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Quality of Care in maternity services: Childbirth among the
urban poor of Mumbai, India

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ABSTRACT

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<u>Doctor of Philosophy</u>

QUALITY OF CARE IN THE MATERNITY SERVICES: CHILDBIRTH
AMONG THE URBAN POOR OF MUMBAI, INDIA
by Louise Anne Hulton

Historically, the major focus in maternity services has been to reduce maternal mortality by providing and encouraging the use of hospital-based services. Less attention has been paid to the quality of care within these hospital-based services and there is growing evidence that women receive and experience appalling care in some institutions. As the trend for hospital births in the developing world continues a growing number of women will experience care provided by a range of institutions, yet we have few measures of quality that enable any distinction between institutions. This is partly due to the lack of clarity around the concept of quality in maternity services and the absence tools to facilitate the measurement of all aspects of quality

As a response quality of care in maternity services is defined and described and a framework of meaningful and measurable elements of quality of care is developed in this thesis. The framework draws together experience and evidence from the extensive medical, health policy and social science literature on all aspects of quality in maternity care to create a flexible quality assessment framework specifically for use at the institutional level in developing countries. It divides quality into two elements: firstly into the provision of quality of care, and second into elements relating to users' experience of that care. These two important aspects of quality of care in pregnancy and childbirth are intrinsic components of a basic reproductive rights approach. The framework is then used to guide a situation analysis of quality of the provision of care and the quality of the experience of care at maternity institutions in a slum area of the eastern suburbs of Mumbai, India's most populous city. The city has one of the highest institutional delivery rates for the country as a whole with 82% of women living in slums delivering in an institution.

Data from municipal and private hospitals that serve the eastern suburbs is collected using observation at municipal hospitals, exit interviews, provider interviews, hospital records, a quality schedule and the mystery client approach at private providers. In addition data from a community survey of 650 women from six slum pockets who had a baby within eight months of the interview were collected in 2000. These data are analysed using a range of methods including bivariate analysis and logistic regression for the survey data plus a critical narrative of the content and quality of care at case study hospitals based on the other data sources.

The findings provide evidence that quality is far from optimal in both municipal and private facilities. Within elements of the quality of the provision of care issues ranged from lack of essential drugs to the use of inappropriate procedures that are not evidence-based. Within elements of the quality of the experience of care issues ranged from users being left unsupported, evidence of physical and verbal abuse and institutional delivery which does not guarantee attendance by a health professional let alone skilled attendance. There is no substantive difference in the quality of care (beyond the quality of the provision of human and physical resources) that women receive and experience at private providers, indeed they are at greater risk of unnecessary interventions. Findings do show, however, that the quality of experience of care varies significantly by background characteristics of the woman and her family.

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**List of accompanying material**

1)      **Volume Two**                    Appendix One: Research tools

2)      Hulton, L.A., Matthews, Z. and Stones, R.W (2000), *A Framework for the assessment of quality of care in maternity services* University of Southampton

# Acknowledgements

# Map One

## The Indian subcontinent



Himachal Pradesh

Punjab

Chandigarh

Haryana

Delhi

Sikkim

Arunachal Pradesh

Meghalaya

Jammu & Kashmir

Rajasthan

Uttar Pradesh

Assam

Gujarat

Bihar

Madhya Pradesh

West Bengal

Nagaland

Manipur

Mizoram

Tripura

Diu

Daman

Dadra & Nagar Haveli

MUMBAI

Orrisa

Maharashtra

Andhra Pradesh

Goa

Lakshadweep

Karnataka

Pondicherry

Andaman & Nicobar Islands

Tamil Nadu

Kerala
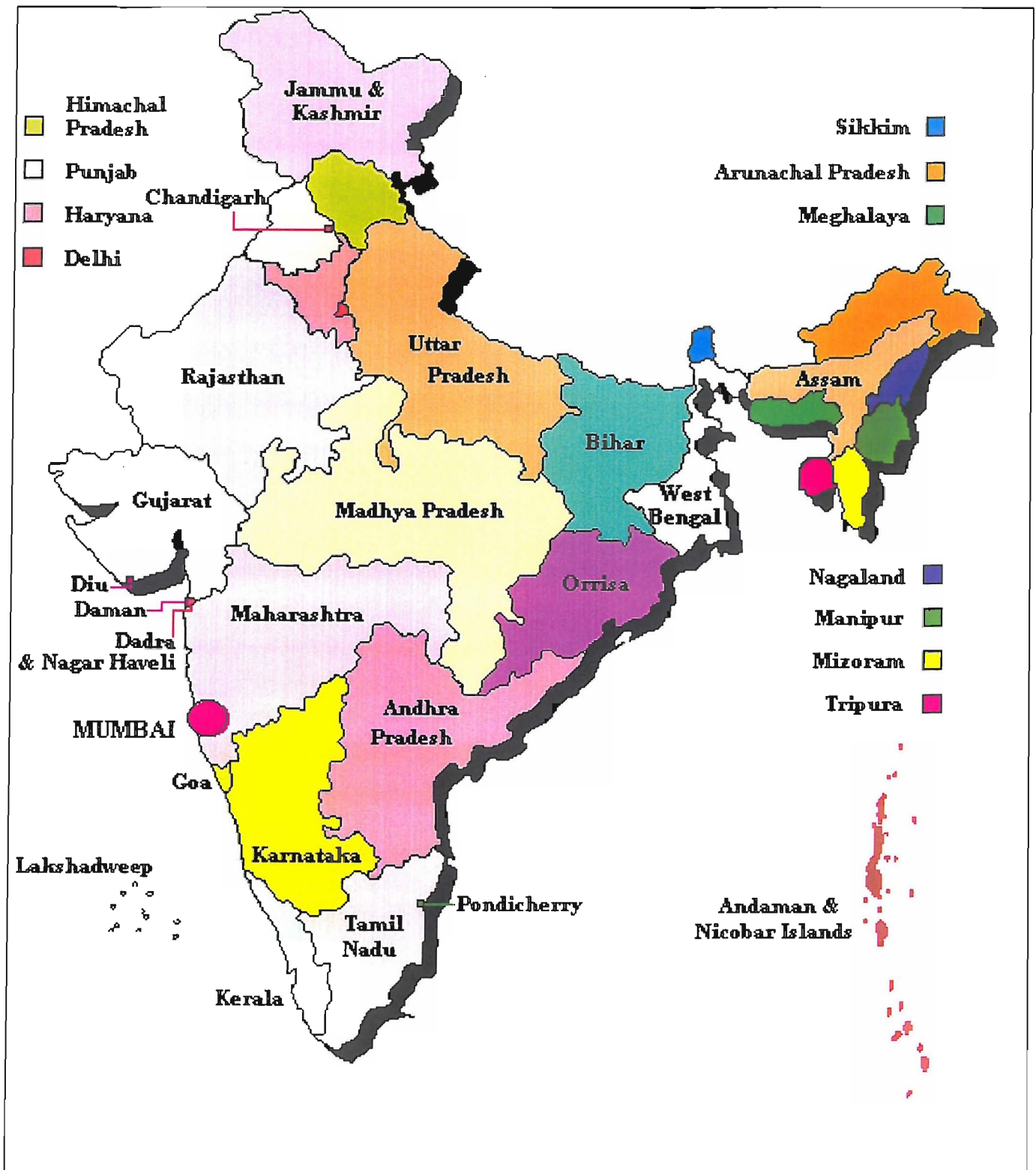
Source: Census of India

# Map Two

## Mumbai, Maharashtra including M ward



**KEY**

- ■ hospital
- ● community survey pocket
- ～ boundary of M ward
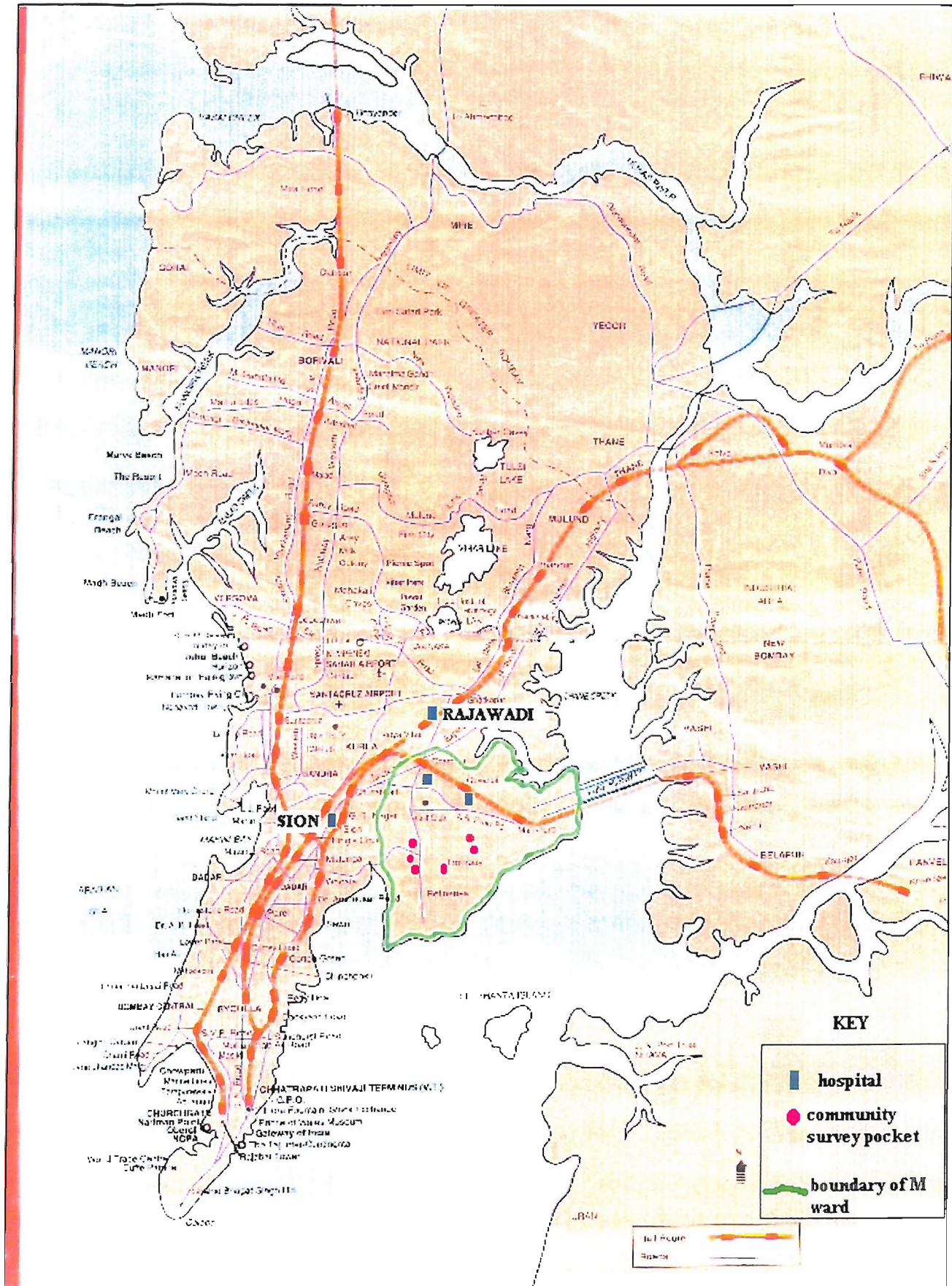
**Source: Mumbai Municipal Corporation**

# Map Three

## M ward including community survey pockets and case study hospitals

MUNICIPAL CORPORATION OF GREATER BOMBAY

MAP OF M WARD

REVISED DEVELOPMENT PLAN (DRAFT)

1981-2001

N

SCALE 1 : 8000

CHEMBUR MATERNITY HOSPITAL

SHTABDI HOSPITAL

Nagababa Nagar

New Bharat Nagar

Shahaji Nagar

Om Ganesh Nagar

Gautam Nagar

Laxmi Nagar

INDEX PLAN
MAP OF M WARD

N

KEY MAP

E-28  E-27

E-26  E-29  E-30  E-31

E-32  E-33  E-34

M

E-35  E-36

E-37  E-38
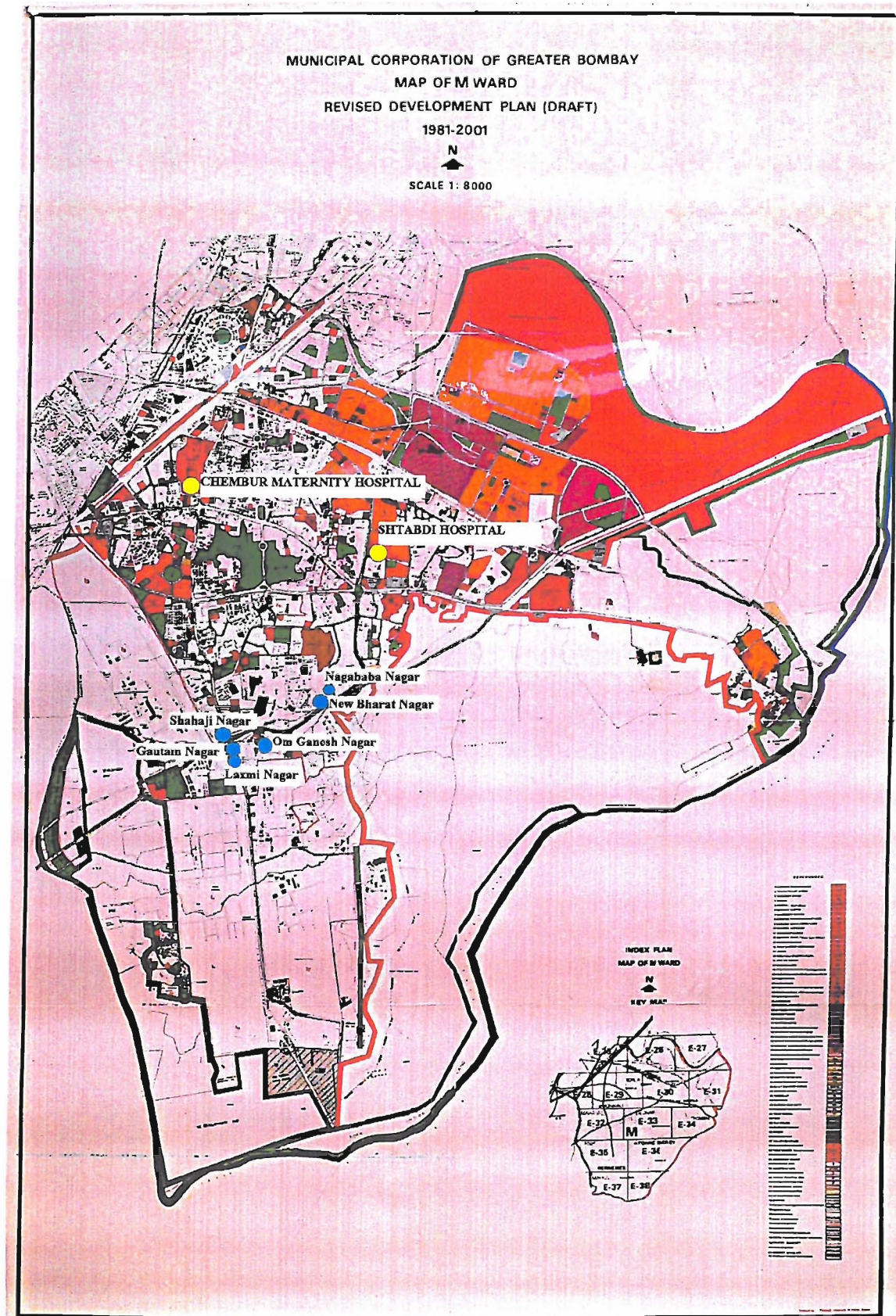
**Source: Mumbai Municipal Corporation**

# 1. Chapter One

## 1.1 Introduction

*'Understanding what good quality of care is and how to evaluate improvements in quality should be a prerequisite to investing considerable resources in improving the quality of maternity care. Yet despite the enormous interest in providing access to good quality care, the lack of clarity surrounding the concepts of quality of care acts as a barrier to progress.'* (Pitrof and Campbell, 2001 p.4)

## 1.2    Background

More than 585,000 women each year die of pregnancy-related causes world-wide, 99% of them occur in the less developed world (WHO, 1996a). If timely and appropriate obstetric care were accessed in the event of a complication, an estimated 75% of the above deaths could be prevented. While in many areas services simply do not exist, where they do they are often under-utilised. In addition, late presentation at hospitals by pregnant women in the event of a complication, combined with poor quality of care, contribute to high levels of maternal and perinatal mortality and severe morbidity (Thaddeus and Maine, 1994). As all pregnant women are at risk of obstetric complications, access to adequate essential obstetric care (EOC) should be universal. The existence of such services, however, guarantees neither use nor improved outcome. This will be possible only if the care that exists is of a high enough quality to provide adequate treatment and encourage early utilisation. Furthermore, quality of care is an essential component of any programme that upholds the basic principles of a reproductive health approach.

Quality is not easy to measure or define. Its measurement has always struggled with a validity issue (De Geyndt, 1995). However, significant progress has been made in defining quality of care in relation to the family planning element of reproductive health (Bruce, 1990). The recognition that the quality of services has an impact on the use of services has given suppliers of such services a strong incentive to improve quality of care with the goal of greater acceptance and more sustained use of contraceptive technologies.

At the same time, more couples are able to achieve the family size and spacing they desire and a concomitant reduction in overall fertility can be expected – a win-win situation.

The elements of quality care within family planning are relatively well defined and amenable to measurement, but a broad approach to quality of care in maternity services has received relatively little attention. Historically, the major focus has been to reduce maternal mortality by the provision of hospital-based services. The effectiveness of this approach in developed and developing countries has perhaps detracted from the broader issues of quality of care, which affect women's health and influence the acceptability and uptake of services. Where services exist they should provide a standard of care that results in the best possible outcome given the resources available, and should not inhibit utilisation. It is clear from a review of the current literature that no consensus exists as to what quality of care in maternity services incorporates and no systematic framework is currently available by which to assess quality in this field. In the absence of such a framework identifying strategies aimed at implementing change in order to improve performance within institutional maternity services is difficult.

## 1.3 Aims

The overall aims of this study therefore are:
1. to identify and describe key elements of quality of care in maternity services
2. to develop a practical framework to guide the assessment of quality of care in institutional maternity services
3. to use this framework to guide a detailed situation analysis of the quality of institutional delivery care available to, and used by, poor women in the eastern suburbs of Mumbai

This thesis therefore identifies and describes key elements of quality of care in facility-based maternity services. A framework of meaningful and measurable elements of quality of care is then developed, specifically for institutional care in labour and delivery, based on an extensive review of evidence from a range of disciplines. The creation of this

framework provides a practical basis upon which strategies for the systematic improvement of care in this vital part of the maternal health chain may be developed. The unique contribution of the approach taken in this research is the drawing together of research from medical, health policy and social science disciplines to produce an evidence-based model by which to assess quality. The framework is then applied in practice as a guide to describe the provision of quality of care and the quality of the experience of care at maternity institutions in a slum area of the eastern suburbs of Mumbai, India's most populous city. The city has one of the highest institutional delivery rates for the country as a whole with 82% of women living in slums delivering in an institution (IIPS and ORC Macro, 2001).

## 1.4    Context

Over 90% of women in India become mothers. Unlike medical conditions that affect sub-sections of the population, often randomly, pregnancy in India affects almost all women quite predictably. At present 58% of these women deliver without skilled assistance during delivery and 66% deliver at home (IIPS and ORC Macro, 2001). The National Population Policy adopted by the Government of India in 2000 (Ministry of Health and Family Welfare, 2000) articulates the government's commitment to the safe motherhood programmes. Among the national socio-demographic goals for 2010 specified by the policy is the target that 80% of all deliveries should take place in institutions by 2010. This target is motivated by the very high levels of maternal mortality currently experienced in India which was estimated to be above 400 maternal deaths per 100,000 live births in 1990 (WHO, 1996a).

The target adopted by the Government of India assumes that institutions in some way provide preferable levels of care to non-institutional delivery. Growing evidence however, suggests that women receive and experience appalling care in some institutions in the developing world. Examples of poor institutional care identified in a number of studies range from the use of inappropriate obstetrical care, such as the routine use of practices that are not evidence-based (Qian et. al., 2001), to unacceptable treatment by hospital staff, such as the use of humiliating unnecessary procedures, lack of privacy and

verbal and physical abuse in labour (Campero et. al., 1998).

The principal contribution of this work to the field of safe motherhood therefore is the description of key elements of quality of care in maternity services and their integration into a practical framework. The study of quality of care within a complete referral chain within the urban slums of Mumbai, using the quality framework as a guide, provides both a situation analysis of quality in a variety of institutions and raises important methodological and interpretational lessons that were learnt in the process of using this framework as a guide. These are discussed in Chapter Ten.

This research formed a component of a wider Wellcome Trust funded study into maternity care among the urban poor coordinated by researchers at the University of Southampton and the Centre of Technological and Social Change, a Mumbai based research unit (Matthews et. al., 2000). This research project benefited from the economies of scale that such a study enabled.

**Figure 1.1    Overview of idealised process for the improvement of quality of care within maternal health services**
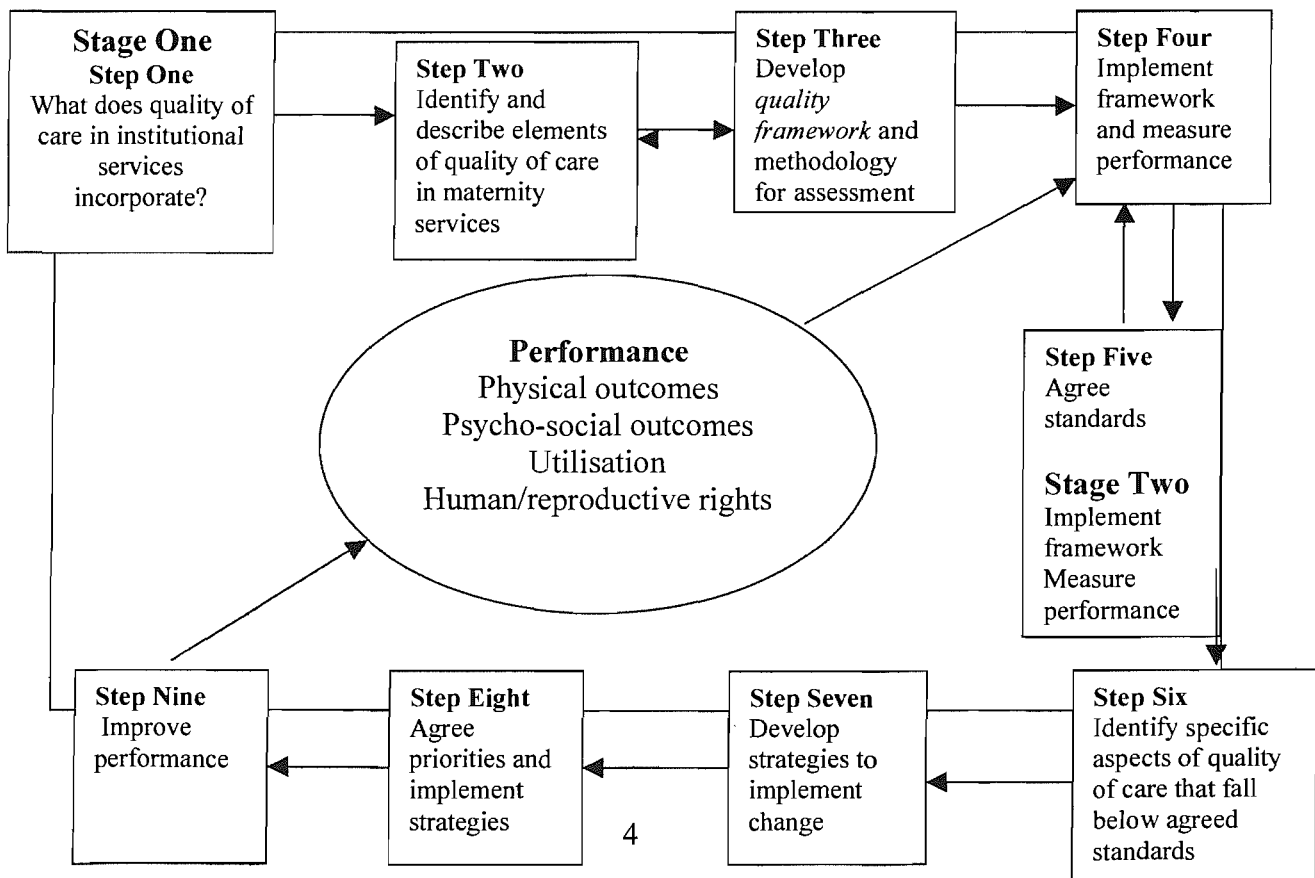
## 1.5    Conceptual overview

The above conceptual overview (Figure 1.1) describes an idealised process for improving quality of care within institutional maternal health services. This involves a two stage process. In the first instance (stage one, step one) it is necessary to define what quality of care within institutions incorporates and then describe specific elements of care within this service environment (step two). Step three involves the development of a quality framework which incorporates these elements of care which would provide an evidence based structure that could be used to guide a quality assessment. Clearly, the selection and development of methods for the purpose of collecting quality related data is an important part of this process.

During stage one, in the absence of any quality related data, a situation analysis of quality is needed to provide some baseline quality of care data. In order to do this the framework would be implemented and performance measured using the appropriate methods (step four). From this situation analysis of baseline data standards can subsequently be set. This process would provide evidence of the current levels of quality with the purpose of informing the design of any strategy to implement change. Once the situation analysis has been completed stage two would begin. This would involve the setting of standards and the identification, from the situation analysis of where standards need to be improved (step six). Step seven refers to the process of developing a strategy aimed at implementing change (with the purpose of improving quality). Step eight above, represents the process of agreeing priorities. This would ultimately direct the implementation of change strategy. This process would involve an assessment of the human and other resources available. Step nine, following the implementation of the strategy to improve quality, would ideally result in improved performance: measured partly by improved outcomes – physical and psycho-social, improved utilisation (timely presentation by all, in particular those with indications of complications), and improved performance in human and reproductive health rights. The process would then begin again at stage two (step five), with the setting of standards followed by the implementation of the framework and the measurement of performance. Where performance falls below agreed standards strategies to implement change would be

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examined and refined and so on.

In short, stage one involves the description of quality, the development of a quality framework and a situation analysis of quality to provide baseline information to inform the setting of standards and the development and implementation of a strategy to improve quality. Stage two then begins the iterative process whereby performance is measured to see how it compares with the baseline data and with the standards set in stage one. These standards are then reviewed and the framework implemented and performance measured and so the cycle continues.

