily concerned with ups and downs, entrances and exits, and what belongs inside and outside of the body. Movements are believed to be determined by the presence of warm or hot elements which cause body parts to fall, or fresh or cold elements, which cause the entrance or rise of foreign elements and body parts. A healthy woman is defined as a strong, well-nourished woman with an abundance of blood, and a "good worker" who gives birth to her children without problems. Correct movement within the body is felt to be particularly important during pregnancy, delivery and the postpartum period.

Women perceive that the formal health system does not understand or consider these beliefs in its attempts to provide health care. In contrast, researchers found that an "alternative" health system exists which reinforces the Quechua-Aymara women's beliefs and provides services in ways that are familiar and acceptable to them. After obtaining this information through interviews, focus groups and other qualitative techniques, the researchers were able to outline the nature of the conflict between the formal, biomedical health system and the traditional system used by local women (see Box 9 below). Based on these findings, recommendations were made for specific program interventions which could make each side more understanding of and receptive to changes needed to improve the health status of local women.

**Source:** Center for Health Research, Consultation and Education (CIAES). *Qualitative Research on Knowledge, Attitudes and Practices Related to Women's Reproductive Health: Cochabamba, Bolivia.* MotherCare Working Paper #9, July 1991 (in Spanish and English).

MotherCare used focus groups in a variety of settings. As part of the ethnographic research in Bolivia, a local research agency conducted focus

group discussions and interviews with women and with their service providers, revealing distinct beliefs about physiology and health care practices which often conflicted with the women's practices and those that dominated formal health services. These differences were prioritized and then addressed in subsequent health communications, training and policy interventions.

**Box 9. Conflict between the Quechua-Aymara and Biomedical Systems regarding Delivery Assistance**

<u>Quechua-Aymara System</u>	<u>Issue</u>	<u>Biomedical System</u>
warm environment	<b>room temperature</b>	cold environment
no air currents	<b>ventilation</b>	ventilated room
husband, mother-in-law, TBA	<b>attendants</b>	doctors, nurses, interns
heavily clothed & wrapped	<b>clothing</b>	light gown
none	<b>preparation</b>	enema, wash and shave vaginal area
hot foods and teas	<b>diet</b>	none prohibited
vertical	<b>position during labor</b>	horizontal
walking	<b>movement during labor</b>	none
teas, massages, augmenters, pharmaceuticals	<b>labor inducers</b>	oxytocin
kneeling	<b>position during delivery</b>	supine gynecological position
a ceramic shard	<b>instrument to cut umbilical cord</b>	metal
bury or burn in home area	<b>care of the placenta</b>	throw it in the trash
modesty, privacy, well-being of woman, adherence to protective customs	<b>primary concerns</b>	proper biomedical techniques, asepsis, well-being of infant, other patients' needs

**Source: Center for Health Research, Consultation and Education (CHACE). 1991. Qualitative Research on Knowledge, Attitudes, and Practices Related to Women's Reproductive Health. MotherCare Working Paper #9, John Snow, Inc., Arlington, VA.**

In Nigeria, focus group discussions followed a literature review of maternal health issues to create the foundation for the health communications component aimed at the improvement of maternal self-care and to increased utilization of maternal health services. In Jamaica, focus groups were used to determine women's preference for birthing location and attendant. The information from these focus groups was then used to design interventions, taking into consideration the point of view of local women which had

emerged during the group discussions. And in Tanjungsari, Indonesia, awareness of the danger signs (signifying serious obstetrical complications) and the appropriate use of services was explored with pregnant and recently delivered women, their spouses, TBAs and midwives, through focus groups.

**In-depth interviews** are also a common method used in qualitative assessments. One-on-one interviews are conducted to obtain information about a particular subject. Usually, the focus of the interview is up to the person being interviewed, although the interviewer may try to ask general questions to guide the interview. The purpose of these interviews is to develop an understanding of the subject's attitudes, practices and beliefs about a general topic. By allowing the interview to develop without following a pre-determined course, topics of importance are more likely to emerge.

Individual interviews with women, influential family members and providers are more likely to elicit truthful and practical information about specific behavior, especially when the topic is sensitive. For example, women with delivery complications or men and women who have tested seropositive for syphilis will be more comfortable talking individually than in a group about their experiences. Conversely, the more common and less sensitive the issues, and the more focus the questions put on knowledge, feelings and perceptions, the more natural and interactive a group discussion may be to participants.

MotherCare used in-depth interviews to elicit information about local beliefs and practices related to maternal and peri/neonatal health. Often, these interviews were used in conjunction with other qualitative techniques, such as focus group discussions. In Nigeria, for example, in-depth interviews were part of the process of designing a health communications campaign. In Jamaica, interviews provided information about women's preferences regarding birthing location and type of attendant. In Cochabamba, Bolivia, in-depth interviews and other techniques were used to facilitate a self-assessment by women of their most important maternal and peri/neonatal health problems.

