



MotherCare™

**BEHAVIORAL DETERMINANTS OF
MATERNAL HEALTH CARE CHOICES IN
DEVELOPING COUNTRIES**

WORKING PAPER: 2

October 1990

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TABLE OF CONTENTS

INTRODUCTION	1
I. MATERNAL HEALTH CARE CHOICES	3
A. Reviews of Maternal Health Care Utilization	4
B. Lack of Standard Definitions	5
C. Limitations of Data	8
D. Prenatal Care	9
1. Identifying Users and Non-Users	10
2. Amount and Timing of Care Use	10
3. Appropriate Care Use	11
4. Sources of Care Outside the Home	12
5. Self-Care and Other Household Care	15
E. Intrapartum Care	16
F. Postpartum Care	18
II. FACTORS INFLUENCING MATERNAL CARE CHOICES	21
A. External Barriers	22
B. Internal Barriers	24
1. Maternal Health Knowledge	24
2. Prior Experience	26
3. Perceived Quality of Care	26
4. Health Belief Systems	27
5. Attitudes toward Pregnancy and Childbirth	29
6. Maternal Self-Esteem and Confidence	31
7. Social Support	31
III. SUMMARY AND IMPLICATIONS OF FINDINGS	33
BIBLIOGRAPHY	35
APPENDICES	
A. Definition of Terms	
B. Recommended Maternal and Community Health-Promotive Behaviors	

INTRODUCTION

Following a decade in which health programs concentrated on child survival issues, the 1987 Safe Motherhood Conference refocused international attention on maternal and reproductive health concerns, particularly on mortality directly related to childbearing. As a result, there has been renewed interest in implementing activities to improve maternal, perinatal, and neonatal health.

In theory, maternal and neonatal health and nutrition in developing countries could be improved significantly through appropriate utilization of Western-style health services during pregnancy, childbirth, and the postpartum period. Yet the reality is that less than one third of pregnant women in these nations receive any formal prenatal care, and only 20 percent of births in developing countries occur under trained supervision (95). Women do seek "maternal care" during the prenatal period, mostly in the form of social support, information seeking, and basic treatment such as massage or abdominal palpation, from a wide variety of sources within the community (125). Self-care or treatment by the extended family is also widely practiced. In order to improve maternal and neonatal health, it is essential to provide more acceptable and better quality services, support, and information both through Western-style services as well as through innovative mechanisms that utilize whatever channels women themselves indicate are most acceptable.

The MotherCare Project is providing funding and technical assistance to maternal and neonatal health and nutrition projects in Indonesia, Guatemala, Bolivia, Uganda, and Bangladesh. As part of its aim to improve the health and nutrition of mothers and newborns in these and other developing countries, MotherCare has identified several strategies that can be implemented at the household, community, and primary care referral levels. Among these are information, education, and communication (IE&C) interventions:

- promoting key behavior changes among women, community members, and primary-level maternal health care providers;
- enhancing the ability of women, communities, and providers to make more informed choices that lead to better use of existing maternal care services. (Maternal health care, as used in this paper, refers specifically to the care received by women who are currently pregnant or who have been pregnant within the previous forty-two days. Appendix I provides definitions of key terms.)

This paper explores lessons learned in understanding and influencing the wide range of behaviors and service utilization practices that affect maternal and neonatal health and nutrition. The paper summarizes published literature not only on international maternal health care and utilization, but also from fields as diverse as medical anthropology, behavioral psychology, and development communication. In addition, some relevant information on small field projects and studies has been gathered from unpublished papers and presentations.

In general, previous reviews of utilization of maternal health services have focused on describing current behaviors and factors that correlate with (and may possibly explain) them. This review intends also to consider how such insights can be used to change behaviors.

This paper takes insights from the literature and from MotherCare's own analysis of women's actions (particularly her use of health services) during pregnancy, childbirth, and the postpartum period in order to derive frameworks to assist health planners to:

- **document current patterns of maternal health care choices, health behaviors, and use of health services (Table 1);**
- **define the factors that influence women's maternal health care choices and "health seeking" behaviors (Table 4); and**
- **determine a set of appropriate behaviors, maternal care use, and knowledge which could be promoted to women and communities to improve pregnancy outcome (Table 3 and Appendix II).**

Chapter I presents many maternal health care choices, including health behaviors and utilization patterns of formal and other sources of maternal care, that women make throughout the developing world. It also suggests a range of alternative or "recommended" behaviors and choices that might be promoted to women and communities as a means of improving maternal and neonatal health.

Chapter II considers the factors that influence the health behaviors and health care utilization choices of pregnant women. It briefly describes the findings and conclusions of some of the many researchers who have begun talking with women themselves about these issues.

Chapter III summarizes lessons learned and suggests implications for programs that intend to improve maternal and neonatal health.

I. MATERNAL HEALTH CARE CHOICES

Worldwide, pregnant women and their newborns benefit when women practice such preventive measures as eating a balanced diet, taking iron supplements, getting sufficient rest, receiving tetanus immunization (before and during pregnancy), and breastfeeding immediately and exclusively. Pregnancy outcomes are better if infections, other medical problems, and potential risks or complications are detected, treated or referred as early as possible during the prenatal period. Births are safer if attended by an assistant who is trained to handle common complications of labor and delivery and who returns to check for problems with the mother or newborn.

Naturally, there are many location-specific constraints to these desirable behaviors. Women are poor and overworked, and culture dictates diet and continued physical labor during pregnancy. In many settings, services and health personnel are not available or appropriately trained to provide primary-level maternal care and women, and communities often do not recognize the need for such care. The fact remains, however, that regardless of constraints and available services, women make potentially critical decisions concerning both their use or non-use of health care during and after pregnancy and concerning the setting and assistance for childbirth.

Clearly, programs that intend to improve maternal and neonatal health must address issues of women's behavior regarding these choices. An obvious and critical step in most settings is to improve the quality and accessibility of maternal health care services (i.e., in marketing terms, to improve supply). But beyond that, programs must work to enable women to make more informed choices (i.e., to increase demand) concerning:

- early recognition of maternal and neonatal danger signs, problems, and risk factors and timely, appropriate response;
- improved use of the formal maternal health system throughout pregnancy, birth, and the postpartum period, including early initiation and regular use of prenatal care and compliance with referral or treatment recommendations;
- appropriate use of nonformal sources of maternal health care, especially the use of trained attendants for childbirth; and
- adoption and regular practice of health-promotive behaviors during pregnancy and in the postpartum period (preventive self-care/health maintenance).

Reviews of international patterns of maternal health seeking behavior and service utilization document general trends and may assist maternal health planners. However, because of the wide regional diversity in behaviors related to maternal health, findings cannot usually be directly applied in other country-specific situations. To design appropriate maternal health services in specific locations, distinct sets of local information are required on utilization issues and on service system issues.

Utilization issues include:

- local patterns of use of maternal health care and other maternal health behaviors;
- factors influencing women's current patterns of health-seeking behavior, including use of services; and
- recommended patterns of utilization of maternal health care and other health behaviors.

Service system issues include:

- recommended international and local protocols for prenatal, intrapartum, and postpartum maternal care, and realistic local adaptation of those standards; and
- type and amount of local health or other resources available to provide recommended maternal care.

Despite its importance, a comprehensive discussion of the second set of information is beyond the scope of this paper. Although standards exist for provision of maternal health care, for the most part they reflect the availability of health services and needs of women in industrialized nations. In many cases, these standards have been applied uncritically in developing country settings, without adaptation of either content of care or method of service delivery.

The remainder of this chapter reviews the importance and nature of women's maternal health care choices. As an introduction, a few reviews of maternal health care utilization are summarized, and definitions of terms and limitations of data are discussed.

A. Reviews of Maternal Health Care Utilization

Several comprehensive reviews of the international utilization literature have contributed significantly to current knowledge on the use of formal health services in developing countries. Leslie and Gupta (95) reviewed literature primarily on utilization of formal health services in developing countries, particularly prenatal care. Their discussion of the major factors contributing to underutilization of maternal services concentrates on health system causes and such conventional client characteristics as maternal age, parity, education, and income. Their review identifies the "consistently greater use of (formal) prenatal than childbirth services" and notes that transportation difficulties present a serious barrier to many women availing themselves of formal health services for prenatal and obstetric emergencies.

Thaddeus and Maine (170) abstracted and reviewed a similar body of utilization literature, focusing their discussion on the applications of the literature to strategies for reduction of maternal mortality, specifically by addressing the causes for delays in seeking treatment for obstetric complications. Three phases are identified: delay in deciding to seek care, in obtaining transport to the source of care, and in receiving treatment after arrival at the facility. This review reexamines the accepted roles of distance, cost, and perceived quality of care as negative influences in utilization of health services, and identifies recognition of illness severity as perhaps the most important determinant of maternal health service use.

A review and analysis of research results in several developing countries (Peru, Jamaica, Mexico, Swaziland, the Philippines and Malawi) provides additional information on patterns and determinants of prenatal care use (125). Although country-specific findings vary widely, the overall results confirm previous patterns documented in developing nations:

- initiation of care in the second trimester of pregnancy,
- an average of less than four total prenatal contacts, and
- earlier and more frequent use of formal prenatal care by urban women than by those in rural areas.
- reliance of pregnant woman on prenatal care sources outside the formal health system, sometimes in addition to use of modern prenatal care.