The above conceptual overview represents an idealised approach to improving the quality of institutional maternity care in practice. In this thesis the focus is stage one (steps one-four); that is the definition and description of elements of quality of care within maternal health services and the development of a quality framework (Chapter Two and Three). Specific methodologies are then selected and developed (Chapter Four). The application of these methodologies enables the implementation of the framework within institutional maternity services in the eastern slums of Mumbai. The data collected from this process then enables a broad situation analysis of quality of care within these services (Chapters Five-Nine). The discussion in Chapter (Ten) then provides a critical overview of the results presented in the preceding chapters. In addition, this chapter reviews lessons learnt from the application of the methodologies selected and developed as part of this research for the purpose of measuring quality.

| Table 1.1 | Structure of the thesis |
| --- | --- |
| Chapter Two | The literature review provides contextual information for this study and critically reviews literature in the field of maternal health (with particular attention to India), and identifies gaps. The chapter includes a review of studies that examine the status of women in India and the utilisation of health services. It also reviews literature that explores the role of quality of care in the utilisation of services. |
| Chapter Three | This chapter draws on a wide body of literature to describe 10 key elements of quality in institutional maternity services which are integrated into a quality framework. The framework provides the intellectual and scientific basis from which to base the situation analysis of quality undertaken in this research. It is also considered a significant product of this research. |
| Chapter Four | Chapter Four reviews the methodological techniques used in the application of the framework. The tools used can be found in Appendix One which accompanies this thesis. Methods include at the community level; a community survey of 650 recently pregnant women within six slum pockets located within in the study area, the eastern slums of Mumbai (see Maps 1-3); and provider based methods including; the application of a quality schedule and provider interviews within the three principal municipal hospitals in the study area (Chembur Maternity Home, Shatabdi General Hospital and Rajawadi Teaching Hospital); exit interviews with a total 70 recently delivered women at the above municipal hospitals; a review of the case notes of the 70 women who completed an exit interview; a review of the hospital records of these 3 municipal hospitals and of 2 private hospitals situation within the area; and finally a mystery client study conducted at 8 private hospitals in the study area. |
| Chapter Five | Chapter Five provides an overview of the study area in which the situation analysis takes place, the maternity service environment and the study population. |
| Chapter Six | Chapter Six begins the situation analysis of maternity services in the study area. It draws largely on findings from the provider based methods. |

| | |
|---|---|
| **Chapter Seven** | This chapter examines data from the community survey to establish what determines place of delivery in the eastern slums and the extent to which quality influences choice of place of delivery. |
| **Chapter Eight** | The focus of Chapter Eight is the user's experience of care and what factors determine the quality of that experience based on findings from the community survey. |
| **Chapter Nine** | Chapter Nine examines a group identified as 'late presenters', that is women arriving within an hour of delivery. The chapter takes an experimental approach and attempts to identify factors which influence late presentation and determine whether quality can be found to influence timing of arrival. |
| **Chapter Ten** | Chapter Ten critically examines the overall findings of the situation analysis and reviews the lessons learnt from the application of the methods used to measure quality in this thesis. The chapter examines the wider contribution of this thesis to the international field of maternal health and identifies wider research and policy recommendations. |

## 1.6    The quality framework

Implementing the quality framework in the way that it is followed in this thesis, that is, as a tool to guide a situation analysis, is important for a number of reasons. Practically the process informs those interested in research methodologies for the measurement of quality of care in this field. Secondly, the findings of the situation analysis in Mumbai provide important baseline information about quality of care in the study area. This serves as evidence of the differential levels of care provided and experienced in a specific service environment which would inform a standard setting exercise. The application of this framework, as a guide for measuring quality in service settings in the developing world, adds to the body of evidence about differential standards of care at maternity institutions. This is particularly important in the context of the increasing numbers of women using institutional services in these areas of the world. This evidence is an important step in highlighting specific aspects of sub-optimal care and may be used to influence and shape policy, leverage resources and improve the accountability of health policymakers and service providers in the maternity services (Van Lerberghe and De Brouwere, 2001).

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# Chapter Two

## 2.1 Literature Review

## 2.2 Introduction

This chapter reviews the literature that provides important contextual information for the study. It explores the status of women and their reproductive health in Indian sub-continent. It examines patterns of utilisation of health services by location, sex, education and type of provider within the country as a whole. Finally it examines the literature that traces the emergence of quality of care in health generally and maternity services more specifically. Literature from the population and health community has until recently focused primarily on the coverage of maternal health services (Rohde 1995). The recognition that availability does not automatically equal use, and that use does not automatically equal improved outcome has led researchers to examine the role that the content and quality of services play in determining outcome and use and it is this literature that informs the basis for this research.

### 2.2.1 Maternal mortality in India

Maternal mortality is the most extreme outcome of a complication in pregnancy. A maternal death is defined by $9^{th}$ and $10^{th}$ revisions of the International Classification of Diseases as, *"The death of a woman while pregnant or within 42 days of the termination of pregnancy, irrespective of the duration or site of the pregnancy and which results from any cause related to or aggravated by pregnancy or its management"* (WHO 1992). Of the 585 000 women estimated to die each year from causes related to pregnancy and childbirth, 99% die in the developing world (WHO/UNICEF 1996). The disparity between the level of maternal mortality in the developing world and the developed world is greater than for any other health indicator. While infant mortality is 10 times higher in the developing world than the developed, maternal mortality is 100 times higher (AbouZahr and Royston 1991). In India, complications of pregnancy and childbirth are believed to be the leading cause of death among women of reproductive age. However, studies suggest very different levels of maternal

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mortality. These differences reflect the difficulties associated with trying to measure a relatively rare event (i.e. statistically rare), that is also difficult to identify. Where maternal mortality ratios cannot be calculated directly indirect techniques are used. For example, Mari Bhat et al. (1995) outline a technique for the estimation of maternal mortality which relates the sex differentials in mortality for people of reproductive age to the age schedule of fertility. They apply this method to data from the Sample Registration System (SRS) for 1982-1986. This application indicates a level of mortality of 580 deaths per 100,000 live births for India as a whole, 638 deaths in rural areas, and 389 deaths in urban areas (Mari Bhat et al. 1995). These figures contrast sharply with information supplied by the Office of the Registrar General, in India, which gives an all India maternal mortality ratio of 385 and 377 deaths per 100,000 live births for the years 1981 and 1991 respectively. Using state-specific regressions of mortality, Mari Bhat et al. (1995) derive an estimated maternal mortality ratio for Maharashtra of 393 per 100,000 live births, a rate of 48 per 100,000 women of reproductive age (15-49)[1].

Recent WHO/UNICEF estimates place India's maternal mortality ratio at 555 per 100,000 live births. This figure is about six times as high as neighbouring Sri Lanka where the maternal mortality ratio (MMR) is 80 (WHO/UNICEF, 1996). If this estimated MMR for India is a true reflection of reality, it can be said that while India accounts for 19% of all live births world wide it accounts for as many as 27% of all maternal deaths (Ascadi and Johnson-Ascadi, 1990). The life- time risk of dying from pregnancy-related causes in India with a total fertility rate of 4-5, and a maternal mortality ratio of around 500 per 100,000 live births is as high as one in thirty seven (WHO/UNICEF, 1996). Despite the numerous problems associated with the estimation of maternal mortality (misclassification, measurement and interpretation), there is little doubt that the problem of pregnancy related death is very real, and associated with both the status of women in India and the availability, accessibility and quality of services. For this reason

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[1] A maternal mortality ratio is the number of maternal deaths divided by the number of live births. In contrast, the maternal mortality rate is the number of maternal deaths divided by the number of women of reproductive age.

India makes an interesting location for this study which focuses on this latter aspect of care in particular.

## 2.2.2 Cause of death

Bhatia (1988) estimated that only five conditions accounted for 75% of maternal deaths in India in 1981 and 72% of deaths in 1986 (sepsis, toxaemia, haemorrhage, abortions and anaemia). In this review of the primary causes of maternal death in India anaemia was found to account for 17-25% of all deaths, haemorrhage for 16-22%, toxemia for 10-12%, sepsis for 8-13%. Ten percent of deaths were attributed to unsafe abortion, despite the fact that abortion was at the time of this study (and remains) legal and available in public institutions. This cause of death distribution is similar to other high mortality situations and suggests that a large number of such deaths are preventable. Jeejeebhoy and Rama Rao (1995) identify three underlying conditions among women in India that contribute to the high level of maternal death in the country; poor health care; poor nutrition; and high and closely spaced fertility stretching from adolescence to menopause. In their paper Jeejeebhoy and Rama Rao (1995) illustrate effectively how poverty and the low status of women in India provide the context for these conditions. The literature that examines this relationship is reviewed below.

## 2.2.3 Maternal mortality as an indicator of the status of women

The health of a woman is partially determined by factors that affected the health and status of her own mother during pregnancy. Winikoff (1988) explores the linkages that exist between the health of the mother and the health of her children in some detail. She concludes that, far from being linear, they are part of a continuous process in which health, or ill health, can be perpetuated from mother to child to mother to child over decades.

> *It is not very long before the four-year-old becomes the teenage bride who is likely to become a new mother within the first year or so of her marriage: the pre-schooler of today may be a mother in less than a dozen years. (Winikoff 1988 pp.197)*

She illustrates effectively the elements that go into the intergenerational perpetuation of ill health for women and girls in poor societies. Taking pregnancy as a starting point, poor maternal health may result in a baby who is of low birth weight, such an infant is then at higher risk of dying, but if she survives may well continue in poor health. The mother in turn, suffering from poor health (malnutrition and acute or chronic infections), has less energy and personal resources for adequate child-care. The girl child may suffer discrimination in the form of health, nutrition, social and access to economic and educational resources. Endowed with fewer resources for her own care and less knowledge, she grows up illiterate, she has less chance to acquire knowledge, and less possibility to improve her socio-economic condition (Winikoff 1998).

Her energy may be affected as a result of anaemia, or bouts of malaria, that together with poor nutrition will undermine her ability to manage her life effectively. She is more likely not to use family planning once sexually active, through either lack of services, poor quality services or circumstances that affect her access to existing services. Through her own sexual activity, or that of her husband, she may be exposed to sexually transmitted diseases.

Lack of knowledge or access (socio-economic and cultural) may affect her recognition of illness or complications that need medical care, and/or her ability to obtain such care. She will be unable to prevent an early first birth and may not have access to (or simply not access), adequate medical care during pregnancy and delivery. She may experience complications from pregnancy because of her own small stature, due to inadequate early nutrition, putting her at greater risk of obstructed labour, ruptured uterus, sepsis and death (Winikoff 1988). Her chances of receiving antenatal care are one-half to two-thirds those of her industrialised counterparts. If she lives in South Asia her chances of having a trained attendant for childbirth are just 20-30%. Even if she does obtain medical care, her marginal nutrition during pregnancy puts both her and her foetus at risk of continued poor health and development.

This powerful imagery adapted from Winikoff, of the sequence of events that lead from low birth weight, to high-risk pregnancy and poor access to care illustrate the

complexity of maternal ill health. It serves as an indication that the building of well-equipped maternity facilities will not, in isolation, solve the problem of maternal ill health or reduce the number of maternal deaths. The following section provides evidence to support the above, rather stylised description of the cycle of health, drawn from selected texts from the large maternal health literature.

## 2.2.4 Nutrition, pregnancy and anaemia

Anaemia is characterised by a low level of haemoglobin in the blood. Haemoglobin is necessary for transporting oxygen to the lungs and to other tissues and organs of the body. Anaemia usually results from a nutritional deficiency of iron, folate or vitamin $B_{12}$. This type of anaemia is commonly referred to as iron-deficiency anaeamia and it is the most widespread form of anaemia in the world (Stolzfus and Dreyfus, 1998). Anaemia affects an estimated 50 percent of the population in India (Seshadri, 1997).

Poor nutrition impacts the development of a woman throughout her early life, predisposing her to short stature and low haemoglobin (defined as a haemoglobin of below 11 grams/dl) even before she becomes pregnant. Once pregnant, however, Patel (1991) illustrates how a woman's meagre nutritional intake before pregnancy is then combined, in many parts of India, with cultural practices regarding diet which can increase the level of anaemia through restricting the intake of certain foodstuffs (such as Papaya) (Patel 1991; Khan et al. 1988). As mentioned, anaemia accounts for up to 25% of maternal deaths in India, and an unestimated number of morbidities (WHO 1986). It is not only a direct cause of death but also aggravates other complications of pregnancy such as eclampsia, sepsis and antepartum haemorrhage. Women with haemoglobin levels below 6.5 g/dl tend to suffer puerperal morbidity three to four times more than women with normal haemoglobin levels (Kapil 1990). Maternal anaemia also has severe consequences for infants, who are more likely to be born low birth weight and more likely to die in the perinatal period. Ramachandran (1989) found that three-fifths of all infants born to women with haemoglobin levels less than 5.0g/dl were low birth weight compared to one-quarter born to mothers with normal levels of haemoglobin.

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For the first time in a large scale community survey in India the NFSH-2 (1998-9) undertook direct measurement of the haemoglobin levels of all ever-married women age 15-49 and their children under three years of age. Forty five percent of women from slum areas in Mumbai had anaemia to some degree. In total 32.4% of women in these areas has anaemia, 11.8% had mild anaemia and 1.2% had severe anaemia. In Maharashtra as a whole, 52.6% of pregnant women and 50.6% of breastfeeding women had anaemia (IIPS and ORC Macro, 2001).

## 2.2.5 Adolescent childbearing

In India as many as 6.2% and 43.4% of girls aged 10-14 and 15-19 respectively are already married. Marriage is followed by socio-cultural pressures on young women to conceive as soon as possible – thus, according to Jeejeebhoy and Rama Rao (1995), adolescent marriage is synonymous with adolescent childbearing. An estimated 10-15% of all births each year occur to women before they are fully physically developed (Mathai 1989; Kapil 1990). Risks of maternal mortality and peri- and neonatal mortality are particularly high among adolescents – the result of the combined effects of maternal stunting (shorter than average height) and competition for nutrients between the mother's growth needs and the growth needs of her foetus. Not only are adolescent mothers more likely to give birth to low birth weight and premature babies, but several studies have shown that they are also more likely to suffer pregnancy related complications themselves (WHO 1986; Aras and Purandare, 1990; Pachauri and Jamshedji 1988).

Sixty one percent of women aged 20-49 in Maharashtra married before the legal minimum age of marriage of 18 years for women (set by the Child Marriage Restraint Act of 1978) according to the NFHS-2 (1998-9). In urban areas in the State the 7% of women aged 15-19 who were married by the age of 15, compared to 24% of women aged 40-44 (IIPS and ORC Macro, 2001).

## 2.2.6 Fertility

Total fertility in India was estimated by the Sample Registration Survey in 1991 as 3.6. The recent NFSH (1998-9) suggests that it has fallen to an average of 2.9 children per woman. This level masks large state and inter-state differentials.

Southern states have on average significantly lower fertility levels (eg. Kerala, Orissa, Tamil Nadu), while Northern States exhibit levels above this figure (Uttar Pradesh, Rajasthan). Within States there are large urban-rural differentials in fertility. This is consistent with other socio-demographic trends; contraceptive use rates are higher in urban areas, educational status of women/female literacy higher in urban areas and southern states, age of marriage is lower in the respective areas and mortality rates (maternal, infant and child) all higher on average in these locations.

The TFR in Mumbai (2.13) is slightly lower than in urban Maharashtra (2.24). Within Mumbai fertility is much higher in slum-areas than in non-slum areas – an average woman in slum areas gives birth to 1.3 children more than an average woman in non-slum areas. The TFR for slum areas of Mumbai (2.69) is only slightly lower than the rural TFR (2.74) (IIPS and ORC Macro, 2001). The TFR among Muslim women in the State is nearly 1 child higher than among Hindu or Christian women, 1.2 children higher than among Buddhist women. High levels of fertility exhibit certain features considered contributory factors to high levels of maternal morbidity and mortality. Firstly, there are more pregnancies, which means more 'at risk' events. Second, women tend to have births earlier (discussed above) and more closely spaced pregnancies. Closely spaced births have well documented impacts on child survival (Hobcraft et al. 1983). The reasons for this are complex but relate to the ability of a mother to care for her children, recognise illness, access medical care, negotiate effectively with family members and medical staff and her own health status. In addition the excessive nutritional demands on the mother through closely spaced pregnancies and breastfeeding is likely to influence her own energy levels. Unfortunately few studies in India examine the relationship between birth interval and maternal depletion and health. Royston and Armstrong (1989) in a study of maternal deaths from three hospitals in Bangkok, however, found that women with a previous birth interval of less than two years had a 250% higher risk of dying than women with a longer birth interval. In addition parity is known to affect haemoglobin levels: while 24% of women with two or fewer pregnancies had haemoglobin levels below 9 g/dl, over 42% of women with three or more pregnancies had equivalent levels (Jejeebhoy and Rama Rao, 1995).

Patterns of high fertility in India reflect the socio-economic and cultural status of women throughout India. Those states with lower fertility, as discussed, exhibit more favourable socio-demographic characteristics, in particular women's access to education and resources. In 1995 only 37.7% of women in India were literate, compared to 65.5% of men, while women's share of earned income was only 25.6% compared to the 74.6% of males yet they made up 31% of the adult labour force (UNDP 1998). If we break this down by State levels of literacy and share of earned income, mirror fertility patterns such that those States with higher levels of literacy have as a rule lower fertility.

## 2.2.7 Abortion

Unwanted pregnancy that results in an unsafe abortion is one of the most avoidable risks of maternal mortality. The level of unwanted pregnancy partly reflects the level of unmet need in India, that is the number of women who are not using contraception but want to delay or avoid a pregnancy. In 1987-1988 there were an estimated 4.5 million illegal abortions compared to only 0.5 million performed under the health services network (UNICEF 1991). Illegal/unsafe abortions account for an estimated 10% of maternal deaths (WHO 1996). Starrs and Measham (1990), however, estimate that actual percentage of total deaths attributable to unsafe abortion may be as high as 15-25%. Since the majority of deaths from abortions go unreported it remains particularly difficult to measure. Hospital-based studies that examine the number of abortion related mortality and morbidities support such estimates (Bansal and Sharma 1985; Kamalajayaram and Parameswari 1988).

## 2.2.8 India and the status of women

### 2.2.8.1 The sex ratio.

The sex ratio is considered a revealing indicator of the status of women (Dyson and Moore, 1983). Sex ratios reflect the number of females that there are in a population, relative to the number of males. Where discrimination exists against females this is reflected not only in the sex ratios of an area, but also in the life expectancies. Ceteris paribus, one would expect to find life expectancies for

women to be higher than for males. This is partly accounted for by the biological advantage that women have over males on average over their life span. Lifestyle accounts for the remaining 'advantage'. As populations develop socially and economically, this female advantage tends to increase.

Numerous studies have drawn attention to the imbalance in sex ratios in India (Argarwal 1981, Das Gupta 1987, Mosely and Chen 1984, Dyson and Moore 1983). Excess female mortality is particularly marked in the sub-continent – such that male and female life expectancy at birth is almost identical (61.4 and 61.8 years respectively (UNDP 1998)). Adverse sex ratios are more marked in the north east of the country (Dyson and Moore 1983). In some states female life expectancy is even lower than male (notably Uttar Pradesh, Rajasthan and Bihar). Refer to 2.1 below.

**Table 2.1: Sex ratio per 1000 and life expectancy by state 1991**

| State NE | Sex ratio per 10000 (female/male) | Life Expectancy Male | Life Expectancy Female |
|---|---|---|---|
| Uttar Pradesh | 885 | 51.1 | 46.9 |
| Rajasthan | 919 | 54.8 | 55.4 |
| Bihar | 946 | 54.8 | 55.4 |
| Haryana | 870 | 61.4 | 59.6 |
| Punjab | 879 | 64.3 | 64.3 |
| State SW | | | |
| Kerala | 1032 | 65 | 69.9 |
| Orissa | 981 | 54.1 | 51.9 |
| Tamil Nadu | 977 | 58.3 | 57.9 |

Source: Registrar General 1991

In the absence of discrimination towards one sex in relation to another, one would expect the sex ratio, as expressed below as the number of women per 1000 men, to be over 1000 (as in Kerala State, Table 2.1). Overall sex ratios (i.e. for the population as a whole, not simply at birth) for India have been well below this level since the beginning of the twentieth century. These ratios declined steadily through to the most recent census for which results are available, 1991, which produced the lowest sex ratio since records began, of 929 women per 1000 men (Office of the Registrar General, 1991). Refer to Table 2.2 below.

**Table 2.2: Sex ratios in India 1901-1991**

| Census Year | Sex Ratio (female per 1000 male) |
|---|---|
| 1901 | 972 |
| 1911 | 964 |
| 1921 | 955 |
| 1931 | 950 |
| 1941 | 945 |
| 1951 | 946 |
| 1971 | 930 |
| 1981 | 934 |
| 1991 | 926 |

Source: Office of the Registrar General. (1999a)

Masculine sex ratios are associated with high levels of mortality among very young girls and women of childbearing age. As sex ratios are linked to variations in well being, in turn linked to biological, social, and economic reproduction, these levels can be understood as outcomes of the economic under-valuation and low relative social status of women. The literature provides abundant evidence for the relative neglect of female children in India. Such evidence needs to be considered when designing services and policy in maternal health.

### 2.2.8.2 Evidence of neglect

In the Matlab Project area in Bangladesh, Chen et. al. (1981) found that female child mortality was higher than male after the neonatal period. Chen et al. (1981) identified pronounced sex differentials in the food and health care received by children. In a study of two villages in West Bengal Sen and Sengupta (1983) found evidence that girls consistently had poorer nutritional status than boys among all socio-economic strata, as defined by landholding and mother's education. Dyson and Moore (1983) related the 'North-South divide' to variations between kinship systems and female autonomy. Meanwhile Miller (1981) explained the adverse female mortality as an outcome of neglect and discrimination in terms of the "allocation of food, of medical care, and of love" (p.14).

Argarwal (1981) drew attention to the role that the burden of poverty in households plays in her study that illustrates the multiple privations and complex forms of oppression to which women are subject. She identifies the intra-household distribution of food as a sensitive indicator of the discrimination prevalent. With regards to a woman's access to medical care, women were found to fare worse than men, their ailments often ignored in the initial stages because they were not admitted to for fear of disrupting the household, shyness or to save on medical expenses. This finding is important to consider in any examination of access to and use of maternal health services.

Das Gupta (1987) examines the dynamics of sex discrimination at the household level, and its relationship to family building. Her work on 11 villages in the Punjab, and work by Muhuri and Preston (1991) with reference to Matlab, Bangladesh, strongly suggest not just diffuse neglect or maltreatment of females, but focused discriminatory behaviour closely related to individual parents' family building strategies. Das Gupta's study reveals the mechanisms by which parents restrict the number of daughters they have. A sizeable proportion of women in her study area did not want to have even one daughter, and almost none wanted a second daughter. This attitude was reflected in the mortality rates; male mortality was higher only during the neonatal period, when biological factors predominate. During subsequent periods of early childhood (1-59 months), when mortality is more susceptible to societal manipulation, female mortality was almost twice that of males. Her most striking finding was that the burden of excess mortality falls selectively on a subset of female children, those born into families that already have a surviving daughter, indicating that neglect is applied selectively among female children. The extent of conscious and voluntary behaviour required for this is far greater than would necessarily be involved in a generalised discrimination against females.

Of particular relevance to India today, where fertility continues to fall and where education among females increases, were Das Gupta's findings relating to this particular subset of daughters, those born to families that already have one of more surviving daughters. It is this group that appears to be subjected to increasing concentrations of excess mortality relative to other children – if their

mothers are younger, and even more if they are educated. So among young educated women these girls experience 2.36 times higher child mortality than their siblings. This is probably because these mothers have experienced the maximum decline in both fertility and mortality. They are reducing their completed family size to fewer than three living children, and still want to have one or two sons. This puts them under increased pressure to have fewer surviving daughters. One outcome of their ability to manipulate both their own fertility and their daughter's mortality is that educated women are better equipped than others to achieve the family size and sex composition that they desire.

### 2.2.8.3 Mechanisms of neglect

The mechanisms of neglect identified by many of the above mentioned authors, relate to disparities in the nutritional intake of girls compared to boys, and their differential access to health care in the case of illness, whereby boys receive attention earlier (Das Gupta 1987; Khan et al. 1988). As Winikoff (1988) suggests the poor nutritional growth status of the mother is a reflection of her own growth as a foetus, newborn, child and adolescent. Nutritional status is recognised as a major risk factor for maternal and peri/neo natal mortality. Studies that have monitored growth and nutritional status among children confirm gender disparities in growth and severe malnutrition from an early age (Srikntia 1989; Government of Maharashtra and UNICEF-WHO 1991). Poor adolescent weight and height is one consequence of this. Gopalan (1989), estimate that 47% of 15 year olds in India have a body weight less than 38 kg and 39% have heights less than 145 cm. Another, important consequence of this for maternal health is the level of anaemia among pregnant women (71% of 15-49 year olds) (UNDP 1998).

The above review of the literature on the overall maternal health and status of women in India provides the context for the research contained in this thesis as it illustrates some of the important and inter-related range of factors that contribute to poor maternal and peri-natal outcome and the differential utilisation of health services. What is needed is a more detailed examination of factors that influence risk of maternal death and the use of services. The above review has focused on literature about, and often published within, the Indian sub-continent. The following part of the literature review draws on a more international maternal

health literature and examines risks of maternal death, and delay in the utilisation of services. This analysis includes an examination of the role of both the availability and the quality of essential obstetric care services in preventing maternal death and morbidity.

## 2.3    Maternal mortality: risk and delay

Clinical literature suggests that about 75% of maternal deaths result from direct obstetric causes, such as haemorrhage, obstructed labour, infection, toxaemia and unsafe abortion (WHO 1986). This literature also suggests that a majority of these deaths could be prevented with timely medical treatment. Delay, that is avoidable time delays from the onset of a complication, to the accessing of appropriate services, has emerged as a pertinent and indeed central factor contributing to maternal death and disability (Thaddeus and Maine 1994).

Maine et al. (1997) outline the conditions that must exist for a maternal death to occur. The woman must first become pregnant. Second, she must develop a medical problem. Third, in order for the woman to die the complication must be treated inadequately (e.g. treated too late or mismanaged), or not treated at all (Maine et al. 1997 p.7). To reduce maternal mortality therefore, interventions must either, reduce the likelihood that a woman will become pregnant, reduce the likelihood that a pregnant woman will experience a serious complication of pregnancy or childbirth, or reduce the likelihood of death among women who experience complications (Maine et al. 1997 p.7). This thesis focuses on the latter two options cited.