The strengths of both **focus group discussions** and **in-depth interviews** complement each other. Both methods, particularly when combined with other qualitative techniques, provide the type of comprehensive and locally generated information that is essential to laying a foundation for strong programmatic interventions.

**Concept testing** is another widely used qualitative technique. This involves the introduction of a new service or product, and then observation over time to evaluate the acceptance and appropriateness of this new

program element. Concept testing relies on the prior development of a new product or idea through qualitative research, so that its introduction follows the specifications and needs of the target population. The process of concept testing then works to refine and further develop the product to the needs of those who will use it.

**Participatory research methods** are also frequently used in qualitative assessments. Participatory research builds from the community level. Program staff may ask questions to elicit information, but the direction of the discussion is determined by community response. In general, participatory methods involve the members of a community, particularly the women affected by maternal and peri/neonatal health problems and health care providers who treat them, in the basic research to understand and document the local maternal and peri/neonatal health situation. The Inquisivi/Save the Children project developed a highly successful participatory research method, the "autodiagnostico", detailed in the previous section. This methodology illustrates the necessity for a complete and integrated qualitative assessment process.

These examples illustrate the benefits from combining a variety of qualitative techniques. Many of these techniques complement each other and are maximized when used to complement each other. For instance, individual interviews can be more enriching if they are shaped around findings from focus group discussions. **Illustrative questions are outlined below, with references given on pages 87-88.**

## **QUESTION AREAS FOR QUALITATIVE RESEARCH**

### **Beliefs and Practices During Pregnancy and Utilization of Care:**

**What are the attitudes of women and others about pregnancy in general?  
About the current pregnancy?**

Do they feel pregnancy is a special time in their lives? How?  
What special things do women think they should do or avoid during pregnancy?

**How do women first recognize that they are pregnant? How do they feel?**

What do they do? Who do they tell? Where and when do they seek advice, and from whom?  
What are their sources of social support?

**What types of care do women perceive as necessary during pregnancy?  
When? For what reasons/problems? From what type of person? Why?**

**Are women aware of what should take place during a prenatal and  
postnatal visit (what specific medical care they should receive)?**

What do they consider "good" maternal care?  
What terms do they use to describe quality care?

**Is there recognition of the need for/benefits of maternal tetanus toxoid (TT)  
immunization? Do pregnant women take action to seek TT immunization?  
Why, why not?**

**What have women's experiences been with formal health services for prenatal  
care, delivery assistance, and postpartum care?**

What are women's own perceptions of the barriers to their use of formal maternal and  
peri/neonatal health care (convenience, cost, need, satisfaction)? How could these  
resistances be minimized?  
What do they like/dislike about the care?

**Do women comply with referral for additional medical care or treatment? For  
which conditions? Why, why not?**

## **ANSWERS:**

*On going to prenatal care: "No, because they say that at a prenatal visit they only look at your belly and your parts [genitals] and there are many men and women looking at us; that's awful; that's why I wouldn't have prenatal care."*

*-- woman in Cochabamba, Bolivia*

*"We are not used to prenatal control visits although some women do have them; we don't attend because we are embarrassed and frightened since the health worker is a man."*

*-- woman in Cochabamba, Bolivia*

## **RECOGNITION OF PROBLEMS, RISKS AND RESPONSES**

**What is the level of awareness of pregnant women and families toward common complications of pregnancy/birth/postpartum periods?**

**What conditions during pregnancy/birth/postpartum are perceived as particularly dangerous?**

**What terms do women use to describe these conditions?**

**What is the perceived cause of each problem/risk?**

**How susceptible do individual women feel they are to each problem? Why, why not?**

**How serious do women consider each problem?**

**Where do women/families get their information about pregnancy, birth and postpartum problems and risks?**

**Do women/families understand the concept of obstetric risk/danger signs?**

**Do they distinguish between potential risk factors (age, parity, etc.) and actual risk related to current signs or symptoms?**

**Do they relate problems in previous pregnancies to the possible outcome of current pregnancy?**

**What is the sequence of actions taken for each maternal problem/risk?**

**What is the first action? Self-care or other home care? Traditional practitioner, clinic, other?**

**What triggers the first action? What happens next if the problem continues?**

**What type of care for pregnant women occurs within the home prior to seeking external assistance?**

What type of practitioner do women prefer to seek care from, and for which specific pregnancy-related problems? Why?

To what degree do women control their own self-care and use of services?

Who else influences the health-seeking behavior of pregnant women? How?

**ANSWERS:**

For antenatal bleeding, headaches, dizziness, fever, high blood pressure, or anemia, most women would accept referral from a TBA to a midwife or go to a midwife first. Most respondents stated that swelling of feet, hands or other parts of the body is normal, and they would not accept referral for this, nor for lack of weight gain. No one thought that referral to a midwife because of small stature made any sense, nor was it regarded as a risk factor because of its predetermined nature.

