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THE HOME-BASED MOTHER'S RECORD:

A guideline for its adaptation, use and evaluation

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A. OVERVIEW OF HOME-BASED MOTHER'S RECORD AND ITS EVALUATION

1. Need for home-based mother's record

The outstanding problem in maternal and child health is the unacceptably high maternal, perinatal, and neonatal mortality rates in most developing countries of the world. Important factors associated with high mortality relate partly to unregulated fertility - with pregnancy recurring too soon, too close together, and too many in number; the life-style and living conditions; patchy health care delivery; poor nutritional status; and inadequate involvement of the community in health care. In recent years, a primary health care (PHC) approach which revolves around the life-style of the people and an assumption of active participation by them has been recommended to improve the situation. To reduce mortality and morbidity there is an urgent need to provide continuity of essential health care including family planning to women throughout their reproductive cycle with provision for appropriate and timely action if problems develop.

Past experience with the child growth chart as a tool for promoting health care and encouraging people's participation has prompted thinking on the issue for maternal home-based health cards. The institution based maternal records are exhaustive; however, they have very limited applicability in field conditions. They are unwieldy, difficult to complete as primary health care workers have limited educational backgrounds, and expensive to store and retrieve. For these reasons, information on maternal health is often incomplete, of poor quality, and there is a poor flow of information between the health care team in most developing countries. Moreover, the demand for family planning programme information has stimulated the development of detailed programme records. Often the rationale for the information is for programme management and evaluation at the higher levels and the primary health care workers neither understand nor receive the feedback from the information he or she is responsible for collecting.

A home-based mother's record could overcome the problems mentioned above. It would function as a simple information system that could also increase people's participation in their own care, stimulate timely and appropriate intervention if a problem develops, encourage continuity of care throughout the women's reproductive cycle, provide a link between various health care facilities, and function as a teaching tool. The records, if widely used by most families in an area, could serve as a source of reliable information as part of household surveys conducted for either evaluation or research purposes. The record also serves to illustrate to the mother and the rest of the family the relationship of various fertility and maternal health relationships, e.g. breast-feeding and the appropriate timing of other means of contraception. Home-based records are simple. They are particularly relevant to PHC since they do not require equipment or time to file them and they are less expensive to maintain than health centre-based records. Home-based records are of considerable help in instituting and coordinating family and self-care and can remain with the mother if she migrates.

2. Review of experiences

Dissevelt and co-workers (1) developed an antenatal card in Kenya to define "high risk" individuals for referral in order to facilitate the operation of antenatal services and to maximize the benefits to those who need care the most. The card had a built-in warning system for risk identification. Shah (2) in India devised and used a mother's health card similar to a growth chart. Her home-based record, which can be used during four pregnancies and the inter-pregnancy period, includes essential information on the reproductive cycle, early identification of

pregnancy by a monthly recall of menstrual periods, family planning practices, breast-feeding, "at risk" indicators during pregnancy, a graphic record of weight gain, and information on the post-partum period of the mother and the baby's health during the first month. Kumar (3) introduced a pictorial card for use by illiterate traditional birth attendants (TBA) in India to facilitate provision of minimal antenatal care, to identify early recognizable "risk" factors in the newborn, and to generate essential vital information.

The maternal cards used in some countries are quite detailed and are primarily designed for clinic or hospital situations (4-9). They are less suitable for PHC workers. These clinic-based cards cannot be used as a prototype for PHC cards since clinic-based cards are not designed to change as the health needs of the community change, nor are they designed for use by workers with minimal writing skills.

3. Characteristics of home-based mother's record

A simple home-based mother's record containing essential information can indicate to the mother her health status and that of her infant up to one month of age, can monitor the lactational and breast-feeding status and family planning practice during the interpregnancy period, can identify "at risk" individuals, and can guide health workers in the timely management of care to be given at home and at the next referral level. The home-based mother's record should be an educational tool which promotes the concept of increasing participation by the mother and the family in self-care. With it the mother and the family should recognize the need to use the health care facility when necessary.

4. Process of development and adaptation of the record

While developing a home-based mother's record, the following should be considered:

- a. cultural background and literacy level in the community;
- b. health and family planning policies and programme strategy; differences in the pattern of health care delivery, distribution and availability of primary health care workers (PHCWs), and their support system. If there are national family planning policies and programme strategy such as community-based contraceptive distribution system or any other, those should be reflected while designing and adapting the record;
- c. stage of PHC development which includes the variations in the background and education of the PHC worker: (belongs to the community? lives in it or not? has the ability to read and write or not?). Since the PHC worker may not be able to read and write, the information provided by the PHC worker may be entered by a literate husband, school-going child or neighbour. In some places a PHC worker is a nurse-midwife, a health assistant or a doctor;
- d. level of mother's literacy: the record is designed to get participation from mothers and families and to increase the concept of self-care. If the mother is literate, she can fill in the card herself to the extent that she can;
- e. health problems in the area that affect women during the reproductive period such as anaemia, malnutrition, hypertensive disorder of pregnancy, malaria, blood group incompatibility, diabetes, tuberculosis, carcinoma of the cervix;

- f. the risk factors and appropriate cut-off points based on the pregnancy outcomes in the area. For example, the risk factor for height may be determined as 150 cm in some countries; others may recommend it as 145 cm.; and
- g. the danger carried by risk factors varies from community to community. In order to focus attention on priority conditions, the boxes indicating a risk factor may be highlighted by shaded area. This will draw the attention of the PHC workers and the community to concentrate resources on these factors for reduction of mortality and morbidity. Additional educational material/teaching aids in the form of illustrations and simple, short messages may be provided on the record. To illustrate, if tetanus, neonatorum, anaemia, and high birth rate are the priority problems in the area, these risk factors can be highlighted in the record, and a simple booklet or handouts provided for the additional guidance of PHC workers and the community.

The core elements of the record must give due consideration to:

- a. the importance and frequency of health problems in the area;
- b. the priority assigned to the problem;
- c. the complexity of the problem to be included in the card and the technical competence of PHC worker;
- d. the availability of equipment and facilities at the PHC level.

5. Prototype record for local adaptation

The prototype home-based mother's record (see Annex I) was developed at an Informal Consultation convened by the MCH Unit in Geneva in January 1982 and has been modified on the basis of comments of experts in obstetrics, nursing, paediatrics, community medicine and those concerned with development of health records for use in PHC.

The essential features of the prototype record are:

- a. it permits easy identification of "risk factors" in order to facilitate timely intervention;
- b. it initiates action at the PHC level for many of the problems identified;
- c. it builds continuity of health care during both pregnancy and the inter-pregnancy period;
- d. it provides information on the status of menstrual cycle and helps in initiating education and action on a suitable family planning practice; and
- e. it encourages active participation of the mother in self-care for improvement of health.

For the sake of uniformity, economy and ease of storage, the mother's record should be printed on strong coloured A-4 size cards (25 x 10cm), similar to the growth card. The mother's record has a total of six panels so that it can be folded twice and then carried in a polythene bag to increase its durability even in adverse storage and weather conditions. The polythene bag should be large enough to allow the record to be put in and pulled out with ease. The bag should be strong enough to last several years. Plastic cards are long lasting and economical as there is no need to provide polythene bags, but writing on them may be a problem.

The prototype record is a flexible starting point for the design of more appropriate ones for each area of use. Specific local problems and risk conditions considered important in the areas/regions of health and family planning policies and strategies should be included.

Out of six panels on the record, one panel is for data and risk conditions recognized from the past history; three panels are to record events including identification of risk during three pregnancies, deliveries and post-partum periods. These panels also include essential information on the health status of the newborn during the first month of life. There is a panel to monitor health progress before the first pregnancy and/or during the inter-pregnancy period (for a period of 7 years) and one panel for recording the findings and recommendations to the referral centre. The record thus provides linkages between the different areas on the panels and a visual indication of the "risk" situation represented by shading which emphasizes the need for timely action by the PHC worker or the referral level. Simple guidelines for the use of the record by the PHC workers and the midwife/health assistant have been developed (see Part B).

6. Issues related to the contents of the record

Each country should determine its own risk level for parameters like haemoglobin, blood pressure, height of women and birth weight in order to facilitate easy and uniform identification of "at risk" women or newborns.

The record should be used as an educational tool for the mother and her family for improving maternal health and family planning care. Where mothers are literate they may be encouraged to complete their own records and participate in self-care under proper supervision. Where mothers and PHC workers cannot read or write, the record should be simplified by the inclusion of simple illustrations.

Meaningful communication should be established between different referral units like the health post, health centre, district hospital with the home-based record serving as a link. Simple tally sheets incorporating health information from the record, including risk indicators, could be developed for use by PHC workers. The copies should be transmitted to the first and second levels of referral, thus providing a simple, timely, and useful information system.

Severe maternal malnutrition is a risk condition responsible for unfavourable pregnancy outcomes. It may have adverse effects during lactation. Recognition of malnutrition allows for intervention that may help provide favourable outcome. Some may like to record maternal nutritional status on the record to identify nutritionally at risk mothers. The measurement of left arm circumference by using a tricolour arm strip (10) and of body weight before and during pregnancy (represented against reference weight curves) have been used in the past to indicate maternal malnutrition (11). These measurements need local adaptation before inclusion in the record.

The mother who breast-feeds her infant exclusively and does not give him/her other food and breast-feeds frequently day and night, benefits from a natural contraceptive mechanism that is stimulated by the act of breast-feeding. Once other foods are introduced into the infant's diet and the number and frequency of suckling episodes is decreased, the risk of ovulation is increased; hence, the risk of a new conception occurring. Regular recording on the pattern of breast-feeding in terms of frequency during the day and the night and the time when it begins to change, the mother should use family planning practices for spacing births.

7. Field testing and evaluation

The process of adaptation and development of a home-based mother's record will necessitate field testing and evaluation after a feasibility study. In the study,

different approaches, like Focus Group Discussions, may be used through mother-health worker interaction to determine attitudes and reactions to the record, its colour, size, and its overall value in improving health care. The views of selected perceptive mothers could be very useful in simplifying the contents so as to be suitable to the local needs.

Field testing and evaluation should be undertaken in 10-12 countries representing: (a) different literacy levels of the community e.g. high and low; (b) literacy and training of the PHC workers, e.g., TBA, community health volunteers, nurse-midwife and health assistants; (c) different levels of development representing the developing, intermediate and developed countries; and (d) variations in geographical terrain like hilly areas, sparsely and thickly populated areas. Trial of the record and the experiences gained in these different situations will help to further refine the record before recommending it as a tool for strengthening of MCH care in PHC.

The prototype home-based mother's record and the guidelines should be field tested to evaluate: (a) conditions of the record after usage for a period of one year; (b) extent of usage of record; (c) quantity of information collected; (d) usefulness of the information collected (e) community and health workers' opinions about the value of the record; (f) risk factors identified; (g) referral of cases; (h) utilization of the referral facilities, (i) utilization of family planning services; and (j) linkage with growth chart and other health service records.