The only certain way a maternal death can be prevented is by preventing a pregnancy. If you are not pregnant you cannot suffer a maternal death (Rohde 1995). The only real risk factor is pregnancy. Research indicates that most obstetric complications can be neither predicted nor prevented (Rosenfield and Maine 1985; Rooney 1992; Winikoff et al. 1991; Maine et al.1997). Beyond avoiding unsafe practices that could contribute to a maternal death, from for example postpartum sepsis, there is very little that can be done to prevent most other complications (Rohde 1995). Individual risk factors, such as age and parity, are poor predictors of actual risk (WHO 1992). Such risk factors measure only the

relative risk of different population groups; they are markers for groups of women but not for causes of mortality (Rohde 1995).

Table 2.3 illustrates this point. The higher risk of maternal death associated with being less than 20 and above 30 years old is reflected in both the maternal mortality ratio and the relative risk of dying columns (1 and 2). However, the age group with the largest number of maternal deaths, that is women aged 20-29, have the smallest relative risk. This is due to the very large number of births to this age group. For planning public health programmes, the number of deaths is a more relevant indicator than the relative risk. (Chen, 1974 – cited in Maine 1997 p9)

**Table 2.3: Maternal mortality and fertility by age in Matlab, Bangladesh, 1968-70**

| Age | Maternal Mortality Ratio* | Relative Risk of a Maternal Death | Number of Live Births** | Number of Maternal Deaths |
|---|---|---|---|---|
| 10-14 | 17.7 | 3.9 | 509 | 9 |
| 15-19 | 7.4 | 1.6 | 3,907 | 29 |
| 20-29 | 4.5 | 1.0 | 11,286 | 51 |
| 30-39 | 5.8 | 1.3 | 4,667 | 27 |
| 40-49 | 6.7 | 1.5 | 447 | 3 |

* Maternal deaths per 1000 live births

** Computed from number of maternal deaths and MMR reported by authors

**Source:** Figure reproduced from Maine et al. 1997: p.9

The same can be said for prevention. With the exception of unsafe induced abortion most complications cannot be prevented (Maine et al.1997). However, while they may be unpredictable and non-preventable, they can be treated (Rohde 1995).

### 2.3.1 Risk factors

Commonly used risk factors in maternity care include height, weight, age, parity, previous history and the use of antenatal care services. All of these seem to have some correlation with higher risk (Rohde 1995). This list identifies populations of women who tend to have a higher proportion of complications, but not individual risk. Other 'risk factors' commonly identified, such as antenatal bleeding, high blood pressure, sexually transmitted diseases, malpresentation and severe anaemia are in fact complications, medical conditions which require treatment – they are not population risk factors. All of the above, have for a long time been used in antenatal care as a means of identifying women considered at high risk of a complication in pregnancy and labour, and in need of referral to a hospital. This strategy has diverted crucial attention from the many 'low risk' women who go on to develop complications and comprise 50% or more of all maternal deaths. The problem is one of high false positive predictions and poor sensitivity.

Rohde (1995) states that antenatal care has two major functions. It can be used to detect some complications early, such as high blood pressure and malpresentation. However, more critical in a resource poor setting is the opportunity to get information to pregnant women: how to recognise problems when they occur; when they should leave to seek help from wherever they are; and where they should go for proper attention. Rohde (1995) illustrates the importance of the whole family, not only the mother knowing this information. They must be able to look ahead, to be informed and motivated about complications and referral, and be prepared to arrange transport. Ante-natal care can provide an important opportunity to communicate this information.

## 2.3.2 Antenatal Care

Antenatal care (ANC) refers to pregnancy related care provided by a doctor or a health worker in either a medical facility or at home (IIPS and ORC Macro, 2001). It is one of the "four pillars" of safe motherhood identified by the Maternal and Safe Motherhood Programme, Division of Family Health of the World Health Organisation (WHO, 1994). The other three pillars are family planning, clean/safe delivery and essential obstetric care (discussed below).

In theory, antenatal care should address both the psychosocial and the medical needs of the woman within the context of the health care delivery system and the culture within which she lives (WHO, 1996). In addition to the identification and management of complications and risk factors, antenatal visits should be used to provide essential services such as tetanus toxoid immunisation, and the prevention of anaemia through education about nutrition and the provision of iron and folic acid tablets.

Of equal importance however, as noted by Rohde (1995), is the role such visits should play in preparing a woman and her family for birth, for establishing a confidence between the woman and the health care provider, and for individualising promotional health messages (WHO, 1996). A minimum of four antenatal care visits is recommended by the WHO, the first within the first trimester. The emphasis is placed, not so much on the quantity of visits, but the

content and quality of visits. Four high quality visits cannot be substituted by eight poor quality visits. Women should be encouraged to begin antenatal care early in pregnancy, as services such as the correction of anaemia have the greatest impact on the health of the mother and baby at this stage. In addition, the month of pregnancy in which ANC is first sought reveals the expectant mother's consciousness of the need for such care, as well as the amount of services used. Those who access care earlier have a longer potential period of antenatal care (WHO 1996). It is not clear from the literature, however, what the relationship between quality, quantity, content and timing of ante-natal care and subsequent use of maternity services once in labour is. This is an area that needs more research. In this research the relationship between the timing of ante-natal care and the use and timing of institutional maternity services is briefly examined.

### 2.3.3 Availability and use of essential obstetric care

In the past decade, growing attention has been given to the vital role of essential obstetric care in the prevention of maternal deaths. A WHO working group (1997) identified two levels of 'essential obstetric care': basic and comprehensive. An essential obstetric care facility is expected to be able to provide six essential functions: antibiotics (injectable), oxytocics (injectable), anticonvulants (injectable), manual removal of the placenta, removal of retained products and assisted vaginal delivery. A facility providing a comprehensive level of essential care is expected to be able to provide not only all of the above but also caesarean-sections and blood transfusions. These are referred to as BEOC and CEOC henceforth. As all pregnant women are at risk of obstetric complications, effective access to appropriate essential obstetric care needs to be universal and women should be able to access that care promptly in the event of a complication.

The observation that increasing the availability of services does not always increase the use of services is not new. Much research has been devoted to investigating factors that might account for the under utilisation of services (Thaddeus and Maine, 1994). Delays to accessing care can range from the actual decision to seek care on the part of the individual and/or the family, to delays in reaching an adequate health care facility, to delays in actually receiving adequate care at the facility (Thaddeus and Maine 1994, p1093). The theoretical availability

of services does not mirror access and a number of socio-economic and cultural factors combine to influence the utilisation of maternal health services. In addition a facility that is in theory be a comprehensive essential obstetric facility may not in practice. This could delay some woman's access to appropriate care (Maine et. al. 1997).

## 2.4    Utilisation of health services, education and the status of women

Most studies have shown a positive correlation between maternal education and the use of modern preventable health services. At the state level Jain (1985) came to the conclusion that the relationship between mother's education and infant mortality in India could largely be explained by differential utilisation of modern health care, specifically medical attendance at delivery and vaccination of infants. In India, this puts those women in the lowest socio-economic bands, who tend to have lower levels of education, at yet higher risk of maternal death. If the above patterns of health utilisation (or under-utilisation) are similar in pregnancy then one could expect greater delays among the less educated in accessing services in the event of a complication.

Cleland and van Ginneken (1988) examine the relationship between female education (a proxy of status), and use of health services. They suggest that it is likely that more educated mothers are better nourished, more willing to flout harmful food taboos during pregnancy and less subject to heavy manual work during pregnancy than their less educated counterparts. They present evidence that supports this suggestion by examining the percentage of mothers receiving antenatal care from a doctor, nurse or midwife, and the percentage of deliveries attended by a doctor, nurse or midwife by their educational level, in years of schooling. Patterns of use, as anticipated, increased with years of schooling. To explain such behaviour they suggest that education is likely:

'...to impart a greater responsiveness to novel ideas and services, a greater identification with the outside world, more social confidence handling officials and perhaps an enhanced ability and willingness to travel outside the community in search of services' (p.1361)

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Women's status is composed of the 'educational, cultural, economic, legal and political position of women' in a society (Thaddeus and Maine 1994, p.1098).The status of a woman influences her access to health services in a number of ways. In the first instance a woman's status may directly affect the decision to seek care. Power of decision making may lie not with the woman herself, but with her spouse or senior members of the household. Her status may affect her mobility. She may need permission to travel anywhere beyond the normal sphere of her domestic activities. Certain aspects of the distribution and quality of services that do exist, may unequally affect the actual access that a woman of low status has to these services. Distance, for example, is relative. An economically low status woman is less likely to have access to motorised transport than her economically higher status counterpart (Stock 1983). The way in which a low status woman may be treated by staff may be more disrespectful and dismissive than her higher status counterpart. This behaviour may influence both the decision to seek care in the first place, and the quality of care she receives once there (such as poor history taking and less attentive care). Finally a woman's unequal status within the household may result in efforts to avoid perceived unnecessary expenditure, unless absolutely necessary, by which time it may be too late.

### 2.4.1 Utilisation of services and income

In theory in India, anyone can access prestigious well-equipped apical institutions through the referral system and up the health service hierarchy. In practice the vast majority of people never have access to such institutions (Das Gupta et al. 1996a). Das Gupta et al. (1996a) highlight the widespread agreement that the network of public health services which is actually available to people on the ground is highly deficient in terms of infrastructure and personnel. The mounting evidence that people often prefer to spend their money on private providers clearly suggests that there is something lacking in the nature of these services.

Visaria and Gumber present the results of the national Sample Survey Round for 1980-1 and 1986-7 on maternal and child care. They focus in particular, on the differential utilisation of services by income strata, and by groups stratified by caste and tribe. Their findings illustrate the wide differentials that exist between income groups in their utilisation of health services, including services that are

supposed to be free to all, such as immunisation. They identify even larger differentials in urban areas both in immunisation, and in the use of maternal care and institutional delivery. It is clear from these findings that poorer people have far less effective access to these services than their richer counterparts. The proportion of those who do access free services however, as one would expect, tends to be higher among the relatively poor households (Visaria and Gumber 1990).

Estimates of health expenditure in India are difficult to arrive at, but Griffin (1992) indicates that India spends a higher percentage of its GNP on health than China, Indonesia, Sri Lanka or Thailand, all of which have significantly higher life expectancies at birth than India. This is true of public expenditure as well as total (public and private) expenditure on health. This suggests poor returns on the resources they spend on health. Griffin (1992) gives one explanation for this. While much has been spent on setting up health facilities all over the country, many studies show that people are reluctant to use these free facilities as illustrated above, preferring instead to spend substantial amounts on private health care or go without altogether. Griffin concludes that in view of this, the country needs to assess the feasibility of changing the conditions of public sector health care, so as to make it more attractive to clients. Such an observation suggests that more work into the conditions within public sector health care is needed to inform the design of strategies that aim to make such care more accessible, something this study intends to do for maternity services.

## 2.5    Summary

It is clear from this review that safety in pregnancy and childbirth is experienced differentially within the sub-continent. It also shows that the maternal health of women in India is as much the product of their status within both the household and wider society, as the actual availability of health services and the effective accessing of appropriate care. The above review does not however examine quality of care in maternity services, the focus of this thesis, in any depth. This is examined below. The review focuses on two major aspects of quality of care covered by the literature in this field: the relationship between the quality of care

in maternity services and the use of these services: and the relationship between quality of care in maternity services and maternal outcome. The literature also examines some of the drivers for improving quality of care in this field, and these are also discussed. These include reproductive rights, efficiency and equity.

## 2.6 Why quality of care?

The existence of maternal health services does not guarantee their use by women. Neither does the use of maternal health services guarantee optimal outcomes for women. An important aspect of care that has been highlighted to explain why women either do not access services at all, access them late or suffer an avoidable adverse outcome, despite timely presentation, relates to the quality of care in maternity services.

It is clear from the growing body of literature in this field that quality of care (QOC) is becoming an issue that is central to maternal health. However, for many years the international community and national health planners have directed efforts towards ensuring that coverage of antenatal, delivery and postnatal care increases, but have paid less attention to the content of that care (WHO, 1996). This has resulted in a situation where it is not uncommon for data indicative of widespread coverage to coexist with high levels of maternal and neonatal mortality and morbidity (WHO, 1996).

### 2.6.1 Utilisation of services and quality of care

The quality of care that a health service provides is thought to influence use in a number of ways, although little is known about the mechanisms by which this relationship functions. Studies have shown that quality can affect the decision to seek care (Iyun, 1983; Stock, 1983; Mwabu, 1986). Where service users have access to more than one facility, it is often their perceptions of quality of care, related to their own experiences or those of people they know, rather than proximity that determines their choice of facility. It is a combination of dissatisfaction with the service received and the effectiveness of treatment given that shapes a patient's and her friends' and family's perception of care, which in turn influences health-seeking behaviour (Thaddeus and Maine, 1994).

Visaria and Gumbar (1990) conclude that casual observation suggests that the poor and uneducated often receive little consideration from government officials including those in medical services. Many researchers have suggested that such 'little consideration' influences the health seeking behaviour of individuals (Thaddeus and Maine 1994, Patel 1991, Nnadi and Kabat 1984), but few evidence-based studies substantiate this in any way. As noted, prompt access to adequate services could prevent many of the 75% of maternal deaths from direct causes. Clearly this relationship needs further examination. A delay for whatever combination of reasons can cost a life, not only of the mother, but the infant. No studies were identified in the course of the review of literature that examined the timing of arrival of women at hospital once in labour and the time of delivery. There are studies that examine the decision making process prior to leaving for the hospital, and these do refer to perceptions of quality of care as a factor for delaying the accessing of care (see Thaddeus and Maine 1990). However none of these studies go on to examine the timing of arrival at hospital and the time of delivery. Chapter Nine in this thesis will in part address this group by examining the time between arrival at hospital and delivery and identify factors which are significantly related to late presentation (in this thesis late presentation refers to women who deliver within an hour of arrival at hospital).

Quality of care encompasses not only quality of personnel, with regard to their availability, skill and the nature of facilities and medical equipment they have to work with, but also quality with regard to their relationship with the women (and families) they care for. Rohde (1995), while working for UNICEF's country office in New Delhi, recounted a story at a conference organised by the Prevention of Maternal Mortality Network (when):

> *"Recently, one of my colleagues in Delhi related her experiences talking to women in a Delhi slum, just a few hundred meters from a major public hospital. When asked if they went there for delivery or when problems arose in the pregnancy, they replied, "No, no; that place is not for us"*

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Geographic distance and lack of money or time are only one part of the problem. In India a social distance exists between those at the bottom end of the social and economic scale and those at the top. In a study of rural Rajasthan, Patel and Hulton (1997) examine the cultural alienation felt to exist between populations at the two ends of the social spectrum to help explain the low level of hospital deliveries, by women from a village that is 25 kilometres away from the nearest city hospital in Jodphur (95% deliver at home). The investigation produces anecdotal evidence from in-depth interviews that villagers felt that they were generally perceived as dirty and ignorant of modern medical ways in the government hospital. The women and their attendants were found to feel uncomfortable in the hospital, and language often caused problems of communication. They reported feeling insulted and ignored.

The common image of a hospital delivery in the village (Mogra) described in this paper is one where no attendants are allowed near the labouring woman and she is made to lie alone on a table *"Is this the way to treat a labouring woman? Is this what you go to hospital for?"* (Patel 1991). The disposal of the umbillical cord, in a hospital, was perceived as problematic by the women of Mogra. A hospital was not a place that parents would want the cord to be ritually buried. Unlike home, post-partum women were kept under electric fans. This exposure was considered by village women as harmful for a post-partum body, as women at home are secluded and cover themselves to avoid breeze for a few days after childbirth (believed to be adverse for the body). Other 'contraindications' for a hospital delivery include the lack of ritually significant foods *"They make us eat the same food as sick people"*. The study concludes that communities need to be able to feel a sense of ownership, or at least relationship, to hospital services. They need to feel comfortable and recognise the value in certain situations, of making use of these facilities, yet recognise in relation to pregnancy they cannot predict who will need to go to the hospital. However, as described, the social distance people feel from the facilities meant to serve them is significant (Rohde 1995) and poor quality of care in public institutions can aggravate this distance.

Social and cultural divides are perhaps more obvious in a rural setting, but they are likely to be no less important in an urban area, although there was no literature that specifically examined this in an urban setting.

The literature does show that increasing the availability of services does not always increase the use of services, and it investigates the reasons for this. Delays to accessing care can range from delaying the actual decision to seek care on the part of the individual and her family, to delays in reaching an adequate health-care facility and finally, to delays in actually receiving adequate care at the facility (Thaddeus and Maine, 1994). Factors that influence delays in the decision to seek care include the status of women, illness characteristics, distance from the facility, and perceived quality of care. Delays to accessing care refer to factors such as the distribution of facilities and the condition of the roads, while delays in receiving adequate care include the adequacy of referral systems, shortages of supplies, and the competence of available personnel (Thaddeus and Maine, 1994). Thus the theoretical availability of services does not mirror access, and a number of socio-economic and cultural factors combine with individual and group perceptions and experience of quality of care to influence the utilisation of maternal health services.

Programmes and research into maternity care often focus on women's access to emergency care and the referral of complicated cases and less attention has been paid to institutional care for uncomplicated deliveries. In many parts of the world, indeed in many parts of India, institutional delivery is the exception rather than the norm, which would explain the focus on the referral of complicated cases that would otherwise have been home deliveries. No studies conducted in India were identified in the literature that examined women's experience of institutional care during an uncomplicated delivery. In practice, despite the small relative percentages delivering in hospital in some parts of the world, the numbers of women experiencing a hospital delivery are growing. A woman's experience of care during an institutional delivery is likely to influence her future health seeking behaviour. The nature of this relationship is also not examined in depth in the literature. However, while the availability of appropriate essential obstetric care is the only way to prevent a complication becoming a death, the quality of care

provided and experienced in normal delivery may negatively influence overall outcomes, if the timing of use is delayed as a result of poor perceived standards of care, and thus more research is needed to examine this relationship.

### 2.6.2 Quality of care and outcome

In addition, for those women who do access services, at whatever stage, the outcome is partly dependent on the quality of care they receive, although the links are not always direct. The existence and prompt use of services alone is not sufficient to reduce the number of maternal deaths. Facilities need to be providing adequate services. A community-based investigation of maternal deaths, undertaken in both rural and urban areas of Zimbabwe to assess their preventability, identified sub-optimal clinic and hospital management as an avoidable factor in nearly 70% of cases. Lack of appropriately trained personnel contributed significantly to sub-optimal care (Fawcus et al., 1996). Similarly, a study conducted at a university hospital in Nigeria found that delays in obtaining appropriate treatment were responsible for a significant number of deaths, and that such delays were more common among women of lower socio-economic status and among younger women (Okonofua et al., 1992). Findings from this study indicate that delays relating to health service failures were more significant than postponing the initial decision to seek emergency care. Health service failures identified included incorrect treatment, lack of facilities, poor staff attitude, and delays in the referral process. Poor co-operation between health providers, and inadequate equipment and supplies were identified by women themselves as constraints to emergency obstetric care (Okafor and Rizzuto, 1994). In a review of hospital-based studies, Sundari documents evidence of 'avoidable factors' and identifies a range of failures in the health service delivery system that contributed to maternal deaths. Failures ranged from *'the lack of minimal life-saving equipment at the first referral level; lack of equipment, personnel and know-how even in referral hospitals, and, worst of all, faulty patient management'* (Sundari, 1992; p.513).

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### 2.6.3 Quality as part of a reproductive health approach

The concept of reproductive health, which gained currency initially in the 1980s, is premised on the feminist principle that every woman has the right to control her own sexuality and reproduction without discrimination as to age, marital status or income. Ensuring the highest possible standards of reproductive health-care for girls and women is fundamental to the exercise of their reproductive rights and freedoms, and to the exercise of the broad array of other human rights to which girls and women are entitled (Dixon-Mueller, 1993). Quality of care is both a reproductive right and an essential component of any programme that upholds three principles of a reproductive health approach:

1)    A woman's ability to regulate her fertility safely and effectively by conceiving only when desired, by terminating unwanted pregnancies, and by carrying wanted pregnancies to term.

2)    To remain free from *avoidable* disease, disability or death associated with her sexuality and reproduction.

3)    To bear and raise healthy children.

(Adapted from Germain and Ordway, 1989, cited in Dixon-Mueller, 1993).

Where the nature of maternal care is such that it inhibits effective utilisation and receipt of effective care, women are being denied the basic right to bear and raise healthy children and remain free from disease and disability associated with their reproduction. Evidence suggests that there are procedures specific to childbirth in an institutional setting that women dislike or fear, and which may therefore inhibit utilisation. They may feel uncomfortable exposing their genitals in a hospital ward, or they may intensely dislike positions favoured by hospitals for delivery (Thaddeus and Maine, 1994, p.1096). Not only does good quality of care afford a woman dignity in childbirth, it also endeavours to avoid those aspects of care that are disrespectful - even unnecessary - and may impact negatively on patterns of use.

### 2.6.4 Quality - Equity and technical efficiency

De Geyndt, in a World Bank Technical Paper (no.258) 'Managing the Quality of Health Care in Developing Countries', justifies the continuous assessment and improvement of QOC in health generally on two grounds; equity and technical efficiency (De Geyndt, 1995). He explicitly describes health and medical services being for the purpose of '*protecting, maintaining, restoring and ameliorating the optimal physical, social and mental functioning of a country's citizens*'. Being a World Bank Technical Paper it is not unexpected that the implicit rationale is apparently that of ultimately improving productivity and economic growth. However, this approach is not inconsistent with a reproductive health approach in that there is an underlying premise that accepts individual well-being as the bedrock of a productive society. He identifies five reasons that '*undergird the rationale for public and private actions in quality improvement*' (p.12). These are examined with and adapted with specific reference to maternal health care in Box 2.1.

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**BOX 2.1:De Geyndt's Five reasons for the improvement of quality – adapted**

1) Self-regulation and self-correction efforts to assess and improve performance are, he argues, found at the centre of almost any professional endeavour.

2) Equity. Empirical evidence documents the inequity of the availability and the accessibility of good quality care based on social class, education, income, geographic location and in general the political empowerment of the patient. Improving the quality of public health services would therefore make access to good quality maternal health care more equitable.

3) Efficiency. Improving quality would improve efficiency. There are growing concerns with the inefficiencies of providing medical care of doubtful efficacy, inappropriate to the medical condition to be treated, and provided for non-medical reasons. Between one quarter and two fifths of some medical activities in the US are judged inappropriate or medically unnecessary (Brook 1989). As part of an overall quality evaluation, this study investigates the use of certain practices whose routine use in maternity care has been identified by the WHO (1996) as either harmful or ineffective (and thus inefficient), such as routine use of intravenous infusion in labour and routine pubic shaving.

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4) <u>Variability</u>. Improving quality would decrease the variability in the process of providing services. *'Research studies document the large variation among physicians, among institutions, ...between public and private sectors, and ...in the use of staff, in the appropriateness and medical necessity of diagnostic procedures, of medical and surgical interventions, and of drug prescribing behaviour'* (De Geyndt, p 15). In maternity care the variation by facility in the use of certain interventions such as induction, episiotomies, and caesarean sections is a recognised feature of maternity care (SE Thames Perinatal Survey, 1996-99)

5) <u>Accountability</u>. Health care is costly and consuming an increasingly large share of national resources. Government, business and households are the three major sources of health care financing and are demanding more accountability from health providers. For example, if the quality of communication and inter-personnal relations is poor, the danger of vital information relating to post-natal care not being effectively conveyed may increase post-natal problems at an avoidable cost to all concerned. Also, the use of highly technological equipment, the effectiveness of which has been poorly assessed in a resource poor environment, such as ultrasound sonography for dating, increases costs for the family and the provider who could be spending money on more scientifically sound interventions, such as purchasing Magnesium Sulphate as the drug of first choice for the treatment of eclampsia (Benbow et. al. 1997).

## 2.7    Summary

While the measurement of the quality of family planning has received considerable attention and is now standard practice in most donor sponsored national programmes and non-governmental programmes (Koenig and Khan 1999), quality of care in maternity services has received less, but increasing, attention (Maine et.al.1997, Pitrof and Campbell 2000).

While many indicators of quality have been developed to measure aspects of maternity care (see Pitrof and Campbell 2000), no broad evidence-based description of the elements of quality of care in maternity service has yet been developed or integrated into a practical framework. Attention in the clinical

# Chapter Three

## 3.    Quality of care maternity services: A framework

### 3.1    The framework

Based on an extensive review of medical, social science and health policy literature, ten different, but closely related elements of quality of care are identified and described (see Box 1). The elements are integrated into a framework which divides care into two broad groups; the first includes those elements that reflect important aspects of the quality of the provision of care; and the second which describes those elements which are more focused on aspects of the quality of the experience of care by clients[1]. For each element criteria, broad standards and selected indicators are suggested. In subsequent chapters a range of methods are employed to undertake a situation analysis of quality of care within maternity services in the study area using the framework as the intellectual and practical basis for analysis. Lessons learnt from the use of these methods in the practical application of this framework are then critically examined in Chapter Ten.

The framework weaves together a number of distinct yet integrated components of institutional delivery care: care during normal delivery; care during a complicated delivery; psycho-social-cultural care during labour and delivery; hospital logistics and

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[1] The chapter forms the basis of a monograph (attached), published by the University of Southampton, Feburary 2000. The reference for the monograph is:

Hulton, L.A., Matthews, Z. and R.W.Stones (2000), *A framework for the evaluation of quality of maternity services,* University of Southampton. (ISBN: 085432702 9). L.A.Hulton, formulated the study objectives, undertook the literature review, designed the framework, wrote the monograph, the criteria and indicators. Z .Matthews commented on early drafts of the monograph, helped to write parts of the final draft and helped formulate some of the criteria. R.W. Stones commented on early drafts of the monograph and provided technical support throughout, particularly with the formulation of the criteria and indicators.

management; and the overarching health system of which the unit is part. The quality of each component is dependent on the quality of the others, therefore their inclusion conceptually (within one broad framework) is important. A fully equipped operating theatre will be inadequate if an anaesthetist cannot be located. Similarly while care in normal delivery may be clinically exemplary, if a woman is unhappy with the psycho-social support she receives, she and her family may prefer that for any future pregnancies she deliver at home with the support of traditional birth attendants.