*-- Tanjung Sari, Indonesia*

Kukil had been married at 17 and became pregnant a year later...Kukil was healthy for eight months of her pregnancy. Then one day she complained about severe headaches. The family did not think much of it at first. She was made to rest. A few hours later...she had fits, bit her tongue, tore off her clothes. The family sent for two [traditional healers] to treat what they believed was caused by spirit possession. As this treatment was not effective and Kukil's condition became critical, they sent for the [doctor]. He gave Kukil a sedative and recommended urgent referral to the hospital. The family did not act immediately...the husband said that Kukil died before he could organize a trip to the hospital. She died within 16 hours of developing the symptoms.

*-- Bangladesh*

## **PRACTICES SURROUNDING BIRTH AND THE IMMEDIATE POSTPARTUM PERIOD**

### Prenatal

How do women recognize when labor has begun? What do they do?

Do women/families make plans for childbirth attendance prior to initiation of labor? When? Why? Where?

### Delivery

Where do women prefer to give birth? Why?

What are women's preferences for home birth versus hospital birth? Why? What terms do women use to describe a desirable/optimal birth experience?

How amenable to change are women's choices of birth location? Under what conditions?

Do women/families recognize women at risk for problem birth and seek a hospital or attended delivery? Why, why not?

What are women's perceptions of the perceived need for/benefits of trained birth attendance?

What type of birth attendant do women prefer? Why? How is the birth attendant selected? By what criteria? By whom?

Do pregnant women have routine contact with the birth attendant during the prenatal period? When? Why?

For home births, do families prefer traditional attendants to formally trained (such as government midwife) home attendants? Why?

What are the routine practices of traditional birth attendants or family help regarding:

- o hygienic birth techniques, management of normal births?
- o use of safe delivery kit, conditions of use?
- o Intrapartum abdominal massage or manipulation?
- o use of drugs (especially oxytocins, natural or medical formulation) intrapartum and postpartum?
- o cord cutting, dressing and aftercare?
- o management of the placenta?

Are these traditional practices helpful, harmful?

Do TBAs initiate these practices? Do women/families request them? Condone them? How amenable might they be to change?

Do TBAs generally refer "high risk" clients (or clients with health problems) to the formal health system? When and to whom?

What special facilities (such as community birthing huts or waiting homes) exist? How are these regarded by women, TBAs, the community and midwives?

### Postpartum/Neonatal

If most births take place at home, what postpartum problems are recognized by women/families/home birth attendants as requiring additional care/referral outside of the home?

For each recognized problem, what triggers a health-seeking response? What is that response?

What is the local definition/perception of the postpartum period? What changes in maternal nutritional/activity patterns take place? Why? Are they helpful/harmful?

Does the concept of postpartum confinement or confinement hut exist? To what degree is it adhered to?

What are the routine newborn-care practices of birth attendants regarding care of eyes, airway, warming, cord care, initiation of breastfeeding? Why? Are actions helpful/harmful?

Do mothers/families/birth attendants recognize common neonatal problems/danger signs? Which ones (neonatal sepsis, neonatal tetanus, asphyxia/ hypoxia, low birth weight, hypothermia, acute respiratory infection)?

How do they recognize these conditions?

What terms do they use to describe them?

Do they feel that they are serious problems?

What health-seeking behavior do they take? When? Why?

What triggers action to seek care outside of the household/traditional practitioner? Why? When?

What maternal postpartum care practices are routinely tried out by birth attendants? Why, when? Helpful/harmful?

What maternal postpartum problems/conditions are recognized by mothers/families/birth attendants? What actions are taken? When? Why?

Do mothers/families comply with referral upward for medical care of postpartum problems? Why, Why not?

What are women's/families'/birth attendants' perceptions of ideal size for their baby at birth and why?

What terms do they use to describe it?

What significance do women give to their baby's birth weight and why? Is it a concept they understand and that they think about during pregnancy?

Do they relate birth weight to the health of a newborn?

If a "small" baby is desired, are there any reasons/terms which might be used to acceptably promote the advantages of giving birth to a higher (normal) birth weight baby?

## ANSWERS:

Doctors are against nurse/midwives being trained and allowed to perform lifesaving skills like I.V. infusions, giving antibiotics, performing manual removal of placenta, vacuum extraction, etc....At the time of the study, there was no single obstetrician/gynecologist in the employment of the...state government, while most general hospitals were reputed to have less than three medical officers.

-- Nigeria

"Hospital baby is much safer than at home because some time the mother can fall into difficulty and trying to find something to rush her to hospital could cost the baby's life."

-- woman in Jamaica

"Obstacles or complications that a woman may have when she is pregnant at times is that the child may not be turning around. We then take such a woman to whoever is helping to treat her....the doctors could be of help, our fathers could do it and some religious sect can do it with lots of prayer."