The value of evaluation can be considerably strengthened by an objective comparison of the utilization of health care in comparable areas, for instance, one in which the home-based mother's record has been introduced, and one in which the record is not introduced, and possibly an area in which a placebo intervention (e.g., health calendar depicting antenatal care pictures) is tried. The comparison criteria will include: (a) number of referred patients; (b) the timing of first antenatal visit to the health outpost; (c) utilization of health outpost for family planning services; (d) extent of linkage with growth cards and (3) differences in outcomes of the pregnancies.

Analytic techniques recommended in the January 1982 meeting for evaluation of the home-based record include: (a) rapid evaluation through focus group discussions and (b) audit of records at various levels.

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B. GUIDELINES FOR USE OF HOME-BASED MOTHER'S RECORD

1. General guidelines

The Home-Based Mother's Record (HBMR) is designed to be a reflection of the mother's health before her first pregnancy, during pregnancy, childbirth, post-partum period and the intervening period between subsequent pregnancies. It records her family planning status. In addition, the record provides information about the health of the newborn during the first month of life. The record should remain with the woman under all circumstances - at home, while visiting the clinic, in the health centre or upon referral to the hospital. If she moves from her habitual location she can take the record with her.

The responsibility for filling-in the record is that of the PHC worker with progressively increasing participation by the mother and the family for promoting the concept of self-care.

The HBMR should be filled in as fully as possible, because the history of a woman and the events occurring during pregnancy, and the reproductive cycle are most important in determining her health and that of her family. This can be accomplished by adequate training of the PHC workers using the guidelines. Thus the guidelines should become an integral part of PHC workers' training.

The record should be completed for women between 15-45 years of age who are pregnant or likely to become pregnant, irrespective of whether they are practicing family planning or not. It should be filled in at home, at a health centre, or in the hospital on the first visit. It is not necessary to initiate it only after the onset of pregnancy. For women who are not pregnant, appropriate panels (1 and 6) of the record should be filled-in. The purpose of the record and its value should be carefully explained to the family. The importance of keeping the record safely needs to be explained too.

Answers to all items must be marked in the appropriate boxes whether the response is a yes or no or a number. The negative response should be entered as a cross (X) and a positive response as a tick (✓). All questions should have some kind of response entered. When there is neither a " " nor a "X" mark in a box, it means that a woman has not been attended to or asked that question by a health worker.

There are shaded areas on the panels that indicate "risk factors". Whenever a tick (✓) mark appears in the shaded area, it means that there is a condition present that endangers health. Immediate action is needed in the form of advice, therapy or referral. The shading is printed lightly and darkly. The darker the shade, the higher the level of risk. Those with tick marks in the darkest shading should be advised to have the baby delivered in hospital, whereas those having a tick in the lighter shaded areas of the card should be supervised, advised or treated by the PHC worker and referred if there is no improvement or when advised by the nurse.

In Panels 2, 3 and 4 there are several items relating to the baby's health during the first month of life. This information needs to be transferred to the child's growth card. By doing this, a linkage is provided between the HBMR and the child's growth card.

Panel 5 is provided for the personnel in referral facilities. A note should be entered from the PHC worker documenting a referral. The conclusions and recommendations of the referral centre need to be entered in a language that PHC workers can understand. Written instructions should be simple, clear and concise. This will immensely help and support the efforts of the PHC workers and the family in improving maternal care. If needed, additional pages can be attached to the card as an extension to Panel 5.

2. Specific guidelines for PHC workers

These detailed guidelines will set out:

- a. The risk factors chosen. This will include necessary definitions and simple explanations.
- b. Who will normally carry out the initial antenatal screening.
- c. The referral procedure and structure, including known problems in referral and possible ways of overcoming these.
- d. The action to be taken for each specific risk factor. The information is not detailed in these guidelines as different action may be specified in different countries and situations. However, it is necessary to detail precise instructions, partly for the health care of the woman, and partly to assist in evaluation of the HBMR.
- e. The preventive measures to be taken. The detailed guidelines must give precise instructions on the issuance of iron tablets; chloroquine prophylaxis (if appropriate) and tetanus toxoid. For example, the local policy may be to give iron tablets to all women. On the other hand, due to drug shortages iron tablets may be given to only those who are obviously anaemic. Necessary action should be specified, but if shortages are expected, it would be helpful for health workers if there were guidelines on what they should do.

GUIDELINES ON THE CONTENTS OF THE PROTOTYPE
HOME-BASED MOTHER'S RECORD

Home-based Mother's Record

PANEL 1

This panel includes information on identification and registration, age of the woman, her height and history during previous pregnancies and child births. The following instructions are suggestions only and must be written to match the educational level of the PHC worker and using only those terms that are familiar to them.

Name: Enter the full name by which the woman can be recognized easily.

Number: The register number of the woman should be entered here. It will be useful for identification of the record and linkage with the child's registration number.

Address: Fill in the address for home-visiting. Enter only recognizable landmarks.

Date of first visit: The date when the record was prepared and when the woman visited the health centre or the health worker contacted the woman for filling-in the record.

Age: When age is unknown some indirect methods should be used to assess the age, e.g. appearance, age of eldest son/daughter, comparison with other relatives or neighbours; reference to major events in which the community or adjacent community has been indelibly involved, e.g. flood, earthquake, volcanic eruption, cyclone, hurricane, war or some outstanding local event.

Height: Height may be taken with a tape-measure or by standing against a wall on which markings have already been made. A cut-off level for risk will be communicated from the health centre. A stick with coloured marking up to 145 cm. (or whatever level is decided as being "at risk") can be used by a Traditional Birth Attendant (TBA) who cannot read or write to identify the risk factor.

Previous History: Under this heading past information about pregnancy and health should be entered. The columns need not be filled in if the woman is pregnant for the first time.

Number of deliveries: include the number of children, whether alive or dead who have been born to the woman.

Health workers sometimes have problems with the phrase "Number of Deliveries". This is because:

- a. Some mothers, when asked how many deliveries they have had, will only refer to those still living or they may total every pregnancy including abortions. The question "How many babies have you had" sometimes gets better information.
- b. Health workers sometimes do not know whether they should write the number of total live and still births or total number of pregnancies. This must be clarified.

Abortion: means expulsion of products of conception up to 5 months of pregnancy. This enquiry should be made about the last pregnancy.

Oedema: it is swelling of the feet, hands or face. The woman will explain about severe swelling of the feet or about any swelling on the hands, e.g., when she could not put rings on during her last pregnancy.

Fits: jerky movements of the body or a part of the body, often accompanied by stiffness. This is associated with loss of consciousness.

Still-Birth: a child who, after birth, did not cry, breathe or show any sign of life. For still-births, the pregnancy should have lasted more than 5 months. This enquiry should be made about the last pregnancy in particular but also include a question on the number of still births the woman has had in the past.

Abnormal deliveries: include caesarian section, forceps delivery, face, hand or shoulder presentation, breech delivery and vacuum extraction.

Excess bleeding after delivery: here vaginal bleeding after delivery means more than normal bleeding, as considered by the PHC worker, traditional birth attendant or family member.

Labour lasting more than 24 hours: when strong, painful labour pains have lasted longer than a full day and night.

Low-birth-weight: includes babies born with birth weight of less than 2500 gm.

Death of baby during first week: means baby born alive but who died before seventh day.

Other health problems: any health problem of a serious or chronic nature such as tuberculosis, diabetes, malaria, high blood pressure, kidney or heart disease, Rh. incompatibility, need to be entered here.

PANELS 2, 3 and 4

EACH "PRESENT PREGNANCY"

In Panel 2 fill in information on the pregnancy under consideration for care. Panels 3 and 4 are for any subsequent pregnancy. When filling in Panels 3 and 4 refer to Panel 1 for the information on age and number of deliveries and to Panels 2 and 3 for risk conditions during the last pregnancy. The status of at-risk grading may change according to age and number of deliveries.

Present Pregnancy: includes information or findings during the present pregnancy. All information except the items enclosed by the thick lined upper box are to be filled in by the PHC worker and/or the literate mother. In areas where PHC workers are auxilliary nurses, they will fill in all the information.

Information on action taken is to be filled in by the PHC worker. However, the auxilliary midwife/health assistant will be responsible for taking some action such as injection of tetanus toxoid, provision of chloroquine and iron tablets.

L.M.P. (Last Menstrual Period): record information on first day or month of last period in this column. If the woman cannot recall the date, record at least the month and the year.

E.D.D. (Expected Date of Delivery): to calculate the EDD, add 7 days to the date of the last menstrual period, and then count 9 months ahead. This is the approximate date of delivery. Alternatively, count 3 months backwards, after adding 7 days to the date of last menstrual period for calculation of EDD.

Another possibility for calculating EDD is by the adaptation of a local events calendar or a lunar calendar.

Example: date of last menstrual period = 4th March, add 7 days = 11 March. Now count 9 months as follows. 11 April (1), 11 May (2), 11 June (3), 11 July (4), 11 August (5), 11 September (6), 11 October (7), 11 November (8), 11 December (9). The expected date of delivery is 11 December.

Months: in the boxes under this heading include information of events from the second to the ninth month of the present pregnancy.

Date/month: the date, month and year on which the check-up was made should be entered here.

Severe pallor: the colour of the nails is a reliable method of recognizing pallor. Tongue, lips and lower eyelids are other places where pallor can be traced. A description of pallor adapted to local terminology may be useful.

Pitting oedema: press the skin over a bony prominence on the front of a leg. If a visible depression forms and stays for more than a few seconds, pitting oedema is present.

Vaginal bleeding: means any vaginal blood loss that is more than spotting during pregnancy.

Very thin: the face is pinched, arms and legs are very thin and there is little palpable fat layer on the abdomen.

Very large abdomen: the size of the abdomen (tummy) is much larger than expected for the duration of the pregnancy. It may be the result of too much water in the bag or because there is more than one baby in the womb. Both these conditions are an extra risk for the mother.

Abnormal presentation includes breech, face, shoulder or hand presentation. The appearance of the cord before the baby is delivered is also an abnormal presentation which requires immediate referral.

Weak foetal movements: if foetal movements become less frequent or weak or stop, immediate referral should be sought.

ACTION TAKEN: (Fill in the lower thick lined part of the box).

Food advice: a pregnant woman should eat more to meet her own needs and those of her baby who is growing in her womb. If she does not eat enough, she will become weak and her baby will have a low birth weight. She should eat larger amounts than usual and more often. Among the locally available foods she should try to eat cereals, seasonal vegetables and fruits, milk, meat and eggs. If advice on food is given, a tick mark should be entered in the box.

Iron tablets: two tablets of iron, or iron and folic acid should be given daily after meals according to the advice of the local health authorities. This helps in preventing pallor and in treating it. If iron tablets are given to women a tick mark should be entered in the box.

Chloroquine tablets: chloroquine should be given for treatment of fever in areas where malaria is endemic. Early treatment of malaria can prevent complications during pregnancy. The choice of drug, its dose and duration would vary according to the recommendations made by the local health authorities. Drugs may also be given for prevention of malaria according to the advice of local health authorities.