All of the above-mentioned reviews agree on the complexity of the interaction between service and user factors in determining utilization of formal maternal health services, and on the need for further investigation of women's own perspectives on barriers to using such services. These reviews focused more on women's use of prenatal care than on care for childbirth, use of nonformal maternal health care in general, or maternal self-care. It is recommended that these other areas of maternal health care, which extend the conventional framework for investigation of utilization of maternal services, be further explored. This paper represents one effort in this direction.

B. Lack of Standard Definitions

The multitude of technical terms used to describe maternal care use and the lack of standardized, universally accepted definitions make it difficult to analyze and especially to compare information on the use of maternal care. Appendix I defines many of these terms as used in this paper.

It is useful to begin by defining the parameters of maternal health care utilization. **Maternal health care utilization** can be classified according to:

- type of service (prenatal, intrapartum, postpartum, and neonatal);
- patterns of use of each phase of care (underutilization, overutilization, appropriate utilization); and
- source of care (formal/nonformal, private/public, modern/traditional, household/self).

Table 1 lists the range of possible patterns of use and sources of care for each major type of care.

As mentioned above, most analysts consider maternal health care utilization primarily in relation to women's use of Western-oriented health services offered through the formal care system, with the exception of use of traditional birth attendants for home childbirth. Little consideration is given to the many additional maternal care options available to women.

Coverage, or levels of utilization of maternal care, also needs careful definition. In relation to prenatal care, WHO defines coverage as one visit (usually to a clinic or physician) during pregnancy (184). The relevance of a coverage measure of this type has been questioned, as it is unlikely that a single contact with the maternal care system represents provision of adequate services. Leslie, in her review (95), defines prenatal care as "seen at least once by a trained attendant during pregnancy." This rough indicator of prenatal care use essentially divides women into either users or non-users of formal care. It does not, however, provide information on the number or timing of prenatal contacts. Also, although this broader interpretation commendably allows fuller consideration of care sources outside of the formal system, it may be difficult to compare to data collected using the standard definition. But for purposes of investigating coverage for program planning, a much more detailed definition of coverage has been suggested which classifies care received according to factors such as content, quality, timing and appropriateness of services delivered (169).

There has been considerable movement toward agreement on a standard definition of **intrapartum coverage**. As the majority of births in many developing nations still occur outside of the formal health care setting, "delivery assisted by a trained attendant" is used in many countries to measure "coverage of births." Again, however, lack of specificity of definition makes it difficult to distinguish between assistance provided by formally trained health professionals, trained traditional birth attendants, or trained family members. The level of training represented and its subsequent effect on safe birth practice are also difficult to determine through use of this term alone. Less attention has been given to defining or examining use of postpartum care. No standard definition for either maternal or neonatal postpartum coverage in developing countries is available in the literature reviewed.

Table 1: Maternal Health Care Utilization Classification

TYPE OF CARE	POSSIBLE USE PATTERNS	POSSIBLE CARE SOURCES	
		FORMAL	INFORMAL
PRENATAL	<ul style="list-style-type: none"> • use/non-use • timing of first visit (initiation) • number of visits (frequency/amount) • interval between visits • attendance for recommended follow-up care • compliance with treatment recommendations 	<ul style="list-style-type: none"> • Western-oriented clinic/hospital • public/private 	<ul style="list-style-type: none"> • modern/non-Western • traditional • household/self
INTRAPARTUM (childbirth)	<ul style="list-style-type: none"> • unattended/self-attended • untrained family member • untrained traditional attendant • trained traditional attendant • health professional <ul style="list-style-type: none"> - auxiliary midwife - nurse midwife - physician/obstetrician - retrained health professional 	<ul style="list-style-type: none"> • clinic/maternity center • hospital • referral hospital • community-based clinic 	<ul style="list-style-type: none"> • home • community-based clinic (birthing hut)
POSTPARTUM (maternal/neonatal)	<ul style="list-style-type: none"> • use/non-use • timing of first visit (initiation) • number of visits (frequency/amount) • interval between visits • attendance for recommended follow-up care • compliance with treatment recommendations 	<ul style="list-style-type: none"> • Western-oriented clinic/hospital • public/private 	<ul style="list-style-type: none"> • modern/non-Western • traditional • household/self

C. Limitations of Data

For much of the developing world, the only reliable data on utilization of maternal health care are those on utilization of formal prenatal care services and hospital births, as these can be compiled from routine service statistics. Information on maternal care from sources outside of the formal system is more difficult to obtain. Frequently, there are questions related to the accuracy and specificity of the limited data that are available. For example, in some developing nations, statistics on utilization of maternal care have a strong urban bias, due in part to the stronger health infrastructure in urban areas and greater ease of data collection.

Despite such reporting inconsistencies, some broad generalizations can be made about the utilization of formal maternal health services. Overall, in much of the developing world, formal maternal health care is underutilized during every part of the reproductive cycle. **One third of all pregnant women receive no prenatal care, 75 percent of births are not assisted by a trained attendant, and 90 percent of both new mothers and newborns receive no postpartum care** (184). These figures represent global utilization trends; in fact, **there are vast regional, country-specific, and intracountry variations in patterns of maternal health service utilization**. In addition, there are notable exceptions to the worldwide trend of underutilization of maternal health services. In some more advanced developing nations, such as Jamaica, over 80 percent of women seek prenatal care, and the demand for hospital childbirth exceeds the capacity of the health system (175).

Significant differences in utilization patterns can also exist between urban and rural areas within a given country. Utilization of formal health services for both prenatal care and childbirth are usually higher in urban areas. In addition, wide variations in utilization patterns by type of formal maternal care are often present. In some countries, such as Jordan, utilization of formal prenatal care is low, but use of the formal health system for childbirth is high (64). Ghana exemplifies those developing nations where even in the presence of high levels of prenatal care use, out-of-hospital births predominate (105). Table 2 illustrates this country-specific diversity in utilization by type of formal maternal service.

As discussed above, throughout their pregnancies and births, women have many more care choices than simply use or non-use of formal health services. This indicates the need for careful documentation of the many facets of women's utilization of maternal care.

As a first step in the development of meaningful, effective strategies and programs aimed at improving women's use of maternal health care, local and national patterns of maternal and neonatal care use should be completely explored. **Knowing what proportion of the target population uses or fails to use existing maternal health resources -- under what conditions, from what sources, and for what reasons -- should help maternal health planners design more acceptable services**. At the same time, this provides useful background information that can be used to promote informed maternal health and more appropriate, planned use of available maternal health services by women and their families.

Table 2: Variations in Utilization by Type of Care			
		FORMAL INTRAPARTUM CARE	
		LOW	HIGH
FORMAL PRENATAL CARE	LOW	Bangladesh Bolivia Guatemala	Jordan
	HIGH	Ghana	Jamaica

The remainder of this chapter discusses in more detail the purposes and utilization patterns of prenatal, intrapartum, and postpartum services.

D. Prenatal Care

Much of the potential benefit of prenatal care is related to the early identification and treatment of pregnancy complications. A substantial portion of morbidity and increased risk of mortality can be detected or anticipated, and therefore potentially avoided or treated, by early recognition of significant symptoms or of current or historical pregnancy events. For decades, pregnant women have been encouraged to believe that early, frequent attendance for formal prenatal care is an essential part of safe and responsible childbearing. However, substantial debate still exists regarding the specific role of prenatal care in influencing maternal and neonatal mortality and other adverse pregnancy outcomes, as well as whether there is a precise mix of prenatal care content and delivery that results in optimal maternal and neonatal outcome.

Several studies in the developed world have demonstrated that prenatal care **can** make a difference. The relationship between prenatal care and improved perinatal outcome has been demonstrated primarily through its effect on infant birth weight (98, 97, 59). In the developing world, data from all but two of 30 countries reviewed showed that the number of prenatal visits had a positive effect on birth weight (43). In Israel, almost three times as many deaths occurred among newborns of women who had not attended prenatal care (138). In a traditional community in Guatemala, it has been demonstrated that failure to use formal prenatal care is significantly associated with both intrapartum and neonatal deaths (12).

Although not as well defined or studied as infant outcomes, improvements in maternal health, including decreased morbidities and intrapartum complications as well as improved nutritional status, are also potential outcomes of prenatal care use. In a study among the Maori in New Zealand, focused delivery of prenatal care and health education resulted in decreased incidence of premature labor, operative delivery, and postpartum hemorrhage (34). The maternal mortality rate was 100 times higher among non-users of prenatal care in the U.S. (81). In Nigeria, 46 of 49 maternal deaths occurred among women during labor and delivery who had not attended for prenatal care (142, 65).

To provide a more comprehensive understanding of patterns of prenatal care utilization, several dimensions may be examined. These can be applied to both formal and other types of care:

- use versus non-use;
- amount of care use (total number of visits, underutilization, overutilization);
- timing of care use (timing of first visit, frequency and regularity of care use);
- appropriateness of care use (planned use of care; preventive vs. curative care use; compliance with treatment, follow-up or referral recommendations); and
- source of care (formal care, public vs. private; nonformal care, traditional, household or self-care).