-- woman in Nigeria

"How will one know when there is too much blood? But if it is in the hospital, once the nurse sees her, they will know if the blood is too much or not and they will know what to do to stop the excessive flow."

-- woman in Nigeria

"You need someone to comfort you; instead they [hospital staff] are adding fury to the fire... is like you have a gun shot and they take you to hospital and you get another shot."

-- woman in Jamaica

The problems of [the district] hospital are common to many such institutions and are well known in Bangladesh. There is no blood bank, and no staff and no equipment to perform caesarian sections or other emergency obstetric procedures. As the doctors are all men, village women, especially Muslims, are reluctant to be seen by them. Doctors attribute these attitudes to women's ignorance and lack of education. In their understanding, it is not the medical profession which should adapt to village society but village women who should be 'educated', 'trained' or 'enlightened' to value the services they provide. To be posted [here] is regarded by most doctors as punishment. These professional men, most of whom come from larger cities, feel socially very cut off and isolated... Even if they had an interest in obstetrics (which is not obvious), they would have very little opportunity to develop their skills with so few patients. There is no antenatal clinic at the hospital and usually no contact is established with pregnant women during pregnancy. Women are brought to the hospital only when there is a severe complication.

-- Bangladesh

"You are more comfortable at home because sometimes it is plenty deliveries at the hospital and at home Nurse spend more time helping you."

- woman in Jamaica

"I gave birth at home, in order to be calm, and because I wanted to be near my parents. They are already experienced... I was washing my clothes and felt a pain at my waist, as though I needed to defecate. My husband said maybe I was ready to give birth, but I told him no, because I didn't know... my parents went to find the paraji [TBA] but she was out. Soon after, the baby was born and my grandmother helped me deliver... the paraji still hadn't arrived. A neighbor helped bring out the placenta. The paraji came half an hour later, cut the cord, bathed the baby, and massaged me..."

-- woman in Tanjungsari, Indonesia

The placenta is the baby's source of life. This is why the cord is usually not cut before the placenta is ejected. Once ejected, if the baby shows no sign of life, the placenta will be manipulated, heated up, trampled on, the cord will be squeezed and massaged to bring a flow of life from the placenta to the baby.

-- Bangladesh

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## **Methods for Assessing Service Needs: Provider Skills, Training and Supervision Needs, Status of Health Facilities and Supplies**

Within the medical services, a needs assessment can be used to determine the level of providers' skills and experience, and the service facilities, equipment and supplies, including essential drugs. The purpose of a needs assessment is to establish a baseline measurement, and to identify areas for strengthening and upgrading, such as provider performance, facility and equipment needs, and systems development. Many methods can be used, both qualitative and quantitative. A simple format for service needs assessment that is widely used is a standardized guideline or "checklist". The checklist is based on background research and knowledge of the situation, and can be used for a quick assessment of health services, or training needs. While other types of assessment obviously provide more in-depth information, a short checklist can be useful in providing a broad picture. Conducting training needs assessments--which include a review of provider skills, training capabilities and health center equipment--is an important part of the assessment process aimed at the development of a viable safe motherhood program.

### **STEP ONE: DESIGNING ASSESSMENTS TO FIT YOUR NEEDS**

A critical element in this assessment process is the definition of what skills are considered essential for midwives to function effectively in emergency obstetrical situations. For the MotherCare projects in Nigeria and Uganda, the training needs assessment process was designed to assess the skills and practice level of licensed midwives (e.g., their training, practices, and how well they perform) and to assess the institutional environment in which they work. It resulted in the development of performance protocols against which to assess practices. Inventories of facilities and equipment were also made of the institutions that were to serve as training sites. This focused the assessment on a limited number of essential skills and provided the basis for a standardized tool used to assess existing levels of training and practice. The guideline presented in Box 10 served as the assessment tool used to examine midwives' stated skill levels and identified skills that needed to be strengthened through further training.

### Box 10. Training Assessment Guidelines for Nigeria MotherCare Project\*

Skill:	HAVE THE MIDWIVES BEEN TRAINED TO:		Do Regularly	Emergency
	Trained To Do:			
	Yes	No		
Manually Remove Placentas				
Start IV Infusions				
Bimanually Compress the Uterus (Crede)				
Suture (Repair) Episiotomies				
Suture Cervical Lacerations				
Suture Vaginal Lacerations				
Suture 4th Degree Lacerations				
Perform External Versions				
Perform Internal Versions				
Perform Vacuum Extractions				
Perform Speculum Examinations				
Perform Bimanual Examinations				
Partograph				
Perform Controlled Cord Traction				
Perform Adult and Infant CardioPulmonary Resuscitation				
Perform Rectal Infusion				
Perform Intraperitoneal Infusion				
Perform Pelvimetry				

Source: Kwasi, B.E., Miller, S. and Conroy, C. *Management of Life Threatening Obstetrical Emergencies. Protocols and Flow Diagrams for Use by Registered/Licensed Nurse Midwives or Midwives in Health Centers and Private or Government Services.* MotherCare, 1993.