**Box 1: Principal sources**

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**Principal sources:**

- The Pregnancy and Childbirth Module of the Cochrane Library

- The UK Royal College of Obstetricians and Gynaecologists Clinical Audit Unit

- WHO Safe Motherhood Series (including *Care in Normal Birth* (WHO, 1996b) and the *Mother and Baby Package* (WHO, 1994)

- *The Design and Evaluation of Safe Motherhood Programmes* (Maine et. al, 1997)

- *The Evaluation Project – Indicators for Safe Motherhood* (Koblinsky et. al. (1995), Carolina Population Centre, University of North Carolina)

- *Guidelines for Monitoring the Availability and Use of Obstetric Services* (UNICEF/WHO/UNFPA, 1997).

- *Studies in Family Planning*

- *Social Science and Medicine*

- *Health Policy and Planning*

- *International Journal of Gynecology and Obstetrics.*

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### 3.1.2 Quality - Definition and measurement

The definition of quality of care determines both the content and the process of care. In 1966 Donabedian defined quality of care in a unique way: '*quality of care is the extent to which actual care is in conformity with present criteria for good care*' (Donabedian, 1966). The unique feature of this conceptualisation of quality at the

time was the introduction of evaluation into the definition. Evaluation became the link between quality and quality assurance. This definition makes an important distinction between the quality of actual care, which is established at the end of an evaluation procedure, and the expected quality of care as it is described in terms of criteria and clearly defined standards (Reerink, 1990). A more recent definition states that:

*'Quality of care is the degree to which health services for individuals and populations increase the likelihood of desired outcomes and are consistent with current professional knowledge.'*
(Institute of Medicine, 1990, p.94)

The above definition has been adapted to achieve a definition of quality of care relevant in the context of maternal health. This definition incorporates the concept of both effective and timely access and of reproductive rights thus:

*'Quality of care is the degree to which maternal health services for individuals and populations increase the likelihood of timely and appropriate treatment for the purpose of achieving desired outcomes that are both consistent with current professional knowledge and uphold basic reproductive rights'.*

This working definition provides the basis from which to create a quality assessment framework for maternal health in an institutional setting. The definition allows quality in this context to be separated into two constituent parts:

1)   The quality of the provision of care within the institution.

2)   The quality of the care as experienced by users.

For quality of care to be meaningful, it is fundamental that elements of these two components of care be consistent with the basic norms of internationally agreed reproductive rights.

The division of quality into these two components recognises the fact that use of services and outcome are the result not only of the quality of the provision of care but of women's *experience* of that care. The provision of care may be deemed of high quality against all recognised standards of good practice but unacceptable to the woman and her family. Conversely, certain aspects of provision may be popular with women but objectively ineffective or even harmful to health.

### 3.1.2.1 A quality of care framework: Ten elements of care

The framework is presented in Figure 3.1 below. It identifies six elements related to the provision of care: human and physical resources; referral system; management information systems; the use of appropriate technologies; internationally recognised good practice; and the management of emergencies. Four aspects relating to women's experience of care are also identified namely; human and physical resources; cognition; respect, dignity, equity and emotional support.

**Figure 3.1. Quality of Care Framework**

(see page below)
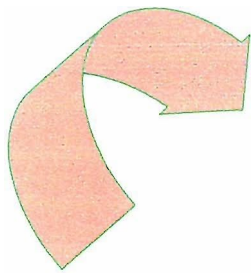
# Quality of Care
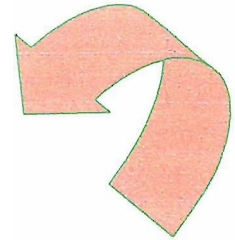
## Provision of care

1. Human and physical resources

2. Referral system

3. Maternity information systems

4. Use of appropriate technologies

5. Internationally recognised good practice

6. Management of emergencies

## Experience of care

7. Human and physical resources

8. Cognition

9. Respect, dignity and equity

10. Emotional support

### 3.1.3 Criteria and standards.

To make the above framework a practical and analytic tool, criteria for each constituent element need to be developed and corresponding standards defined by which quality can be evaluated. The criteria are a set of broad requirements that need to be satisfied before each element of quality can be realised. Part Two of this chapter contains ten tables detailing suggested criteria, broad standards and suggested indicators for each of the elements that make up the framework. For example, the following illustrates a criterion that can be used to assess the quality of the management information system provided at a maternity unit (see Table 3 in the Appendix). This example comes from the third element of the provision of care: management information systems.

| Criterion | Standard |
|---|---|
| Basic registers in facilities are designed to record data that is **sufficient** to monitor and evaluate activities **effectively.** | 'sufficient' <br> 'effectively' |

Standards define the limits by which the criteria can be assessed. In this example, 'sufficient' and 'effectively' are the standards that need to be defined. 'Sufficient' in a maternity home may not have the same meaning as 'sufficient' in a large university hospital. Given the enormous variability that exists in health-care systems and economic and socio-cultural conditions throughout the developing world, setting universal standards is problematic. What is acceptable and achievable in one setting may be impossible in another. The criteria within the framework can be applied universally among institutions of similar status but local conditions should dictate the exact standards that are appropriate in that setting. Given this, however, for certain aspects of maternity care it is possible to set universal standards applicable regardless of the context; for example, the maintenance of asepsis 'at all times'. This is what

Donabedian referred to as 'certain limits...which should not be transgressed' (1966, p.183).

It is particularly difficult to set minimum standards for the elements of the framework relating to the experience of care. Research conducted in the developed countries indicates that perceived quality may vary among members of different socio-economic groups (Calnan, 1988a: Roberge et al., 1996; Haddad et al., 1998). Perceptions are influenced by the social, organisational and technological context in which the health services are delivered (Palmer, 1991; Ellis and Whittington, 1993). However, even when staff are overwhelmed by the volume of users, rudeness and disrespectful behaviour, should not be condoned (Mensch, 1993). Notions of privacy vary culturally, as do definitions of respect. Where the communication of important information is inhibited, such as details of medical conditions from the patient to the provider, or of details of side-effects from certain drugs, such behaviour is more than simply rude, it can contribute to adverse outcomes. Agreeing on minimum standards for communication and respect within institutions is therefore an important part of the quality process.

### 3.1.4 Indicators

Once appropriate standards have been explicitly defined, a variety of indicators may be selected to evaluate how closely these standards are being met. There already exist numerous publications that offer a range of indicators that can be drawn on to aid the evaluation process (Koblinsky et al., 1995, Maine et al., 1997, Campbell et al., 1995, UNICEF/WHO/UNFPA, 1997). These indicators are normally organised into an input-process-output structure leading to outcomes. That is, indicators have been developed to evaluate the inputs to a programme, and how these are converted through processes (activities) to produce results (outputs) at the programme level and eventually changes at the population level (outcomes) (Koblinsky et al., 1995). This is a useful way to conceptualise the whole. However, in an assessment of quality of care at the facility level the range of indicators so far developed fails to capture important aspects of service provision that contribute to women's experience of care. The input-

output-outcome model allows for the assessment of this aspect of care (as an outcome), but in practice the range of indicators currently used to do this are limited. Considerably more attention has been paid to clinical outcomes. The detailed framework presented at the end of this chapter offers a number of suggested indicators to assess whether criteria to assess users'experience of care are being met. These criteria are a mixture of professional/research defined and user defined. The user definitions were identified from the relatively limited literature that exists in this field, selected texts of which are reviewed when the experience of care elements are described. The development of such indicators is in its infancy and the corresponding examples given in Tables 7-10 represent working suggestions. More work is needed by the maternal health research community to identify a wider range of user-defined indicators of experience of care. In addition, the indicators that are currently most commonly used in international research studies do not on the whole help evaluate either the appropriateness of intrapartum and postpartum care or whether that care falls within recognised standards of good practice. For this reason the author has, based on the literature, included and described a range of these aspects of care in the quality framework.

The degree of difficulty in measuring quality increases as one moves from input, otherwise known as structural, variables to process measures and then to outcomes of patient care. Certain outcomes, such as maternal mortality rates or ratios, case fatality rates, perinatal mortality rates and so forth can reveal certain things about maternal health at a general level, but alone reveal very little about the process of care at the institutional level. It would be presumptive to infer that improved outcomes were the result of improving the process in most cases (De Geyndt, 1995). For example, a reduction in maternal mortality at the facility level may be the result of an improved transportation system and have little to do with the quality of care provided. The cause-effect relationship between process and outcome is often tenuous. No indicator used in isolation is sufficient to provide a meaningful insight into the element of quality being examined.

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There are two important drawbacks of an input-process-output trilogy. The first, indicated above, relates to the complex relationship that exists between cause and effect. The link between structural attributes and the process of care is inconsistent and empirically unproved (De Geyndt, 1995). The simple existence of human and physical resources necessary to provide high quality essential care is not enough to assure the provision of such care. The second methodological problem relates to the relative importance of the ten elements. Failing to meet standards set for certain criteria may result in such poor quality care as to influence the health outcome directly (for example, empty blood stores in a referral hospital), while failing to meet other standards will have a less immediate impact (for example, prohibiting social support in labour). Aspiring to meet all criteria to the highest standards would be the ultimate goal, but in practice, given limited resources, decisions will inevitably be made about the relative importance of specific interventions to redress areas of poor quality identified in the assessment process. Given this, however, it is no good having a limitless supply of blood if there is no one qualified to transfuse that blood, just as the existence of an effective communication system with referral hospitals is practically useless if transport between the units is not available 24 hours a day. To reduce the number of maternal deaths it is vital that the interdependence of the elements of care be recognised in the assessment of care. Optimal care in one element can go hand in hand with high levels of maternal death and morbidity if care in other areas falls below an acceptable standard. In practice, the resources needed to address some of the problems within maternity services would not require significant additional funding (Fortney, J 1999). For example, operating theatres are kept locked and the person responsible for the key cannot be found, the theatre has not been cleaned after the previous operation, anaesthetists are on call during the night but often cannot be contacted or are unable to attend during public holidays. There is evidence that an increase in the quality of care provided and experienced could actually reduce the cost of the service by decreasing waste, curtailing inappropriate use of limited resources, eliminating inefficiencies, optimising the use of existing inputs, and applying correct processes (De Geyndt, 1995). By separating elements into distinct units within the Framework there is a danger that relationships that might

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exist between elements will not be recognized. One approach that could be used to overcome this artificial separation of inter-related elements is for those implementing the framework to cross examine the results of any situation analysis or quality assessment and draw out links that exist between elements as they go. Any approach designed for the purpose of implementing change in order to, as a first step, assure a basic minimum quality would then need to recognize and consider such relationships when prioritizing time and resources.

## 3.2   Expanded quality of care framework: Provision of care

### 3.2.1   Human and physical resources

Human resources include *'the quantity and quality of health and non-health personnel employed for providing and supporting the delivery of patient care'* (De Geyndt, 1995). The term refers also to the configuration of staff, levels of supervision, staff training by length and place, management styles, population-based staffing ratios, and nature and frequency of staff training.

Physical resources *'are the grounds, buildings fixed and movable, medical and non-medical equipment, vehicles, furniture, medical and office supplies, pharmaceuticals, warehousing and storage conditions and maintenance of physical assets'* (De Geyndt, 1995, p.33). The term covers general hospital infrastructure, including water and electricity supplies.

A quality assessment tool needs to be able to record in some detail the availability, use and quality of the above. The review process would need to assess not only the clinical skills of staff, their experience, training and communication skills, but also their hours and salaries. Facilities can suffer from staff shortages, a dysfunctional skill mix versus case mix, unclear job descriptions, under-skilled staff and staff who lack confidence in their skills (Huque et al., 1999). They can also employ staff who feel isolated, unmotivated and undervalued - all of which have an impact on the quality of both clinical and interpersonal care provided by the institution. The Safe Motherhood

Project in Nigeria draws attention to the fact that inadequate pay and benefits for health staff are frequently mentioned as determinants of poor quality of care. Okafor and Rizzuto (1994) recommend that such practices should be reviewed and, if possible, remuneration for health professionals should more closely reflect the value of the critical service they provide. Simmons and Elias (1994) warn that researchers must be aware of the *'profound sense of alienation that shapes providers' behaviour in many settings. Where the threat of unemployment and resource scarcities dictate assignments to rural work settings, rather than an intrinsic motivation to serve, providers are bound to communicate their sense of frustration and lack of concern for their clients' (p.4)*. Effective provision of maternity services requires that staff are managed and supported effectively in their roles. Delay in payment of salaries, excessive patient loads and insensitive line management will promote an adverse professional environment. Conversely efficient and responsive management of an institution will tend to enhance the quality of the working environment and motivate staff.

Areas suitable for the application of quality standards related to human resources include:

- **Safety at work.**

Staff require protection from risks associated with their work. These include physical violence, verbal abuse from patients and relatives and transmissible infectious diseases, especially Hepatitis B and HIV. These are especially pertinent in maternity facilities where exposure to large volumes of body fluids is likely.

- **Staff training and development.**

Effective systems for staff appraisal linked to personal and professional development opportunities such as the availability of courses and in-service training are key to maintaining the quality of the human resource base.

- **Management of human resources**

Staff operate more effectively where there are clear management structures and clear lines of accountability.

Insufficient and unqualified staff, unavailability of blood, shortages of essential drugs and missing supplies limit access to life-saving procedures (Thaddeus and Maine, 1994). The provision of basic and comprehensive essential obstetric care services also requires that other aspects of the physical infrastructure function efficiently. In the developing world there are frequent problems with the provision of the continuous supply of power and water. In addition the maintenance of buildings and equipment in a state of adequate repair is often problematic in settings where budgets are constrained, and increased demand for services compromises the efficient operation of facilities. The ability of a facility to perform effectively the functions expected of it is the outcome not only of the quality of human and physical resources but also of the other aspects of quality identified in this framework. The following box draws out a number of criteria, based on the literature, to illustrate the range of criteria that may be used to assess the quality of this element of care. It is not exhaustive in content. In practice users of the framework would need to define and agree their own criteria based on the design of their quality assessment and the resources available to them.

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**Criteria that may be used to assess the quality of the provision of care (relating to human and physical resources) include (also see Table 1 in the Appendix to this chapter):**

1) The skill mix is sufficient to cope with patient flow and the case mix of deliveries at the facility.
2) The maternity wards are adequately equipped to perform their function effectively and consistent with internationally recognised good practice.
3) The operating theatre is in good repair and fully equipped with drugs and surgical equipment to perform life-saving procedures when required.
4) The general infrastructure of the facility is of sufficient size and state to cope with demand, and essential support services are reliable.

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5) The organisational and management structure of the labour, delivery and postpartum suite ensures most efficient use of resources.

6) Staff should always be adequately protected from risks associated with their work.

7) Effective systems for maintaining the quality of the human resource base should be in place at all facilities.

8) All facilities should have a clear management structure and clear lines of accountability

## 3.2.2 Referral

The quality of the referral system is crucial to preventing maternal death. The hierarchy of maternity facilities only becomes a functioning unit if the referral system from the lower-order health centre to the referral unit is efficient and effective. While the majority of complications are unpredictable, it is possible to identify antenatally certain high-risk groups (such as breech presentation and multiple pregnancies), which should be referred to the appropriate facility well before labour begins. This framework is not concerned with referrals made antenatally, however, but with the quality of referral procedures once a woman in labour or with a complication presents at the facility under assessment. Poor referral procedures were identified as a significant constraint to the accessing of emergency care in a study in Nigeria (Okafor and Rizzuto,1994). Here, midwives in Akwa-Ibom were reportedly frustrated that registered maternity-centre patients were treated as 'unbooked' cases when they went to general hospitals for emergency assistance, and were therefore denied prompt treatment. Among municipal facilities in Mumbai, it has been reported that units providing basic emergency care may deny care to any unbooked woman presenting in labour, regardless of her condition. This policy adds avoidable delays to the accessing of prompt and appropriate care for women who go on to have an uncomplicated delivery. For women with a complication the delay can be far more serious where insufficient attempt is made to stabilise her condition before referral. The time taken to travel between facilities on the normally crowded roads of Mumbai is

unpredictable, and in the late stages of labour it can be uncomfortable, distressing and potentially fatal for both mother and child (Matthews et al., 2000).

It is important that referral protocols are defined at the level of health-care systems with input and cooperation from managers at all levels within the system. Managers need to determine locally which conditions can be treated in a given facility and which must be referred. An effective referral and transport system is the link that allows facilities to work together in a continuous chain. There must be good communication and cooperation throughout the chain if the system is to be effective (WHO, 1994).

This element of the framework aims to identify components of sub-standard care, such as poor coordination between providers, which may delay the referral process and consequently negatively affect the pregnancy outcome.

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**Criteria that may be measured to help determine the quality of the referral process include (see also Table 2 in the Appendix to this chapter):**

1) An admissions procedure that ensures the timely examination and referral of a woman presenting with a complication.
2) Experienced staff and essential drugs are available at accessible hours at the referring facility to stabilise a woman before referral.
3) Reliable transport is available on a 24-hour basis.
4) There is a functioning and reliable communication system to enable staff to communicate with the referral hospital of first choice to ensure that essential staff and equipment are available.
5) There is a qualified member of staff on call to accompany complicated cases to the referral hospital when necessary.
6) There are always sufficient stocks of essential drugs and equipment and qualified staff to stabilise referred women

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### 3.2.3 Maternity information systems

A review of record-keeping procedures by the Prevention of Maternal Mortality (PMM) network at ten facilities in Kumasi, Ghana (Danqua et al., 1997) revealed that information on obstetric complications is often inconsistent or missing. Some hospital record systems were not designed to collect such information at all. Individual patient records are indispensable for case-management and peer review, and for appropriate record-keeping to determine the impact of programmes (Geefhuysen, 1999). In these studies, case notes were often nonexistent, incomplete or illegible. No formal procedure existed to classify and then record maternal complications by primary cause. Nor did any functional procedure exist to review causes of death. For example, many perinatal deaths will inevitably remain unexplained, but obvious obstetric and paediatric causes should be identified. Deaths related to pre-term delivery are relatively common, but if their number is compared with the total number of low birthweight babies delivered at the facility, the ratio (if the data has been accurately and completely reported) can give an impression of the standard of intrapartum and neonatal care (Driessen, 1987). Regression models in a study of the measurement of quality of essential obstetric care in Nigeria showed that the most consistent and important predictor of quality scores was the use of printed forms (ie, routine records of labour) during intrapartum care. Printed forms served as job aids, providing prompts that reminded midwives to perform specific tasks (Adeyi and Morrow, 1997).

The PMM network also identified problems in record-keeping at the human resources and management levels where they noted a dearth of trained records personnel and training programmes. They found that medical personnel lacked knowledge and skills in recording and managing information, and that administrators' poor use of available information contributed to inefficient planning of services. Any quality assessment exercise would need to review the record-keeping practices and skills of the department and the use to which information is normally put. It will then be possible to upgrade effectively both record-keeping instruments to ensure all necessary information is recorded, and the skill base to ensure staff are adequately trained to

record the correct information accurately and use it effectively. Regular reporting of baseline data, analyses and dissemination of data for the purposes of policy, planning and case review are essential components of a maternity information system.

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**Criteria for assessing the quality of management information systems include (see also Table 3 in the Appendix to this chapter):**

1) Basic registers in facilities are designed to record data that is sufficient to monitor and evaluate activities effectively.

2) Current procedures for recording information result in complete and accurate data entry.

3) A review process is in place to ensure data is comprehensive and used effectively to improve patient management and service delivery.

4) Each complicated case (severe morbidity or mortality, maternal or infant) is effectively reviewed and analysed, and avoidable factors identified.

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### 3.2.4 Appropriate technologies

It is now increasingly recognised that certain technologies within maternity care are not always appropriate, being at best wasteful and at worst harmful. However, assessing the extent to which inappropriate technologies are used has not yet been widely embraced as an indicator of quality of care. For this reason this element of the framework is examined in some depth here.

Good care relies on the use of technologies that have been justified scientifically. Inappropriate technologies can compromise safety, use up scarce resources unnecessarily, and in the case of certain specific procedures be not only uncomfortable and humiliating for the labouring woman, but even harmful. According to the World Health Organisation a technology is: *'an association of methods, procedures, techniques and equipment which together with the people using them can contribute to solving a health problem. An appropriate technology is one that is scientifically sound, adapted to local needs, acceptable to those who use it or*

*for whom it is used, and that can be maintained and utilized with resources that the community can afford'* (WHO, 1995).

Ideally, only interventions that support the process of normal birth should be used, and those that are poorly evaluated or potentially harmful stopped. The WHO has published a report on care in normal birth, in which it details aspects of normal care and identifies technologies that have been demonstrated by randomised controlled trials to be inappropriate, unnecessary and sometimes harmful (WHO, 1996b). While there are myriad potential interventions that can be, and are, used by midwives and obstetricians all over the world, a selected number identified in the WHO report are included as criteria for this element of the framework and will be discussed here in some detail. Those selected are relatively easy to identify in an assessment exercise. The assessment process would attempt to ascertain whether or not these were used by the facility being assessed, and how often.

### 3.2.4.1 Routine pubic shaving and enemas

Preparation for birth in a health centre or hospital often includes several routine procedures such as taking a woman's blood pressure and checking her pulse and temperature, all of which have implications for the birth. As a rise in temperature may indicate infection or dehydration, and a rise in blood pressure may signal pre-eclampsia, both are normally checked at least every four hours. Routine procedures such as pubic shaving and enemas before delivery, however, are common but have no proven benefits and can both be uncomfortable and humiliating. Pubic shaving was popularly thought to reduce infection and make suturing easier. While there is no evidence to support this, the likelihood is that the risk of infection for the woman (and indeed the provider) will rise through contamination from a non-sterile blade. The transmission of HIV and hepatitis are among the more serious potential consequences. A study examining this practice as early as 1922 (Johnston and Sidall, 1922) and a more recent randomised controlled trial in 1965 were both unable to

detect any lowering of puerperal morbidity by pubic shaving. Rather, there was a tendency towards increased morbidity in the shave groups (Kantor et al, 1965).

Enemas are used in the mistaken belief that they will help the uterus to contract and the head to descend, and to reduce contamination at delivery and so minimise the risk of infection to mother and baby. While some women do ask for enemas, many find them an embarrassment. Two randomised controlled trials have evaluated the effects of routine enemas, and no effects on the duration of labour or on neonatal infection or perineal wound infection were detected (Romney and Gordon, 1981; Drayton and Rees, 1984). Routinely administering enemas to women in labour confers no benefit. Aside from being particularly uncomfortable during labour, they carry some risk of bowel damage (rectal irritation, gangrene and anaphylatic shock).

### 3.2.4.2 Intravenous infusion and vaginal examination

Other routine procedures still widely used include intravenous infusion of glucose and fluid. Fasting in labour is commonly observed in order to minimise the contents of the stomach should a general anaesthetic be necessary. However, there is no guarantee that withholding food and drink will result in a stomach volume of less than 100ml. Nor can fasting be relied on to lower the acidity of the gastric contents (Crawford, 1956; Roberts and Shirley, 1976; McKay and Mohan, 1988). However, restricting food and drink in labour continues in many institutions. Dehydration and ketosis are possible outcomes of this type of restriction, the common response to which being the use of intravenous infusion of glucose and fluid. Dehydration can cause veins to collapse, which would make putting in a drip, if needed, difficult. Moreover, not only can this interfere with a woman's ability to move freely in labour, and so interfere with the natural process, it may have potentially serious unwanted effects on the baby such as, hyperinsulinism (Lucas et al., 1980; Rutter et al., 1980; Tarnow-Mardi et al., 1981; Lawrence et al., 1982). Labour requires enormous amounts of energy. The WHO (1996b) concludes that the correct approach should be not to interfere routinely with women's wish for food and drink during labour and delivery (WHO, 1996b, p.11).

Checking cervical dilatation is the most common method used to assess the progress of labour. This requires a vaginal examination. To reduce the risk of infection, these examinations should be kept to a strict minimum - once every four hours during the first stage according to the WHO (1996b) and should be carried out only by skilled attendants, with clean hands and wearing gloves. It is important to keep invasive techniques to a strict minimum (ICN 1996). Attendants' impatience is often a reason for the over-use of this invasive technique.

### 3.2.4.3 Intravenous infusion of oxytocin

The use of oxytocic drugs is part of the package of basic emergency obstetrical care recommended by international agencies (Donnay, 2000). There is very strong evidence in favour of injecting oxytocics routinely during the third stage of labour (Buekens 2001, Prendiville et al. 2000). How frequently oxytocin needs to be used during the first and second stage of labour is a far more controversial issue (Buekens, 2001). Oxytocin is used both to induce and to augment labour. The administration of excessive doses of oxytocin may cause hyper-stimulation (Dujardin et. al., 1995). Impatience is sometimes given as a reason for the liberal use of another technology: intravenous infusion of oxytocin. When the membranes rupture early and labour does not follow spontaneously labour is often induced augmented in order to avoid chorioamnionitis. The practice of using an intravenous infusion of oxytocin, to speed up labour after early amniotomy if the rate of cervical dilatation is less than 1cm per hour, has been investigated in a number of randomised trials (Read et al., 1981; Hemminki et al., 1985; Bidgood and Steer, 1987; Cohen et al., 1987 and Lopez-Zeno et al., 1992). Three of the trials provided data on the length of labour after oxytocin augmentation compared with control groups only. Only one of these demonstrated a shorter mean duration with oxytocin. In one trial women in the control group were encouraged to get out of bed and move as they wanted. In this group the mean length

of labour was slightly shorter than in the augmented group. No difference in AGPAR[2] scores were found (Hemminki et al., 1985). The majority of women in this trial described the augmentation process as unpleasant, and more than 80% said that it increased their pain. The WHO (1996b, p. 23) concludes that it is not clear from available data that the liberal use of oxytocin augmentation ('active management of labour') is of benefit to women or infants. Additionally, the WHO (1996b) concludes that as a general rule oxytocin should only ever be used to augment labour in facilities where there is immediate access to Caesarean section should the need arise.

### 3.2.4.4 Intramuscular oxytocin

In many areas of the world oxytocin is often administered by intramuscular injection, or without a pump to control the speed of the intravenous infusion. Use of any intramuscular oxytocin before the birth of the infant is generally regarded as dangerous because the dosage cannot be adapted to the level of uterine activity. Hyperstimulation may result which is harmful to the foetus (WHO 1996b). An increased incidence of ruptured uterus has also been linked to this practice (Kane et, al., 1993). Recent studies of assisted home deliveries in rural Karnataka, observed the frequent use of intramuscular oxytocin before delivery to augment labour (Matthews et al. 2000). This harmful practice should be abandoned (WHO, 1996b).