1. Identifying Users and Non-Users

Identifying users and non-users of formal prenatal care is important, as non-users of the formal care system are often those women at highest risk for pregnancy complications and maternal or neonatal death. For example, in Mozambique, those pregnant women with the most risk factors were those who used formal prenatal care least (73). Once a program identifies women as non-users of the formal system, it can focus efforts on them to encourage use of care or provide services through alternative channels.

2. Amount and Timing of Care Use

Several conflicting recommendations have been made concerning appropriate standards for developing countries. The World Health Organization recommends five prenatal visits for women in developing countries (184). Another definition of adequate prenatal care suggests four visits, including a pelvic examination, as sufficient (168). It is doubtful that one generic set of guidelines for prenatal care could be both feasible to implement and meet the needs of pregnant women in all developing nations. It is more likely that situation-specific targets for number and timing of prenatal visits, based on local maternal health problems, care standards and health resources, need to be developed. For example, in the Philippines, as few as three visits, one per trimester, were sufficient to positively affect pregnancy outcomes (62).

Considerable disagreement also exists surrounding "critical prenatal care contact points" -- precise and specific times during pregnancy when use of care is especially important. Recently, it has been suggested that utilization of prenatal care as soon as possible after conception and again at 32-34 weeks of gestation might be minimally acceptable prenatal contact points (131).

Many specialists have noted the value of early initial contact with the prenatal care system (152, 27, 37). The reasons for this are varied. Early initiation of formal prenatal care allows for:

- baseline determination of parameters such as weight, hemoglobin, and blood pressure, before the physiologic adjustments of pregnancy take place;
- early detection of pregnancy-related risk factors, infections and conditions, allowing for rapid and adequate treatment and timely referral (6);
- early exposure to concepts of preventive care and health behaviors, allowing adequate time for adoption of practices and potential effects of health education;
- access to formal maternal health services to register for hospital birth, in countries where this is required.

The first contact with the formal prenatal care system has also been recognized as an important factor in determining the parameters of pregnant women's future use of care (42). Women's response to their first encounter with prenatal care influences readiness to return for additional care, to act on advice given, and to feel secure in seeking additional pregnancy-related information (44).

The importance of making the initial prenatal visit for assessment during the first trimester has been stressed, even by those who argue about the desired timing and frequency of later visits (104). However, the average first visit among those pregnant women who use prenatal care in the developing world does not usually occur until the second trimester of pregnancy (125). In many cases, this "first visit" is the only visit and is sought either to confirm pregnancy or to complete the registration requirement for access to hospital delivery (134, 142).

3. Appropriate Care Use

In addition to measures of the appropriate use of formal prenatal care according to the factors described above (initiation, amount and timing of utilization), there are two additional aspects of appropriate care use during pregnancy. These are **planned use** of formal care, including preventive vs. curative use, and **compliance** with several types of care recommendations.

Too often, investigations of prenatal care do not distinguish women's planned use of formal services for preventive care, screening, or education from use of services for curative purposes after a complication has already developed. Differentiating between the two can help to determine whether women are truly following recommended patterns for utilization of prenatal care. For example, a woman who made six prenatal visits during her pregnancy might be considered as exhibiting better-than-average utilization of prenatal care. However, some of those visits might be for curative care unrelated to pregnancy or for emergency treatment of conditions preventable through earlier planned use of prenatal care. Documenting the preventive vs. curative aspect of prenatal care use, not simply the number of visits, can provide more relevant utilization data.

Compliance with additional prenatal care suggested once pregnant women enter the formal prenatal care system is another dimension of appropriate prenatal care use. Level of

compliance or knowledge regarding treatment instructions, routine iron supplementation, or treatment for infections such as sexually transmitted diseases, as well as with recommended follow-up visits or referrals, has not been investigated as thoroughly as other aspects of prenatal care utilization. In some settings, it is estimated that over half of all illness treatment initiated is interrupted or abandoned (126).

Table 3 compares these and other patterns of maternal care utilization currently encountered in developing nations with a set of recommended utilization behaviors.

4. Sources of Care Outside the Home

A continuum of care sources exist from which many women choose to receive health care during pregnancy, delivery and the postpartum period. Formal maternal care during any phase of pregnancy and birth usually signifies a modern, Western-oriented approach to medical care. However, in many developing nations, "formal" care, delivered by trained health professionals, includes modern medical practice based on naturopathic, ayurvedic or other highly developed non-Western approaches. Within the formal maternal health care system, three important considerations are:

- the type of care provider (auxiliary nurse, nurse, midwife, doctor, obstetrician);
- type of health facility (local community clinic, maternity center, hospital, referral hospital); and
- choice of public or private practitioner and/or facility.

A woman's choice of type of formal maternal care practitioner is primarily a matter of personal preference and may not significantly influence outcome of care if the practitioner's level of training is consistent with the care required. Provider choices may be influenced by gender factors (95) or by cultural beliefs that predetermine use of specific types of practitioners for certain health problems (110).

Because there are likely to be significant differences in content or quality of training or care provided by various levels of maternal care providers within the formal system, or between public and private practitioners, these choices may exert important influences on pregnancy outcome. These aspects of utilization patterns are useful in addressing service factors, such as determining the most appropriate levels of practitioners to train or most acceptable type of maternal care facilities to build.

Choice of a maternal care source from outside of the formal system, however, may have even more impact on maternal and neonatal health and nutrition. As many of the most common causes of pregnancy-related morbidity and mortality do not fall within the realm of conditions successfully treated through nonformal care providers, choosing to seek maternal care from outside the formal system may delay receipt of lifesaving modern treatment.

Table 3: Maternal Health Care Utilization Patterns

<u>PRENATAL</u> <u>Prevailing Patterns</u>		<u>Recommended Use</u>	
<p>underutilization</p> <p>inappropriate use</p> <p>overutilization</p>	<ul style="list-style-type: none"> • non-use • insufficient number of visits • late initiation of care • sporadic attendance • non-compliance with recommended follow up visits for risks/problems • use of traditional practitioner for pregnancy problems amenable to Western medicine • rare 		<ul style="list-style-type: none"> • early initiation (first visit during first trimester) • 3-4 additional routine visits during pregnancy • early recognition of pregnancy problems and self-referral to appropriate care source • compliance with special visit schedules for risks/problems • use of traditional practitioner to complement formal prenatal care
<p><u>INTRAPARTUM</u> <u>Prevailing Patterns</u></p> <p>underutilization</p> <p>home delivery</p> <p>hospital delivery</p> <p>inappropriate/ overutilization</p>	<ul style="list-style-type: none"> • no birth attendant/self or untrained • underuse of hospital delivery for anticipated normal &/or problem births when facilities are available • use of hospital delivery for anticipated normal births when facilities are inadequate and other preferred options are available • use of hospital for birth without prior registration through associated prenatal care system 	<p><u>Recommended Use</u></p> <p>home delivery</p> <p>hospital delivery</p>	<ul style="list-style-type: none"> • use of trained attendant for birth • early recognition of intrapartum danger signs and seek higher level assistance • access hospital delivery through recommended channels (booking) • universal hospital delivery if policy/facilities adequate • self select or follow recommendation for hospital delivery based on knowledge of risk/problem if policy or facilities inadequate

Table 3: Maternal Health Care Utilization Patterns (continued)

<u>POSTNATAL Prevailing Patterns</u>		<u>Recommended Use</u>	
underutilization	<ul style="list-style-type: none"> • non-use • insufficient use 		
inappropriate use	<ul style="list-style-type: none"> • use as curative rather than preventive after maternal and/or neonatal problems already developed • use of household care or traditional practitioners for maternal/neonatal problems amenable to formal care 		<ul style="list-style-type: none"> • one routine early postpartum contact (day 3) to assess mother/newborn • additional routine visit (2 weeks, 40 days) for education/FP, etc. • seek early care if recognize maternal/neonatal danger signs • follow recommended visit schedule if problem/risk
overutilization	<ul style="list-style-type: none"> • rare 		

It is commonly accepted that use of nonformal maternal care is confined primarily to delivery, for which the role of traditional birth attendants is well understood. However, the role of traditional maternal care sources during the prenatal period may be greater than previously documented (182, 110). Although few studies of maternal health care utilization investigate use of nonformal care sources during pregnancy, one study in Jamaica showed that many pregnant women seek some, if not all, of women's health care during pregnancy from this source (179). Investigation of many of the same aspects that apply to maternal care from within the formal system - amount and type of nonformal care sought, frequency, types of problems, and results - can provide a fuller understanding of women's use of nonformal sources of care.

Pregnant women commonly combine multiple providers, sources and locations for prenatal care (125, 182). For example, in Mexico, where utilization of the formal maternal health system is high, the "sabadora" or massage therapist is also well used throughout pregnancy (159). Use of nonformal care is not limited to women within specific geographic, socioeconomic, or educational parameters. In the Philippines, pregnant women in both urban and rural areas routinely consult dual care sources (171).

Besides incorporating some modern medical practices and pharmaceuticals into their therapies (112), many nonformal practitioners address the emotional and spiritual needs of pregnant women which are frequently ignored by providers within the formal system. The influence of such felt needs on women's use of maternal care can be far reaching. Even women who migrate to developed countries, accustomed to traditional prenatal care, seek care from familiar sources. For example, although less than 35 percent of Cambodian refugees in one periurban American community received adequate formal prenatal care according to U.S. standards, the majority had consulted traditional Asian health professionals in the community (55). The importance of social support provided through the nonformal prenatal care network should not be underestimated.