Tetanus toxoid: PHC workers should motivate pregnant woman to have tetanus toxoid injections. Two injections of tetanus toxoid are given at an interval of 1-2 months after 4 months of pregnancy. This protects the baby from a fatal disease - neonatal tetanus. The second injection should be given one month before delivery. If there is a history of these injections, then the health worker and/or nurse should be guided by the immunization schedule being used in the country.

Advise on place of delivery: During mid-pregnancy it is useful to discuss with the mother the place for delivery so that adequate preparations and arrangements may be made well ahead of time. The decision should be based on the previous history and the situation in the present pregnancy, and a tick mark placed in a shaded area. The auxiliary nurse/midwife should be consulted if any of the shaded areas have a tick mark. The risk of home confinement needs to be explained here and a decision about the place of delivery should be taken by the mother and the family. Those women who have a tick mark in a deeply shaded area should deliver in hospital as considerable risk conditions may be apparent.

LABOUR/DELIVERY

In many areas, the delivery is conducted by the TBA or a relative who may not be able to read and write. If a PHC worker (who is not a TBA) has not delivered the baby, information from the TBA or the person who conducted the delivery should be obtained.

Duration: the duration of labour is prolonged if strong and frequent labour pains have lasted for more than one day and one night (24 hours).

Presentation: the part of the baby that came out first, either head or any other part (cord, hand, shoulder, foot, breech) should be noted.

Type of delivery: Head presentation is a normal delivery. Other deliveries, such as breech, cord, hand, shoulder, caesarian, forceps or vacuum extraction should be considered as other types of deliveries and are not normal.

Excess vaginal bleeding: includes more than normal vaginal bleeding after the delivery of the baby and it indicates that the placenta or part of it is still not delivered. Record any information on whether there was, or was not, excess vaginal bleeding.

BABY

Include information on the baby until one month of age in this record. On the day of the birth prepare the child's growth chart and fill that in regularly.

Date of delivery: write the date, month, and year of baby's birth

Sex: tick whether a male or female

Place of delivery: tick the place where the delivery was conducted.

Conducted by: information on who conducted the delivery. The abbreviations used are:

TBA - Trained Traditional Birth Attendant
REL - Includes relative or neighbour
ANW - Midwife
RN/RM - Registered nurse/registered midwife

Duration of pregnancy: Refer to the EDD and record whether pregnancy was longer than 8 months, 8 months or less. A baby born at 8 months or earlier is a pre-term baby.

Number of babies: whether the delivery resulted in the birth of one baby or more. If two or more babies are born include the information on the other baby/babies in the next panel.

Birth weight: it is presumed that a simple portable balance is available for recording the birth weight. If not available, this should be procured by the local health authorities. The weight may be read directly from the scale in the case of literate workers or recognized from the range of colour coded symbols if the weight is to be recorded by a Traditional Birth Attendant or person who cannot read. The colours to be used for defining the weight range may be chosen according to local cultural acceptability and the cut-off point for defining low-birth-weight babies should be 2.5 kg or less than that (this may be changed if information about the community indicates 2.5 kg is too high).

Crying: There is delayed crying if the baby takes a long time to cry (more than five minutes) after being born and some action has to be taken to make the baby cry or if he/she has difficulty in breathing and breathing is delayed and/or he/she is blue (cyanosed) on tongue and lips. In that case put the tick mark in the "delayed" box.

Breathing difficulty: this occurs if the baby experiences sucking of the lower chest when breathing in, grunting or if his nostrils swell with each breath. Breathing difficulty is apparent if observed at any time during the first month of life.

Condition of baby: whether baby is alive, born dead or died during first 7 days or during 7-28 days should be recorded.

Breast-feeding by one month: Breast-feeding is not successful if the baby is given any food other than mother's milk on one or more occasions each day. This information should be recorded at one month of age.

PANEL 5

REMARKS TO AND FROM REFERRAL CENTRE

This panel is filled in by the PHC worker when referring the mother to either nurse or doctor. The nurse or doctor will write down a brief remark on examining the mother. The information about the problem, action taken, and the advice given should be simple and concise as there is allowance for a 7 year follow-up in this section. These findings can be valuable if the woman seeks referral care again in another centre/hospital. This panel is also meant to be a link between the PHC worker and the mother on the one side, and the referral facility on the other.

While the entries on the panel will be of great value from a service point of view, the personnel in the health centre and at a referral facility must be actively involved in the orientation and training of PHC workers regarding the home-based mother's record. The value of home-based mother's record and the credibility of the PHC workers can be considerably increased by the active participation of the health personnel in the referral facilities.

PANEL 6

BEFORE FIRST PREGNANCY AND DURING INTER-PREGNANCY PERIOD

Information on every woman in the village between 15-45 years of age who has a chance of becoming pregnant but at present is not pregnant should be entered here. In order to include all women, the PHC workers should visit each home at least once in 3 months to inquire about the woman's health and welfare and take timely action before complications or problems develop. A record should be drawn up when the first contact is made (during pregnancy, or inter-pregnancy period as the case may be). If information needs to be filled in on this panel, it should be done in the appropriate column for the month under consideration. The year for should be entered identification purposes. Information should be entered every 3 months after the first visit. If, for any reason, a visit is not made then a literate woman should fill-in the columns herself or get the help of someone else to fill them in for her.

Breast-feeding: information on whether the mother is continuing to breast-feed beyond one month should be marked by a tick mark for each month.

Menstruation: ask about the month of last menstrual period: Put a cross mark if menstrual period has been missed (X); place two cross marks if two periods have been missed (XX). If two cross marks are present it suggests pregnancy. Early identification of pregnancy helps the PHC worker to provide care throughout pregnancy for a favourable outcome.

Family planning: mark with a tick (.) the column of any of the family planning methods which have been used during the three months under consideration (one tick for one month). In front of each column, (pills, injections, IUD (loop), place a tick (,) or a cross (X) mark, whichever is applicable. If no method of contraception was used in 6 months after delivery, motivate the family and seek help from neighbourhood health workers or supervisor to get the mother to decide on which method to use.

Surgical: includes vasectomy and tubectomy to stop future childbirths.

No methods: if no family planning method is used then mark accordingly in the box.

If excessive vaginal bleeding, dizziness or nausea, pain in the lower abdomen or pain in the legs are reported by a woman who is using a family planning method, refer her to the next referral level and enter the problem in Panel 5.

The information on extreme thinness, pallor, malaria (fever with signs), other problems like serious or chronic illness, or on the use of chloroquine as prophylaxis for malaria should be entered in the appropriate boxes. Necessary action whether health educational or therapeutic should be taken.

Putting the guidelines into practice: the protocol on the HBMR lays out instructions for auxiliary nurse midwives who are to teach the PHC workers how to use the record. However, many such workers may be unfamiliar with the concepts of risk and self care.

For this reason guidelines should first be written for conducting of seminars or workshops for the training of senior midwives in the practical use of the HBMR's. These senior midwives will then be able to give practical training to the

auxilliary nurse midwives. Auxilliary nurse midwives should receive special practical training for recording information such as filling in the boxes, because in some teaching, tick marks (✓) are considered good and crosses (X) are bad. In using this HBMR the tick mark means "yes" (there are risk factors) and "X" indicates "no" (no risk present).

3. Specific guidelines for medical staff at PHC workers first referral level

These guidelines are intended for health personnel such as auxilliary nurse midwives, nurses, health assistants or doctors who are responsible for the care of women during their reproductive period at the level of health outposts. For the purpose of these guidelines, these health personnel are referred to as medical staff.

The first referral level staff at the health outpost is responsible for the training of PHC workers and an important component of this will be to familiarize the PHC workers with the essentials of health care and the skills required to identify risk factors. Medical staff should use the guidelines as a starting point for the training of PHC workers.

The first referral level staff should maintain minimal but essential information on identified risk factors for mothers and babies of the area, the family planning acceptance rates, serious health problems, and referrals. In addition, medical staff are responsible for recording information on vital events concerning mothers and babies. The maintenance of this information system helps in ensuring the continuity of health care.

The first referral level staff is responsible for filling in information about pregnant women in the boxes enclosed by thick lines in Panels 2, 3 or 4.

B.P.: Measure the blood pressure by using recommended method. Put a tick (✓) mark only if B.P. is more than 140 mm systolic or 90 mm diastolic and (X) will indicate if B.P. is not high. No mark indicates that B.P. has not been taken.

Haemoglobin: Estimate the blood haemoglobin. Place a tick mark if it is below 8 g/dl or the level suggested from the health centre. Mark with an "X" if it is above 8 g/dl and no mark indicates that haemoglobin was not estimated. Below 8 g/dl would indicate that referral care is required.

Urine albumin: Measure the urine albumin. If it is more than a trace, put a (✓) mark in the box. Urine albumin estimation is carried out during the last 3 months of pregnancy.

Weight in kilogrammes: Enter in weight in kilogrammes in figures in the appropriate box according to the month of pregnancy.

The columns under the heading "action taken" are a joint responsibility of the nurse-midwife or the staff from the referral level and the PHC worker. The medical staff must ensure a continuous supply of vitamin, iron and folic acid tablets, chloroquine tablets and must train PHC workers about proper usage according to established recommendations of local health authorities. While the PHC worker is expected to motivate and inform the women about tetanus toxoid, the nurse midwife is responsible for administering the immunization.

4. References

1. SHAH, KUSUM P. The Local Event and Lunar Calendar to Predict Expected Week of Confinement (mimeographed)
2. MEI-PU, CHEN. Community-Based Health Services Research in Maternal and Child Health in Shanghai in Learning from Doing; Experience of Maternal and Child Health Services Research, MCH/HSR/81.1, World Health Organization, 1981.

C. GUIDELINES FOR ADAPTATION OF HOME-BASED MOTHER'S RECORD
TO LOCAL AREA USE

1. Making the Home-Based Mother's Record (HBMR) simple to understand and use

Many antenatal cards are written by doctors for completion by doctors and midwives. This mother's record is different. It is designed to be used and understood by PHC workers and mothers themselves. Thus, although it must be designed so that health personnel get the information they want, the language used must be that used by the PHC workers and local women.

In adapting the HBMR to the needs of any area, four stages are necessary:

- a. Adaptation of the HBMR to national health and family planning policies and strategy and to local health and obstetric problems - For example, some areas have no malaria and investigators may wish to substitute some other problem or preventive measures, e.g., Pap test or more information on family planning. In others, redefinition of the risk criteria is necessary to accommodate appropriate difference.
- b. Adaptation of the HBMR needs of PHC workers - If reliable information is to be obtained from these mother's records, the questions should be very precise.

Frequently, general open-ended questions do not produce useful answers, e.g., the section "Other Health Problems" (Panel 1) may not be completed at all. Thus, if the investigator wants to know about tuberculosis in particular, it may be necessary to include a reminder about this. Otherwise, if the health worker is very busy or tired, information will be missed.