### 3.2.4.5 Caesarean delivery

Caesarean delivery can be life saving for mothers and infants, but more and more often it is being used for reasons other than this. The appropriate use of Caesarean delivery leads to a decrease in maternal mortality and morbidity as well as decreasing perinatal mortality and morbidity. The rate of Caesarean section varies considerably among countries from about 5% to over 30% of all deliveries. Rates also vary considerably within countries. In a resource-poor setting rates can suffer from being too low in municipal facilities yet too high in private ones. In Brazil, where delivery

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[2] This is a general fitness test which assesses the baby's heart rate, breathing, skin colour, muscle reflexes and response to stimulation. It is carried out immediately after the birth and is scored from 1 to 10 on the APGAR scale (Hemminki et.al. 1985).

in hospital is the norm, the Caesarean delivery rate for the country has been estimated as 36.7% (Macro International, 1996). A recent study found rates in private hospitals as high as between 65% and 72% (Chacham and Perpetuo, 1998). The optimal rate of Caesarean delivery is unknown, and will inevitably vary by institution according to its status within the referral chain. But the national data available suggest that little improvement in outcome appears to occur when overall rates rise above 7% (Enkin et al., 1995). The WHO suggests that rates of below 5% may indicate inadequate availability and access to obstetric care, while rates of above 15% may suggest over-utilisation for reasons that are not essential. Excess use of Caesarean section exposes women to anaesthesia and major surgery with their concomitant risks. It is also expensive, at a cost to either the wider health-care resource pool or to the woman and her family if they are paying for the operation and associated costs. A study of 221 consecutive Caesarean sections at a large London teaching hospital demonstrated that maternal morbidity was common after the operation. Anaesthetic problems, haemorrhage, paralytic ileus, wound problems and infective complications were both frequent and often unrelated to the condition that mandated the Caesarean section (Kelleher and Cardozo, 1994).

Studies indicate that the growing use of this technology is partly the result of the lucrative nature of this intervention for the providers of care. Other factors that have been suggested to explain differentials in use include the fear of malpractice litigation, convenience for the clinician, the socio-economic situation of women and patient demand. Of women who stated that they would prefer to deliver by Caesarean section in the Metropolitan Area of Belo Horizonte County in Brazil 43% gave 'less painful' as the reason, 22% wanted to have a tubal ligation at the same time and 16% had had a previous Caesarean section. The same study set out to establish the extent to which patient demand could explain the high caesarean section rate in the county. Of the 400 women interviewed 71% said that they wanted a vaginal delivery, 21% wanted a Caesarean section delivery and 8% said they had no preference. These figures suggest that patient preference is not a sufficient explanation for the very high rates experienced in this area (Perpetuo et al. 1998).

### 3.2.4.6 Supine position

Many facilities move women from a labour room to a delivery room at the start of the second stage of labour and then require them to lie on their backs to deliver. Yet moving a woman at this stage of labour is an added discomfort, serves no physiological purpose and can be disruptive at this point. This is true also of the latter procedure of ensuring women are lying on their backs to deliver, in some cases with their legs tied in stirrups or held by hospital staff. In the absence of a complication women should be free to adopt whatever position feels most comfortable for them at the time of delivery. Generally, if given the choice, women choose positions such as squatting or standing that more closely complement the physiology of the labouring woman, ensuring that gravity aids the process. Lying on her back, or semi-reclining, effectively results in a more restricted birth passage. In these positions, particularly the latter, the woman will be sitting on her coccyx and sacrum, curving the interior of her pelvis and bringing her pelvis and spine closer together, which reduces the space available for the baby's head (Sutton and Scott, 1996). A number of trials (Stewart and Spiby, 1989; Liddell and Fisher, 1985; Crowly et al., 1991; Bhardwaj et al., 1995) suggest that an upright position or a lateral tilt during second stage labour has greater advantages than a supine position. Findings demonstrate that the upright position causes less discomfort and difficulty when bearing down, less labour pain, less perineal trauma and fewer wound infections. In one trial a shorter second stage was observed in the upright position. Despite this, the supine position for delivery is generally the position favoured by the staff attending, and is preferred not only in most of the developing world but in much of the developed world as well. Much of the positive effect of the vertical position depends on the ability of the birth attendants and their experience with any position other than the supine. Birth attendants may need to be trained to help women deliver in positions other than the supine (WHO, 1996b, p. 27).

### 3.2.4.7 Episiotomy

In many parts of the world, episiotomy is used liberally, particularly for first births without strong scientific evidence for its effectiveness. It is generally justified on a number of grounds. It is thought to prevent damage to the sphincter and rectum, and permit better healing than a spontaneous tear. It is thought to prevent trauma to the foetal head, and, finally, it is thought to prevent serious damage to the muscles of the pelvic floor. In practice, all of the above can be prevented by appropriate management of labour and delivery. Not only do episiotomies, like other surgical procedures, carry a number of risks such as excessive blood loss and infection, evidence has shown that the routine use of episiotomy does not reduce the risk of perineal trauma or improve healing, nor does it prevent damage to the foetal head or improve APGAR scores. Also, use of episiotomy has not been shown to reduce the risk of urinary stress incontinence after delivery (Sleep et al., 1991). Where rates of infectious diseases such as HIV and hepatitis are high, not only is the overuse of episiotomy unnecessary for the above reasons it may increase the risk of transmission for the health-care provider responsible for the cut and subsequent repairs. Despite this, episiotomy is the USA's most common surgical operation, as most women undergo this procedure at the birth of their first child for the primary purpose of avoiding a perineal tear.

A recent systematic review of six randomised controlled trials comparing the possible benefits and harmful effects of selective versus routine use of episiotomy shows that the selective use of episiotomy is associated with a lower risk of clinically relevant morbidity including posterior perineal trauma, a reduced need for suturing perineal trauma and fewer healing complications at seven days. An increased risk of anterior perineal trauma was the only disadvantage shown using selective use of episiotomy (Carroli and Belizan, 2000). The was no difference in the incidence of major complications, such as severe vaginal or perineal trauma nor in pain, dyspareunia or urinary incontinence. The evidence does not support a 'blanket' policy, such as those in place in many developing world hospitals, which require all primiparous women to have an episiotomy (Carroli et al., 1997).

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Episiotomy has a place in safe maternal care, but only if used appropriately. The WHO (1996b) suggests that a good goal to pursue would be an episiotomy rate of 10%, the figure attained without harm to mother or infant in a British trial (Sleep et al., 1984).

### 3.2.4.8 Manual revision of the uterus

The delivery of the placenta is the next point at which appropriate care is vital. At this point the major risks for the mother are postpartum haemorrhage and retained placenta. The routine manual revision of the uterus post delivery is an example of another widely used and yet inappropriate technology. Manual revision of the uterus refers to the practice of checking the contents of the uterus by hand for retained sections of the placenta. The process, as well as being uncomfortable for the newly delivered, episiotomised mother, increases the risk of postpartum infection, can cause shock or mechanical trauma and is of no proven benefit.

### 3.2.4.9 Pain relief – Behavioural and drug based methods

A woman's experience of pain in labour may be modified by a variety of circumstances, including the cultural context, the support she receives from caregivers and companions, and the labouring environment (Enkin et. al., 1995). A number of factors can result in intensified feelings of pain such as abnormal labour, prolonged or complicated by dystocia, induced or accelerated by oxytocics or instrumental delivery (WHO, 1994).

The study of pain transmission and its modulation has provided findings that are applied in a variety of behavioural approaches to relieving the pain of childbirth. These have been classified by Enkin et al., 1995) as:

- Techniques that reduce painful stimuli, such as maternal movement and position changes, counter pressure (steady strong force applied to an area of the lower back during labour).

- Techniques that activate peripheral sensory receptors such as superficial hot and cold, immersion in water, during labour, touch and massage and acupuncture and acupressure.

- Techniques that enhance descending inhibitory pathways such as attention focusing and distraction, hypnosis, or music and audio-analgesia.

Pharmacological control of pain in childbirth has a long history. The use of opiates was mentioned in early Chinese writings. There have been more clinical trials of pharmacological pain relief during labour and childbirth then any other intervention in the perinatal field (Enkin et al., 1995). Methods have been classified as:

- Systemic agents such as narcotics, sedatives and tranquillisers.

- Inhalational analgesia (such as, nitrous oxide).

- Regional analgesia, usually epidural or spinal analgesia.

For many in the developing world, access to drug based methods of pain relief are very limited. More fundamentally, clear evidence of the extent to which lack of drug based pain relief in labour is associated with adverse sequelae, distress and suffering is lacking. In contrast, studies of cancer pain in different socio-cultural settings has clearly shown comparable levels of distress and suffering, which has led to current WHO initiatives to enhance the availability of effective drug treatment, especially by addressing the legal problems surrounding the medical use of opioids in many countries. It is not yet possible, from the existing literature, to identify a consensus to inform the development of general criteria about the extent to which methods of pain relief should be available to women in labour and primary research in this field is urgently required. However, effective pain relief for operative procedures is mandatory and its availability and provision should form part of the evaluation framework.

**In the light of the above the following criteria may be measured to assess the quality of the provision of care (see also Table 4 in the Appendix at the end of this chapter).**

| | |
|---|---|
| 1) | The following procedures are not used either routinely, or most of the time: |
| | • Pubic shaving |
| | • Enema |
| | • Intravenous infusion |
| | • Episiotomy for primis |
| | • Lithotomy position for delivery |
| | • Manual revision of the uterus |
| 3) | The use of vaginal examination to assess the progress of labour is kept to the minimum necessary. |
| 4) | Intramuscular oxytocin is not used to speed up labour. |
| 5) | The use of Caesarean section falls within reasonable limits. |
| 6) | Effective pain relief is always provided for operative procedures. |

### 3.2.5 Internationally recognised good practice

There are a number of procedures in maternity care that have, through carefully designed randomised studies been shown to be of benefit to the mother or her baby. The UK Royal College of Obstetricians and Gynaecologists (RCOG) has published a list of effective procedures suitable for audit (Benbow et al.,1997). The present framework draws exclusively on the RCOG guidelines, but there are other sources from which good-practice criteria can be obtained (see the WHO Safe Motherhood series). Table 5 in the Appendix provides a selection of auditable procedures of good practice identified in the RCOG report. Number 8 is drawn from the WHO Mother and Baby Package. While the criteria selected are not in any way exhaustive their inclusion in any quality assessment of the type suggested would be relatively straightforward and subsequent findings suggestive of the quality of the general level of clinical practice.

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**The following criteria are suggested (see also Table 5 in the Appendix):**

1) Magnesium Sulphate is the drug of first choice for the treatment of eclampsia. Eclampsia causes as many as 50,000 maternal deaths a year world-wide. It is widely

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recognised that magnesium sulphate is the best treatment for eclampsia. A large multicentred, international, randomised trial (The Eclampsia Trial Collaborative Group (1995)) showed that it is better at treating and preventing further seizures than either diazepam or phenytocin, other popularly used drugs (Royal College of Obstetricians and Gynaecologists, 1996).

2) Women are actively considered for a vaginal delivery after one Caesarean section.

Women who have had a Caesarean section should be actively considered for a subsequent vaginal delivery taking into account the reason for the previous section (Flamm et al., 1988; Rosen et al., 1990; Rosen et al., 1991).

3) Prophylactic antibiotics are used routinely at the time of an emergency Caesarean section.

The use of prophylactic antibiotics at the time of an emergency Caesarean has been shown to decrease the incidence of post-operative infectious morbidity such as pelvic abscess, septic shock and wound infection (Mungford et al., 1989).

4) Ventouse delivery is the instrument of first choice for low-cavity operative vaginal delivery. (Benbow et. al.,1997). Evidence from randomised controlled trials suggest that ventouse is preferable to the use of forceps for low-cavity operative vaginal delivery. The reason given for this is that ventouse is associated with reduced maternal trauma, without any increase in foetal trauma (Johanson 1995, and Drife 1996).

5) When repairing perineal wounds, polyglycolic acid suture material is used.

As trauma to the perineum and problems with healing are a significant component of maternal morbidity (Glazener et al., 1995) and can affect the mother's ability to care for her baby, perineal trauma should be minimised. When it occurs, polyglycolic acid suture should be used for perineal repair (Enkin et.al. 1995; Sleep 1991). The use of polyglycolic acid materials for suturing causes less pain and less use of analgesia in

the immediate puerperium period in comparison with catgut and non-absorbable sutures.

6) For a non-complicated delivery women are always allowed to adopt whatever position they choose for delivery. Whenever possible, women should be allowed to move and adopt whatever position they choose for the birth. Upright posture in labour seems to shorten the length of the labour and reduce the need for drugs to augment the labour (Stewart et al., 1978; Nikodem, 1995). Exit interviews with women on discharge, or retrospective survey questions can be used to document position of birth and reason for that position. Many facilities continue to insist that women assume the supine position for delivery with no clear understanding of the reasons for this.

7) Women are always allowed the social support of their choice during labour and birth.

All women should have continual professional support in labour and the choice of social support during labour and birth (Hodnett and Osborn, 1989a&b). Women who are supported during labour and birth, not only report a more enjoyable experience but have better outcomes. The main social support giver should be freely chosen (Benbow, 1997). Randomised trials on support in labour by a single person have demonstrated that continuous empathic and physical support during labour has a number of associated benefits. These include shorter labours, significantly less medication, fewer APGAR scores below 7 and fewer operative deliveries (Klaus et al., 1986; Hodnett and Osborn, 1989a&b; Hemminki et al., 1990; Hofmeyr et al., 1991) The WHO (1996b) concludes that a woman in labour should be accompanied by people she trusts and feels comfortable with. However, in order to respect the privacy of other women labouring in the same room, this may preclude male supporters in many cultures. Social support can also reasonably be excluded from operative deliveries. Many hospitals in the less developed world, as in the developed world for many years, preclude all but staff from the labour and delivery wards. This element of good care is also an important part of a woman's experience of care

(emotional support).

8) Throughout labour a woman's physical well-being should be regularly assessed. A woman's pulse, temperature, blood pressure, fluid intake and urine output should be monitored regularly throughout her labour and delivery.

## 3.2.6 Management of emergencies

The primary direct causes of maternal death world-wide include: haemorrhage (25%), sepsis (15%), hypertensive disorders (12%), unsafe abortion (13%) and obstructed labour (8%) (WHO, 1994). Facilities need the essential drugs and equipment to manage specific conditions and qualified staff who are trained to recognise, treat or refer such conditions. This framework identifies criteria that are indicative of the capacity of facilities to provide high quality clinical care (see Table 6 in the Appendix). For a more complete examination of the indications for, and approaches to, the management of the above emergencies, refer to the WHO Mother and Baby Package (1994) and A Guide to Effective Care in Pregnancy and Childbirth (Enkin et al., 1995).

1) *Postpartum haemorrhage* is the single most important cause of maternal death. It is estimated that 150,000 women die of postpartum haemorrhage each year. Nearly 90% of women who die from postpartum haemorrhage, die within four hours of delivery (Kane et al., 1992) indicating that they are a consequence of events in third stage of labour (WHO, 1998). Hospital studies suggest that about 2 to 3% of women haemorrhage during delivery. In the majority of cases, uterine atony and retained placenta are responsible for the haemorrhage, but vaginal or cervical lacerations and (occasionally) uterine rupture or inversion play a role (Kwast, 1991).

**For the management of postpartum haemorrhage:**

a) Oxytocics should be available at all facilities and health staff should be trained to administer them by injection as a first aid measure for postpartum haemorrhage (WHO, 1994).

b) Health workers of an appropriate level should be trained in clinical skills to manage ante and postpartum haemorrhage (WHO, 1994).

c) IV fluids should be available at all facilities and blood transfusion services should be available at comprehensive emergency obstetric care units on a 24-hour basis (WHO, 1994).

2) *Puerperal infections* such as sepsis are still major causes of maternal mortality in many developing countries. In some places, as many as one in three deaths is the result of infection. Fever is the main symptom, and antibiotic treatment is the main cure. Puerperal infection is more likely after a Caesarean section, prolonged labour, early rupture of the membranes and frequent vaginal examinations. Strict hygienic measures during labour are important for preventing puerperal sepsis (WHO, 1994). Birth attendants should be attentive of early signs of puerperal sepsis and institute adequate treatment promptly. The choice of antibiotics will differ from country to country, due to local availability, patterns of causal agents and antibiotic susceptibility (WHO, 1998)

**For the management of puerperal sepsis:**

a) All women and birth attendants should be aware of the requirements for a clean delivery: clean hands, clean delivery surface, clean cord cutting and care (WHO, 1994).

b) Health staff should be trained to recognise puerperal sepsis and manage it appropriately or refer (WHO, 1994).

c) All facilities should be able to provide the necessary treatment for puerperal sepsis, including antibiotics and surgical procedures (WHO, 1994).

3) *Eclampsia* and *pre-eclampsia* are common complications of pregnancy. Pregnancy-induced hypertension usually occurs in the second and third trimester of pregnancy. If untreated, pre-eclampsia may lead to eclampsia, with very high blood pressure, convulsions, cerebral haemorrhage or organ failure. Once eclampsia develops, immediate treatment and rapid delivery are needed. Eclampsia is estimated to occur in about 1 in 100 to 1 in 1,700 deliveries in developing countries (Crowther, 1985). Between five to seventeen percent of women who develop eclampsia die. Those who survive may suffer paralysis, blindness, or chronic hypertension and kidney damage.

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**For the management of severe pre-eclampsia and eclampsia:**

a) Health staff should be trained to manage and refer women with pregnancy induced hypertension. (WHO, 1994).

b) The full range of services required to manage severe pre-eclampsia and eclampsia should be available at Comprehensive Essential Obstetric Care (CEOC) facilities (WHO, 1994).

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4) Unsafe abortion is responsible for an estimated 13% of the 585,000 maternal deaths that occur each year. *'The prevention of abortion-related maternal mortality is dependent on the emergency abortion care being integrated through the health-care system of every country, from the most basic rural health post to the most sophisticated tertiary level facility, 24-hours per day. Whether it is health information and education, stabilization and referral, uterine evacuation, or specialized care for the most severe complications, at least some components of emergency abortion care must be available at every service delivery site in the health-care system'* (WHO, 1994)

One of the most positive steps that can be taken is to provide life-saving care at the lowest possible level of the health system, in order to maximise the chances that the woman will reach that care before it is too late (WHO 1994, p.2). The first referral level must be able to build on the services provided at the primary level by providing

life-saving surgical and medical procedures for all but the most serious abortion related-complications.

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**For the management of abortion related complications:**

a) Health workers should be trained in the early recognition of abortion related complications.

b) Evacuation of the uterine contents, antibiotic therapy and intravenous fluids should be available at all facilities and surgical treatment at CEOC hospitals.

c) Treatment should always be followed by counselling and contraception information and services.

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5) *Prolonged labour* is defined as active labour with regular uterine contractions and progressive cervical dilatation for more than 12 hours (WHO, 1994). Obstructed labour occurs when progress is arrested by mechanical factors and delivery by Caesarean section is required. Prolonged labour is strongly associated with several adverse outcomes. It can lead to perinatal asphyxia, maternal exhaustion and even maternal death (Enkin et al., 1995). The purpose of monitoring progress in labour is to recognise early problems, so that their progression to serious problems can be prevented. A cervical dilatation rate of 1 cm per hour in the active phase of labour is often accepted as the cut-off between normal and abnormal labour, however many women who show slower rates of cervical dilatation proceed to normal delivery. The definition of normal progress should therefore be interpreted with discretion in the context of the woman's overall well-being (Enkin et al., 1995). When monitoring the progress of labour, recording the findings makes the degree of progress readily apparent, so that problems will be recognised early, and to facilitate transfer of information to other caregivers (Enkin et al.,1995). The WHO recommends that the partograph should be introduced at hospitals and health centres where staff with appropriate skills and training are available. The partograph is a structured graphical representation of the progress of labour that can be an effective tool for the early recognition of obstructed labour. Too much reliance on partographs however, can be an agent for regimenting labour rather than caring for the woman in labour, especially

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when strict protocols of action related to partograph patterns are followed (Enkin et al., 1995).

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**For the management of prolonged and/or obstructed labour:**

a) The partograph should be introduced at hospitals and health centres where staff with appropriate skills and training are available (WHO, 1994).

b) First level health centres should be able to effectively perform the following: emptying of bladder, giving antibiotics if rupture of membranes occurred more than 12 hours previously, rehydration and referral.

c) In addition to the above mentioned second level health centres should be able to rupture membranes if required and perform a vacuum extractor delivery.

d) Additional interventions, such as oxytocics, antibiotic and the capacity to perform Caesarean section and other surgical procedures should be available at CEOC hospitals, on a 24-hour basis.

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## 3.3    Experience of care

While the quality of the provision of care in facilities is fundamental to ensuring effective care, women's actual experience of care is also significant. If women's cumulative experience at a facility is such that it deters some from returning for a subsequent delivery, or leads to rumours to the same effect in the wider community, the actual quality of the provision of care for these women is academic. The Safe Motherhood study in Nigeria reported findings from focus groups in which participants cited a litany of inadequacies that they *expected* to experience at health services including poor hygiene and medical treatment and censure or abuse from health workers. Cost, convenience and kindness were principal factors in the choice of health-care provider (Okafor and Rizzuto, 1994). A study in Zaire that identified qualities that women thought should be found among health workers showed that they valued interpersonal qualities (respect, patience, courtesy, attentiveness, friendliness

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and straightforwardness), technical qualities and, to a lesser extent, integrity (Haddad and Fournier, 1995). When they were asked about the two best qualities a nurse should have, the majority mentioned a relational component first and a technical component second. This observation is supported by findings from studies conducted in a variety of settings (Calnan, 1988a; Bruce, 1990; Lohr et al., 1991; Vera, 1993). What this suggests is that the provision of care could be of the highest technical quality yet still be unacceptable to the women and families for whom the care is intended.

To help reduce the number of women presenting late once in labour, and to increase overall utilisation, facilities need to concern themselves with the experience of care that women receive during their contact with the facility. While effective antenatal care in this respect is vital, this quality assessment tool has been designed to assess only care internal to a facility. However, late presentation (within one hour of delivery) is one indication of poor communication of health messages at contact opportunities with women during pregnancy; for example, at an antenatal visit or hospital admission for a complication in pregnancy. The criteria selected to assess the woman's experience of care includes indicators to measure the quality of information exchange, which can be fundamental to, among other things, ensuring patient compliance and other such outcome indicators.

*'During every health-care encounter, the culture of the patient, the culture of the provider and the culture of medicine converge to impact patterns of health utilization, compliance with recommended medical interventions, and health outcomes.... Increased sensitivity [in turn] can facilitate positive interactions with the health-care delivery system and optimal-health outcomes for the patient served, resulting in increased patient and provider satisfaction.'*
(American College of Obstetrics and Gynecology, Committee on Health-care for Underserved Women, 1998).

A woman's experience of care can be divided into four broad areas: her contact with and experience of human and physical resources; her 'cognition', that is, the level to which she understands what is happening to her and why; the respect, dignity and equity of care she receives throughout her experience of delivery care; and, finally, the emotional support she receives during her labour and beyond.

### 3.3.1 Human and physical resources

A woman's experience of care relates not only to the quality and appropriateness of the obstetric care she receives and her perception of the quality of that care, but also to her impression of the state of the infrastructure (the bed, sheets, food, toilets and so on). Her experience of care here refers also to her experience of actual contact time with qualified staff. This is distinct from her impression of how staff treated her during interaction (see section on respect, dignity and equity below). Are providers qualified to undertake the tasks they are responsible for, and is the time they spend with clients sufficient? For example, criteria here would help identify whether or not women are being left alone for extended periods, or whether unqualified personnel are undertaking certain duties that should be the responsibility of nurses or midwives.

In a study that examined the meaning of quality for women who received reproductive health services at a non-governmental family planning and maternal and infant care clinic in Santiago, Chile the clinic's cleanliness was regarded as a sign of respect for the client and its hygienic conditions relieved fears of infection (Vera, 1993). Women also referred to the quality of time and attention they received as an important element of overall quality. They described having to wait for hours and hours as characteristic of the government health services. In the clinic in question, women felt they were given the time to both talk and learn: '...they explain things'. For the women interviewed in this study a high quality of health services meant treatment that included the following elements: a clean, hygienic place, prompt service, accurate information, an opportunity to learn, and enough time to consult with staff and receive advice (Vera, 1993).

> **Criteria that may be selected as part of a quality assessment of this aspect of care include (see also Table 7 in the Appendix at the end of this chapter):**
>
> 1) The physical infrastructure and the overall environment of the maternity wards are acceptable to all/most women.
>
> 2) Contact time with qualified staff is sufficient.
>
> 3) Male/female staff ratios are acceptable to most women.
>
> 4) Staff are competent to provide appropriate care.

### 3.3.2 Cognition

One aspect of care that Donabedian (1988) drew attention to in his model was the interpersonal care. This consisted of communication between the client and provider for the purpose of both diagnosis and the determination of preferences for treatment. The relationship between these two parties should be characterised by 'privacy, confidentiality, informed choice, concern, empathy, honesty, tact and sensitivity'.

Cognition relates to two specific experiences of care:

1)      The extent to which a woman feels she understands what is going on and feels that her questions have been answered adequately.

2)      Whether she actually receives sufficient information in a form that she and her family can understand and that she has the right to know.

Cognition depends on what Bruce refers to as 'provider-client information exchange' (Bruce, 1990). How effective this information exchange is depends on having adequately trained and qualified staff and a positive client-provider interaction. An analysis of women's demand for services in South Asia identified this aspect of care as a crucial factor explaining women's use of medical services (Leslie and Gupta, 1989). Reasons that have been given for under-utilisation of available health services include poor relations between health-care providers and their clients (Jacobsen, 1991). Women often have questions that they hesitate to raise with the typical Western-trained or male provider, fearing that providers are too busy to attend to a

women's real concerns or that such questions would be considered stupid (Simmons and Elias, 1994; Lubis et al., 1992). The clients' view that providers might consider them stupid is often well-founded (Simmons and Elias, 1994).

Questions included in an exit interview or survey questionnaire format can address whether the woman was happy with the explanations she received, whether she understood what was going on, whether she was confused and ignored, and so on. Positive responses or not-negative responses, however, do not always equate to good quality care. There are other means of assessing whether or not she received adequate information in a specific circumstance. For example; if an infant dies within hours of birth and his/her mother is unable to give any explanation for the cause of death before being discharged, this is a strong indication that the standard of care she received (information exchange) fell below an acceptable standard.