\*Note: In Nigeria, regulations do not allow midwives to carry out other life saving tasks, such as vacuum extraction, the prescription of antibiotics and sedatives, and oxytocics for the prevention and control of postpartum hemorrhage. In selected hospitals, midwives are trained in these functions where other personnel are not available. They do not perform blood transfusions or cesarean sections, tasks required to address the serious problems of severe hemorrhage, obstructed labor and eclampsia.

## **STEP TWO: FOLLOW-UP WITH DIRECT OBSERVATION**

Direct observations are intended to:

- o measure the frequency of performance of particular skills by midwives, and
- o to measure actual skills as providers performed their duties.

With these criteria in mind, licensed midwives in Nigeria were observed in the performance of various obstetrical skills. Using the checklist detailed in Box 11, this assessment, developed with MotherCare support by the American College of Nurse Midwives (ACNM), provided a baseline observation of how well required skills were performed and of the level of knowledge about specific techniques. It led to the development of specific objectives for training as well as modification of the standardized Life Saving Skills Manual. The assessment showed that training was needed both in obstetrical skills and in interpersonal communication. The assessment also provided a baseline for both provider performance and skills from which to evaluate program interventions at a later date.

Based on these assessments and as part of an overall effort to improve the quality of maternal and peri/neonatal health services, MotherCare provided advanced training for midwives to upgrade their clinical skills and knowledge. In both Uganda and Nigeria, training courses in "life saving skills" were designed to provide training in managing obstetrical and neonatal emergencies. Life Saving Skills (LSS) training for midwives is competency-based training that emphasizes clinical practice and the development of proficiency in performing essential obstetrical skills. In a competency-based training program, skills and knowledge identified through the baseline assessment become the basis for the midwife's learning objectives. Therefore, the learning objectives address maintaining and upgrading the midwife's existing knowledge and skills. **More information on life saving skills training is available from MotherCare; see reference #1 at the end of this section.**

## Box 11. Life Saving Skills for Midwives: Training Checklist

### 1. ANTENATAL RISK ASSESSMENT

General Condition: head \_\_\_\_, neck \_\_\_\_, breasts \_\_\_\_, abdomen \_\_\_\_, limbs \_\_\_\_, vulva \_\_\_\_,

Fundal Height Growth Monitoring  
baby active or moving \_\_\_\_, fundal height \_\_\_\_,  
check dates \_\_\_\_, abnormalities \_\_\_\_,

PET Screening: blood pressure \_\_\_\_, edema \_\_\_\_,  
urine \_\_\_\_,

Anemia Screening: diet and medicine  
history \_\_\_\_, symptoms that interfere with good  
diet \_\_\_\_, tired, sleepy, headaches \_\_\_\_, sore  
tongue, loss of appetite \_\_\_\_, nausea or  
vomiting \_\_\_\_,

ASK AND LISTEN (for history of high risk for  
anemia)

too close pregnancies \_\_\_\_, heavy or long  
periods \_\_\_\_, previous anemia \_\_\_\_, bruise  
easily \_\_\_\_, prev hemorrhage \_\_\_\_,

LOOK AND FEEL (visual anemia exam)  
conjunctivae \_\_\_\_, gums \_\_\_\_, palms, nail  
beds \_\_\_\_, ADVISE diet, medicines.

STD Screening: ASK AND LISTEN--discharge \_\_\_\_,  
sores \_\_\_\_, LOOK--discharge \_\_\_\_, sores \_\_\_\_,  
other \_\_\_\_,

TREAT as necessary. ADVISE hygiene and  
prevention.

### 2. MONITOR LABOR PROGRESS

Record on partograph if cervix less than 2 cm  
AND contractions mild, OR cervix more than 2  
cm and contractions mild.

ASK, LISTEN, LOOK, FEEL and RECORD during  
labor: vaginal every 4 hours or as needed \_\_\_\_,  
cervix \_\_\_\_, descent \_\_\_\_, molding \_\_\_\_,  
membranes \_\_\_\_, position \_\_\_\_, uterine  
contractions \_\_\_\_: hourly \_\_\_\_, or every 1/2 hour  
when active. Temperature and BP every 4  
hours \_\_\_\_, pulse every hour \_\_\_\_, urine every 2  
hours \_\_\_\_, hydration hourly \_\_\_\_,

### 3. CONDUCT DELIVERY

put on apron and boots \_\_\_\_, wash hands \_\_\_\_,  
gloves \_\_\_\_, equipment ready \_\_\_\_, oxytocic  
ready \_\_\_\_, perineal cleansing \_\_\_\_, bladder \_\_\_\_,  
care at birth: wipe mouth and nose \_\_\_\_,  
advise mother to breathe not push \_\_\_\_, check  
for cord around neck \_\_\_\_, deliver anterior  
shoulder \_\_\_\_, advise assistant to give  
oxytocic \_\_\_\_, deliver posterior shoulder \_\_\_\_,  
deliver baby \_\_\_\_, put on mother's belly if baby  
OK \_\_\_\_, clamp and cut cord \_\_\_\_, APGAR \_\_\_\_,  
baby to breast \_\_\_\_,