- c. Translation and adaptation for PHC workers - In many countries, translation will be required. However, translation is often done by a professional translator or highly qualified medical person. Such translations are good but often use technical and complicated medical words and abbreviations. If the HBMR is only to be used by doctors, this may be satisfactory. However, the aim of this record is that it should belong to the mother, not just so that she can hold it in her hand, but so that she can understand the words, even if the record has to be read to her. Thus, the words used in the translation need to be the simple terms used by local women in talking to each other.

- d. Making sure that HBMR can be understood and used - Even if translation has not been necessary the wording and layout of the record needs to be tested. The health workers who will normally use the record and the mothers themselves should be involved in testing it. The record should be tested before it is put into general use. In this, health workers at field level can be involved in creating the record rather than being expected to use one that is difficult to understand. Various health workers should be involved in this exercise, especially those who will actually use the HBMR. Those to be included should be:

- (1) the senior nurse-midwives involved in the programme;
- (2) the enrolled nurse midwives, or auxilliary nurse midwives;
- (3) any voluntary assistants in the programme, and
- (4) mothers who will use the HBMR (literate and illiterate).

Each of these groups of people can make a different contribution. Senior nurse midwives with their greater experience may focus not only on the words used and the layout of the HBMR, but also on the appropriateness of the risk criteria and the relevance of the health and obstetric problems listed. The health workers will probably focus on simplifying the words used and making the layout of the HBMR clearer.

Each health workers should fill out about 5 or so records. First the health workers should work in pairs to try the HBMR out on each other in role play. Then the health workers can use the record with pregnant women as they would normally do for antenatal visits. The health workers should be encouraged to make comments on the record. They could have an extra sheet of paper to write comments on (if they are literate). After the health workers have tried out the HBMR a focus group discussion with the PHC workers (especially the illiterate ones) and some of the mothers who used the card can be held to discuss at least the important points. Some appropriate questions to consider are:

- a. Do you understand all the words written on the HBMR? If no, ask the supervisor what they mean and change what is written on the record.
- b. Are the words on the HBMR the words that you would use in talking with a pregnant woman? If not, what would you say?
- c. Are all the questions on the HBMR useful? Are there any that should be changed? What can you write instead?
- d. Do you think the order of questions is easy to follow in talking to a pregnant woman? Do you think any questions should be added? If so, which ones? Is there enough space to write the name and address?
- e. Is the printing clear so it can be easily read?
- f. Would the print be better in another colour?
- g. Is the colour of the HBMR attractive? Will it get dirty easily?
- h. Is the of data recording easy to do, and does it cover all aspects?
- i. Does the HBMR ensure the clients' understanding, interest, and participation?

2. Risk Criteria

The risk criteria in the HBMR must obviously be re-adapted for each local area. Several aspects must be looked at:

- a. What risk factors will be included?
 - i. What are the major maternal and perinatal health problems in the area?
 - ii. Whether pregnancies are too soon or too frequent or too many?
 - iii. What risk factors are important enough to be deleted by a primary health care worker?
 - iv. What is the education and training of primary health care workers?
- b. What will be the cut-off levels of high and low risk? Can the primary health worker measure the cut-off level?
- c. How will the risk factor be measured? (should be part of the guidelines).
- d. What are the types of equipment and current practices at the various "levels" of the existing health care delivery system, beginning with the primary health care worker in closest contact with the mother? (If the primary health care worker has no equipment or training to do the haemoglobins, then the risk factor of less than '8Gm haemoglobin' cannot be something the PHC worker is responsible for assessing on the HBMR.)
- e. If a risk factor is identified, what is the action to be taken, by the primary health care worker? Is there the possibility of taking appropriate action in the area?
- f. Is the health care delivery system able to provide care once the risk factor is identified, and where? Can the system provide the resources to cope with the numbers classified as high risk? For example, in some places 50% of pregnant women would be high risk if all primigravidae and gravidae above 5 were classified as high risk. The services often cannot cope with this load. Thus, risk must also be defined in terms of service capacity, and the criteria related to age and parity may have to be redefined.

D. GUIDELINES FOR THE EVALUATION STUDY

1. Outline of contents of a project proposal

A proposal must be written for the implementation of the HBMR and its evaluation. An outline of the elements of a basic proposal follows:

1. Background.
 - a. Describe existing health care delivery system
 - b. Describe how the HBMR might fit into the system.

2. Objectives of the evaluation and questions to be answered.
3. Methods and Materials.
 - a. Area(s) Chosen: Describe Geography.
 - b. Population of Area: Describe:
 - i. Birth Rate
 - ii. % Population that are females, 15-45 years (or in reproductive age)
 - iii. Known % of pregnancies, risk factors, morbidity, mortality
 - c. Evaluation Study Design.
 - d. Sampling:
 - i. Unit, Size
 - ii. Sampling Method
 - e. Implementation of the Home Based Mother's Record.
 - f. Information Collection for the Evaluation:
 - i. Instruments for Information Collection: Discuss examples
 - ii. Study Personnel: Training, Selection
 - iii. Equipment, Facilities, Transportation
 - iv. Pilot Study Plans
 - v. Administration
 - vi. Time line
 - g. Data Processing and Analysis:
 - i. Data Processing Plan
 - ii. Instructions for Coding Evaluation Data
 - iii. Analysis Plan

4. Budget

In the rest of this section more specific examples and suggestions for carrying out the evaluation are given with the intent of making the evaluation similar in the various areas where the HBMR is implemented.

2. Objectives of the HBMR and questions to be answered in the evaluation

The objectives for the current HBMR evaluation are based on the process of its use, that is, whether it is filled out, or if mother keeps it, rather than on the outcomes of use, such as its impact in lowering morbidity and mortality. Of interest in the evaluation of process is whether the HBMR works as it is supposed to. First, the HBMR must be shown to work in the way it was intended to work and only later the evaluation of the longer term impact of the HBMR can be undertaken.

Five major process objectives have been identified for the HBMR. The various activities surrounding the use of the HBMR have been grouped according to the objective they address.

Objectives

Programme Activities

- a. to provide a means of promoting continuity of care throughout pregnancy, the postpartum period and the inter-pregnancy period

- the HBMR contains relevant information about the woman's health status and treatments
- the HBMR remains with the woman
- the HBMR links care by various providers
- all providers write notes on the problems present and care given on HBMR. Notes from the PHCW on the HBMR regarding problems of the woman are transmitted to referral service.
- spaces are provided to note treatments and referrals

The HBMR connects care provided at different times and places by the PHCW. Problems continue to be cared for. Also women are not lost post-delivery, but come for postpartal care and family planning. Their infants are followed-up.

- b. to promote referral that suits the need of the woman while encouraging self-care where appropriate.

- problems that put a woman at higher risk of illness or death will be specified and marked.
- standards of referral for specific problems will be established and noted.
- HBMR women will be taught to identify their own problems and what to do for them.
- use and care noted on HBMR

The HBMR assists women to receive the care they need at the appropriate place and from the appropriate provider. Services are receiving only those patients who have problems necessitating the level (sophistication) of care available at that service.

- c. to promote initiation of care suited to identified needs and provide information about the community

- identified needs are noted on the HBMR
- care and treatment provided are noted on HBMR
- dates and activities during inter-pregnancy period noted.
- standards of care are established for problems and further needs identified.

The HBMR should provide a means of documenting needs. With specified needs, the HBMR provides reminders of the care (treatment) most appropriate for the need, and a place to record the care provided. The HBMR could be a source of information about the community permitting rapid and accurate assessment of the community or individual health status and the use of services.

- d. to provide a usable and viable record of care and health information
 - each mother keeps her own HBMR
 - mothers themselves use the HBMR
 - PHCW uses the HBMR

The HBMR must be able to survive the use intended for it as well as provide a means to maintain information about women's reproductive years.

- e. to provide a focus for education related to risks and care during pregnancy and inter-pregnancy period
 - mothers are taught about risks shown on HBMR by the PHCW.
 - PHCWs learn about the risks and their appropriate care.
 - mothers and PHCWs are taught how to note problems and care on HBMR
 - mothers, PHCWs, and other service providers are taught the use of the HBMR.

The HBMR is kept by the mother and problems, if any, noted on it. The PHCW should explain problems detected and entries on the HBMR to the mother. Mothers should know about problems and what to do for them.

3. Evaluation Study Design

In evaluating the use and success of the HBMR in achieving what it is supposed to, two basic study designs will be used: the case study design and the pre-post comparison design.

The case study design means that the experience with the HBMR will be described and information will be collected from only those people who have used the HBMR. In some instances a comparative case study design will be used, that is, normal use of the HBMR will be compared to standards set up by the investigators for their HBMR area.

The pre-post comparison design means that the two areas must be used in the study; one area gets the HBMR and the control area does not get the HBMR. The control area should be similar to the HBMR area in population characteristics and in medical care availability and structure. The comparisons in analysis of results from this design are:

<u>HBMR Area</u>	<u>Control area</u>
pre-HBMR data	pre-HBMR data
HBMR used	HBMR not used
post-HBMR data	post-HBMR data
----- compare findings -----	

Pre-study data collection is necessary in order to measure the change that occurs with the introduction of the HBMR. Since some changes will occur just because of pre-study data collection, the same data collection must be carried out in the control area. Comparing the pre-HBMR data between the two areas will indicate if they are similar to begin with. The most important control to be made between the HBMR area and the control area are in respect to the results after the use of the HBMR.

Because of the pre-study data collection and the activities during the evaluation, there will undoubtedly be some change in the way care is delivered in the control area. This cannot be avoided entirely. However, it is important that the procedure of health care delivery remain the same as before. Similar changes will probably occur in the HBMR area. For all these reasons, similar data collection and activities must occur in both areas (except for the introduction of the HBMR in the HBMR area).

4. Consideration of the areas chosen for HBMR implementation and for comparison

The evaluation and field testing of the HBMR will be undertaken where investigators work in close association with the primary health care (PHC) system, and where proper supervisory mechanism exists. The HBMR will be introduced in the existing PHC structure without any changes in training, supervision or health care delivery mechanisms except for the orientation of the workers and their supervisors about the record. As far as possible, the evaluation will be carried out with the budgetary resources of the investigator or the local area where the record is introduced.

In selecting an area and a population for the introduction of the HBMR, several points must be considered:

- a. Existing health care delivery system includes a "primary health care worker" in direct contact with a community and mothers. It should be a unit that serves a small population.
- b. Characteristics of the PHC worker's education and training must be known so that the HBMR can be adapted appropriately.
- c. Characteristics of maternal and perinatal health problems of that region must be known so that HBMR can be adapted appropriately.
- d. The existing health care delivery system is stable enough to permit introduction of the HBMR without the need to change routine training and supervision of existing workers.
- e. The existing health care delivery system contains possibilities of referral.
- f. An area and population of similar characteristics to those of the HBMR area and population exist for use as a control area.
- g. The likelihood that the health care workers will fill out the HBMR.
- h. The health care delivery system in the study and control areas should be similar to those which the country will have in the future.