Women interviewed by Campero et al. (1998) in a study examining the influence of support in labour in a social security hospital in Mexico made constant reference to the lack of information provided by the medical staff regarding their health and that of their babies, the hospital routines and medical interventions. The information that *was* provided was reported as having been delivered in an authoritarian and vertical manner such that the women did not have a chance to speak, let alone ask questions. It was reportedly taken for granted that the woman would accept whatever the doctor told her: *"We're going to examine you"*, *"We're going to remove the drip"* and so on (Campero et al., 1998, p. 398). With regard to the degree to which women received information about their own labour and delivery, this study found that it was often hard to know exactly what women had been told about a Caesarean section, for example. Even when the doctor gave the woman some information, almost no one in the study understood it, and the information was often inaccurate and confusing. Some women consequently felt guilty and thought that the indication for a Caesarean section was the consequence of their poor effort during labour (Campero et al., 1998). Likewise, with regard to episiotomies, lack of information resulted in some women perceiving it was their fault that the episiotomy had to be performed.

Whether or not a woman clearly understands what is happening, why, and any specific instructions will determine her subsequent behaviour. In maternity care, postpartum health is vital and it is essential that a woman returns for a postnatal check. She also needs to be aware of symptoms that may signal a complication postnatally, such as fever or foul-smelling discharge, and know what to do in the case of such a development. High quality provider-client information exchange is more than a nicety that may contribute to a 'positive experience': it is a medical necessity. It has been argued that the interpersonal process is the vehicle by which technical care is implemented and on which its success depends (Donabedian, 1966). It is the task of the provider to give the woman as much information and explanation as she desires and needs (WHO, 1996b).

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**Criteria that may be used to measure this aspect of care include (see also Table 8 in the Appendix at the end of this chapter):**

1) Necessary information is conveyed effectively in a language that is understandable to all women.

2) All women are fully prepared for treatment and understand their options. Where possible they experience real informed choice.

3) The reasons for a specific intervention or outcome are always clearly explained to all women

4) Information about postpartum care is effectively conveyed.

---

### 3.3.3 Respect, dignity and equity

Client-provider exchanges reflect and are shaped by what Simmons and Elias (1994) refer to as latent dimensions of programme-client interactions, which are relatively hidden but nonetheless powerful components of the interactions. Such components reflect the fundamental differences in the status, power and culture of participants in the encounter (Simmons and Elias, 1994). These interactions are rarely characterised

by supportive relationships, more often expressing dissonance, inherent conflict and social disparities (Simmons and Elias, 1994; Mernissi, 1975; Nichter, 1989; Scrimshaw, 1974; Misra et al., 1982).

There are numerous instances during labour and delivery where staff can fail to treat women with the respect and dignity they have the right to expect. This includes the observance of her privacy and dignity during physical examinations, late-stage labour and delivery. All women's privacy in the birthing setting should be respected (WHO 1996b). Insensitive treatment, poor standards of confidentiality, tactlessness and moral judgements by health providers are all elements of poor quality care documented by numerous studies as women's experience of care (Lasker, 1981; Finerman, 1983; Wedderburn and Moore, 1990). A study of public-health units in the Rakai district of Uganda found that some midwives were perceived as rude, proud, negligent and vulgar. Some young midwives were also said to abuse mothers if they had never attended antenatal care or if they had had many pregnancies. Campero et al. (1998) report that in Mexico, women's complaints about certain routine interventions such as vaginal examinations were expressed with a sense of shame: *"It's the first time anyone ever did that to me. It made me feel very strange [and] ashamed that everyone was seeing it, and that they were doing it in front of other people"*. Other complaints about vaginal examinations reported in this study concerned pain: *"Why are they so rough?", "Why don't they wait until the contraction is over?"* (Campero et al., 1998).

Modern medical facilities have a culture of their own that often clashes with the culture of the potential users (Finerman, 1983). An investigation in a village in Rajasthan produced anecdotal evidence from in-depth interviews that villagers were generally perceived as dirty and ignorant of modern ways in the government hospital. The woman and her attendants were found to feel uncomfortable in the hospital, and they reported feeling insulted and ignored. In the village the common image of a hospital delivery is one in which no attendants are allowed near the labouring woman

and she is made to lie on a table all by herself: *"Is this the way to treat a labouring woman?"* (Patel, 1991).

There are cultural practices that currently have no place in modern hospitals in the developing world but if recognised by institutions, assuming they did not interfere with the provision of high quality care, would greatly enhance women's experience of care and may even be beneficial. The squatting position for childbirth, traditional in many cultures, is known to promote the progress of labour more effectively than the supine position typically used in hospital settings (Rohde, 1995). The adoption of such a tradition by providers would have multiple advantages (with appropriate training of birth attendants). In addition, in many areas the placenta is considered to have enormous ritual significance and forms part of the celebration of the new life. In hospital settings, placentas are generally routinely disposed of and the family given no choice in what is done to this symbolic part of the newborn. Some hospitals in Cochambamba now provide the placenta to families on request (Rohde, 1995).

If a woman and her family are treated with disdain and disrespect, if she is ignored and subjected to unnecessary, uncomfortable and humiliating procedures, it would not be surprising that if given a choice she and her family subsequently chose to deliver at home or at an institution where she expected to receive higher quality care. Being treated like a person was the single most frequent theme in Vera's study of women's attitudes to quality of reproductive health services in Santiago. Other elements identified as important to quality by the women interviewed in this study included treatment as an equal in transactions and cordial, likeable, friendly staff (Vera, 1994).

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**Criteria that may be used to assess this aspect of care include (see also Table 9 in the Appendix at the end of this chapter):**

1) All facilities have an individual responsible for assessing socio-economic and cultural context of the catchment area and an effective mechanism for feeding relevant recommendations to providers.

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2) All women feel they have been treated with appropriate respect.

3) Women do not have to undergo any unnecessary and humiliating procedures.

4) Cultural practices that do not interfere with high quality care are respected.

5) All women are treated with the same standard of care regardless of education, class, caste and age.

6) Services are appropriately priced for the catchment and range of income levels.

### 3.3.4 Emotional support

Many factors in the birth environment can induce stress. The setting and many of the people in it may be strange to the labouring woman. Fear, pain and anxiety may be increased by a mechanised clinical environment and unknown attendants, with potentially adverse effects on the progress of labour. A hospital environment, where separation of family members and rigid protocols are enforced is one of the factors believed to cause the high intervention rates during labour that are seen in many industrialised societies.

There are numerous studies, that highlight the relationship between psycho-social support and the reduction of various types of medical interventions such as the use of forceps, analgesics and Caesarean sections (Sosa and Kennell, 1980; Klaus and Kennell, 1986; Keirse and Enkin, 1989; Kennell and Klaus, 1991).

The needs of a woman in labour are divided into three parts by Butani and Hodnett (1980). The first is the need to maintain her self-control, the second the need to live up to certain expectations and the third the need to preserve her self-esteem. In Mexico these needs were fulfilled by doulas (birth attendants) in a recent study that evaluated the effects of the provision of psycho-social support to first-time mothers during labour, childbirth and the immediate postpartum period in a social security hospital. Women were offered cognitive, emotional and physical support by a doula who helped the woman maintain a positive emotional state throughout labour and

childbirth (Campero et al.,1998). Supportive strategies identified and used in this study included the following:

*'Talking to the soon-to-be mother in an encouraging and soothing language; recognising the woman's labour efforts; ...maintaining constant eye contact; giving information about the progress of her labour; explaining in clear and understandable terms, the medical indications and procedures; answering questions; encouraging the woman to adopt the most comfortable positions possible; suggesting how to relax, breath and push when appropriate; giving massages; holding hands and gently caressing the woman; offering her the bedpan; and changing the bed clothes when necessary'* (Campero et al., 1998, p.397).

The findings were that those women supported by a doula had a more positive birth experience. It has also been shown that support during labour accelerates recovery, favours early bonding between mother and child, decreases anxiety and depression during the first six weeks postpartum and reduces the time spent in labour (Klaus and Kennell, 1992; Hofmeyr and Nikodem, 1991). In light of these findings, it is recommended that all women should have continual professional support in labour and the choice of social support during labour and birth (Hodnett, 1997).

Women who are given support in the form of receiving adequate information or encouragement are reported as feeling a greater sense of control over their labour. Control has been recognised as a key component in a labour process experienced as satisfactory. In addition while a woman expects to have some degree of control her primary satisfaction and self-esteem depend on whether she can achieve it (Campero et al., 1998; Butani and Hodnett, 1980; Kitzinger, 1990; Hillan, 1990). In addition to a woman's immediate experience of care and childbirth the influence of thoughts and feelings about her childbirth experience on later self-perception as women and mothers has been emphasised (Campero et al., 1998; Simkin, 1992; Konrad, 1987).

Emotional support in this context refers not only to a woman's access to her own social and emotional support but to emotional support given by members of staff. Professional birth attendants need to be familiar not only with their medical tasks but also with their supportive tasks, both of which they need to be able to perform with sensitivity and competence (WHO, 1996b)

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**Criteria that may be used to assess the quality of the experience of care in this respect include (see also Table 10 in the Appendix at the end of this chapter):**

1) Except in exceptional circumstances women are able to choose freely the social support they receive in labour and at delivery.

2) All women are treated with honesty, kindness and understanding.

3) In the event of a death or disability, appropriate levels of professional and emotional care are made available to women and their families.

4) All staff are aware of their supportive role in the provision of care during labour, delivery and the immediate postpartum period

5) An effective process exists in all units through which providers are able identify and respond to user expectations.

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### 3.4 Discussion

In this chapter experience and evidence from the extensive medical, health policy and social science literature has been drawn on to identify and describe key elements of quality of care in institutional maternity services. These elements are integrated into a flexible quality assessment framework specifically for use at the institutional level in developing countries. It divides quality into two elements that are conceptually distinct but closely related in practice: firstly into the provision of quality of care, and second into elements relating to clients' experience of that care. These two important aspects of quality of care in pregnancy and childbirth are intrinsic components of a basic reproductive rights approach. The benefits of improving quality of care to mothers at delivery are multiple. Not only could we expect to see an increase in timely and effective use of services and improved psycho-social and health outcomes

but improved quality has been shown to: curtail inappropriate use of limited resources, reduce the use of ineffective and harmful technologies, eliminate inefficiencies, optimise the use of existing inputs and promote following of correct procedures.

The development of the framework is itself a significant product of this research and an important contribution to the international maternal health community field of quality in the maternity services.

## 3.5    Use of the framework

The framework has two possible functions. The first is as a tool by which to help structure a situation analysis review of the quality of care provided at specific facilities, and experienced and perceived by its clients, actual and potential. The second is as a tool by which to improve the quality of care through the on-going critical examination of activities compared with an agreed standard. Where care falls short of agreed standards, a process can then be instigated to identify opportunities and attempt to implement change to bring practice closer to the standard (see conceptual overview, Chapter One). In this research project the framework is used as a tool by which to help structure a situation analysis of quality of services in urban Mumbai. The methods employed to undertake this situation analysis are described in the following chapter and critically examined in subsequent chapters.

Appendix to Chapter Three


Quality of care framework


Criteria

# Quality of Care Framework

# Provision of Care

## Table 1

## Human and Physical Resources

| Criteria | Standards | Suggested Basis for Indicators | Sources |
|---|---|---|---|
| The skill mix is **sufficient to cope** with the patient flow and case mix at the facility. | 'sufficient to cope' | • No. of qualified staff (experience, qualifications)<br>• Terms and conditions of staff (hours, income, conditions)<br>• Normal level of supervision<br>• Staff attitudes (morale, job satisfaction)<br>• Actual day-to-day staffing levels<br>• Staff turnover<br>• Staff training (quantity, content and attendance) | Facility records<br><br>Provider interviews<br><br>Observation |
| The maternity wards **are adequately** equipped to perform their function **effectively** and **consistent with internationally recognised good practice.** | 'adequately' 'effectively' 'consistent with internationally recognised good practice' | • Number of beds, blinds, toilets, handbasins etc per delivery<br>• Quantity of essential drugs by sell-by dates<br>• State of essential equipment<br>• Nature of sterilisation procedures<br>• Layout of wards<br>• Diagnostic and therapeutic capabilities | Provider interviews<br><br>Observation<br><br>Facility records |
| The operating theatre is in **good repair** and **fully equipped** with drugs and surgical equipment to perform life saving procedures when required. | 'good repair' 'fully equipped' | • Physical layout of operating theatre/location<br>• Quantity of essential surgical equipment<br>• State of repair of equipment<br>• Number and availability of qualified staff<br>• Access to blood stocks<br>• Quantity of essential medical supplies | Facility records<br>Provider interviews<br><br>Observation |
| The general infrastructure of the facility of **sufficient** size and state to cope with demand and essential support services are **reliable.** | 'sufficient' 'reliable' | • Structural features of physical infrastructure<br>• Identify essential support services (electricity, running water, transport)<br>• Reported reliability versus observed reliability<br>• Frequency of maintenance of physical assets, vehicles and equipment<br>• State of furniture, medical and office supplies, warehousing and storage conditions | Provider interviews<br><br>Observation<br><br>Facility records<br>Exit interviews |
| The organisational and management structure of the labour, delivery and postpartum suite ensures **most efficient use** of resources. | 'most efficient use' | • Nature of management capabilities<br>• Evidence of management plan<br>• Reported and observed administrative red tape<br>• Financial inputs<br>• Spending breakdown<br>• Use of wasteful technologies<br>• Over prescription or inappropriate use of drugs/interventions<br>• Financial capacity<br>• Transparency | Facility records<br><br>Provider interview<br><br>Observation |
| Staff should **always** be **adequately** protected from risks associated with their work. | 'always' 'adequately' | • A written policy on violence to staff<br>• Provision of security personnel where required<br>• The existence and application of policies and practices for minimising exposure to body fluids<br>• The existence and application of policies and practices for safe disposal of sharps<br>• The existence and application of policies for the management of needlestick injuries<br>• The provision of Hepatitis B vaccination (where affordable)<br>• Availability of HIV testing and post-exposure prophylaxis | Facility records<br><br>Provider interview<br><br>Observation |

| | | | |
|---|---|---|---|
| **Effective** systems for maintaining the quality of the human resource base should be in place at **all** facilities. | 'effective' 'all' | • Appropriate and fair systems of reward and promotion<br>• Listing of available training opportunities<br>• The provision of study leave<br>• The uptake of training courses<br>• Evidence of inservice training including skill certification or portfolios | Facility records<br><br>Provider Interview<br><br>Observation |
| All facilities should have a **clear** management structure and **clear** lines of accountability | 'all' 'clear' 'clear' | • Detailed job descriptions for all positions<br>• The existence and use of an organisational-structure chart<br>• Timeliness of salary payments<br>• Staff knowledge of their responsibilities and the responsibilities of other staff members<br>• Managers knowledge of their job descriptions and responsibilities | Facility Records<br>Provider Interview<br>Observation |

## Table 2

## Referral System

| Criteria | Standards | Indicators | Source |
|---|---|---|---|
| An admissions procedure which ensures the **timely** examination and referral of a woman presenting with a complication. | 'timely' | • Admissions procedure: theory and practice<br>• Referral procedure: theory and practice<br>• Specification of time limits<br>• Actual waiting times<br>• Level of coordination between levels of care<br>• Staff knowledge of referral procedure | Facility guidelines<br>Provider interviews<br>Observation<br>Exit interviews<br>Case notes |
| **Experienced** staff and **essential** drugs are **available** at **accessible hours** at referring facility to stabilise a woman before referral | 'experienced'<br>'essential'<br>'available'<br>'accessible hours' | • Staff complement: actual versus theoretical<br>• Availability of essential drugs on 24 hour basis: actual versus theoretical | Facility Records<br>Provider Interviews<br>Observation |
| **Reliable** transport is available on a **24 hour basis**. | 'reliable'<br>24 hour basis | • Availability of transport and driver: theoretical and actual<br>• Observed versus reported reliability<br>• Vehicle in working order (fuel, parts and regularly serviced)<br>• Average travel time from referral to arrival at referral facility | Facility Records<br>Provider interviews<br>Observation<br>Exit interviews |
| There is a **reliable, functioning** communication system to enable staff to communicate with the referral hospital of first choice to establish **availability** of **essential** staff and equipment. | 'reliable'<br>'functioning'<br><br>'available'<br>'essential' | • Primary means of communicating with referral facilities (eg. phone or radio)<br>• Observed versus experienced reliability (eg. ability to get an outside line in an emergency)<br>• Experienced efficiency of switchboard at referral hospital<br>• Average time taken to communicate with relevant health professional at referral centre<br>• Average non-travel time from referral to arrival at referral facility | Provider interviews<br><br>Observation<br><br>Exit interview<br><br>Case notes |
| There is a **qualified** member of staff **on call** to accompany complicated cases to the referral hospital when necessary. | 'qualified<br>'on call' | • Normal procedure (specify grade of staff usually accompanying referral)<br>• Observed/experienced procedure<br>• Actual versus theoretical availability of qualified staff<br>• Percentage of referred women accompanied | Facility guidelines<br>Provider interviews<br>Observation<br>Exit interview<br>Case notes |
| There are **always sufficient** stocks of **essential** drugs and equipment and **qualified** staff to stabilise referred women. | 'always'<br>'sufficient'<br>'essential'<br>'qualified' | • Quantity of essential drugs by sell by dates<br>• Normal staff configuration<br>• Number and state of repair of essential equipment | Facility Records<br>Provider interviews<br>Observation<br>Exit interview |

## Table 3

## Maternity Information Systems

| Criteria | Standard | Suggested Basis for Indicators | Source |
|---|---|---|---|
| Basic registers in facilities are designed to record data that is **sufficient** to monitor and evaluate activities **effectively.** | 'sufficient' 'effectively' | • Nature of existing proformas normally completed by facility staff from admission to discharge<br>• Space available on existing proformas to record information on nature of complication and treatment | Facility Records |
| Current procedures for recording information result in **complete** and **accurate** data entry. | 'complete and accurate' | • Completeness of past proformas<br>• Legibility of past records (case notes, admissions registers and so on)<br>• Accuracy and consistency of past records<br>• Nature of supervisory mechanism in place | Facility Records<br>Case notes<br>Exit Interviews<br>Observation |
| A review process is in place to ensure data is **comprehensive** and used **effectively** to improve patient management and service delivery. | 'comprehensive' 'effectively' | • Nature of review process, official and actual<br>• Frequency of data analysis<br>• Frequency and content of reporting procedures<br>• Examples from staff of use of data to improve practice<br>• Examples of changes in procedures/supplies following review of records<br>• % of staff who report having received training in information collection and use<br>• Number and type of training devoted to maternity information system, past and planned | Provider interviews<br>Facility Records<br>Observation |
| Each complicated case (severe morbidity or mortality, maternal or infant) is **effectively** reviewed, analysed and **avoidable** factors identified. | 'effectively' 'avoidable' | • Facility procedures in the event of death or severe morbidity<br>• Observed investigation procedure<br>• Examples by staff of lessons learned from past poor outcomes<br>• Public access to records | Provider interviews<br>Facility Records<br>Case Notes |

## Table 4

## Appropriate Technologies

| Criteria | Standard | Indicators | Source |
|---|---|---|---|
| The following procedures are **not used** either **routinely**, or **most of the time**.<br>• Pubic Shaving<br>• Enema<br>• Intravenous Infusion<br>• Episiotomy for Primiparas<br>• Supine Position for Delivery<br>• Manual Revision of the Uterus | 'not used'<br>'routinely'<br>'most of the time' | • Recommended use in hospital guidelines<br>• Reported use by staff<br>• % of women reporting use of procedure in labour<br>• Recorded use | Facility Records<br>Provider Interviews<br>Exit interviews<br>Case Notes<br>Survey |
| The use of vaginal examination of the uterus to assess the progress of labour is kept to the **minimum necessary**. | 'minimum necessary' | • Reported use by staff<br>• Average actual use from time between arrival at hospital and delivery: observed and reported | Provider interview<br>Exit interviews<br>Case Notes |
| Intramuscular oxytocin is **not used** to speed up labour | 'not used' | • Examine records of supplies and use of ergometrine and oxytocin<br>• Evidence of reported use by staff<br>• Evidence of actual use (reported by women, recorded in case notes and observed)<br>• Does facility have capacity to perform C-sections at anytime | Facility Records<br>Provider interviews<br>Case Notes<br>Exit Interviews<br>Observation |
| The use of caesarean section falls within **reasonable limits**. | 'reasonable limits' | • The C-section rate<br>• C-section rate by recorded indication | Facility Records and Statistics<br>Case notes |
| **Effective** pain relief is **always** provided for operative procedures. | 'effective'<br>'always' | • Percentage of women reporting feeling pain during an operative procedure<br>• Type of pain relief routinely provided for operative procedures<br>• Number and availability of personnel trained to administer relevant pain relief<br>• Supplies of basic drugs and equipment | Facility Records and Statistics<br>Case notes<br>Provider interviews<br>Exit Interviews<br>Survey |

# Table 5

## Indicators of Good Practice

| Criteria* | Standard | Suggested basis for Indicators | Source |
|---|---|---|---|
| Magnesium Sulphate is the drug of **first choice** for the treatment of eclampsia. | 'first choice' | • Identify drug of first choice as reported by staff<br>• Evidence of use from stocks, supplies, case notes<br>• Identify type and comparative use of alternatives | Facility Records<br>Provider Interviews<br>Case Notes |
| Women are **actively** considered for a vaginal delivery after one caesarean section. | 'actively' | • Facility protocol/recommendations<br>• Staff responses to normal procedure for previous c-section<br>• Evidence of practice (percentage of women with previous c-section going on to have a subsequent caesarean delivery)<br>• Evidence that women are actively given the opportunity to deliver vaginally (unless otherwise indicated) | Facility Records<br>and Statistics<br>Provider interviews<br>Exit Interviews<br>Case Notes<br>Observation |
| Prophylactic antibiotics are used **routinely** at the time of an emergency caesarean section. | 'routinely' | • Facility guidelines<br>• Reported normal use of antibiotics at the time of an emergency C-section by staff<br>• Actual use (% of women with emergency C-section who are given antibiotics around time of operation | Facility Records<br>Provider Interviews<br>Exit Interviews<br>Case Notes |
| Ventouse delivery is the instrument of **first choice** for an instrumental delivery. | 'first choice' | • Facility guidelines<br>• Instrument of first choice as reported by staff<br>• Evidence of comparative use from facility records (number of forceps delivery vs venteuse)<br>• Evidence of actual use | Facility Records<br>and Statistics<br>Provider Interviews<br>Case Notes |
| When repairing perineal wounds polyglycolic acid suture should be the favoured option. | 'favoured option' | • Suture material most commonly used as reported by staff<br>• Evidence of supplies and use of all suture materials | Facility Records<br>Provider Interviews |
| For a non-complicated delivery women are **always** allowed to adopt whatever position they choose for delivery. | 'always' | • Normal practice as reported by staff<br>• Evidence of actual delivery positions (percentage delivered in supine position, percentage standing, squatting other)<br>• Percentage of women reporting choosing of delivery position of her choice | Provider Interviews<br>Exit Interviews<br>Surveys |
| Women are **always** allowed social support of her choice during labour and birth. | 'always' | • Facility guidelines<br>• Normal practice as reported by staff<br>• Percentage of women who report being accompanied in labour and delivery by person of her choice<br>• Observed practice | Facility Guidelines<br>Observation<br>Provider Interviews<br>Exit Interviews |
| Throughout labour a woman's physical well being should be **regularly** assessed. | 'regularly' | • Number and timing of BP measures<br>• Number and timing of temperature and pulse measurements<br>• Quantity of fluid intake vs urine output noted | Labour Notes<br>Provider Interviews<br>Exit Interviews<br>Observation<br>Surveys |

* Selected '*Effective Procedures in Maternity Care Suitable for Audit*' - Adapted from Benbow et al. 1997 and WHO 1994 *Mother and Baby Package*

# Table 6

## Management of Emergencies

| Criteria* | Standard | Suggested Basis for Indicators | Source |
|---|---|---|---|
| Sufficient stocks of oxytocics should be available at all facilities and relevant health staff should be effectively trained to administer them by injection as a first aid measure for postpartum haemorrhage. | 'sufficient' 'all' 'relevant' 'effectively' | • Number of units of oxytocics in store within expiry date<br>• Number and timing of staff training courses in administration of oxytocics per individual staff post in past two years/five years<br>• Percentage of deliveries in which oxytocics were administered<br>• Refrigerator working and system for dealing with power cuts in place<br>• Case fatality rate for haemorrhage over time | Facility Records and Statistics Provider Interviews Labour Notes Observation |
| Health workers of an appropriate level should be effectively trained in clinical skills to manage ante and postpartum haemorrhage | 'appropriate level' 'effectively' | • Number and timing of staff training courses dedicated to management of haemorrhage per individual staff post in past two/five years<br>• Recall by staff of key procedures<br>• Evidence of major haemorrhage protocol in the unit<br>• Case fatality rate for haemorrhage over time | Facility Records and Statistics Provider Interviews Labour Notes Observation |
| IV fluids should be available at all facilities and blood transfusion services should be available at Comprehensive Essential Obstetric Care (CEOC) facilities on a 24 hour basis | 'all' 'available' '24 hour' | • Number of units of IV fluids in store within expiry date<br>• Availability of blood supplies (by time of day, type, cost, distance)<br>• Availability of staff trained to administer blood transfusion (by time of day) | Facility Records and Statistics Provider Interviews Observation |
| The partograph should be used effectively to assess progress of labour where staff with appropriate skills are available. | 'effectively' 'appropriate' | • Number of labours whose progress was assessed by partograph<br>• Number of staff trained to use partograph<br>• Number of labours assessed by partograph as prolonged by subsequent interventions | Facility Records and Statistics Labour Notes Provider Interviews Observation |
| The appropriate range of services required to manage prolonged/obstructed labour should be available at reasonable hours at each stage of the referral chain. | 'appropriate' 'available' 'reasonable' | • Evidence that first level health centres have facilities and trained staff to: empty bladders; give antibiotics; rehydrate and refer women<br>• Evidence that second level health centres have facilities and trained staff to rupture membranes if required and perform a vacuum extractor delivery.<br>• Evidence that CEOC hospitals have trained staff, essential drugs and equipment to perform additional interventions, such as oxytocics, antibiotic and the capacity to perform caesarean-section on a 24-hour basis.<br>• Percentage of women referred from first level health centre who go on to have instrumental delivery or caesarean section<br>• Case fatality rates for obstructed labour over time<br>• Perinatal death rates attributed to birth asphyxia over time | Facility Records and Statistics Case Notes Exit Interviews Provider Interviews Observation |
| All birth attendants should be aware of the requirements for a clean delivery and follow them effectively. | 'all' 'aware' 'effectively' | • Observance of asepsis at all times<br>• Hands always cleaned before and after any contact with woman<br>• Delivery surface sterilisation procedure<br>• Sterilisation procedure for instruments | Facility Records and Statistics Provider interviews Exit Interviews Observation |
| Health staff should be effectively trained to recognise puerperal sepsis and manage it appropriately or refer. | 'effectively' 'appropriately' | • Percentage of staff who have attended specific training in puerperal sepsis<br>• Percentage of staff who can accurately describe the signs, symptoms and treatment of puerperal sepsis.<br>• Case fatality rate for puerperal sepsis | Facility Records and Statistics Provider interviews Observation |

| | | | |
|---|---|---|---|
| All facilities should be able to provide the **necessary** treatment for puerperal sepsis. | 'All' 'necessary' | • Availability of thermometers and antibiotics per facility | Facility Records and Statistics Provider interviews Observation |
| Health staff should be **effectively trained** to manage and/or refer women with pregnancy induced hypertension. | 'effectively trained' | • Percentage of staff who have attended specific training in recognition and management of pregnancy induced hypertension within past two/five years<br>• Percentage of staff able to accurately recount signs, symptoms and course of action<br>• Case fatality rate for pre-eclampsia and eclampsia | Facility Records and Statistics Provider interviews Observation Labour Notes |
| The **full range** of services **required to manage** severe pre-eclampsia and eclampsia should be available at Comprehensive EOC facilities | 'full range' 'required to manage' | • Sphygmomanometers, stethoscopes and urine testing reagents readily available<br>• Magnesium sulphate, intravenous and oral anti-hypertensive agents available in store within expiry date<br>• Capacity to undertake emergency C-section (availability of staff/equipment)<br>• Access to laboratory services for haematology and biochemistry | Facility Records and Statistics Provider interviews Observation |
| Health workers should be **effectively trained** in the early recognition and treatment of abortion related complications. | 'effectively trained' | • Percentage of staff who have attended specific training in recognition and treatment of abortion related complications within past two/five years<br>• Percentage of staff who can recount signs and symptoms of abortion related complications and appropriate course of action | Facility Records and Statistics Provider Interviews Observation |
| Evacuation of the uterine contents, antibiotic therapy and IV fluids should **be available at all facilities** and surgical treatment at **all CEOC hospitals**. | 'be available at all facilities' 'all CEOC hospitals' | • Availability of antibiotic therapy, IV fluids and skills and equipment to evacuate uterine contents | Facility Records an Statistics Provider Interviews Observation |
| Treatment should **always** be followed by **appropriate** counselling and contraception information and services. | 'always' 'appropriate' | • Percentage of women who received counselling after an abortion<br>• Percentage of women who received contraceptive information and services after an abortion<br>• Percentage of staff trained in counselling | Facility Records Provider Interviews Exit Interviews Observation Survey |

*Adapted from the WHO Mother and Baby Package: Implementing Safe Motherhood in Countries 1994.