Use of dual health care systems may be very important to meet the needs of women. This should not be discouraged, as long as traditional care supports and supplements use of the formal maternal health care system.

5. Self-Care and Other Household Care

Many pregnant women receive most of their care during pregnancy, birth, and the postpartum period in their own homes. Unless studies of maternal health care utilization include investigation of home care practices, including self-care, the extent and nature and role of such care within the framework may be overlooked. One recent book, although not focusing specifically on maternal care, reviews home health practices in 16 developing countries (158).

Maternal self-care can be defined as the regular use of health-promotive dietary, lifestyle, and personal habits by pregnant women in their homes and communities. It can also include traditional remedies for common pregnancy-related discomforts or complications, if initiated and administered by the woman herself. This type of maternal self-care should be clearly differentiated from self-treatment of serious complications of pregnancy, most of which cannot be sufficiently treated without assistance from the formal care system.

Often, other members of the household or extended family play a critical role in health care decision-making, including both home care and care outside the home. It is usually an elder female family member who is the "primary diagnostician and initiator of health seeking behavior" (158). For example, in many Andean communities, these "mother healers" most frequently provide the first response to sickness (51).

Attitudes toward self-care and prevailing household practices should be included in utilization studies if they are to reflect the full spectrum of maternal care. Understanding the maternal health care decision-making process at the household level and the type of maternal care initiated at home can provide background information for the effective promotion of early recognition of danger signs as well as of mothers' practices that promote maternal and neonatal health. In the absence of adequate formal maternal health services, many of the basic components of routine prenatal care might effectively be carried out by women who are already providing many aspects of maternal care at home.

E. Intrapartum Care

The gap between levels of use of formal health care for childbirth between developed and developing countries is even greater than that for use of formal prenatal care. Use of the broad term "assisted by a trained attendant" reflects the magnitude of this gap. Trained birth attendance can indicate many levels of qualification, expertise and experience, ranging from a hospital-based, physician-assisted delivery to a home birth attended by a traditional birth attendant (TBA) with two weeks of training. Still, fewer than half of all births in the developing world are attended by any trained person (184). Even childbirth at home assisted by a trained attendant may not be a realistic goal for pregnant women in some developing countries, such as Nepal, where 10 percent of deliveries are by trained attendants, or Haiti (20 percent) (174).

As is the case with prenatal care, there are significant exceptions to the pattern of predominantly unattended deliveries. In Jamaica (175) and Jordan (1, 64), for example, the great majority of women choose to give birth in health facilities. This pattern is particularly prevalent in developing nations with large urban and periurban populations, where access to more sophisticated health facilities, exposure to modern health practices, and rising expectations increase demand for hospital births.

Although the literature focuses more on the value of prenatal care, greater impact on maternal mortality in developing countries is more likely to result from increased attention to management of obstetrical emergencies, including increased use of trained attendance during childbirth. This is especially true when maternal health care resources are limited or where the majority of women choose not to use the formal system for maternal care.

Much of the maternal and neonatal mortality reduction achieved in developed nations is attributable to the availability of trained assistance for unanticipated delivery problems (hemorrhage or prolonged labor, for example). The unpredictability of many of the most life-threatening complications of childbirth, even in the presence of quality prenatal care, is clearly demonstrated in a U.S. study where 16 percent of women desiring and cleared for childbirth at a maternity center required hospital admission for delivery (140).

Although this type of emergency care may be more effective when provided by health professionals in a hospital setting, trained birth attendance at the community level may also significantly reduce the incidence, improve the outcome, or allow earlier recognition and

referral of certain complications of childbirth, including hemorrhage, prolonged labor, and pre-eclampsia in the women and sepsis, neonatal tetanus, birth asphyxia and hypothermia in the neonate.

Use of delivery care differs from prenatal care utilization in several ways. Like pregnancy, childbirth is regarded as a natural event in most cultures in developing nations. However, most cultures also recognize the increased dangers to both mother and child during childbirth (12, 179), and this is often reflected in many traditional practices, including the use of some form of childbirth assistance. Prescribed traditional childbirth behaviors and practices in most developing nations are often so strongly held in indigenous cultures that introducing modern concepts of improved hygienic childbirth practice is often difficult to achieve.

Two main considerations in measuring delivery care are:

- type of birth attendant (use or non-use of a trained attendant; and
- birth location (home, maternity center, clinic, hospital, referral hospital).

These two factors can combine to create a wide variety of circumstances in which childbirth can take place. Table 1 lists these multiple childbirth settings.

Usually childbirth attended by a professional health worker (a nurse, midwife, physician or obstetric specialist) takes place in a hospital or maternity center. Occasionally, health professionals conduct deliveries at home or in alternative birth locations such as community-based maternity centers or "maternity huts."

Births assisted by traditional attendants most frequently occur at home. Recently, there have been a few attempts to allow TBAs to attend hospital deliveries, allowing both the demonstrated benefits of their social support [86] and the availability of emergency medical backup if required. Home births can also be attended by untrained TBAs, other types of untrained attendants such as elder women family members, and husbands. Also, the concept of maternal self-care can extend to childbirth. In some countries women may choose to give birth completely unattended.

Often, there is significant difference between what women say was their intended birth location or attendant and the actual circumstances of their birth. For example, in Jamaica, many women who had recently given birth stated that they had desired either a hospital delivery or a home delivery attended by a midwife. However, many of them did not actually give birth where planned, due either to lack of adequate planning and preparation, inadequate recognition of the signs of impending labor, delay in initiating required action, or lack of means to get to a facility (179). In Kenya, more than half of the rural women in one study who intended to give birth in a hospital did not, primarily because they could not get there once labor began (178).

A possible contributing factor may be the delay in seeking trained birth attendance. In many countries, such as Bangladesh, women appear to strongly prefer family-assisted home births, and outside assistance is sought only **after** complications have occurred (82). Late initiation of trained childbirth assistance has also been demonstrated among traditional Ecuadorian women (51).

Understanding the factors which cause women to give birth under circumstances different from those which they would have preferred provides an interesting dimension to maternal care utilization studies. Motivating pregnant women to make **timely, planned use** of trained delivery assistance of any type may be one of the most effective ways to reduce maternal and neonatal mortality. To achieve this, all of the steps that contribute to planned birth attendance must be considered, for example, anticipating the transportation difficulties and care-seeking delays cited above.

F. Postpartum Care

Although the postpartum period (usually forty days) is widely recognized and observed in most traditional societies (128), use of the formal health care system for postpartum care is less than for any other phase of the reproductive cycle. In Botswana, for example, where formal prenatal care is used by over 80 percent of pregnant women and over half of all births are conducted by trained attendants, only 24 percent of women received formal postpartum care (8). In many developing countries, most women are unaware of the need for postpartum care for either themselves or their newborns.

Formal postnatal services may also be less available than other types of maternal health services. Often, the recommended content of both maternal and neonatal care during the postpartum period is excluded from the training of the mid-level health professionals who should be responsible for providing it. Very few developing country governments compile information on postpartum care as part of their routine maternal care coverage statistics or break down postpartum care into maternal and neonatal care or preventive and curative care. Therefore, it is often difficult to determine from existing information the amount of or reasons for care received during this period.

Postpartum care is both curative and preventive. Preventive aspects include attention to maternal hygiene, reinforcement of exclusive breastfeeding, proper care and warming of the newborn, and family planning. Deaths from maternal sepsis and most common causes of early neonatal mortality can best be avoided if problems are detected and treated during the first week after birth. Many postpartum services can be delivered effectively at home by appropriately trained traditional birth attendants or others. Increasing the postpartum care skills of informal as well as formal providers can extend the reach of such care beyond the limits of the formal health care system.

Although the amount of formal health care required to maintain health and detect complications in the postnatal period is significantly less than in the prenatal period, evaluation of postpartum care use is similar to that of prenatal care in many respects. Postpartum care is usually evaluated according to the following parameters:

- overall use vs. non-use;
- appropriateness of care use (timing and amount, preventive vs. curative, compliance with treatment, follow-up and referral recommendations) and;
- source of care (formal care, public vs. private; nonformal care, traditional household or self-care).

Most care received by women and neonates during the postpartum period occurs at home, with little utilization of formal postnatal health services. Again, many of the basic functions of routine preventive postpartum care, especially recognition of and early response to danger signs, could be carried out at home by mothers or others with adequate training.

Much more documentation of existing traditional, household or self-care practices during the postpartum period is needed to gain a fuller picture of postpartum care. There are many traditional practices during this period, deeply rooted in local culture, which may negatively affect both maternal and neonatal health.

In summary, adequate and appropriate utilization of formal maternal health services, especially trained birth attendance, comprise a very important series of behaviors during pregnancy, birth, and the postpartum period with significant consequences for maternal and neonatal health and nutrition. Other behaviors may be equally important, including compliance with care recommendations, early recognition of risks and danger signs, and timely initiation of appropriate action.

More detailed desirable behaviors for women, TBAs, health workers, and communities are found in Appendix II. Information about current practices and the underlying reasons behind them should form the basis for efforts to promote these desirable behaviors effectively. The latter topic is discussed in Chapter III.