In order to determine the extent to which the HBMR can be introduced given different conditions, the following types of areas can be studied:

- a. terrain and population distribution - hilly, sparsely populated areas where it takes a long time to walk to a health centre, and densely populated areas.

- b. level of development of the country - developing, intermediate or developed.
- c. literacy of PHC workers and women - literate women, illiterate PHC worker with support from literate woman or community member, literate PHC worker, nurse midwife, or health assistant.

Some examples of possible combinations of variables for project areas are:

- a. Sparsely populated area, developing country, illiterate PHC worker supported by literate family or community member;
- b. Sparsely populated area, intermediate country, literate PHC worker;
- c. Sparsely populated area, developed country, literate mother, midwife;
- d. Densely populated area, developing country, illiterate PHC worker, literate family or community support;
- e. Densely populated area, intermediate country, literate PHC worker;
- f. Densely populated area, developed country, literate mother, midwife;
- g. Hilly area, developing country, illiterate PHC worker, literate family or community support.
- h. Hilly area, intermediate country, literate PHC worker.

5. Issues in determining study sample size

An area having a population of 20,000 inhabitants is suggested for the study population if PHC workers are available in a proportion of one worker to a population of about 1,000. Assuming a birth rate of 30/1000 population per year, the total births in one year will be 600 (see calculations that follow). The size of the population needs to be adjusted in such a manner that the total births in one year number 600 if the birth rate is different. At least 400 HBMR should be filled in after registering pregnancies between 3 and 8 months of gestation during the registration period.

Assuming a 20 per cent drop-out rate, 320 HBMR will be available for analysis. In some areas the drop-out rate may reach 50 per cent. In such situations, areas with larger populations should be included (25,000-30,000) in order to ensure that 320 HBMR are filled in within the stipulated time period of the study. If the risk factors are identified in 20 per cent of cases, detailed information on 64 "at risk" cases will be available for scrutiny.

If any risk factor occurs with lower frequency than 1.5 per cent of pregnant women, the number of HBMR filled-in must be increased. The intent is to have at least five women with the risk factor. If 320 records are filled in and 1 per cent have a factor, then $0.01 (1\%) \times 320 = 3.2$ women have the factor. This is too few; therefore, in order to find out the total number of HBMR needed to get 5 women with the factor:

$$\frac{5}{0.01} = 500 \text{ pregnant women needed in the study rather than } 320$$

Therefore, a larger population must be used to ensure that 500 HBMR are available for analysis.

Another population of similar size will be selected with similar health care delivery and demographic characteristics as a control area but in this area the HBMR will not be introduced. The control area must have a birth rate similar to the HBMR area. Also the percentage of women thought to have high risk pregnancies and so on should be similar; otherwise, the numbers of women in the study will have to be adjusted.

CALCULATIONS

Information needed to determine sample size:

- a. total number of inhabitants in the area
- b. number of births per year or birth rate per 1000 inhabitants per year

In a hypothetical area:

- a = 20,000 inhabitants
- b = 30 births per 1000 inhabitants per year

We want to know how many births there are in a year:

$$\frac{30 \times 20,000}{1000} = 600 \text{ births per year}$$

The next question is: How many women will there be who are 3 through 8 months pregnant when the first survey of the population is done? (The reason for choosing only women 3 months or more pregnant is that most women are not sure of pregnancy until 3 months. The reason for not including women who are 9 months pregnant at the time of the first survey is that they may have had childbirth by the time the PHC worker comes to give them their HBMR). Excluding the first, second and ninth months of pregnancy means that we look at 6 months of pregnancy, or 6/9 months of pregnancy.

$$\frac{600 \times 6}{9} = 400 \text{ pregnant women given the HBMR}$$

To calculate the loss due to drop-out:

20% is the estimated drop-out rate (woman moves away, refuses to continue or dies)

$$400 \text{ women} \times 0.20 \text{ (20\%)} = 80 \text{ women who drop-out}$$

$$400 - 80 = 320 \text{ women with HBMR at the end of the study period}$$

How many women will there be with high risk pregnancies to analyze at the end of the study? If 20% of pregnant women have a high risk pregnancy, then:

$$320 \times 0.20 \text{ (20\%)} = 64 \text{ high risk women}$$

6. HBMR introduction

The PHC workers will provide an HBMR for any pregnant woman whose period of pregnancy is 3 months through 8 months in the HBMR area. This is done in the area to which the PHW is assigned. Those women who come to an area only for delivery or who were not registered at the first survey should not have an HBMR made up. All pregnant women who are registered and for whom an HBMR is prepared will be followed up regularly.

In areas, where the nurse midwife/health assistant is the only worker at the grass-roots level and the population assigned per health worker is unwieldy (that is, more than 1,000 per worker), help may be sought in using the HBMR. For example, if one nurse/midwife cares for a population of 5,000, but only contacts 25% of clients regularly, it would be necessary to increase the number of nurse/midwives participating in the study to 16, in order to obtain the necessary population of 20,000 covered.

In other situations, the possibility of literate mothers and informed community members participating may be actively sought in filling in the HBMR under the supervision of a nurse/midwife. This decision would depend upon the literacy of the population and its readiness to participate in the programme.

7. Evaluation study methods

The evaluation of the HBMR has to be flexible. The design of the evaluation must meet commonly accepted standards of scientific rigor while addressing the needs and circumstances under which health professionals work. Since each area may have circumstances affecting the use of the HBMR, these same circumstances mean the evaluation must be tailored for each area.

a. Plan of work for each objective

Each of the five major objectives for the evaluation are addressed by answering a set of questions. To answer each question information must be collected and analyzed.

The methodology to use in answering each question is presented in a set of matrices (see Annex II), so that investigators can see the actions necessary to answer any of the evaluation questions. There is one matrix for each objective. To see the entire matrix for an objective, lay the two parts side by side, matching the question letter labels (that is, question a to question a, b to b, etc).

The set of evaluation questions implied by each objective are stated in Column 1. The evaluation study design needed to answer each questions is presented in Column 2. Column 3 contains the brief description of the measurements made to answer the question. The sample from which to gather the information appears in Columns 4 and 5, one for the HBMR area and the other for the comparison area.

From the samples, information will be collected from various sources and these are listed for each question in Columns 6 and 7. The term "independent" refers to the factor or variable that is supposed to bring about change, and in many instances it refers to the comparison of the HBMR area with the control area. The term "dependent" means the factor for which change is measured. For example, in Objective A, Question a: information for the independent variable will come from the HBMR area and from control area, and the log of activities telling if mothers sought care for need provides information on the dependent variable.

Columns 8 and 9 list the various methods to use for collecting the information. Generally the priority technique will be listed in Column 8.

Analysis methods that suit the study design and information collection technique are found in Columns 10 and 11. Usually the analysis method in Column 10 matches the information collection technique in Column 8, and Column 11 matches Column 9.

The columns of the matrix are labelled "analysis method" rather than "statistical testing" since the guidelines are for condensing information into a quantitative (or qualitative, as in the case of the focus group discussion method) piece of data without specifying, necessarily, the specific statistical technique that might be used to claim that an answer is significantly different or important. Statistical testing can be done, but is not absolutely necessary in order to obtain an answer to the majority of questions. For statistical testing, consultation with appropriately trained professionals is recommended.

The choice of questions will produce a plan of action for choosing groups to be studied, for information collection and for analysis. Individual investigators have the option of mixing in other issues they wish to address.

An example of reading the matrix is given for Objective A, Question d: does the mother still have the HBMR? The study design (Column 2) is a case design, so data from only the HBMR area will be used. We want to know the number of mothers still having the HBMR at the end of the study (Column 3). From the log of all mothers who were registered HBMR users we will either take all of the mothers or a sample of them (Column 4).

The mothers themselves will provide the needed information (Column 7) in one of two ways: someone (probably the PHC worker) goes to the mother's home at the end of the study to observe that the mother still has the HBMR (Column 8) or the information is recorded on a logue filled out (probably by the PHC worker) at the end of the study (Column 9). Both information collection techniques will be analyzed in the same way, by obtaining the "percentage (%) of the actual", which means we wish to know what percentage of all mothers who are supposed to have the HBMR still do have the HBMR.

Investigators can decide before analysis what they would consider to be the acceptable minimum percentage of mothers with the record and compare what is found from the survey with their expectations. The expected percentage should be no higher than the percentage of retrievable records in a traditional system. Even in a traditional record system kept by health professionals, records are lost.

b. Information collection techniques

The use of a combination of techniques is suggested in order to strengthen the value of each method. Evaluation of the record comprises elicitation of quantitative information as well as a behavioural research component.

The methods recommended for use are:

- i. Forms (logues or register) of events as they occur during the study period.
- ii. Abstraction of the HBMR, and records of the health center and referral centre.
- iii. interviews with mothers, informed community members, PHC workers and health supervisors (since individual interviews are time consuming, focus group discussion is preferable).
- iv. If possible, participant observation to strengthen the data obtained from interviews and audit, ensure validity and understand the process of filling in the HBMR.
- v. Declared standards of practice.

Form: With this type of information collection, only a few questions can be addressed on one list or form. On the form can be recorded many HBMR mothers (in contrast to the questionnaire), but only a few pieces of information (in contrast to the questionnaire format in which many items of information can be collected).

From the forms the number of "yes" and "no" answers can be tallied and answers to basic questions can be obtained quickly. However, if an investigator wishes to address questions such as the characteristics of women who keep their cards, or some such, then the information must be coded for manipulation in the same manner as with the questionnaire.

Two types of forms are used: one type serves as the logue or register of visits and contacts during the study with the mothers (see Annex III for Forms 1-7). One set of Forms 1-7 HB serves the HBMR area and another, almost identical, set of Forms 1-7 CA serves the comparison area.

The second type of form is a Data Form used to abstract the HBMR or medical records (see Annex IV for Data Forms 8 and 9).

Guidelines must be prepared for each form containing the following information:

- a copy of each prototype form.
- who will fill out the logue?
- instructions to the user of the form (and fill it out) with definition of each item.
- where will the form be used and kept?
- what is the source of information (e.g., clinical history, the HBMR, each visit of mother, etc.)?
- when will the form be filled out (at which time during the study)?

These guidelines should be written in a language understood by the person responsible for filling in the form.

Questionnaire: This type of technique usually contains information on just one mother, or record, or whatever the source of the information is. In the questionnaire format, information is entered into the information column by the interviewer (or the observer) and later coded into the coding section by a coder (see Annex V for Prototype Questionnaires A and B). All of the information can be collected from the mother about whatever aspects of the evaluation is desired. The information can then be transferred for analysis either by computer or by hand, as required.

Guidelines for use of the questionnaire and definitions for each question are prepared and include the following items:

- A copy of the prototype questionnaire
- Who will use the questionnaire (fill it out)?
- Instructions for using the questionnaire with definitions of each item
- Where will the questionnaire be used?
- Who is the respondent?
- When will the questionnaire used in the study?