# Experience of Care

## Table 7

### Human and Physical Resources

| Criteria | Standards | Suggested basis for Indicators | Source |
|---|---|---|---|
| The physical infrastructure and the overall environment of the maternity wards are **acceptable to all/most** women. | 'acceptable to all/most' | • Percentage of women who report they are satisfied with the state of infrastructure and wards (buildings, bed, sheets)<br>• Percentage of women who perceive toilets and washing facilities to be accessible and clean<br>• Perceived quality and acceptability of food and drink<br>• Reported reliability of running water and electricity | Exit interviews<br>Focus groups<br>In-depth interviews<br>Community survey |
| Contact time with **qualified** staff is **sufficient**. | 'qualified' 'sufficient' | • Percentage of women who report contact time with staff as sufficient (per contact)<br>• Percentage of women reporting being alone at a time when it worried her to be alone<br>• Percentage of specific procedures reported as being carried out by grade of staff<br>• Average staff of all grades per delivery and per complication | Facility records and statistics<br>Observation<br>Exit interviews<br>Case Notes<br>Focus Groups<br>In-depth Interviews<br>Survey |
| Male/female staff ratios are **acceptable** to **most** women. | 'acceptable' 'most' | • Percentage of female doctors<br>• Percentage of women reporting feeling embarrassed, shy or uncomfortable with staff of opposite sex | Facility Records<br>Exit Interviews<br>Focus Groups<br>In-depth interviews<br>Survey |
| Staff are **competent** to provide appropriate care | 'competent' | • Level of staff knowledge about a specific disease/complication and its appropriate treatment<br>• Effective supervision<br>• Qualifications and experience of staff as per responsibilities<br>• Performance review, training and staff development in place<br>• Training record | Facility Records<br>Provider interviews<br>Observation<br>Case Notes<br>Exit Interviews |

# Table 8

## Cognition

| Criteria | Standards | Indicators | Source |
|---|---|---|---|
| Necessary information is conveyed **effectively** in a language that is **understandable to all** women. | 'necessary' 'effectively' 'understandable to all' | • Percentage of women who had full medical and birth history taken<br>• Percentage of women who are explained and understand a diagnosis<br>• Percentage of staff speaking local dialects<br>• Percentage of women able to give accurate information about contraindications or side effects of certain interventions or procedures<br>• Percentage of women who report that their questions were answered in a language they were able to understand | Observation<br>Exit Interviews<br>Facility Records<br>Case Notes<br>Survey |
| All women are **fully prepared** for treatment and understand their options. **Where possible** they experience **real informed choice**. | 'fully prepared' 'where possible' 'real choice' | • Percentage of women who knew they were going to have an episiotomy before they had one<br>• Percentage of women who have had a caesarean and who report being explained the reason for the operation and what the operation would involve<br>• Percentage of women who report delivering in a position of her choice<br>• Percentage of women who report the presence of at least one birth supporter of her choice | Exit Interviews<br>Observation<br>Focus Groups<br>In-depth interviews<br>Survey |
| The reasons for a specific intervention or outcome are **always clearly** explained to **all** women | 'always' 'clearly' 'all' | • Percentage of women who are able to explain why they had a specific procedure or intervention<br>• Percentage of women who report having been explained reasons for a poor outcome<br>• Percentage of women who understand probable reason for poor outcome | Exit Interviews<br>Provider Interviews<br>Observation<br>In-depth interviews<br>Survey |
| Information about post-partum care **effectively** conveyed. | 'effectively' | • Percentage of women complying with treatment and returning for post natal appointments<br>• Percentage of women who know how to care for perineal wounds correctly<br>• Percentage of women at time of discharge who can name symptoms that may indicate a post-natal complication | Facility Records<br>Exit Interviews<br>Survey |

# Table 9

## Respect, Dignity and Equity

| Criteria | Standards | Indicators | Source |
|---|---|---|---|
| All facilities have an individual responsible for assessing socio-economic and cultural context of the catchment area and an **effective mechanism** for feeding relevant recommendations to providers | 'all' 'effective mechanism' 'relevant' | • Appointment of staff member responsible for research<br>• Evidence of remit, resources and methods of staff responsible<br>• Evidence of change in practice following recommendations (eg. Specific examples) | Facility Records<br>Provider interviews<br>Observation |
| All women feel they have been treated with **appropriate** respect | 'appropriate' | • Percentage of women who report respectful or not disrespectful treatment<br>• Nature of observed interactions | Exit Interviews<br>Observation<br>Focus Groups |
| Women **do not** have to undergo any unnecessary and humiliating procedures | 'do not' | • Percentage of women undergoing unnecessary procedures<br>• Percentage of women who report undergoing procedures that they felt were uncomfortable and/or humiliating | Case notes<br>Exit interviews<br>Observation<br>Focus Group<br>In-depth Interviews<br>Survey |
| Cultural practices that **do not** interfere with high quality care are **respected**. | 'do not' 'respected' | • Reported use or non use of practices identified as culturally offensive to women and their families or practices that they would have wanted to happen and were denied | Facility Records<br>Observation<br>Exit Interviews<br>Focus Groups<br>In-depth interviews |
| All women are treated with the **same standard** of care regardless of education, class, caste, age etc | 'all' 'same standard' | • Comparison of responses to other quality indicators by socio-economic/religious/caste status | Case Notes<br>Exit Interviews<br>Survey<br>Comparative analysis of other quality indicators |
| Services are **appropriately** priced for the catchment | 'appropriately' | • Cost of specific services as a percentage of monthly income<br>• Percentage of women reporting financial constraints as limiting access to services | Facility Records<br>Provider Interviews<br>Exit interviews<br>Surveys<br>Focus Groups<br>In-depth Interviews |

# Table 10

## Emotional Support

| Indicators | Standards | Indicators | Sources |
|---|---|---|---|
| Except in **exceptional circumstances** women are able to choose **freely** the social support they receive in labour and at delivery | 'exceptional circumstances' 'freely' | • Percentage of women reporting companionship of her choice in labour and delivery<br>• Hospital policy on social support in labour<br>• Observed practice | Exit Interviev Facility Reco Provider Interview Observation Survey |
| All women are treated with **honesty, kindness** and **understanding**. | 'all' 'honesty, kindness, understanding' | • Percentage of women reporting unauthorised payments to staff for services<br>• Percentage of women reporting being satisfied with inter-personal care<br>• Percentage of women who report examples of poor interpersonal care<br>• Document examples of poor interpersonal care reported by women/families | Exit interviev Observation Focus Group: In-depth interviews Survey |
| In the event of a death or disability **appropriate levels** of professional and emotional care are made available to women and their families. | 'appropriate levels' | • Percentage of staff trained in bereavement counselling<br>• Percentage of women satisfied with post-natal care in event of death or disability<br>• Percentage of women/families who feel that they understand the reasons for a death or disability before discharge compared with recorded causes of death | Facility Reco Case Notes Exit Interviev Provider Interviews Observation Survey |
| All staff are aware of their supportive role in the provision of care during labour, delivery and immediate postpartum period | 'all' | • Percentage of staff who include supportive role in description of responsibilities<br>• Percentage of women who describe examples of supportive behaviour of staff during labour, delivery and immediate post-partum period | Facility Reco Provider Interviews Exit Interviev In-depth interviews Survey |
| An **effective** process exists in all units through which providers are able identify and respond to user expectations. | 'effective' | • Number and grade of staff responsible for investigating users-views<br>• Examples of changes made following process to obtain users views<br>• Evidence of a complaints procedure (theoretical vs observed) | Facility Reco Provider Interviews Exit Interviev Observation Survey |

# Chapter Four

## 4.1    Research Methods

Chapter Three described the principal elements of quality of care in institutional maternity services and developed a framework for the measurement of both the provision and the experience of quality. This framework provides a background and broad structure under which a situation analysis of quality of care can be undertaken. In this chapter the methods employed to do undertake a situation analysis in the city of Mumbai are presented.

The objectives of the data collection exercise were to:

a)  collect data that could be used to describe the quality and content of maternity services provided by both public and private organisations in Mumbai.

b)  collect data that could be used to describe the quality of the experience of care of users and non-users of maternity services in Mumbai

c)  draw out lessons learnt in the application of these methods for the purpose of obtaining quality related data to inform future studies and situation analyses within institutional maternity services

There were two target populations in the situation analysis of Mumbai. Firstly there were all women from six slum pockets within the eastern slums of Mumbai who had recently delivered a baby, and second, there were the providers of institutional maternity services (public and private) located in or near the study area, and used by the local population. A variety of methods were employed, provider-based and community based, over the period of one year (Jan 1999-December 1999). These methods included; a community survey of 650 women from the six slum pockets; exit interviews of 70 recently delivered women from the three main public hospitals in the area; a review of hospital labour ward records from four public hospitals in the area and two private hospitals; provider-interviews; observation; the application of a quality schedule to assess aspects of quality at the three main public hospitals; and finally a mystery client approach was employed at 10 private hospitals in the

same catchment area. Table 1 summarises these methods which are described in more detail below.

**Table 1: Summary of the primary methods employed, the key source of data, the number of institutions at which each method was employed, by type, and the number of individuals interviewed by method.**

| Method | Key source of data: provider, user or researcher | Number of public hospitals | Number of private hospitals | Number of individuals interviewed |
|---|---|---|---|---|
| Community survey | User | N/A | N/A | 650 |
| Exit interviews | User | 3 | 0 | 70 |
| Review of case notes (antenatal and labour ward notes) | Provider | 3 | 0 | 70 |
| Provider interviews | Provider | 3 | 0 | 14 |
| Quality schedule* | Provider | 4 | 1 | 14 |
| Observation | Researcher | 3 | 0 | 0 |
| Hospital records | Provider | 4 | 2 | 0 |
| Mystery client | User and provider | 0 | 8 | 12** |

* Medical directors at 2 private hospitals, and a senior house officer at one public hospital completed the quality schedule independently

** The mystery client researcher interviewed a minimum of one person at each private establishment and in some cases more

The outcome sought from the application of these methods was a range of data on the quality of maternity services in the case study area. The methods were designed

to capture data that would enable an assessment of nine out of the ten elements of care described in the previous chapter (element six, management of emergencies is not included). This data is then used to inform the situation analysis of the quality of maternity care at institutions within the case study area using the quality framework as a broad structure. The criteria identified in the framework developed for this study were used to inform the design of the data collection methods described in detail below. There was no attempt to assess the quality of element six (the management of emergencies) because this was considered to require specialist clinical skills and would have required timely and resource intensive research methods not possible in a study of this magnitude. In addition, the application of the methods to obtain quality related dated was used as a learning exercise and the principal lessons and recommendations are documented later in this thesis (Chapter Ten).

As discussed in Chapter One this research formed part of a wider Wellcome Trust funded research project: 'Pregnancy and Childbirth in Urban Slums' (Matthews et. al. 2000). This clarifies the relative roles of the author and the other researchers associated with the wider research project in the design and application of the above methods. Essentially the community survey was a collaborative process but I took the lead on the modules key to this thesis. I was also responsible for the design and organisation of all the other methods summarised in Table 1.

## 4.2. 'Good Science'

The decision to use multiple research methods is based on the recognition that in order to obtain reliable and accurate information it is necessary to merge two or more research methodologies in the same study (Warwick 1983). Bennett and Thaisis (1967, p.307, cited in Warwick 1983) reached this conclusion following a review on survey research and socio-cultural anthropology:

*'The human reality must be apprehended by a variety of viewpoints, not by one alone, because this very reality is always in part a construct, always in part an image, and only by encouraging difference in perspective and approach can one obtain the needed richness of imagery, and consequently theory.'*

Quality of care cannot be understood in isolation. The impact of quality on behaviour varies depending, for example, on resource distribution - a poor woman has less choice than a rich one. It is important therefore to examine all the determinants of health seeking to be able to isolate the relative impact of each. For this reason, in order to achieve the stated aims of this thesis a combination of methods has been employed to enable triangulation. Triangulation allows illumination from multiple standpoints. It makes use of a combination of methods, investigations and perspectives. This facilitates richer and potentially more valid interpretations. Expanding the range of data sources, in addition, enables the researcher to obtain information that is not available from a single method. Explanation from a variety of sources using an appropriate combination of methods increases confidence that it is not some peculiarity of source or method that has produced the findings (Banister et al. 1994). In this study one of the most important benefits of using overlapping methods was to verify the validity of data from the various sources, and show whether data from one source was reliable.

## 4.3    Methods

### 4.3.1   Community survey

One of the core research methods in this study was a large community survey. A community based survey provides the opportunity to ask respondents who delivered in an institution specific questions about their care and experience during labour and delivery in the privacy of their own homes. At the same time it is possible to identify respondents who did not deliver in an institution and probe the reasons for this. Six hundred and fifty women from six slum pockets within the eastern suburbs responded to six questionnaire modules about all aspects of pregnancy, delivery and post-partum care.

The target population for the community survey was *women who had delivered a baby within eight months of the interview date*, but who had not delivered within six weeks prior to the survey. This was to avoid the under-representation of those women who gave birth in their natal homes, and who had not yet returned to their normal residence. A recall period of eight months was considered to be a short enough period to ensure reasonably accurate service and morbidity histories. The

omission of currently pregnant women allowed a comparison of pregnancy experiences to be made without the complication of surveying women at different stages of pregnancy. It was thus possible to focus on women's health-seeking behaviour at delivery as well as in pregnancy.

Six slum pockets were selected and the households inside these pockets mapped. The pockets (see map three) were Lakshmi Nagar, Guatem Nagar, New Bharat Nagar, Nagababa Nagar, Om Ganesh Nagar and Shahji Nagar. These are all located within Ward M (E) of the Eastern Suburbs. They were selected by the collaborating organisation in Mumbai, The Centre for Social and Technological Change (CSTC). This local non-governmental research organisation also conducted the survey. It has considerable experience of undertaking research in reproductive health, and related areas within the slums of the eastern suburbs. The selection of the slum pockets is discussed in more detail below.

A basic census of each slum pocket was taken via house to house visits which were co-ordinated within the chosen pockets, by ten interviewers in order to locate and contact *all* women within the pockets who fitted the selection criteria. The interviewers themselves had close links within the community. They were all community health workers (CHW) who had a detailed knowledge of the localities, both through their previous involvement in the surveillance of young children, and as they were themselves residents of the pocket for which they had responsibility. Once target households had been identified women who agreed to take part in the survey were later interviewed over an extended period. All but two eligible women completed the survey. Both moved away from the area at some point between the initial census and the completion of the final questionnaire module.

### 4.3.1.1    The questionnaire schedule

The survey questionnaire was made up of six questionnaire modules. Women respondents were interviewed at least twice (the first time to complete modules 1-3 and the second for modules 4-6). The lives of the respondents are demanding and they generally did not have the time to complete the modules in one sitting. The interviewers therefore sometimes returned various times until the modules had been completed. The survey ran from January - October 1999.

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## 4.3.1.2 Selection of slum pockets

The rationale for not undertaking a random selection of slum pockets lay in the importance of balancing the need for a representative sample with that of ensuring that the quality of the survey was optimal. The slum pockets selected were considered to share key characteristics with other slum pockets within the eastern suburbs. For example, the pockets in these relatively well established slums all have broadly similar access to public and private services, water, electricity and other such facilities. The individuals employed to conduct the survey were local women, known and accepted within their own communities. The quality of the interviewing and therefore responses was considered very high. Many of the topics included in the questionnaire related to issues that were particularly sensitive and that in other circumstances may have engendered hostility and non co-operation.

## 4.3.1.3 Objectives of the survey

The main objective of the survey was to collect community based information from recently delivered women about their pregnancy and labour and their experience of care at maternity facilities. If they delivered at home, the survey obtained information about the decision making process that influenced the choice of provider and the socio-economic determinants of this. The data from the survey was the main source of data from women about their experience of care and included information about women's experience at both public and private institutions as well as the above mentioned home deliveries. The objective was to use this survey data to describe the elements of care identified in the framework as part of the situation analysis of quality. As the interviews were conducted at the homes of the respondents a more complete evaluation of actual care was possible than would have been possible using only provider based methods and interviews conducted within the hospital environment.

## 4.3.1.4 Questionnaire design – Key texts

A number of sources and local knowledge were drawn on in the development of the first draft of the questionnaire. The modules were then piloted, cognitively tested, revised and finally conducted. A key text in the questionnaire design process was a publication by Graham et al. (1994) *'Asking Questions about Reproductive Health in Community Based Surveys'*. This publication draws on the experience of a large

number of researchers and organisations brought together in an expert panel in 1994. An additional text of particular use in the design of questions aimed at collecting data on women's experience of maternity care was a manual produced by the Social Survey Division of the UK Office of Population Censuses and Surveys, Social Survey Division; *'Women's Experience of Maternity Care – a Survey Manual'*. While this manual is designed for use in UK maternity facilities it does offer a selection of questions that can be easily transferred and adapted in the assessment of respondent's experience of care in Mumbai. In addition, recommendations from a variety of expert panels were key to the design of the questionnaires (particularly the delivery module). These included: The WHO Safe Motherhood Publication Series and the British Royal College of Obstetricians and Gynaecologists Clinical Audit Unit, Effective Procedures in Maternity Care Suitable for Audit (Benbow et al. 1997).

In addition, safe pregnancy indicators developed by the Evaluation Project based at the Carolina Population Centre, the University of North Carolina, were drawn on to help design questions that would enable the construction of relevant indicators to enable an informed assessment of a woman's experience of procedures in maternity care (Koblinsky et. at.,1995). Finally, the questionnaire for the National Family Health Survey for Maharashtra (IIPS and ORC Macro,1992-93) was examined. Where appropriate the wording of certain questions was maintained, for use in the study survey, to facilitate comparison.

### 4.3.1.4 The modules

Six modules were designed in total, in addition there was a top-sheet and a household roster, which asked respondents about other members of their household[1]. Module One collected information on socio-economic background, Module Two was devoted to pregnancy history, Module Three to antenatal care and

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[1] The overall content and format of the questionnaire modules was determined collaboratively by the CSTC and researchers at the University of Southampton, but I took the lead on Module 4 (the delivery module) and contributed heavily to the content and format of Modules 2, 3, and 5: the pregnancy history module, the antenatal care module and the post-partum care module (see Appendix One).

planning for delivery, Module Four to experience of labour and delivery, Module Five to the post partum period and Module Six to autonomy. Autonomy was left until last due to the sensitive nature of certain topics included in this questionnaire schedule. The majority of questions within the modules were closed. See Appendix One for a copy of the questionnaire schedules, the top-sheet and the household roster.

### 4.3.1.5 Cognitive testing

An important stage in the development of the questionnaire modules, prior to the piloting of the survey, was the use of cognitive testing. Cognitive interviewing is a diagnostic tool used to both identify flawed questions and improve the wording and layout of the interview schedule (Campanelli 1997, Gerber and Wellens 1997). The method is qualitative in nature and in this instance involved a mixture of the 'think aloud' technique and the 'probing technique'. The former approach enables a respondent to think aloud (either concurrently with the asking of a question and/or retrospectively) thoughts that come to mind when asked a question. This approach establishes what they understood the question to mean and what thoughts went through their minds when they answered it. Retrospective think aloud enables the researcher to ascertain a respondent's impression not only of specific questions but of aspects relating to the organisation of the module as a whole (length, positioning of questions and so forth). Probing in this instance was more useful at the earlier stage of questionnaire design, specifically where the wording of a particular question, without rigorous testing, could have been easily misunderstood (Campanelli, 1997).

For example, in the delivery module we were interested in establishing the length of time a woman stayed at home before making her way to the hospital following the onset of labour. We were, however, less concerned with any medically agreed definition of the onset of labour, and more interested in the point at which the woman herself felt she was in labour. The wording of this question, following cognitive testing was established as: *'How long was it from the time you thought you were in labour to the time you left to go to the hospital?'* Rather than its initial wording of; *'How long was it from the time you went into labour to the time you left to go to the hospital?'*

### 4.3.1.6 Data collection and input

Once the modules had been translated, tested rigorously and amended they were piloted on the women investigators to make final amendments, such as, appropriately revising the coding.

From the start of the survey interview schedules were reviewed at the end of each day. Missing entries and other queries were noted and then followed up at a subsequent visit, until the schedule was approved by the survey co-ordinator. Data was then input into an SPSS spreadsheet by a research assistant for the CSTC. Ten percent of schedules were quality tested to ensure that the accuracy of the data entry was maintained.

### 4.3.2 Exit interviews

Exit interviews were conducted in order to obtain information from women directly, soon after delivery, about their experience of labour and delivery at a particular institution. Asking women directly about the process of care that they experienced and their views about the care they received can provide important quality-related data relevant to a situation analysis of this kind.

Seventy women who delivered over a three week period, in the three of the case study public hospitals (Chembur Maternity Home, Shtabdi General Hospital and Rajawadi General Hospital), were interviewed prior to being discharged. Each hospital was taken in turn and all women who were discharged on six consecutive days were interviewed on the day of their discharge. Normal procedure in these hospitals was that the senior registrar, along with staff nurses on duty, would do their rounds in the morning and decide which women were ready to be discharged. A discharge card was then completed for each woman. This was then attached to her case notes (ante-natal, labour notes and post-natal notes). Women selected for discharge were allowed to go home after four o'clock in the afternoon of that day. Interviews were therefore conducted between the completion of the discharge card, sometime in the morning and four o'clock in the afternoon. Interviews were designed to last for no longer than half an hour. A member of hospital staff (not from the labour wards) assisted with translation for the interviews. While it would

have been ideal to introduce an independent translator, this was not possible. The municipal authority only gave permission for the principal researcher to be present. Certain questions relating to a woman's experience of care were therefore not appropriate in this setting and were unlikely to provide meaningful data because of courtesy bias.

The interview consisted of two questionnaire modules drawn from, but not identical to the community survey. The first module was devoted to a woman's pregnancy history, and her experience of labour, delivery and the immediate post-natal period. The second module was devoted to the woman's socio-economic, bio-demographic status as well as her autonomy. See Appendix One for a copy of the questionnaire modules used for the exit interviews.

### 4.3.3 Case notes

Case notes for women interviewed were studied in advance of, and again in conjunction with individual exit interviews. Case notes here consisted of antenatal cards, labour and post-natal notes and the discharge card. Antenatal cards usually detailed the timing of all ANC visits, haemoglobin levels at booking, blood pressure and weight at subsequent visits, notable complications together with some basic bio-demographic data and dates and results of ultra-sound examinations. Labour notes consisted of information relating to the timing of arrival, time of delivery, parity, complications, interventions, drugs prescribed and so forth. The last of these existed for all women, however, antenatal notes were missing for the few who had not received any antenatal care, and were not booked for delivery at any municipal or other hospital. Also, in the event of a referral, antenatal notes were also sometimes missing, left at the facility from which the woman was referred. Discharge cards noted the time and date of delivery, the weight, sex and condition of the infant and the condition of the mother.

### 4.3.4 Quality schedule and provider interviews

A quality schedule (QS) was designed by the author of this study and completed in three municipal hospitals and one private hospital (see Appendix One). The objective of the quality schedule was to collect specific information relating to the content, nature and process of care provided by the facility. The schedule was

designed following an extensive literature review. The design of the schedule was undertaken in consultation with a consultant obstetrician working at the Princess Anne Hospital in Southampton and a Registrar working at the Chelsea and Westminster in London. In addition, a draft copy was reviewed by Dr. B.K. Dhir, Deputy Executive Health Officer, Maternal and Child Health Services, of the Mumbai Municipal Corporation. Dr Dhir facilitated access to the three of the four main public hospitals serving the target population.