PREVENT'N AND TREATM'T OF HEMORRHAGE:  
Give oxytocic ASAP \_\_\_\_, early clamp and cut  
cord \_\_\_\_, assist delivery of placenta \_\_\_\_: cord  
traction \_\_\_\_, support/hold body of uterus,  
support placenta and membrane? \_\_\_\_,  
inspects cervix and membrane? \_\_\_\_: using  
vaginal speculum? \_\_\_\_, using sponge  
forceps? \_\_\_\_,

### 4. CUT EPISIOTOMY

5. REPAIR EPISIOTOMY OR LACERATION Light  
source \_\_\_\_, soap and water \_\_\_\_, gloves \_\_\_\_,  
needle holder \_\_\_\_, scissors \_\_\_\_, sponge  
forceps \_\_\_\_, suture and needle \_\_\_\_, dissecting  
forceps \_\_\_\_, local anesthesia \_\_\_\_, syringe and  
needle \_\_\_\_, gauze, etc. \_\_\_\_,

Other Skills:

Diagnose causes of bleeding: history \_\_\_\_,  
exam: abdominal \_\_\_\_, perineal \_\_\_\_, cervix \_\_\_\_,  
manual removal of placenta: in delivery  
room? \_\_\_\_, in theatre? \_\_\_\_, External bimanual  
compression \_\_\_\_, digital evacuation of  
uterus \_\_\_\_, resuscitation: airway \_\_\_\_,  
breathing \_\_\_\_, cardiac \_\_\_\_, shock \_\_\_\_,  
prevention and management of sepsis:  
document fever \_\_\_\_, locate cause of infection:  
in mother \_\_\_\_, in baby \_\_\_\_,  
use protocols \_\_\_\_, treatment \_\_\_\_, referral \_\_\_\_,  
hydration and rehydration, start intravenous,  
record input and output.

Source: Uganda Life Saving Skills for Midwives Training Checklist. MotherCare Uganda. 1992.

MotherCare added interpersonal communications (IPC) training to provide midwives with counseling skills that could help to promote better provider-client interactions during prenatal and delivery care, and family planning. This training also included the promotion of counseling skills in such areas as the risks associated with pregnancy, care of the newborn, family planning and early and exclusive breastfeeding. **(See reference #2 at the end of this section)**

Midwifery training differs from country to country and even within countries. In some countries, for instance, midwives have not received training in advanced obstetrics and are taught to refer all emergencies to a higher level provider. Based on MotherCare's experience with licensed midwives in Nigeria, Uganda and the Philippines, a generic manual of protocols for the management of obstetrical complications was designed to fill in gaps in previous training and to allow the midwives to function effectively in emergency situations. This generic manual for the management of obstetrical emergencies is available from MotherCare, and can be adapted for local use. **(see reference #3)**

### **STEP THREE: ASSESS THE SKILLS OF TRAINERS**

Assessing the skills of midwives who provide advanced training is also an important component of LSS programs. Midwives are often the most important link in the maternal peri/neonatal health care chain, and those who train them play a crucial role. Furthermore, assessing the skills of those who provide training in order to ensure their qualifications and the content of the information being passed to midwives is an important indicator of the quality of care. In Uganda, MotherCare addressed the issue of training Master Trainers nationally who could be responsible for training midwives on a regular basis. The required skills for master trainers are outlined in Box 12.

## **Box 12. Assessment of Trainers of Midwifery Training**

Required skills for master trainers are:

- o describing the maternal mortality and morbidity situation in Uganda and the potential role of the LSS midwife;
- o conducting a baseline assessment of midwives' skills and knowing why this is important;
- o understanding ways of obtaining information from midwives;
- o identifying the training needs of the midwife and how this affects the care of women;
- o describing the factors important to adult education and demonstrating teaching methods appropriate for qualified midwives;
- o identifying principles of management including communication, teamwork, evaluation, supervision and continuing education;
- o demonstrating use of the "Life Saving Skills (LSS) Manual for Midwives";
- o describing steps in the implementation of the LSS training program;
- o describing methods of record keeping for the LSS program;
- o developing an action plan for LSS midwife training;
- o knowing how to conduct a site inventory;
- o demonstrating the clinical assessment of a midwife conducting an antenatal exam and a normal delivery; and
- o discussing the before and after written assessment of a midwife undergoing training.