II. FACTORS INFLUENCING MATERNAL HEALTH CARE CHOICES

In order to more fully understand the reasons behind the maternal health care choices and behaviors discussed above, it is necessary to talk with women themselves. In the past, research into maternal care practices emphasized documentation of pregnancy and childbirth-related beliefs and practices in developing countries, such as dietary restrictions and taboos during pregnancy. This extensive ethnographic information, although providing an "inventory" of traditional maternal care practices, frequently does not address women's reasons for adoption or rejection of new practices. In itself, this information is thus of limited use in devising program strategies to overcome identified barriers to improved maternal behaviors.

This extensive literature has been reviewed recently using a more action-oriented approach (128). The findings are discussed according to phase of the reproductive cycle, and a process to facilitate investigation of traditional maternal care practices and incorporate beneficial practices into formal maternal care services is suggested.

As recognition of the importance of the sociocultural and attitudinal factors that influence maternal health care choices increases, interest in studies which seek women's views of care has also increased. Frameworks for exploring women's attitudes, beliefs, and perceptions toward pregnancy and birth, particularly their understanding of the value of and need for formal maternal care, have become an integral part of many utilization studies (109, 187, 123).

To date, the majority of these studies have focused on the concerns of pregnant women in industrialized nations (136, 98). However, a small but growing number of researchers have begun to adapt the methodology and content to reflect the cultural realities and life situations of women in the developing world. This research has expanded our understanding of the complex interaction of behavioral factors that influence women's maternal care choices in many diverse cultures (15, 150, 3).

The following pages briefly discuss some of the more widely recognized factors influencing maternal care choices and present some less-documented underlying behavioral and cultural parameters. A recent review of the international utilization literature, which examines the use or non-use of services by women with pregnancy complications, highlights the importance of the internal (attitudinal/behavioral) as well as external (accessibility, etc.) determinants that influence use or non-use of maternal health services (170). The review identifies three "phases of delay" that significantly contribute to maternal mortality - delay in seeking care, delay in reaching care, and delay in receipt of care. Although there are behavioral considerations associated with each phase of delay, the following discussion focuses on barriers that cause women to delay seeking care.

A. External Barriers

Maternal care use has been most widely examined in relation to several conventionally accepted demographic, geographic and socioeconomic variables, such as maternal age, parity, education and income (11, 19, 33, 46, 67, 93, 99, 129, 160). For the most part, these factors are conditions that are imposed on women or are outside their ability to control. They can be classified as **external** barriers.

In addition to the external barriers related to users of maternal care, there are external barriers primarily associated with the health care system or provider, such as lack of supplies, access, and availability. The literature describing both categories of external barriers has been extensively reviewed (95). Table 4 lists these factors, and categorizes them as they are discussed in this paper. Internal factors, ones that are more within the control of women or providers, are discussed in the next section.

Recent utilization literature reviews have confirmed the importance of many of these known factors in determining women's use of care. For example, Leslie's review confirms the negative association between extremes of both maternal age and parity and care use. The positive relationship between maternal education and care use is upheld (170), with rising levels of maternal education shown to increase not only use of maternal care (142) but also of any type of modern health care, particularly preventive services (35).

Some common assumptions about acknowledged barriers to care were not well substantiated by the literature. The reviews provide a new perspective on the importance of the external barriers to care use associated with access to care, primarily distance and cost. It has been suggested that it is the additional costs, both financial and time, associated with distance from services which most affects use (170). Yet it has been demonstrated that pregnant women will travel distances and pay fees if there is sufficient perceived need for maternal care (167). Although increased distance from health services has been shown to correlate well with increases in maternal mortality, many factors other than distance may contribute to higher maternal mortality in rural areas.

Women in rural areas are likely to have lower levels of education and to live in more culturally traditional areas where, for example husbands may dictate how money is spent. Studies in locations as diverse as India (89), Burkina Faso (118), and Brazil (124) have shown that despite improved access to care through manipulation of cost and distance factors, use of care did not increase. Clearly, the relationship of access factors to maternal care use has not been fully described.

Certain service system variables are frequently examined and readily accepted as influencing women's use of care. These include such characteristics of the system or care facility as:

- availability of supplies, equipment, and personnel;
- waiting times, hours of service; and
- attitudes and gender of health care providers.

Table 4: Factors Affecting Utilization of Maternal Health Services

	EXTERNAL BARRIERS	INTERNAL BARRIERS
SYSTEM FACTORS	<ul style="list-style-type: none"> • Lack of supplies/equipment • Access (distance/distribution) • Personnel - (number and competence) • Availability (clinic schedules/ waiting time) • Gender of health personnel • Poor working conditions • Cost of services • Referral system • Continuity/integration of care • Lack of client oriented service approach • Policy - "approved" caregiver and care location 	<ul style="list-style-type: none"> • Provider attitude/morale • Client/provider interaction • Perceived importance of health care system priorities
WOMEN'S CHARACTERISTICS	<ul style="list-style-type: none"> • Age • Parity • Education/literacy • Income • Social class/caste • Union status • Religion • Costs - direct fees/transport • Time cost/childcare • Access to information • Social support system-kinship network • Decision-making/influentials 	<ul style="list-style-type: none"> • Knowledge of risks and danger signs • Previous experience with event or system • Attitude toward pregnancy • Attitude toward antenatal and childbirth care • Preference for birth location/attendant • Attitude to birth technology • Satisfaction with care • Health belief model • Perceived severity/susceptibility (need for care) • Value of preventive care • Self-esteem • Confidence • Social support • Perceived quality of care
GEOGRAPHIC FACTORS	<ul style="list-style-type: none"> • Distance (access/transport) • Urban/rural • Household environment • Migration 	

User dissatisfaction with health services has been well demonstrated (56, 83, 89, 102, 104, 122), although there is less information regarding the level of influence this dissatisfaction exerts on maternal health care use. Despite the likely importance of these conventional health service barriers (95) in reducing utilization, other factors may still result in utilization in specific circumstances.

Often, health workers themselves do not recognize or acknowledge the importance of key aspects of maternal health care, especially those areas related to encouraging preventive health behaviors, counselling, and social support. The effects of these qualitative aspects of the service system on maternal childbirth care choices need to be further explored.

B. Internal Barriers

Another important set of barriers to utilization of maternal care includes behavioral, sociocultural and attitudinal factors of care users. These personal or **internal** barriers can strongly influence when and how a pregnant women uses formal health care, as well as other maternal care choices and behaviors.

Internal barriers include:

- maternal health knowledge;
- prior experience, both with the reproductive process and the maternal health system;
- perceived quality of care;
- health belief systems;
- attitudes toward pregnancy and childbirth;
- maternal self-esteem and confidence; and
- social support.

1. Maternal Health Knowledge

Most of the literature examining the effects of improving women's knowledge of pregnancy and birth is from developed countries, where attendance at prenatal education classes during pregnancy has become widespread. In this setting, it has been demonstrated that childbirth knowledge influences participation in prenatal counselling (68), healthy pregnancy behavior (133), and compliance with dietary recommendations (136). For example, in Finland, women with less childbirth knowledge used prenatal care less because they did not understand the need for care (133). There is less information from developing countries of the effects of maternal health knowledge on care use, particularly on care use specifically during pregnancy and the postpartum period. However, it seems logical to assume that lack of understanding of the basics of the reproductive process, of potential risks and common problems of pregnancy (106), birth and the newborn period, and the benefits of both prenatal care and attended childbirth can negatively affect use of the health care system.

Assessment of maternal health knowledge can focus on the following areas:

- the basic reproductive process;
- the content and benefits of care during pregnancy, birth, and postpartum;
- common problems of pregnancy, birth, and the neonatal period;
- reproductive risk (historical/potential risk, actual risk based on problems in current pregnancy); and
- sources of maternal health information.

In part because of the strength of traditional health beliefs, many women in developing countries lack basic "modern" knowledge of these areas. This was demonstrated in Senegal, where over one fourth of pregnant women surveyed could not identify a single pregnancy complication. Less than ten percent of women recognized fever or hemorrhage during pregnancy as danger signs, and many thought that fever, dizziness, and pallor were normal pregnancy-related conditions (41). In Guatemala (110) and Jamaica (179), the majority of women were only able to name those obstetric complications that they had actually experienced. Contact with the health care system may significantly increase women's health knowledge. In Kuwait, where 95 percent of women attend antenatal clinics, almost all women questioned recognized hypertension as a danger sign of pregnancy (70).

The benefits of prenatal care, as perceived by modern providers, are quite different from those as perceived by many women (44). Women's reasons for seeking prenatal care are frequently non-specific, such as "to help the pregnancy go smoothly" (104). In the Philippines, women's reasons for seeking prenatal care were primarily nonmedical and included a desire for advice and massage, a common element of traditional care during pregnancy in that culture (171).

Lack of awareness of the need for early prenatal care is widespread. Over 40 percent of women attending prenatal care in the Philippines waited for discernible fetal movement before seeking care. Care was then initiated, as "the baby was seeking attention" (171). In addition to positive internal physical signs of pregnancy, women often wait for visible evidence, such as increase in abdominal girth, before seeking care (104). This may be due in part to insufficient early diagnostic capability at many clinics in the developing world. Frequently, health workers' inability to confirm early pregnancy results in refusal to provide care to early prenatal care seekers until pregnancy can be confirmed through other than laboratory methods. In Jamaica, pregnant women were often aware of the possibility of being denied early care, and this contributed to delay in initiation of formal prenatal care (179).