Focus group discussion: With this technique 6-12 people are brought together to discuss specific topics. An "interview" is conducted with a group, rather than with an individual. Guidelines for the technique must be prepared containing the following information:

- Prototype guide for the discussion.
- Definition of each item.
- Where will the discussion be held?
- Who will participate?
- Who will serve as discussion leader?
- When will the discussion occur during the study?

Focus group discussion (FGD) provides qualitative data about how a group of people behave and why. FGD is especially good for getting a "feel" from the direction of behaviour rather than its magnitude.

The group should be similar in background and characteristics, and there should be no one in the group who is recognized by all there as an "authority". It is better to conduct separate group discussions for PHC workers, nurse/midwives and physicians.

The discussion leader must be familiar with holding group discussions, needs an outgoing personality and a permissive attitude during the discussion. The leader's intent is to gather information, not to provide a point of view. It is frequently advisable to have the discussion leader the same gender as the majority of the group.

The discussion leader needs a list of the questions to be addressed in the discussion but need not pursue them in any particular order (see Annex VI for Prototype Discussion Guides A, B, and C). However, the leader should be aware of how much time is to be spent on any one topic, so that none are left out. The leader "directs" the discussion with non-judgmental open-ended questions, and participants should be encouraged to say whatever they feel.

Standard: For several evaluation questions the results of actual HBMR use are compared with standards set by the investigators before the study starts (for example: the standard says that a woman with signs of toxemia is to be referred directly to the hospital or physician. So, of the women found with pitting oedema in the third trimester by an expert, the PHC worker have should diagnosed 80% of them). These standards must be stated prior to the analysis of the evaluation results.

c. Work plan for the study

The events to be carried out for the evaluation study of the HBMR are shown in Flow Chart 1 (see Annex VII). The forms to register women and to log activities during the study are shown at the bottom of the Flow Chart. The position of the forms tells which events they are to be used for.

The item numbers for the forms indicate when the various events will be recorded on the forms (for example, referrals are recorded by PHC workers on Form 4, by nurses on Form 5, and by hospitals on Form 6).

The records to use for information collection to evaluate the HBMR at the end of the study period are noted on Flow Chart 1 also: Data Forms, Questionnaires and Discussion Guides.

d. Data processing and analysis

Some information will be collected on Forms filled in day-to-day by staff (see Annex III) and other information will be collected on Data Forms (see Annex IV) or on Questionnaires (Annex V). Once the information is collected for the evaluation, the questionnaires and data forms will be checked for errors and for blanks. This can be done by hand. Throughout the study from the time when women are registered for HBMR use until the end, entries on the various forms and logues should be checked periodically for errors and misunderstandings. The research assistant can do some of this and so can the supervisory nurse.

Data processing can be done in three ways; by hand or by card sorter or by computer. Investigators need to think about how they will handle the information and what steps will be taken to ensure the quality of the data. The method of processing affects the manner of coding the data. For many questions coding is simply "yes" or "no". However, if the information is to be processed by the card sorter or the computer, the "yes" and "no" should be assigned number codes, for example, 1 = yes and 2 = no. Instructions need to be written to explain the coding. These instructions can be combined with the guidelines explaining the use of the record in many cases. (See Annex VIII for examples of coding instructions.)

Analysis matrix: For each objective and question on the evaluation matrices in Annex II there is a corresponding entry on the matrices called Analysis Plan in Annex IX. Column 1 contains the question to be addressed. Column 12 shows a picture of the table to construct in order to answer the question, if a table is called for. If no table is called for to obtain the measurement needed, then one is displayed.

For all questions (except those for which the focus groups discussion is used to collect data) a percentage or ratio is calculated and this is displayed in Column 13. Column 14 lists the item number on a form or questionnaire that supplies the information needed for the ratio.

With these Analysis Plan matrices investigators can choose questions to be answered and then know from Column 14 what items of information must be collected.

For example: we wish to answer the question in Objective A, question a: Do more HBMR mothers seek care when need is present than non-HBMR mothers? The question uses the before and after HBMR/comparison group design. We use the post-study data to make a table to compare the ratio of the number of mothers seeking out the PHCW (primary health care workers) for care to the number of mothers seen by the PHCW. These data are available from Form 4 (HB used in the HBMR area and CA used in the control area), Item 5b, the category of "self-referred" - which counts the number of mothers seeking out the PHCW and Item 3 - which counts all mothers seen by the PHCW regardless of referral status.

Qualitative analysis will be used for the focus group discussion (FGD) data. The "data" generated are subjective in nature and are meant to show direction of behaviour or opinions. Information and responses are organized for each question addressed in the FGD. The general content of responses is noted and presented. For example, for objective A, question b, the format of the results might look like this:

Results of Fictitious FGD
with Mothers and PHCW

<u>Mothers</u>	<u>PHCW</u>
HBMR helps mother follow PHCW advice	Leaving HBMR with mother helps her remember
Showed me why (on HBMR) I need to take iron pills	Sometimes did more than told to

Problem: changing diet

The questions used for collecting the information appear on Discussion Guides A and B, Item 1.

Tables like those for Objective A, question h, pictured in Column 12 of the Analysis Plan, are used to obtain the ratios or percentages needed for analysis. We want to know if the percentage of women receiving a post-partum visit before 6 weeks is greater or lesser in the HBMR area versus the control area. The most important analysis uses the post-study data from both areas. The table looks as follows:

Delivered	HBMR area PP visit before 6 weeks				Control area PP visit before 6 weeks			
	Yes %	No %	Total %	(n)	Yes %	No %	Total %	(n)
Yes	50	50	100.0	(192)	30	70	100.0	(208)
No	0	100	100.0	(128)	0	100	100.0	(112)

The comparison is between HBMR area and the control area in the percentage of each group that received post-partum care before 6 weeks following delivery. Compare 50% in the HBMR area with 30% in the control area.

e. Study management, report and time plan

The personnel for the study include the providers of care in the areas chosen for the study, that is, the PHC workers, nurses and physicians. A research assistant will be needed to coordinate the activities associated with the evaluation study, since that activity is not part of day-to-day operations of the health care team. The research assistant can be a nurse, physician or anyone with knowledge of the type of activities to be carried out in the delivery of care. The type and number of personnel depends on the local situation. In some instances investigators may need to include an epidemiologist, data entry clerks or statisticians. A list of personnel working in the project and their assigned tasks should be prepared.

Training: The training and orientation will involve PHC workers, auxiliary midwives and the supervisor in the population where the HBMR is going to be introduced. This will be done within the existing framework for training in the PHC set up, e.g., when workers come for their administrative meetings/training sessions. A population of only 20,000 has been recommended because the number of PHC workers and supervisors to be trained will be within manageable proportions. The training and orientation will include the guidelines, demonstration of specific skills, and the practice of filling up the HBMR in dummy and live situations.

Personnel must learn to use the records for the evaluation. They need to learn:

- to use logues or forms
- to use questionnaire and to conduct an interview (as appropriate)
- to be group discussion leader (as appropriate).

Pilot study: The evaluation study methods will include a pilot study where the personnel involved in the evaluation (including PHC workers) will use the records and the HBMR for a week with about 5 mothers each, not the mothers who will be in the study).

Personal interviews and abstraction of records are done to test the information collection system.

Equipment, facilities, and transportation: Needs for equipment, supplies and facilities should not be great, since the majority of the work will be done in the context of the usual delivery of care. However, paper supplies for the evaluation study will be extra. Needs for printing the HBMR and for copying the forms and questionnaires should be calculated. Transportation may become a factor in the size of the area that can be used for the HBMR and in the choice of the comparison area. The research assistant will have to visit each area often during the evaluation and must have transportation. Investigators should determine what their transportation needs are.

Report: The report will be written after collection of data and its analysis. The report should include observations on parameters measured. It should also mention the following:

- a. Geographic description of the project area, organizational structure of PHC and supportive services and training programmes in the experimental and control areas.
- b. Demographic information and vital events.
- c. Results of the study, and
- d. Suggestions for modifications of the record

Time/plan: The suggested amount of time allotted to the various portions of the field test and evaluation are:

- | | |
|---|------------------|
| a. Adaptation of the prototype record and its printing.
Feasibility study, selection of population, training
and orientation of PHC workers and supervisors | 3 months |
| b. Registration of pregnant women in the area | 3 months |
| c. Use of HBMR | 9 months |
| d. Collecting evaluation data, analysis and report writing | <u>3 months</u> |
| Total study period | <u>18 months</u> |

Annex I

Prototype Home-Based Mother's Record

(2) PRESENT PREGNANCY: L.H.P. E.D.D.
up to MONTH 3 4 5 6 7 8 9

Date/Month:								
Severe Pallor:								
Pitting Oedema:								
Vaginal Bleeding:								
Very Thin:								
Very Large Abdomen:								
Abnormal Presentation:								
Weak Foetal Movements:								

B.P. above 140/90:
Haemoglobin below 8:
Urine-Albumin:
Weight in Kg.:

ACTION TAKEN:
Food Advice:
Iron Tablets:
Chloroquine Tablets:
Tetanus Toxoid:
Advice on place of delivery:

1	home	health centre	2	hospital
---	------	---------------	---	----------

LABOUR/DELIVERY:
Duration:
Presentation:
Type of delivery:
Excess Vaginal Bleeding:

normal	prolonged
head	other
normal	other
no	yes

BABY:
Date of Delivery: Sex: male/female
Place of Delivery: home health centre hospital
Conducted by: TBA Rel. ANW RN/RM Doctor
Duration of pregnancy: more than 8 months or less
Number of Babies: single twin or more
Birth Weight: 2 500 gm. or more
Crying: immediate delayed
Breathing Difficulty: no yes
Condition of Baby: alive still-born died 7-28 days
Breast-feeding by one month: yes no

(3) PRESENT PREGNANCY: L.H.P. E.D.D.
up to MONTH 3 4 5 6 7 8 9

Date/Month:								
Severe Pallor:								
Pitting Oedema:								
Vaginal Bleeding:								
Very Thin:								
Very Large Abdomen:								
Abnormal Presentation:								
Weak Foetal Movements:								

B.P. above 140/90:
Haemoglobin below 8:
Urine-Albumin:
Weight in Kg.:

ACTION TAKEN:
Food Advice:
Iron Tablets:
Chloroquine Tablets:
Tetanus Toxoid:
Advice on place of delivery:

1	home	health centre	2	hospital
---	------	---------------	---	----------

LABOUR/DELIVERY:
Duration:
Presentation:
Type of delivery:
Excess Vaginal Bleeding:

normal	prolonged
head	other
normal	other
no	yes

BABY:
Date of Delivery: Sex: male/female
Place of Delivery: home health centre hospital
Conducted by: TBA Rel. ANW RN/RM Doctor
Duration of pregnancy: more than 8 months or less
Number of Babies: single twin or more
Birth Weight: 2 500 gm. or more
Crying: immediate delayed
Breathing Difficulty: no yes
Condition of Baby: alive still-born died 7-28 days
Breast-feeding by one month: yes no