*Source: Otto, Anne Mary; Luyombye, Mary; and Tebben-Buffington, Sandra. Trainers' Guide for the Training of Midwives. Uganda Life Saving Skills Program, March 1993.*

## **STEP FOUR: ASSESSMENT OF HEALTH SERVICES**

Assessment of the capacity of a health facility to provide quality services for women must be carried out concurrently with the training needs assessment. Training providers in the appropriate care of women is not effective if they do not have basic equipment or drugs necessary to perform these services, or proper supervision. A basic site inventory can help to assess how well a health facility provides essential services and can identify areas to upgrade. These inventories are best carried out through site visits, so that the functional state of existing equipment and the availability of supplies can also be assessed.

Prior to the start of training midwives, MotherCare in Nigeria and Uganda designed a site inventory form for use in Nigeria and Uganda. In Nigeria, the inventory was taken during the site assessment. In Uganda, the inventory form was used in conjunction with midwife training. The midwives were asked a number of questions about the facilities in which they worked. This provided information about what supplies and equipment midwives had available in their practices. Samples of questions contained in this site inventory assessment are included in Box 13. An example of an equipment inventory is the essential equipment checklist shown in Box 14.

### Box 13. Health Services Assessment: Site Inventory Form

Name of facility:

How many assistants?

Number new antenatal visits/year?

Number deliveries/year?

Referral center?      Distance to center?

Reasons for referral in last year?

Equipment for examination: place for history taking\_\_\_\_; place for examination \_\_\_\_; blood pressure apparatus\_\_\_\_; stethoscope\_\_\_\_; adult weighing scales\_\_\_\_; baby scales\_\_\_\_; urine testing equipment\_\_\_\_; hemoglobin testing\_\_\_\_; height\_\_\_\_; examination bed/table\_\_\_\_.

List the equipment used for health education:

Labor room equipment: labor bed \_\_\_\_; vaginal exam tray\_\_\_\_ and contents:

Contents of suture tray:

Sterilization method:

What infant resuscitation equipment do you have?

How many of the following items do you have? Clamps, hemostats, forceps\_\_\_\_  
Suture scissors\_\_\_\_; Episiotomy scissors\_\_\_\_; Cord scissors\_\_\_\_; Suture needles\_\_\_\_; Rectal tube\_\_\_\_; Enema can/funnel\_\_\_\_.

Do you have the following: intravenous solutions\_\_\_\_; giving sets\_\_\_\_; oxytocin\_\_\_\_; ergometrine\_\_\_\_; syntometrine\_\_\_\_; antibiotics\_\_\_\_ and what kind\_\_\_\_\_.

How do you dispose of the placenta?

Do you have delivery registers and antenatal registers?

Source: *Uganda Life Saving Skills Programme Trainers' Guide For the Training of Midwives*. March, 1993.

### Box 14. Essential Equipment Checklist

ITEMS	TRAINING SITES (Numbers Recommended for Each Site)	SUB-CTRS.
<b>Delivery Sets</b>		
• Instrument Trays	75	100
• Cord Scissors	75	100
• Kochers forceps	150	200
• Epis. scissors	75	100
• Gloves	960	1140
<b>Suture Set</b>		
• Chromic suture w/needle	80	95
• Needle holder	40	50
• Suture scissors	40	50
• Tissue forceps	40	50
• Sponge Epis. Pkg.	80	95
• Small bowls	40	50
<b>Individual Items</b>		
• Weighted speculum	2	
• Long needle holder	6	20
• Speculums	10	10
• Mucous extractors	320	380
• Infant scales	2	10
• Sponge forceps	40	50
• Thermometers	40	60
• BP Apparatus	40	60
• Stethoscopes	40	60
• Reflex hammers	40	60
• Fetal stethoscopes	40	60
• Aprons	80	95
• Tallquist scales	80	95
• Centimeter tapes	80	95
• Urine dipsticks	80	95

Source: Marshall, M. and Bullington, S. *Life Saving Skills Manual for Midwives*. American College of Nurse Midwives, 1991.

An important source for more information on assessment tools for health services for obstetrical emergencies, specifically the needs of a district level referral site, is the World Health Organization, which has published a manual on the essential elements of obstetric care. (See reference #5.)

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5. World Health Organization. ***Essential Elements of Obstetric Care at the First Referral Level***. Geneva: WHO/MCH/90.7, 1991.

## **Other Assessment Methods**

There are a number of other assessment methodologies which can be used to obtain information useful in evaluating maternal and peri/neonatal health status. Although not developed by MotherCare, references and a brief description are included as a short introduction.

### **The Sisterhood Method**

This is a methodology developed specifically to measure maternal mortality indirectly (**see reference #1 below**). This method is useful because it attempts to simplify the sample size requirements of larger studies and to reduce problems associated with faulty recall when questions are asked about maternal deaths in a given household in the previous year. Specifically, the method relies on questions which can be asked to all adult household members. These are:

- o How many sisters (born to the same mother) have you ever had who reached age 15 (including those who are dead now)?**
- o How many of these sisters who reached age 15 are alive now?**
- o How many of these sisters who reached age 15 are dead?**
- o How many of these dead sisters died during pregnancy, during delivery, or during the six weeks after delivery?**

It is possible to convert answers to these questions into a maternal mortality ratio. Graham *et al.* (1989) provides more details on this process. These questions simplify the task of both interviewers and respondents, and thus may make information obtained more reliable. Questions can be added onto ongoing or planned surveys to obtain specific information on maternal deaths.