Pregnant women, especially those who are socioeconomically or educationally disadvantaged, often have difficulty obtaining factual, understandable reproductive health information, even when they express a strong desire for such information (71). The most common source of maternal and newborn health information for most women in developing countries is still from within a network of friends and members of the extended family (22). The nature of the information, transferred through this network, from generation to generation, often contains strong mythical and supernatural overtones (110, 179). Yet women in some cultures still lack the confidence to seek "modern" information about reproductive health, especially if it requires approaching someone from outside their own community.

In some settings, mostly in more developed nations, women have come to rely on the formal health system for much of their maternal health information. However, pregnant women and providers of formal maternal care often have distinctly different perceptions of maternal health information and counselling needs (75, 161). For example, in one study, major informational concerns of maternal care providers were directed primarily toward such medical issues as incidence of fetal distress and death. The concerns of pregnant women in the same study were more related to maternal health consequences, such as fear of pain and operative procedures during delivery (157). This perceptual difference can influence both content and effectiveness of counselling and use of health care, as it limits the ability of women to make informed health care choices (29, 40).

Commonly used modern reproductive terminology may be foreign to pregnant women in many non-Western cultures. In Mexico, for example, many pregnant women do not understand the word "risk" or the concept of trimesters of pregnancy (3). Understanding women's own vocabulary of basic maternal health terminology is important in the design of understandable, effective health messages and communication strategies (14, 21 87, 108).

2. Prior Experience

Women's experiences with pregnancy and childbirth and with the health care system have a major effect on their knowledge, attitudes, and use of maternal health care. Successful past experience may exert a stronger influence on health care use than health knowledge (5). Women repeatedly express preference for familiar systems of care (130) and tend to be negative about proposed innovations in maternal health care until they have experienced them (130, 179). For example, previous birth location has been shown to be a powerful determinant of other prenatal, childbirth, and postpartum care choices (95). On the other hand, poor health provider attitudes and treatment of clients frequently discourage women from returning to use services.

3. Perceived Quality of Care

The quality of maternal health care in the developing world has been studied in Africa (102, 105, 13, 73, 122), Latin America (53), and in the Asia/Pacific region (104, 182). However, these studies focused primarily on the service providers' perspective, documenting the quality of medical services delivered. Despite the obvious importance of actual quality of care on pregnancy outcome, perceived quality of care may be a more important determinant of women's use of maternal care than actual quality of care.

Women themselves are rarely able to evaluate the technical quality of maternal care they receive--to know if diagnostic procedures, treatments and medications are correctly prescribed and administered. Rather, they use a different set of criteria to evaluate maternal care. For example, in the Philippines, although less than 30 percent of the components of a standard prenatal visit were actually delivered to pregnant women attending clinic, most women expressed satisfaction with the services received (17). Understanding the elements of maternal care which represent satisfactory care to women themselves can assist in the design of services that women will use.

Recently, emphasis has shifted toward examining a slightly different aspect of service system barriers to care use - the possible "cultural mismatch" between the characteristics of the formal maternal care system and care users. The relevance of the technologies, practitioners

and ideologies of the formal maternal care system to the lives of women in developing countries has been questioned. The same disenchantment with modern obstetric technology, unnecessary surgical intervention, and desire for active participation and control over the process of childbirth which has been documented among pregnant women in Western nations (54, 71, 119, 136) exists in the developing world as well. In Botswana, fear of modern obstetric technologies associated with hospital births is a major factor influencing choice of birth location (8).

Women's cultural definitions of childbirth and expectations of the birth experience are often radically different from those of formal health providers (75). Often, Western-oriented health professionals display attitudes that discourage women's use of formal care or adoption of beneficial health practices (115, 149, 179, 181). In Benin, for example, health workers are scornful of women who arrive at hospitals with complications of attempted home births (147). These attitudinal problems can result in poor treatment and delays in timely receipt of lifesaving care. Lack of respect for women's felt needs for privacy and the culturally determined extremes of modesty in many traditional cultures can also discourage use of formal maternal care (154).

Several studies have attempted to determine the care expectations of pregnant women in developed countries (135, 165). Pregnant women expect individualized care and resent impersonal care, lack of continuity of care, long waits for short consultations, and lack of health information. Lack of consideration of women's time constraints and lack of respectful patient/provider communication are major factors in women's perception of quality care in developed and developing countries alike (95, 104). However, factors which represent quality of care to women in developed countries cannot automatically be applied to women in developing nations.

For example, despite expressed dissatisfaction with aspects of care, women in some developing nations continue to use services in many cases (148). In Jamaica, pregnant women tolerate overcrowding and extremely difficult conditions in urban maternity hospitals. This may be acceptable since they are accustomed to difficult conditions in their daily lives (179). An uncritical acceptance of medical practice, regardless of source, is also common: women seem to express the attitude that "what is, must be best" (130).

4. Health Belief Systems

Particularly where traditional cultures persist among a significant segment of the population, understanding health belief systems is an essential first step in modifying maternal health care choices. There is a wealth of literature on the diverse ethnomedical belief systems that define the sociocultural parameters of health and illness (8, 11, 20, 117, 26, 53, 30, 77, 88, 101, 126) and on the types, components and sequence of care-seeking that influence the utilization of formal and other sources of maternal health care (2, 36, 49, 52, 111, 90, 80, 67, 91, 14, 183). This paper discusses only those aspects most relevant to developing simple instruments for learning about factors influencing maternal care choices.

Every culture has created a set of illness theories that, within the framework of other life events in that culture, provide a rational explanation for illness and disease. Though often not compatible with modern medical theory, lay health belief models usually represent coherent, logical concepts of health and illness.

A classification for illness theories has been suggested which divides health belief models into three types: medical, life-world, and mixed (84). The last category, so-called "traditions in transition," are often more receptive to new health practices, as the cultural boundaries of illness thought have already been expanded (109).

In part due to the different sociocultural parameters often applied to women's lives in traditional cultures, health care decision-making for maternal and neonatal health problems may be distinctly different from that for other types of medical problems (88).

Factors to be explored within health belief models include:

- perceived etiology, susceptibility (risk), and severity of maternal and neonatal problems - disease concepts, symptom definitions, point of definition of condition as "illness", recognition of critical signs which trigger health action;
- perceived benefits of care-seeking and consequences of not initiating action (45);
- perceived barriers to seeking care or adopting preventive self-care practices (187);
- which conditions result in maternal self-care, household care, care from outside the home, of which type, and other treatment actions (156);
- value of preventive care, either self, traditional or formal; and
- perceived quality of accepted treatment for maternal and neonatal health problems - adherence/compliance with treatment, point at which treatment failure is recognized and other actions initiated.

The **etiology** of problems of pregnancy, childbirth, and the postpartum period is often attributed to non-medical causes. For example, it is a common belief throughout West Africa that prolonged labor is attributable to infidelity and will be remedied if the laboring woman confesses the name of her lover (113). Some types of pregnancy-related problems are felt to result from supernatural or spiritual intervention. This influences care choice, as women commonly seek care from the type of practitioner associated with effective treatment of problems of that realm, such as the "obeah man" or spiritualist in Jamaica (179). In Guatemala, pregnant women seek care from traditional midwives for complaints related to breasts, "soul" and reproductive organs, and "fear producing diseases." Modern medical care is sought for skin problems and problems of the heart and lungs (110). Similar practitioner/problem choices have been demonstrated among pregnant women in the Philippines (182).

Perceived personal **susceptibility** to a reproductive problem or condition is also an important determinant of care use. Abstract knowledge of the existence of potential risks or common problems of pregnancy and childbirth may not be sufficient to convince a woman to take preventive action, if she does not feel that she herself might be at risk of experiencing the complaint (118).

Perceived **severity** of a maternal or neonatal problem has been suggested as the single most important health belief factor in determining use or non-use of care (170). Initiation of health-seeking behavior must be preceded by recognition of a problem as requiring care. Many conditions that would trigger immediate action among people subscribing to Western-oriented

health belief models are accepted or regarded as normal in other cultures. For example, in Senegal, death during labor and delivery is considered normal (41). Such fatalism makes early recognition of obstetric problems and timely use of maternal health care unlikely.

Even if dangers are well known to members of the community, cultural norms may play a part in perpetuating harmful practices or discouraging use of formal maternal health care. The boundaries of this "cultural conservatism," the unwillingness to explore new health behaviors or utilize available maternal health care resources, must be defined if such deeply rooted resistances are to be overcome. For example, in a study of maternal mortality in rural India, where half of all deaths occurred at home, lack of recognition of the severity of the problem was a significant reason for not seeking outside health care (19). In one area of Bangladesh, almost half of all deaths among women of reproductive age occurred at home without benefit of attendance from even a traditional practitioner (50).

Some cultures have developed more "successful" patterns of sickness behavior and health care seeking. In Sri Lanka, a cultural evaluation of sickness behavior identified several key steps at the individual or community level that resulted in positive outcomes of illness episodes (31). These include awareness of dangers (risk), rapid identification of problems and initiation of action, appropriateness of first action, quick resort to alternative treatment if present treatment fails (readiness to change), and persistence of effort until treatment succeeds. Identifying the determinants of health behaviors and pathways of use of health care in these settings may provide a framework for promoting similar action in other cultures.