(4) PRESENT PREGNANCY: L.H.P. E.D.D.
up to MONTH 3 4 5 6 7 8 9

Date/Month:								
Severe Pallor:								
Pitting Oedema:								
Vaginal Bleeding:								
Very Thin:								
Very Large Abdomen:								
Abnormal Presentation:								
Weak Foetal Movements:								

B.P. above 140/90:
Haemoglobin below 8:
Urine-Albumin:
Weight in Kg.:

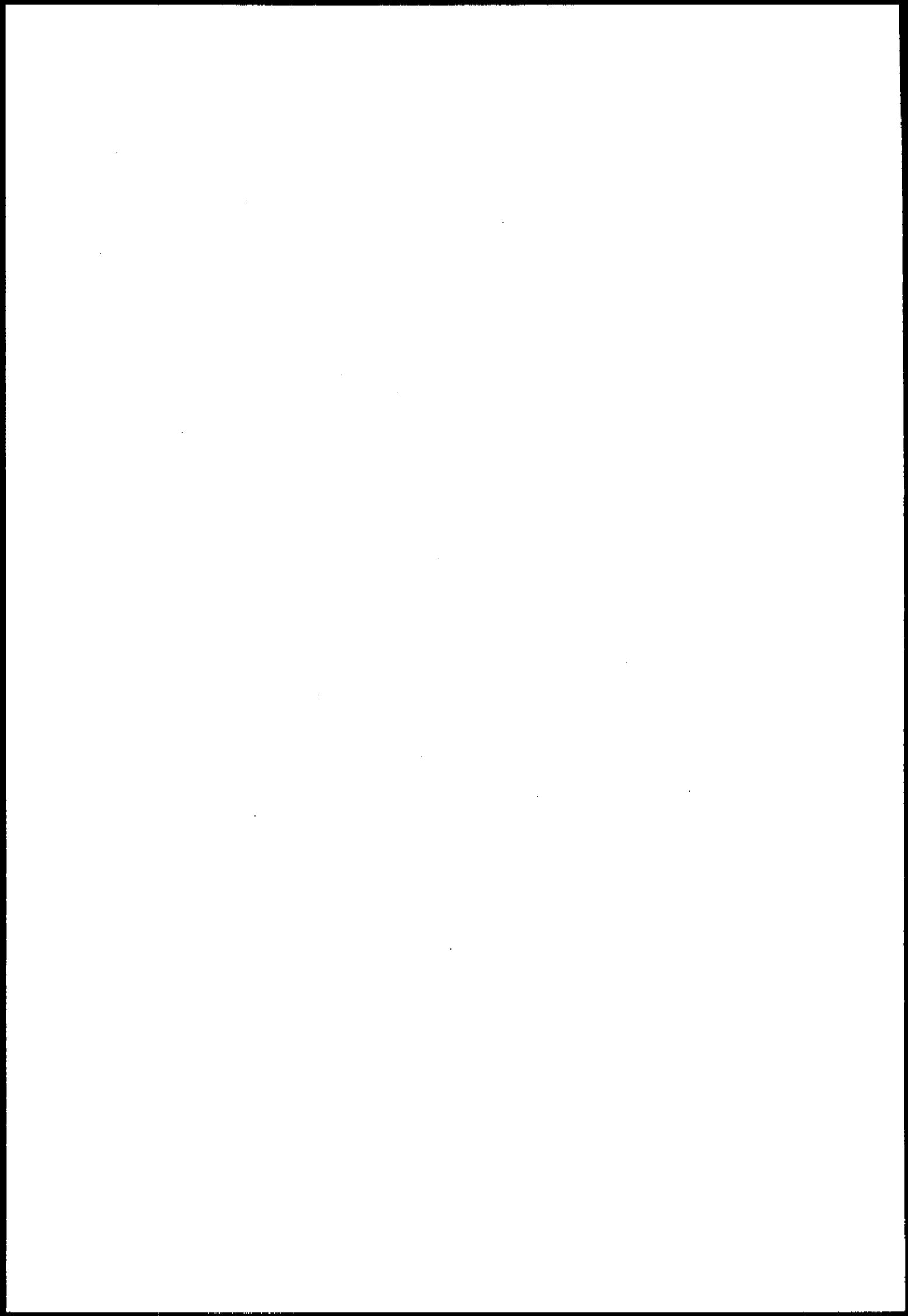
ACTION TAKEN:
Food Advice:
Iron Tablets:
Chloroquine Tablets:
Tetanus Toxoid:
Advice on place of delivery:

1	home	health centre	2	hospital
---	------	---------------	---	----------

LABOUR/DELIVERY:
Duration:
Presentation:
Type of delivery:
Excess Vaginal Bleeding:

normal	prolonged
head	other
normal	other
no	yes

BABY:
Date of Delivery: Sex: male/female
Place of Delivery: home health centre hospital
Conducted by: TBA Rel. ANW RN/RM Doctor
Duration of pregnancy: more than 8 months or less
Number of Babies: single twin or more
Birth Weight: 2 500 gm. or more
Crying: immediate delayed
Breathing Difficulty: no yes
Condition of Baby: alive still-born died 7-28 days
Breast-feeding by one month: yes no



Annex II
Matrices for Evaluation Study

HOME BASED MOTHER'S RECORD: EVALUATION DESIGN

Question	Study Design	Measurement to be done	Source of HEMR Sample	Source of Comparison Sample	Source of Information		Information Collection Techniques		Analysis Methods	
					Independent	Dependent	(a)	(b)	(a)	(b)
1	2	3	4	5	6	7	8	9	10	11
A. OBJECTIVE: TO PROVIDE A MEANS OF PROMOTING CONTINUITY OF CARE										
a. do more HEMR when need is present than non-HEMR mothers (EX.: feel ill, so seek care)?	before/after HEMR, CONTROL group	compare HEMR to non-HEMR; log & where mother identified need & contacted PHCW	log of HEMR mothers	mothers in non-HEMR community	a. HEMR/non-HEMR	log of activities	log of activities			% in each group
b. does the HEMR help the mother to follow advice given by the PHCW (EX.: diet, iron, birth control pills)?	case design	talk to mothers & PHCW/does record help. do case histories of some women advised & their action	log of HEMR mothers			mother/PHCW/HEMR	focus group discussion	case history		qualitative analysis
c. does the record help to provide feedback to the mother and the PHCW from the referral service	case design	no. HEMR referred with feedback from service on HEMR/talk to users about its usefulness	log of HEMR mothers			HEMR, mothers, PHCW	abstract HEMR	focus group discussion		% of actual qualitative results
d. does the mother still have the HEMR?	case design	no. of HEMR mothers with HEMR in house; reason why not	log of HEMR mothers			mothers	observation of mother	log of activities		% of actual
e. does the mother have the HEMR with her when arriving at a health service?	case design	no. of HEMR mothers arriving at services with HEMR; reason why not	services where HEMR mothers sent			service	log of activities			% of actual
f. is mother's condition checked on a regular basis according to local standards (EX.: monthly visits while pregnant, or quarterly visits when not pregnant)?	case design	no. of HEMRs that meet standards set for each condition	all HEMRs			HEMR, standards	abstract HEMR			% of actual

HOME BASED MOTHER'S RECORD: EVALUATION DESIGN

Question	Study Design	Measurement to be done	Source of HBMR Sample	Source of Comparison Sample	Source of Information			Information Collection Techniques		Analysis Methods
					Independent	Dependent		(a) or (b)	(a) or (b)	
1	2	3	4	5	6	7	8	9	10	11
A. OBJECTIVE: TO PROVIDE A MEANS OF PROMOTING CONTINUITY OF CARE (CONTINUATION)										
g. is an appropriate action noted on HBMR every time there are shaded areas marked?	case design	no. of ticks for risks (shaded areas) with advise noted appropriate to risk	all HBMRs	8.	HBMR, standards	abstract HBMR			% of actual	
h. do more HBMR mothers continue practices & maintain contact with PHCM for recommended time than non-HBMR mothers (EX.: postpartum care at 6 weeks)?	before/after HBMR, CONTROL group	compare HBMR to non-HBMR; no. of mothers with continued attendance as recommended	log of HBMR mothers	h. HBMR & non-HBMR community	HBMR/service records	abstract HBMR	abstract service records		% in each group	
i. do more women with developing problems in this pregnancy receive care?	before/after HBMR, CONTROL group	compare HBMR to non-HBMR; no. of pregnant women with problems who receive care	HBMR log: pregnant women only	i. HBMR & non-HBMR community	mothers/records	abstract HBMR/abstract records	personal interview		% in each group	
j. was the mother given a growth card for each baby documented on the HBMR?	case design	no. of mothers with growth card for baby	log of HBMR mothers who delivered live born	j.	mothers/HBMR	observation of mother	abstract HBMR		% of actual	

HOME BASED MOTHER'S RECORD: EVALUATION DESIGN

Question	Study Design	Measurement to be done	Source of HBMR Sample	Source of Comparison Sample	Source of Information		Information Collection Techniques		Analysis Methods	
					Independent	Dependent	(a)	(b)	(a)	(b)
1	2	3	4	5	6	7	8	9	10	11
<p>B. OBJECTIVE: TO PROMOTE REFERRAL ONLY WHEN IT SUITS THE NEED OF THE WOMAN</p>										
a. does the HBMR contain data on referral?	case design	no. HBMR referrals & reasons the same as service record (if usable)	HBMRs for mothers who were referred and went	a.	records	abstract HBMR & records	log of activities	% of actual		
b. do mothers with HBMR obtain earlier referral when a problem occurs than non-HBMR mothers? (EX.: anemia, toxemia)	before/after HBMR, control group	compare HBMR to non-HBMR; time elapsed between date referred & arrived	HBMRs for mothers who used a service and were referred	b. HBMR & non-HBMR mothers in community who used a service and were referred	records/mother	abstract HBMR/log of activities	personal interview	% in each group		
c. do more referred HBMR mothers arrive at the service than non-HBMR mothers?	before/after HBMR, control group	compare HBMR to non-HBMR; no. of referrals with arrival at service	HBMR mothers who were referred	PHCN workers record of referral	records, mother	log of activities	personal interview	% in each group		
d. was the reason for referral stated on the HBMR by the PHCN?	case design	no. of HBMR with referrals and reason stated	HBMRs for mothers who were referred	d.	HBMR	abstract HBMR		% of actual		
e. was the information on HBMR of referred women useful to receiving services?	case design	ask service workers if data useful	services where HBMR mothers sent	e.	service workers	focus group discussion		qualitative analysis		
f. has appropriate use of care increased with the HBMR	before/after HBMR, control group	compare HBMR to non-HBMR; compare service used with standard for conditions present	log of HBMR mothers	f. HBMR & non-HBMR mothers in community	records, standards	abstract service records	standards	in each group		
g. did the HBMR help get care at the referral service?	case design	ask mothers if having the HBMR helped get care at service	HBMRs for mothers who were referred and went	g.	mother	focus group discussion		qualitative analysis		