### **Nutritional Assessment**

The consequences of poor nutritional status for maternal and peri/neonatal health are well documented yet often overlooked. Maternal nutritional status should be viewed not only in terms of the comparatively short pregnancy period but as the result of a very long process during the mother's own intrauterine life. There is evidence that a newborn's weight and health, which have definite bearing on growth and development through childhood, depend in great measure on the nutritional status of the mother long before

she becomes pregnant (PAHO, 1991). With these issues in mind MotherCare, along with the Pan American Health Organization, the World Health Organization and the U.S. Agency for International Development, co-sponsored a meeting on "Maternal Anthropometry for Prediction of Pregnancy Outcomes". The proceedings of this meeting serve as a guide for nutritional assessment (**see reference #9 at the end of this section**).

### **Rapid Assessment Methodologies**

Many of these methodologies can be used in rapid assessments as well as in more long-term approaches. The qualitative research field has recently been pioneering several rapid assessment methodologies, including participatory rapid assessment (PRA), rapid assessment procedures (RAP), and focused ethnographic study (FES). Also, the World Health Organization has developed a rapid evaluation method (REM) for assessing service performance. The REM uses selected quantitative and qualitative indicators to measure the quality of care and client satisfaction. Finally, quantitative methods such as surveys and questionnaires can also be adapted as rapid assessment tools.

**For more information on these methods, see references 2-6 on the following page.**

### **Additional Participatory Research Methods**

Participatory research methods aim to elicit local perceptions, beliefs and practices about maternal and peri/neonatal health as defined and prioritized by women themselves. Participatory research often involves activities such as **community mapping** to define what community members see as the important features of their own communities, **body mapping** by women to elicit their point of view on various conditions and their effects on health, **free listing** in which words associated with a particular condition are spontaneously categorized, and **pile sorts** in which the words generated through the free list are grouped into relevant categories. These techniques require in-depth work among small groups, and can be used to complement and enhance the other qualitative methods described above.

**For more information on these techniques, see references 5-7 below.**

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1. Graham, W.J.; Brass, W.; and R.W. Snow. **Estimating Maternal Mortality: The Sisterhood Method.** Studies in Family Planning, 20: 125-35, 1989.
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## **CONCLUSION**

The various assessment tools outlined above have been useful in eliciting information about the maternal and peri/neonatal mortality situations in a number of settings. Many of the assessment tools have been used by local project staff and health workers. Results from Mothercare projects in various countries illustrate the power of these methodologies, and in particular the value of using several tools at once, providing a means for cross-checking data.

The studies from Bolivia and Bangladesh, in particular, illustrate the practical uses of the assessment tools outlined above. Short term assessment at the community level can help to provide an overview of needs and priorities, while longer-term assessments generate critical information which helps to build a basis for country-wide programs.

Qualitative methods help to describe the maternal and peri/neonatal health situation, particularly local beliefs and practices which may be unknown to researchers. These methods are useful in understanding how interventions might be used best, and which messages are most necessary to initiate behavior changes leading to improved maternal and peri/neonatal health.

Quantitative methods help to illustrate the magnitude of maternal and peri/neonatal health problems in a given setting, and help to pinpoint areas and specific targets for intervention. In both Bolivia and Bangladesh, various assessment tools were useful in highlighting the extreme isolation of the areas under study, and the difficulties of changing behaviors when so little infrastructure exists to help women seeking better health for themselves and their children.

At the macro-level, assessment targets areas of knowledge and gaps in knowledge, helping to catalyze programs in a nascent phase. Rapid assessment makes use of available information to paint a picture of the maternal and peri/neonatal health situation at all levels. These assessments provide the basic information needed to get a national level safe motherhood program going. They can help to pinpoint the most urgent areas--both in terms of disease priority and geographically--for intervention.

At the community level, assessment takes on a different meaning. Studies conducted at this level provide the baseline information, often missing, for the initiation of safe motherhood programs. Also, community level studies often inform the development of interventions to tackle specific factors

causing maternal and peri/neonatal mortality. It is important to note that the various assessment tools used in this process tend to provide similar results, indicating that a high degree of comparability between them has been achieved.

The MotherCare Project has worked to improve and develop the process of assessment, the tools used in assessment and the identification of appropriate assessment indicators through country-specific projects and community-level interventions. MotherCare has worked to improve assessment capabilities in order to aid the development of programs at the level of policy dialogue, targeted interventions for improved services, and health communications regarding maternal and peri/neonatal health in order to foster a better environment for safe motherhood programs.

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