5. Attitudes toward Pregnancy and Childbirth

Attitudinal and emotional factors exert important effects on utilization of maternal health care (33). Besides the influence of knowledge and prior experience on a woman's attitudes, culturally determined expectations of pregnancy and birth vary significantly among women of different ethnic backgrounds and cultural heritages (135). These differences in sociocultural preferences, attitudes and emotions contribute to the widely divergent patterns of maternal care use in developed and developing countries, within developing nations, or even within different regions of the same country.

Attitudinal factors include:

- attitudes toward pregnancy in general and toward current pregnancy (depression, denial, shame);
- attitudes toward childbirth (fear of pain or obstetric intervention);
- expectations of care during pregnancy and birth (types of provider, sources of care, birth location); and
- reasons for seeking care during pregnancy and birth (health reasons, social support, or to facilitate access to hospital delivery).

Attitudes toward pregnancy and birth have been studied in relation to women's use of maternal care in several settings. Instruments such as the Maternal Attitudes to Pregnancy Index (185), and the Pregnancy Acceptance Scale (100) have been developed to investigate attitudinal factors and their influence on formal maternal care use in developed countries. Several researchers have begun to adapt measures of this type to more closely reflect the

realities, conditions, and concerns of pregnant women in developing nations (110, 179). This often reveals a startlingly different world view and cultural attitude toward the reproductive role among traditional women. In the Guatemalan highlands, for example, pregnant adolescents associate pregnancy with feelings of an emotional or spiritual nature, rather than within the physical realm expressed in many Western-oriented cultures (110). In the highlands of Ecuador, women's conceptualization of the reproductive process allows for differentiation between maternal and fetal responsibility for pregnancy outcome (51).

In much of the developing world, pregnancy and birth retain their traditional importance as rights of passage into womanhood (40). Perhaps in part due to the greater frequency with which reproductive events occur in these areas, pregnancy and birth are considered normal life processes, not requiring special attention or intervention. However, in some settings, negative attitudes coexist with or replace the positive maternal feelings traditionally associated with pregnancy and childbearing. Pregnancy-related depression, denial and fear can lead to delay in disclosing pregnancy, (179), delay in initiation of prenatal care (76), and failure to recognize or acknowledge symptoms of obstetric complications (98). These effects can be observed among pregnant women in both industrialized and developing nations. A study in Ethiopia has demonstrated that the use of prenatal care was significantly less among women with unwanted pregnancies (143). In England, depression, denial and fear were much more commonly reported by minimal users of prenatal care (76).

It is not only the attitudes of pregnant women themselves which affect maternal and neonatal health and nutrition. The attitudes of husbands and other influentials can also exert strong influence on both use of formal maternal health care and adoption of preventive self-care practices during pregnancy. Pregnant women in Thailand, for example, cited their husbands' dislike of weight gain as an important factor limiting their food intake during pregnancy (139). Educating husbands and other family members can positively affect their influence on maternal and neonatal health (18).

6. Maternal Self-Esteem and Confidence

Maternal self-esteem (sense of self-worth) and confidence (feeling of ability to take independent action and effect change in her life) exert powerful influences on a wide range of maternal care choices and behaviors (92, 141).

Cultural influences have a major influence on maternal self-esteem and confidence. For example, in some cultures, a woman's self-esteem is closely tied to her reproductive role. In others, mostly in more developed nations, pregnancy is regarded as a period of increased vulnerability and additional life stress. In many parts of the world, culturally condoned attitudes of fatalism, dependency, passive acceptance of suffering, and "learned helplessness" prevail among women (116), who, although at increased risk to experience pregnancy-related illnesses and problems, often feel helpless to prevent them (145). Also, difficult physical conditions during pregnancy, such as overcrowded housing and inadequate diet, can have the psychological effect of deprivation which can result in inadequate use of maternal health services and inappropriate maternal behaviors (substance abuse, for example) (145).

Several recent studies have documented effects of maternal self-esteem on such health behaviors as child feeding practices (60) and use of preventive child health services (172). In India, women's lack of aspirations for their future and low self-esteem influenced use of health services (79).

7. Social Support

Social support, the presence, guidance and assistance of any of a wide network of family, extended family and community members, is a crucial factor influencing maternal care choices throughout all phases of the reproductive process. In addition to the more obvious psychological benefits, appropriate social support can also provide a means to reinforce desired maternal health practices and health care use. In Jamaica, pregnant adolescents identified the support of close friends as a prerequisite to initiation of prenatal care (179). In France, emotional support from midwives was valued more than all forms of pain relief offered to women during labor (115).

Some recent studies have reviewed positive effects of social support on outcome of labor and delivery in a variety of settings (121). In Guatemala, hospital deliveries attended by family members and traditional midwives demonstrated significantly better birth outcomes than controls (166). Continuous social support throughout hospital labor and delivery resulted in shorter length of labor, lower incidence of Caesarian sections, less need for oxytocin augmentation of labor, fewer perinatal complications, and fewer admissions to the neonatal intensive care unit (86).

Social support from within a pregnant woman's cultural community can help to maintain beneficial practices associated with her ethnic group. This is exemplified by a study in Los Angeles which compared incidence of low birth weight among Latino women born in Mexico with those of Latino women born in the U.S. Mexican-born women demonstrated a substantially lower incidence of low birth weight than U.S. born Latino women, irrespective of receipt or timing of formal prenatal care. An "index of acculturation" was developed, which measured levels of ethnic identification. Mexican origin and retention of ethnic identity were associated with behaviors and lifestyles that were more important determinants of birth outcome than prenatal care. These included low use of tobacco and alcohol, better nutritional practice, and a higher cultural regard for parenting roles (153).

Conversely, social support from friends, family and peers can help to counterbalance the negative psychosocial effects experienced by some pregnant women in relation to undesired pregnancy and maternal deprivation, as discussed earlier (66).

III. SUMMARY AND IMPLICATIONS OF FINDINGS

This paper presents some of the complex patterns of maternal health care utilization and the factors which influence the many maternal care choices of women in developing countries. Several important conclusions emerge from this review. One major finding is the need to look beyond utilization of formal maternal services, to explore what women are doing and are willing to do to maintain their health and the health of their newborns. This is crucial not only because existing services are often underutilized but also because in many if not most developing nations, it may be decades before women in poor communities have access to quality formal maternal health services.

A second major finding is that utilization of formal maternal care services is both low and inappropriate not only because services are not easily accessible to many women but also because services are culturally inappropriate to women's needs and expectations. Clearly, any program that is successful in improving maternal health care and pregnancy outcomes needs both to modify available services -- to improve their appropriateness and effectiveness and to make them more acceptable to women -- as well as to educate and motivate women to use services appropriately.

MotherCare feels that such steps must be based on detailed, well-designed formative research documenting the underlying beliefs, attitudes and behaviors of women, communities, and health workers. Based on such research, an appropriate and effective program of service improvement (supply) and promotion (demand creation) can be designed. The communication (demand) component of these efforts should:

- provide only the most essential facts required to achieve the desired behavior changes;
- identify and address barriers, concerns, and motivating factors;
- supply the essential information to women precisely at the time when it is needed (85);
- consider the different information needs required to promote desired behaviors to various segments of the target audience.

Some more specific lessons that can be drawn from information reviewed in this paper are:

- Reasons why women now delay initiation of prenatal care can be identified and addressed. Determining what motivates those women who **do** attend for early care is equally important.
- Motivating non-users of formal maternal care to accept the need for the ideal number of prenatal visits is not feasible in many settings in developing countries. Strategies to encourage use of formal prenatal care at only a few critical points during pregnancy, for the time being in many places in the developing world, are more feasible and appropriate.

- Attitudes and behaviors regarding some maternal care topics that are found to be universal can be promoted to all women and communities. However, there might be greater variation in attitudes toward other topics, which would require more specific promotion at a local or regional level.
- Nonformal care constitutes an important source of maternal health care. Determining which nonformal actions and sources of care are helpful, and which can thus be promoted, is essential and can increase the acceptability of other new ideas and behaviors.
- Understanding the type of problems and perceived severity that currently result in self- or home care and that trigger health-seeking action could be helpful in designing strategies to promote early recognition and appropriate response to common maternal and neonatal health problems.
- Communication strategies can address issues of women's self-esteem by incorporating confidence building into maternal health messages, thus increasing women's belief in their own ability to take health-promotive action or seek health care. Messages can be targeted to those influential whom women themselves have identified as key sources of social support.

Maternal and neonatal deaths can be prevented by increasing awareness of pregnancy-related problems and use of formal maternal health services among women, improving maternal self-care practices in the home, and by upgrading the knowledge and skills of both modern and traditional caregivers. Gathering information from women themselves, from family and community members, and from primary-level maternal care providers about patterns of and reasons for maternal care choices is an essential step toward improving maternal and neonatal health and nutrition.

This type of qualitative approach has been successfully employed to complement quantitative data (47, 57) and improve program design for infant feeding (61, 103), childhood diarrhea (16, 58, 155), childhood immunization (38), and family planning (127, 151, 173, 186). Application of this methodology to maternal health and nutrition programs can improve the effectiveness of behavior change efforts, ultimately increasing the knowledge, resources and motivation of women in the developing world to improve their own health and the health of their newborns.