Question	Study Design	Measurement to be done	Source of HBMR Sample	Source of Comparison Sample	Source of Information			Information Collection Techniques		Analysis Methods	
					Independent	Dependent	Dependent	(a)	(b)	(a)	(b)
1	2	3	4	5	6	7	8	9	10	11	
<p>C. OBJECTIVE: TO PROMOTE INITIATION OF CARE & ACCURATE INFORMATION ABOUT THE COMMUNITY</p> <p>a. do the PHCWs practice appropriate actions for problems based on local standards more with the HBMR than without it (EX.: delivery in best place for mother's health status, iron if anemic)?</p> <p>b. do more HBMR PHCWs provide appropriate health promotion based on local standards (EX.: immunizations, family planning advice)?</p> <p>c. can data on the frequency of problems in the community be obtained from HBMR?</p> <p>d. can accurate data on use of health services be obtained from HBMR (EX.: family planning use)?</p> <p>e. does the PHCW identify problems that exist in HBMR areas better than in non-HBMR areas?</p> <p>f. does the PHCW accurately record actions taken</p>											
	before/after HBMR, CONTROL group	compare HBMR to non-HBMR: no. of appropriate actions according to standard among all actions	all HBMRs	HBMR service records of non-HBMRs (if usable)	a. HBMR & non-HBMR	records & standards	abstract HBMR	abstract service records	% in each group		
	before/after HBMR, CONTROL group	compare HBMR to non-HBMR: no. of mothers with public health action meeting identified need	log of HBMR mothers	mothers in non-HBMR community	b. HBMR/ non-HBMR	records	abstract HBMR/ service records	standards	% in each group		
	comparative	no. of women with problems, risks, needs of all HBMR women compared to opinions of mothers	all HBMRs	log of HBMR mothers	c. abstract HBMR	mother's opinion	abstract	focus group discussion	% of actual qualitative		
	comparative	no. of women in HBMR area who use services (PHCW or other) & service record confirms it	all HBMRs	HBMRs service records	d. HBMR	records/ mothers	abstract HBMR	log of activities	% of actual		
	before/after HBMR, CONTROL group	compare HBMR to non-HBMR: no. of PHCW assessments like expert's for identifying risk or conditions	PHCW in HBMR area	PHCW in non-HBMR area	e. HBMR & PHCW	expert	abstract HBMR or service record	observation by expert	% in each group		
	comparative	no. of PHCW recordings on HBMR that agree with observations of actual actions taken	PHCW in HBMR area	PHCW in HBMR area	f. HBMR	expert	abstract HBMR	abstract expert's HBMR	% of actual		

HOME BASED MOTHER'S RECORD: EVALUATION DESIGN

Question	Study Design	Measurement to be done	Source of Information		Information Collection Techniques		Analysis Methods			
			Source of HBMR Sample	Source of Comparison Sample	Independent	Dependent	(a) or (b)	(a) or (b)	(a) or (b)	
1	2	3	4	5	6	7	8	9	10	11
D. OBJECTIVE: TO PROVIDE A USABLE RECORD OF HEALTH CARE										
a. What do users of HBMR think about it (EX.: HBMR color, shape, size, wording, etc.)?	case design	talk to people who have used HBMR	HBMR log/PHCM/ser-vices used by HBMR mothers	a.	PHCM, mother service workers	focus group discussion	qualitative analysis			
b. does the record contain information that those who use it wish it to have?	case design	talk to users of HBMR about what the HBMR contains & what it lacks	HBMR log: PHCM in HBMR area: services used by HBMRs	b.	PHCM, mother, service workers	focus group discussion	qualitative analysis			
c. does the HBMR remain intact during its period of use?	case design	no. of HBMR's in good condition	all HBMRs	c.	HBMR	observation personal interview	% of actual			
d. are the users able to enter data onto the HBMR when necessary (EX.: there is enough space for data entry)?	case design	talk to users about HBMR format, space for writing, smudging, etc.	HBMR log: PHCM in HBMR area: services seeing HBMR	d.	PHCM, mother, service workers	focus group discussion	qualitative analysis			
e. are entries on HBMR legible & understandable to users?	case design	talk to users about HBMR-do they understand it, is there somewhere to write, no. of legible entries	HBMR log, PHCM in HBMR area, services seeing HBMR	e.	PHCM, mothers, service workers	abstract HBMR focus group discussion	% of actual qualitative analysis			
f. is the order of items on the HBMR logical to users?	case design	talk to users of HBMR about the flow of items in its format & suggestions for improvement	HBMR log, PHCM	f.	PHCM & mothers	focus group discussion	qualitative analysis			

HOME BASED MOTHER'S RECORD: EVALUATION DESIGN

Question	Study Design	Measurement to be done	Source of HBMR Sample	Source of Information			Information Collection Techniques		Analysis Methods	
				Source of HBMR Sample	Source of Comparison Sample	Independent	Dependent	(a)	(b)	(a)
1	2	3	4	5	6	7	8	9	10	11
E. OBJECTIVE: TO PROVIDE A FOCUS FOR TEACHING ABOUT PREGNANCY & INTER-PREGNANCY CARE										
a. do users of HBMR know conditions of risk better than non-HBMR users?	before/after HBMR, CONTROL group	compare HBMR to non-HBMR: no. users with knowledge of risks	log of HBMR mothers, PHCM	mothers in non-HBMR community, PHCM	a. HBMR non-HBMR	mothers & PHCM	personal interview	focus group discussion	% in each group	qualitative
b. do users of HBMR know what to do for conditions of risk better than non-HBMR users (EX: to seek care if edema in face, etc.)?	before/after HBMR, CONTROL group	compare HBMR to non-HBMR: users with knowledge of what to do	log of HBMR mothers, PHCM	mothers in non-HBMR community, PHCM	b. HBMR non-HBMR	mothers & PHCM	focus group discussion		qualitative analysis	
c. do PHCM use HBMR to teach mothers about caring for themselves?	case design	talk to mothers about teaching with HBMR	log of HBMR mothers		c.	mothers	focus group discussion		qualitative analysis	

Annex VI
Prototype Discussion Guides A, B and C

Evaluation of Home Based Mother's Record

Discussion Guide A

GUIDE TO FOCUS GROUP DISCUSSION WITH MOTHERS

1. Name of discussion leader _____
 2. Date of discussion (DD/MM/YY): ____ / ____ / ____
 3. Place where discussion was held: _____
 4. Number of mothers attended: _____
-
5. Is having the home-based record helpful or not to you in following advice or treatment given to you by the PHCW?"
 6. Is the home-based record useful or not in getting information about what happened at a medical service (nurse, health center, hospital or doctor) when you go there?
 7. Not for mothers.
 8. Did possessing the home-based record with you when you went to see a medical service (nurse, health center, hospital or doctor) help or not in getting care?
 9. In your opinion what are the biggest most important health problems pregnant women have in your area?
 10. Is the colour of the home based record acceptable to you? Does the home based record show dirt easily? Does the plastic bag help to keep it clean? Is the bag alright? Is the size of the card of the home-based record alright? not too big? not too small? any other size better? Is the shape of the record alright? any other shape preferable?
 11. Is there any information that was not on the home-based record that you would have liked to see? What information should be added to the record? What should be taken off? What information was not useful to you? What was most useful to you?
 12. Is there enough space to write what you needed on the record? Did the writing on the record smudge or get messy? Do you like the way the record looks? Could you find what you needed to know easily? or not? What needs to be done to fix it?
 13. Are the words used on the home based record alright? If not, which words were hard to understand? Which words would be better to use? Could you read the printing? Was it too small? Was it too big? What would you prefer?
 14. Is the order of things to do on the home-based record alright? Is there a better order?
 15. Not for mothers.

16. In the opinion of the group what should be done for a woman who:

- bleeds from the womb before the baby is born
- is very thin
- has high blood pressure (or colloquial term for it)
- has other condition of interest to investigator.

17. Did the PHCW use the home-based record to teach you about care during pregnancy? Did having the record help you learn about problems that can be dangerous in pregnancy and what to do about the problems?

GUIDE TO FOCUS GROUP DISCUSSION WITH
PRIMARY HEALTH CARE WORKERS

1. Name of discussion leader _____
 2. Date of discussion (DD/MM/YY): ____/____/____
 3. Place where discussion held _____
 4. Number of PHCWS attending: _____
-
5. Is having the home based record helpful or not to mothers in following advice or treatment given by you?
 6. Is the home based record useful or not in getting information about what happened at a medical service (nurse, health center, hospital or doctor) when a mother has been referred there?
 7. Not for PHCW.
 8. Not for PHCW.
 9. Not for PHCW.
 10. Is the colour of the home based record acceptable to you? Does the home based record show dirt easily? Does the plastic bag help to keep it clean? Is the bag alright? Is the size of the card of the home based record alright? Not too big? Not too small? Any other size better? Is the shape of the record alright? any other shape preferable?
 11. Is there any information that was not on the home based record that you would have liked to see? What information should be added to the record? What should be taken off? What information was not useful to you? What was most useful to you?
 12. Is there enough space to write what you needed on the record? Did the writing on the record smudge or get messy? Do you like the way the record looks? Could you find what you needed to know easily or not? What needs to be done to fix it?
 13. Are the words used on the home based record alright? Which words were hard to understand? Which words would be better to use? Could you read the printing? Was it too small? Was it too big? What would you prefer?
 14. Is the order of things to do on the home based record alright? Is there a better order?
 15. In the opinion of PHCW group what are the conditions of risk that must be looked for during pregnancy? In the obstetrical history? In the prenatal period? During childbirth? In the baby?

16. In the opinion of the PHCW group what should be done for a woman who:

- bleeds from the womb before the baby is born?
- is very thin
- has high blood pressure (or colloquial term for it)
- has other condition of interest to investigator.

17. Not for PHCW

GUIDE TO FOCUS GROUP DISCUSSION WITH
SERVICE WORKERS

1. Name of discussion leader _____
 2. Date of discussion (DD/MM/YY): ____/____/____
 3. Place where discussion held _____
 4. Number of workers attending: _____
-
5. Not for service workers.
 6. Not for service workers.
 7. Was the information on the home-based mother's record useful or not to you? Was the information about the referral on Panel 5 useful or not in providing care to the mother?
 8. Not for service workers.
 9. Not for service workers.
 10. Is the colour of the home-based record acceptable to you? Does the home based record show dirt easily? Does the plastic bag help to keep it clean? Is the bag alright?
 11. Is there any information that was not on the home-based record that you would like to see? What information should be added to the record? What should be taken off? What information was not useful to you? What was most useful to you?
 12. Is there enough space to write what you needed on the record? Did the writing on the record smudge or get messy? Do you like the way the record looks? Could you find what you needed to know easily or not? What needs to be done to fix it?
 13. Are the words used on the home based record alright? Which words were hard to understand? Which words would be better to use? could you read the printing, or was it too small or too big? What would you prefer?
 14. Not for service workers.
 15. Not for service workers.
 16. Not for service workers.
 17. Not for service workers.