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APPENDIX A: DEFINITION OF TERMS

DEFINITION OF TERMS

Births assisted by a trained attendant - hospital births attended by formally trained medical professionals such as nurses, midwives or doctors; and home births attended by traditional birth attendants who have received several days to several months of training in hygienic birth techniques and related skills. Occasionally home births are attended by formally trained health professionals.

Early recognition of maternal danger signs, risks or problems - prompt self-diagnosis and response (usually immediate self-referral to formal maternal health services). Although community or household-level recognition of these conditions (hemorrhage, sepsis, preeclampsia) is desirable, this must be clearly differentiated from self-treatment, as virtually none of these problems are best remedied by self-care.

External barriers - actual or perceived conditions, primarily demographic, geographic or socioeconomic, that contribute to non-use of maternal health services. Often these conditions are outside the ability of women to control or change.

Health belief model - a combination of specific factors, usually the perception by an individual or culture, of the severity of and personal susceptibility to a disease; the benefits of, motivations for and barriers to treatment; and the consequences of action versus non-action.

Health care decision-making - the process involved in deciding on a course of action once a health problem has been recognized. Besides the woman herself, other influentials often are involved, usually male or elder female family members, or community elders. Too often, a condition either is not recognized, or the decision is to take no action.

Health promotive behaviors - the adoption of routine actions to maintain or promote health or to prevent common problems during pregnancy, birth and the postpartum/neonatal period. This includes improved dietary practice, receipt of maternal tetanus immunization, taking iron-folate tablets during pregnancy, and immediate and exclusive breastfeeding.

Household maternal care/self-care - use of traditional remedies or treatments, most often initiated by the woman herself or by members of the extended family network, usually elder women.

Internal barriers - behavioral, attitudinal, or cultural factors that influence women's use of health care.

Maternal health - the health status of women currently pregnant or pregnant within the previous 42 days.

Maternal health-seeking behavior - specific actions taken to maintain health or remedy health problems, including healthy behaviors during pregnancy, household self-treatment of common ailments, reliance on care available within community-based traditional health systems or referral for care outside of the community.

Maternal health service utilization - use of health care services provided by the formal medical system during pregnancy, childbirth or the postpartum period.

Maternal morbidity - illnesses, infections or conditions affecting women during pregnancy birth or the postpartum period.

Maternal mortality - the death of a woman who is pregnant or has been pregnant during the previous 42 days.

Nonformal maternal health care - visits for health care to a source outside of the formal maternal health care system, including traditional birth attendants, traditional healers, spiritualists, usually within the community.

Patterns of resort - the timing and order of the specific steps in the maternal health-seeking behavior process, including all of the actions included in that term. Often includes multiple consultations or combinations of traditional and formal sources of care.

Prenatal care coverage - at least one contact with the formal maternal health care system during pregnancy.

Reproductive health - the health of women of childbearing age, between age 15 and 45 (or 49). Commonly includes maternal health issues but also family planning and health conditions such as cancers of the breast and reproductive organs.

Self-esteem/self-efficacy - a woman's confidence in her self-worth her ability to make positive changes, or take actions to improve her own or her family's lives

Women's health - the health of all women, including adolescent females and the elderly, including chronic general medical problems such as diabetes or hypertension that also affect women.

**APPENDIX B: RECOMMENDED MATERNAL AND COMMUNITY
HEALTH-PROMOTIVE BEHAVIORS**

Desirable Behaviors re. Prenatal Care/Service Utilization

Women of Reproductive Age/ Pregnant Women/Mothers

- Seek/utilize prenatal care (at least 2 visits)
- Seek delivery care from trained attendant (formal or nonformal)
- Learn danger signs of common OB complications/emergencies
- Seek early treatment or emergency care if required for OB/medical conditions
- Seek and accept family planning services in postpartum period

TBAs

- Identify pregnant women in the community
- Channel pregnant women to source of prenatal care
- Provide basic prenatal screening/referral
- Coordinate care of pregnant women with local health services
- Improve basic delivery techniques
- Educate pregnant women and their families regarding danger signs that should trigger action
- Motivate new mothers to accept family planning and refer
- Make postpartum visit to identify problems of mother or newborn and refer

Health Workers Clinic Level

- Give effective education/counseling
 - communicate key prenatal nutrition information
 - explain importance of prenatal care and tetanus toxoid (TT) immunization
 - schedule return prenatal/TT visit
 - explain danger signs of common obstetric complications/emergencies
- Assess pregnancy risk/treat or refer if indicated
- Improve prenatal service delivery
- Give TT immunization at correct intervals
- Develop clinic schedules and programs acceptable to mothers
- Assist in TBA training
- Coordinate prenatal care with TBAs
- Distribute iron, folate &/or nutritional supplement as indicated

Community

- Encourage use of prenatal services
- Develop a plan to facilitate transport to health facility for women at-risk or needing emergency care

Desirable Behaviors re. Prenatal Care/Service Utilization

**Women of Reproductive Age/
Pregnant Women/Mothers**

- Seek prenatal care/delivery services
- Seek appropriate medical treatment for infections
- Use condoms/avoid multiple sexual contacts
- Take malaria prophylaxis as prescribed
- Comply with medical treatment recommendations

TBA's

- Recognize potential risks/association between:
 - anemia/hemorrhage
 - maternal infection/low birthweight (LBW)
 - malaria/anemia
 - diet/anemia
- Identify and refer pregnant and other at-risk women
- Promote iron-rich diet for pregnant women
- Promote use of condoms

**Health Workers
Clinic Level**

- Give effective education/counseling
- Recognize pregnant women at risk
- Improve diagnosis/treatment of prenatal/delivery/postpartum problems, complications, emergencies:
 - recognize & treat sexually transmitted diseases (STDs) & AIDS
 - encourage use of condoms/partner treatment
 - recognize & treat malaria
 - dispense malaria prophylaxis to pregnant women
 - recognize & treat anemia
 - dispense iron tablets to pregnant women
 - recognize & treat/refer preeclampsia
 - recognize pregnant women at high risk of cephalo-pelvic disproportion (CPD)
 - improve prenatal skills
 - improve delivery practices

Community

Desirable Behaviors re. Prenatal Care/Service Utilization

Women of Reproductive Age/ Pregnant Women/Mothers

- Seek and utilize prenatal services
- Take iron/folate supplements throughout pregnancy
- Make dietary modifications necessary to ensure consumption of diet adequate for pregnancy/lactation:
 - increase consumption of iron-rich foods
 - increase caloric intake during pregnancy/lactation (assuming inadequate intake)
 - consume iodine-rich foods if available
- Seek & utilize food supplementation program if available
- Plan home gardens to assure home availability of iron and vitamin-rich foods

TBAs

- Recognize (possible) relationship between diet and pregnancy outcome
- Encourage pregnant women to consume extra calories, iron-rich foods, iodine-rich foods
- Encourage home gardens
- Distribute iron/folate supplements as indicated

Health Workers Clinic Level

- Recognize and treat or refer nutritional anemias
- Distribute iron/folate supplements as routine part of prenatal services
- Encourage consumption of iron-rich foods, extra calories
- Improve prenatal nutrition counseling skills
- Promote home gardens
- Recognize and treat goiter
- Promote iodine-rich food sources

Community

- Encourage distribution of food within households to support needs of pregnant/lactating women
- Plant and promote home or community gardens
- Encourage redistribution of workload or pregnant women if possible
- Organize or assist women's income-generation project

Desirable Behaviors re. Prenatal Care/Service Utilization

Women of Reproductive Age/ Pregnant Women/Mothers

- Seek appropriate prenatal or other health services to receive complete TT immunization series at appropriate intervals
- Seek trained delivery attendant (formal or nonformal sector) to facilitate hygienic cord-cutting and delivery practices
- Initiate exclusive breast-feeding (BF)/use of colostrum immediately after birth
- Seek early medical treatment if detectable problems with newborn arise

TBAs

- Motivate and refer pregnant and other women for TT immunization
- Recognize and report neonatal tetanus (NNT) cases in the community
- Use good hygiene in delivery and cord-cutting
- Promote immediate initiation of exclusive breastfeeding/use of colostrum
- Provide good newborn care:
 - prevent neonatal conjunctivitis with eye-drops at birth
 - recognize/treat neonatal conjunctivitis
 - wrap baby to maintain desirable body temperature
- Recognize and refer acute respiratory infection (ARI) in newborns

Health Workers Clinic Level

- Demonstrate understanding of (possible) relationship between:
 - maternal diet/LBW
 - LBW/poor neonatal outcome
 - hypothermia/ARI
 - maternal STD/conjunctivitis
 - cord-cutting practice/NNT
- Educate and counsel women effectively re. TT/basic newborn care
- Recognize importance of TT
- Know correct schedule for TT
- Correct mothers' misinformation regarding TT side effects, purpose, etc.
- Use good delivery/cord-cutting techniques
- Use correct decisions and techniques in immunization
- Identify and report any NNT cases
- Promote immediate initiation of exclusive BF/use of colostrum
- Provide good newborn care:
 - recognize & treat neonatal conjunctivitis
 - recognize & treat ARI in newborns

Community

- Motivate & support pregnant women to seek TT immunization
- Encourage training of TBAs