The QS was undertaken in conjunction with semi-structured interviews with key members of staff including auxiliary nurse-midwives, staff nurses, house officers, registrars, medical officers and health officials. Semi-structured interviews were used to obtain information on a range of factual, impressionistic and substantive issues. For example, these interviews in conjunction with the quality schedule provided data on information ranging from pay and hours of work and availability of drugs, to hospital policy with regard to certain procedures, and staff attitudes towards any of these (see the responses to the quality schedules by hospital in Appendix One). While the schedule provided the structure to the interview, both the interviewer and the respondent were able to discuss particular issues in greater depth as they arose, and where gaps or contradictions surfaced these could be explored further. This less structured approach enabled the interviewer to tailor questions to the position and comments of the interviewee. It was possible to respond to, and follow up, issues raised by the interviewee - including ones that were not anticipated.

The quality schedule together with provider interviews were undertaken in the three case study hospitals prior to the exit interviews. Verification of the information obtained from these approaches using data from the other methods employed (such as observation) and clarification of responses, however, was an ongoing process. Completed quality schedules, with supporting notes using information from the provider interviews, for the three principal municipal case study hospitals are available in Part II of Appendix Two. Slight differences in the format of the schedules exist due to the varying nature of information that was available and collected.

### 4.3.5 Facility/hospital records

Permission was given by the Municipal Corporation to examine the admissions register at each municipal hospital, for the three years prior to the study (March 1996-April 1999). Information recorded in the admissions register includes the following details for each admission to the labour ward: name, address, age of mother, parity, basic interventions and in some cases complications, state of perineum, sex of child, birth weight, condition of mother and baby on discharge. This information is submitted to the census office quarterly. The above data was accumulated from the three case study municipal hospitals and one additional municipal referral hospital (Sion). The information provided by the admissions registers enabled the calculation of basic descriptive statistics that facilitated comparison between facilities. It was also possible to calculate basic outcome indicators from this data such as facility based maternal mortality ratios and perinatal mortality rates. The data from the hospital records examined can be found in Part III of Appendix Two. Due to the varying nature of record keeping in each hospital differences in the format of the record sheets and completeness of data exist.

### 4.3.6 Observation

Observation techniques were employed intermittently during initial visits to the particular facilities, during which time the quality schedule and provider interviews were being conducted (February-March 1999). They were employed also for the duration of the three week period during which the exit interviews were undertaken (one week per hospital in March 1999) to assess the validity of the reported experience and provision of care. The author had full access to all parts of the labour and delivery ward but did not enter the delivery ward for any extended period when occupied by a labouring woman. The permission of the women was obtained before entering. General observation techniques are essential in the assessment of basic quality indicators relating to cleanliness, crowding, state of equipment, provider-client relations at a general level and so on. Moreover observation is an effective means of verifying aspects of care described in provider and client interviews, such as the efficiency of the admissions procedure - are

women often left waiting for excessive periods of time, before being first examined, despite staff claims that women are usually seen immediately?

Providers tend to be affected by the presence of outsiders, or best-behaviour bias, such that providers do or say what they believe is expected of them rather than what they usually do on a day to day basis. For this reason observation techniques require that the assessor is, either internal, or specifically trained, or around for a sufficiently long period of time to gain a fairly accurate insight into normal care. Observation of the everyday functioning of the labour ward, post-natal ward and reception area this period (which did not include nights), was undertaken. Despite this certain types of behaviour were unlikely to have occurred in such circumstances. For example, a couple of women reported being slapped by staff during their labour, however these women had laboured during the night, with no observer present. Simmons and Elias (1994) suggest that in reality, where quality of care norms are not yet widely accepted and implemented in the field, providers may not feel the need to disguise their approach to the provision of care when being observed. This was certainly true of particular aspects of care in the context of this study such as the use of intramuscular oxytocin and the routine use of supine position in labour.

### 4.3.7   Focus groups

A limitation of this research was that focus groups were not carried out. These were in the work programme but were not carried out by the local collaborators. Focus groups would have provided some important insights into women's experience of care and choice of place of delivery. Surveys cannot adequately capture the complex feelings and perspectives of clients or the underlying dynamics of power and status. Simmons and Elias (1994) note that research on social services in developed countries has shown that survey data typically reveal high levels of client satisfaction with services, while in-depth street-level approaches show extensive evidence of dissatisfaction (Lipsky, 1981).

Over the past decade focus groups have been seen as increasingly useful as a way to generate qualitative data about a range of social, cognitive, health and behaviour patterns (Folch-Lyon and Trost 1981, Bender et al. 1994). Focus group

investigations can reveal how people are so often less logical, less thoughtful and less organised than we might expect (Barker Knaul and Rich 1992). In relation to patterns of health seeking, numerous competing factors influence the actual behaviour of people and focus group methodology enables investigators to probe specific issues in an environment that is less structured, more flexible and responsive than alternative methodologies.

### 4.3.8 Mystery client approach

Private hospitals in Mumbai were reluctant to participate in this investigation in any way. Even with support from the Municipal Corporation it was not possible to access private providers beyond some very basic data about admissions and deliveries from one provider. One probable reason for this is that private providers in most parts of the world are fearful of tighter regulations.

Due to the difficulties of gaining access to such providers a female Mumbai resident was employed and trained as a research assistant. She investigated eight private providers using the mystery client approach (Huntington and Schuler, 1993). She visited the private nursing homes and hospitals in the guise of the sister of a woman who was pregnant and wanted to choose an appropriate provider. The providers were identified from the full list of providers used by respondents of the community survey. During her visits of these providers she sketched the layout of the premises, the number of beds and staff and asked a range of questions relating to the normal process of care and associated costs (see Appendix one). Through a combination of observation, and the outcome of her contact with staff, she was able to draw some brief but important comparisons between these providers. Private providers ranged from a single doctor with an operating theatre and a couple of assistants, to a larger private hospital with a number of beds and range of staff. During each contact visit she used an interview guide to ensure comparability of information. Results, layout and general observations were written up directly after the visit to maintain accuracy.

The ethics of using the mystery client approach were considered and it was decided that the technique compromised neither women's access to care nor the providers provision of it, and it was therefore a legitimate research method under the

circumstances. The service offered by private providers is one that can theoretically be bought by anyone and therefore there should be no reason why any information volunteered to a potential client about the service should be confidential, or indeed any impressions of that service that a potential client may have. In addition with 13% of the study population and 43% of women in Mumbai as a whole (IIPS and ORC Macro, 2001) delivering in a private institution it is the responsibility of the municipal authority to keep auditable records about private maternity hospitals and nursing homes. They do not do this in practice, and the private sector remains largely unregulated. Therefore the mystery client approach was the only method, under the circumstances that could be used to gather information about the private hospitals at which the women in the study area deliver.

## 4.4    Analysis

Box 4.1 reviews the main data sources, process of collection and the approaches used in the analysis of the data.

**Box 4.1: Summary of data sources, data collection and analytical techniques applied**

| Community Survey (see Part I, Appendix One for copy of questionnaire modules 1-6) | The community survey involved interviews with 650 recently delivered women from six slum pockets. The principal sources of data for this thesis were module 1 the 'background module' and module 4 the 'delivery module'. Module 1 is principally devoted to questions related to background and household characteristics of the respondents and module 4 is devoted to planning for delivery and the events surrounding the actual delivery.<br><br>Data was entered onto an SPSS data file by a research assistant and cleaned by myself and Zoe Matthews (University of Southampton). Analysis focused on the responses to module four (delivery module) and module one (background module) and ranged from basic frequencies and descriptive statistics, calculation of bivariate statistics including comparison of means and proportions and contingency tables and logistic regression. |
| --- | --- |

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| | Analysis by t-tests and chi-squared tests were performed to inform interpretation. Further, standardised residuals were calculated. The standardised residual is in the form of a z score which can be compared with standard normal tables. (Diamond and Jefferies 2001). |
|---|---|
| **Exit Interviews (see Part II of Appendix One for copy of questionnaire modules 1-3, and Part I of Appendix Two for responses to modules 1-3)** | Data from the three modules that made up the exit interview were entered onto an SPSS data file by myself and also cleaned. Analysis was undertaken as with the community survey above. |
| **Case Notes** | Data from the hospital antenatal notes, labour notes and post-natal notes of women interviewed during the exit interviews were used to support the exit interview process. They were used as a prompt and a tool for verifying responses. Where information differed between the interviewee's response and her case notes the case notes were used as a prompt to explore the differences. |
| **Facility Records (see Part III of Appendix Two for data from hospital records)** | Four municipal hospitals and two private hospitals provided access to their records for three consecutive one year periods 1995-96, 1996-97 and 1998-99. For Sion Hospital a Registrar transferred the aggregated data for the first two years and provided monthly totals for the final year. At the other three municipal hospitals the information was held only in the original labour ward books. This information is aggregated by staff at the end of each month. All the relevant data for the three year periods was transferred manually onto proformas designed as part of this research project for this purpose. This was a time-consuming task but it did afford the possibility of going back to the daily records to check the |

| | accuracy of the aggregated monthly totals. This information was then transferred onto an Excel spreadsheet which facilitated analysis. Analysis involved comparing simple frequencies and calculating rates and ratios to aid comparison and interpretation. |
|---|---|
| **Quality Schedule (see Part III of Appendix One for copy of questionnaire schedule and Part II of Appendix Two for completed quality schedules for each municipal case study hospital)** | The quality schedules were completed at the time of the provider interviews and data from them extracted and put into tables to facilitate comparison between hospitals. This data, together with data from the community survey, exit interviews and provider interviews provide evidence of practice and policy in the individual hospitals. This information is drawn on particularly as evidence to establish the quality of the provision of care. |
| **Provider Interviews** | The quality schedules were used as a discussion guide for the provider interviews. Providers were probed over a number of the responses to the questions on the quality schedule. Their responses are drawn on in the subsequent analysis to help explain the use of certain practices and procedures in specific hospitals. Providers were also asked their view on the behaviour of the women who use their services. This provided some insights into the relationship between provider and client. Findings were written up during and immediately after hospital visits to get as accurate a replication of the responses by providers. These responses are reproduced where their inclusion is considered to contribute to the analysis or interpretation. |
| **Observation** | During all hospital visits observations about both the provision and the experience of care were noted. The elements of care from the quality framework were used to help structure and organise observations. Notes were written up at any opportunity during the day and completed fully at the end of each day. At the end of the |

| | observation period for each hospital visited these observations were drawn together and organised into broad themes, which reflect the quality framework. This information provides the basis for the narrative about the content and quality of care in each of the case study hospitals presented in Chapter Six. |
|---|---|
| **Mystery Client** | The research assistant who undertook this research wrote up her findings immediately after each hospital visit. Her original notes are reproduced in full Chapter Six and then broad conclusions drawn from them. In addition, the findings of the mystery client approach are reviewed in the context of data about private providers from other sources (the community survey and facility records from two private hospitals). See Appendix One for guidance notes used by research assistant to structure questions. |

## 4.5 Summary

In order to obtain data on both the quality of the provision of care and quality of the experience of care for the situation analysis of quality of maternity services, as articulated in the quality framework in the previous chapter, it was necessary to use a range of data capture techniques, both hospital-based and community-based.

A number of the tools designed for the situation analysis contained in the subsequent chapters were developed specifically to collect information about quality. Previous research has tried to measure aspects of the quality of the provision of care and this research has drawn heavily on this work to help design the research tools (Graham et al.1995, Maine et. al.1997). No tools, however, exist which have tried also to capture women's experience of maternity care to any substantial degree. Direct questions related to how women felt they were treated have been used before in exit interviews, but there has been no work to date that draws together women's responses to both direct and indirect questions about her experience of care and compares this with information about the content and quality of the provision of care in the institution at which she delivered.

The approach taken in this study allows the situation analysis of quality undertaken in this study to identify examples of poor quality of the care provided at specific hospitals at the same time as examining how women experience that care. This helps determine whether differential experience of care is the product of a specific hospital or type of hospital or the product of the socio-economic and religious background of a woman. This is key to learning more about quality in maternity services and identifying generalisable lessons with regard to quality of care and inter-relationships between quality of care, utilisation and outcome.

# Chapter Five

## 5.1    The study area and service environment in context

### 5.1.1    Introduction

Chapter Five provides an overview of the study area. The chapter is divided into two sections. The first provides the context within which this study has taken place. It places Mumbai in the context of both urban Maharashtra and urban India. The second section provides a profile of the study population based on findings from the community survey.   It examines where the respondents in the study area delivered their babies, whether at home, at a private hospital or at a municipal hospital.

#### 5.1.1.1 The study population in context: Maharashtra

The study population is located in the urban slums of the eastern suburbs of Mumbai, the largest city in the western Indian State of Maharashtra. At 96.8 million, the population of the state accounted for 9.4% of India's population in 2001 (Director of Census Operations, Maharashtra, 2001a). It is the second largest state in India in terms of population size, next to Uttar Pradesh. Since the 1991 Census the population density of Maharashtra has increased from 257 persons per km squared to 314 persons per km squared in 2001. It is also the second most urbanised state of India with 42% of the 2001 population resident in a town or city (Director of Census Operations, Maharashtra, 2001a)

Maharashtra is one of the most economically developed states in India. The per capita state income at current prices was Rs. 23, 393 during 1999-2000. This ranks second only to the Punjab among the 13 major states. The state is also the largest contributor to the nation's domestic product, accounting for 22% of the net value added by the manufacturing sector of the country (Centre for Monitoring Indian Economy, 1991).

#### 5.1.1.2 Social development

As far as social development is concerned Maharashtra ranks second, below Kerala, in terms of two key indicators – literacy and infant mortality. In 2001, Maharashtra's

overall literacy rate was 77%, whereas for Kerala it was 91% (Director of Census Operations, Maharashtra, 2001a; Office of the Registrar General and Census Commissioner, 2001). In 1999 the infant mortality rate for Maharashtra was 48 deaths per 1000 live births, whereas for Kerala it was 14 deaths per 1000 live births (Office of the Registrar General, 2001).

## 5.1.2 Population

The population of Maharashtra has doubled in nearly 30 years. The 1991 population was 78.9 million and it has grown by nearly 20 million people in the 10 years since then. One of the reasons for this large growth is that in-migration to Maharashtra is large. It is estimated that net migration contributed to 19% of the population growth rate over this time. The crude birth rate in the state has declined from 32.2 births per 1000 population in 1971 to 21.1 per 1000 population in 1999. This is still considerably higher than the crude death rate which has also declined from 12.3 deaths per 1000 population in 1971 to 7.5 in 1999a Office of the Registrar General, 2001; Office of the Registrar General, 1999b). The expectation of life at birth in Maharashtra in 1996-2001 is estimated as 65.3 for males and 68.1 for females (Ministry of Health and Family Welfare, 1999)

## 5.1.3 Sex ratio

The sex ratio of the *de facto* population of Maharashtra is 947 females per 1000 males as a whole, and is higher in rural areas (985) than in urban areas (898), suggesting that more men that women have migrated to urban areas. The sex ratio at birth for the seven year period before the NFHS-2 (1998-99) is 935. This low sex ratio is most likely the outcome of the practice of sex selective abortion and male preference (IIPS 2001).

## 5.1.4 Mumbai

Mumbai lies on the Western coast of Maharashtra and is the state's most populated city. It also falls within the list of the ten most populous cities in the world. It is considered the commercial capital of India. Its origins can be traced to a small fortified settlement of the East India Company. It grew very little in the first decades after it was ceded to the British crown in 1661. It was not until the nineteenth century that it began to grow substantially. Several factors spurred its growth during the later

half of this century including; the development of foreign shipping services to exploit its location in the Arabian Sea, the fact that it was closer to Europe than Calcutta, the extension of the railway line to the cotton-growing areas around Bombay in the 1860s, and a rise in the price of cotton following shortages caused by the American Civil War. The opening of the Suez Canal in 1869 also increased trade in Bombay (UN 1995).

**Table 5.1: Population Growth in Mumbai 1671-2000**

| Year | Population Size |
|------|-----------------|
| 1661 | 10,000 |
| 1872 | 644,400 |
| 1921 | 1.2 million |
| 1951 | 3 million |
| 1961 | 4.2 million |
| 1981 | 8.2 million |
| 1991 | 9.9 million* |
| 2001 | 11.9 million** |
| 2015 | 26 million (Projected growth estimated by UNDP 1998) |

Source: *Government of India 1991

**Director of Census Operations, Maharashtra, 2001b.

Since 1951 its population has grown enormously from 3 million to its 2001 level of almost 12 million (see Table 5.1). Largely as a result of this rapid population growth, which is far beyond the capacity of existing housing, demand for housing is calculated at at least 60,000 units per annum, while new supply is barely 20,000. By 1993 an estimated 55% of the city population lived in slums, and a further 25% in squalid and dilapidated chawls (UN 1995). Rapid growth of urbanisation in all countries in the South East Asia region has been recognised as a major threat to urban health development, particularly in those countries where the public health services are unable to cope with even a static population (World Bank 1993). According the 2001 census of India 48.9% of the population of Mumbai lives in slum areas (Director of Census Operations, Maharashtra, 2001c). This is less than several other estimates and reflects the differing definitions of what is, and is not a slum.

## 5.1.5   The eastern suburbs

The city areas within Mumbai are divided into nine municipal administrative wards and the Suburbs and Extended Surburbs into a further fourteen wards. The research for this thesis was undertaken in Wards L and M (East) the boundaries of which are described in a booklet entitled *Know Your Ward* published by the Municipal Corporation of Greater Mumbai as follows:

*M/East Ward :- (North) Thane Creek, (South) - Arabian Sea, (East) Thane Creek,(West) - R.C. Marg, Nirankari Math Joining with R.C.F. township and C.G. Road upto Panjrapole junction and along Waman Tukaram Patil Marg, and Central Railway line up to Subhash Nagar Nallah along the Creeek up to Eastern Express Highway.*

*L Ward :- (East) - Tansa Pipe Line towards Chembur side, Vikhroli and Ghatkopar Hills (West) - Mithi River, (North) Powai, (South) - Sion Creek.*

## 5.1.6   The urban poor

Singh (1990) identified three distinct settlement groups among the urban poor in Mumbai. Those living in multi-storied, one roomed tenements in the island city are described by Ramasubban and Singh (1999) as representing the stable face of the poor in terms of their social history and skill levels and are described as being relatively more responsive to institutional and technological innovations. The second group, pavement dwellers ('a floating group') have the lowest incomes, a large percentage is male, they lack strong kinship and family support and have proved least responsive to intervention strategies. Large slum settlements in the suburbs and extended suburbs make up the third group. These settlements consist of several pockets housing communities of between 2,000 and 5,000 (Ramasubban and Singh 1999). The populations of these communities come from many different parts of India resulting in households of divergent social histories but within which kinship and caste ties are resilient, but their asset base and income levels are poor. The study area is made up of 6 such 'pockets' within large slum settlements in the Eastern Suburbs. In 1989 the Operations Research Group conducted a survey of 8,047 households in the Bombay Metropolitan Region from which they estimated that 45% of slum households in the

city had incomes below the poverty line (a household income of Rs 1,290 per annum at 1991 prices (Operations Research Group 1990).

Within slum settlements the lack of systems for disposing of excreta, sewage and solid and other wastes is a notable threat to the health of the resident populations. In 1981 the Census of India found that of 619 notified slums 174 settlements had no toilets. Geeta and Swaminathan (1994), in a survey of a Bombay slum (Santosh Nagar) identified only 1.5% of households had their own toilet. They found that 69% used public toilets and 29.5% used open spaces for defecation. The water supply situation in Mumbai has been described as critical (UN 1995). The level of supply is so much below demand that water use is restricted to between two and eight hours per day, depending on location.

With regard to the nutritional status of children living in Mumbai slum communities Geeta and Swaminathan (1994) found that of children under the age of 5, 61% of boys and 72% of girls were malnourished on the basis of a weight-for-age index. The recent NFHS-2 found that 50% of children under age three years are underweight, 40% are stunted and 21% are wasted. Girls were more likely to be underweight, stunted and wasted than boys and children from slum areas of Mumbai were more than one and a half times more likely to be underweight and stunted than children from non slum areas (IIPS and ORC Macro, 2001).

Acharya (1988) and Geeta and Swaminathan (1994) however note the weak link that exists between both the level of income and the quality of housing and the level of income and illness. Reasons given to explain this poor association relate to the fact that in Mumbai small increases in income cannot secure an improvement in the living environment while losses of income due to illness can aggravate conditions of malnourishment (Pryer 1993).

## 5.1.7 Mortality and morbidity in Mumbai

Mumbai exhibits many of the worst aspects of urban poverty and the conditions exist to sustain high levels of morbidity. Evidence to date suggests that overall mortality rates in slum areas have not declined significantly over the past 15 years. Registration

data suggest that the crude death rate in Mumbai has declined since the early decades of the twentieth century. In 1910 the recorded death rate was 35.7 per thousand; in 1997 it was 7.3. Table 5.2 illustrates a relatively stable crude death rate (CDR) over the period 1988-1997 but a sustained decline in the infant mortality rate and maternal mortality ratio (see discussion below). Crook et. al. (1991) suggest that from all the evidence they examined registration covers at least 90% of all deaths although it is unlikely to have improved much over the last 10 years. Indeed the Municipal Corporation of Greater Mumbai make it difficult to leave a death unregistered. In the first instance the Sample Registration System provides supporting data that complements the findings of the death registration system. A death registration certificate is required for several important functions (such as for permission to cremate a relative) which encourages high levels of reporting. While death registration is considered relatively complete, cause of death is not reliable for measuring maternal mortality. The maternal mortality ratio estimates from the Municipal Corporation of Mumbai population programme-v, below are not considered reliable, as discussed below.

**Table 5.2  Crude Death Rates (CDR), Infant Mortality Rate (IMR) and Maternal Mortality Ratio (MMR) for Mumbai 1988-1997**

| Category | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 |
|---|---|---|---|---|---|---|---|---|---|---|
| CDR Per 1000 population | 7.2 | 7.0 | 6.8 | 8.0 | 8.0 | 7.3 | 7.2 | 7.3 | 7.6 | 7.3 |
| IMR Per 1000 live births | 53.1 | 51.6 | 48.0 | 49.2 | 47.2 | 43.4 | 41.3 | 40.4 | 40.2 | 39.8 |
| MMR Per 100,000 live births | 40 | 60 | 60 | 50 | 30 | 10 | 10 | 8 | 6 | 4 |

Source: Bombay Municipal Corporation Population Project V

### 5.1.8  Maternal mortality ratio

Maternal mortality is difficult to measure for a number of reasons. For 1995 the Bombay Municipal Corporation (BMC) reported a maternal mortality ratio (MMR) of 8 per 100,000. This ratio is unlikely to be a real reflection of the level of maternal death in the city. The MMR for developed countries such as the UK, where cause of death identification and death registration is considered of high quality, is currently 14

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maternal per 100,000 live births (HMSO,1998), nearly double that of the figures reported for Mumbai. For the purpose of this research study an attempt was made to ascertain the quality of data used in the calculation of this low MMR. From this it was evident that the figure was an underestimate. In 1995 the BMC reported that there were 212,280 live births in the city that year. Given this it is possible to calculate that in order to achieve an MMR of 8 per 100,000 live births only 17 maternal deaths would have had to have occurred over that time period. However, in four of the hospitals studied in the course of this research, at which the hospital records were examined directly, a total of 49 maternal deaths were recorded for 1995/96. Had these been the only maternal deaths in the city (which they were not) the MMR would have been 23 per 100,000, considerably more than the figure reported by the BMC.

Data was taken directly from the hospital records of these four case study hospitals in the Eastern Suburbs and a hospital based maternal mortality ratio calculated. At these 4 hospitals there were a total of 49 maternal deaths recorded and 16, 420 births. From this information it is possible to calculate a Municipal hospital-based MMR of 298 maternal deaths per 100,000, live births. This is considerably higher than the 8 per 100,000 reported by the BMC.

### 5.1.8.1 Availability and use of health services in Mumbai

One aspect of Mumbai that is distinct from many towns and cities of developing countries is the wide availability of modern health services. According to Yesudian and Parasuraman (1990) the city of Mumbai has the highest number of hospital beds and doctors per capita of any other city in India. To some extent this contradicts expectations given the relatively poor economic and social situation of so many of the urban poor. Findings reported by Crook et. al. (1991) from a cross-sectional household survey revealed that in the case of children from about 90% of households, treatment for any ailment was sought within a week. For adults this proportion was slightly lower but this held true in all types of neighbourhoods. They conclude that this provides strong evidence that even fairly marginalised urban populations are now well-linked in with the curative medicine system. They further calculated that the average cost of curative treatment of a sick person worked out at between one fifth and one third of monthly household income, which taking the incidence of illness into consideration, worked out at an estimated 2.3 and 3.6% of household per capita

income. This is good evidence that even the poorest groups among Mumbai are willing to pay for curative modern medicine when the need arises. This is contrary to many common perceptions of the urban poor. In fact the above survey, which also examined proximity to curative services, found that there was a chemist within one kilometre of 68-97% of households and an allopathic doctor within one kilometre of 74-88% of households. Physical access to medical facilities, they conclude 'can hardly be regarded as a limiting factor in Bombay today' (pp317).

Curative health services in Mumbai are provided by both the public and private sector and range from basic curative health services, provided by dispensaries and clinics to specialised health services, provided by teaching hospitals. As all teaching hospitals are run by the municipal corporation, specialised services are theoretically available to the urban poor at a nominal cost. However, these almost freely available health services do not necessarily lead to better utilisation of health services by the urban poor. Yesudian (1988) examined a sample of 692 households in Deonar, a poor area of Mumbai, to establish whether household members prioritised the treatment of illness depending on the status of the individual householder. Sixty percent reported no such priority system. Of the remaining households an analysis was made of reported preferential treatment. Household members were split into four categories: wage earners, housewives, dependent children and dependent elderly. Findings suggest that wage earners and dependent children are given priority, seeking health services earlier than other sick members of the sample households. Housewives and dependent elderly were given lower priority. Since they remained mainly at home, the importance of seeking immediate health care was not felt.

Though the sample households in this study belonged to lower economic groups and public health services were available to them at a nominal cost these households had incurred moderately high expenses to treat illness episodes during the year prior to the survey. An examination of type of service provider used by type of ailment revealed that in general the majority of households sought private clinics for the treatment of short-term ailments. Municipal dispensaries designed to treat such ailments were particularly poorly utilised (3.6%), while 23.5% attended public hospitals in the event of a short term illness. Sample households reported a lack of faith in the municipal dispensaries. They felt that these dispensaries lacked experienced doctors and

adequate medicines. This partly explains the relatively high use of the out-patient departments of major municipal hospitals for minor ailments. The most frequently cited reasons for non-use of public sector health care facilities were distance and inconvenient opening hours. Private practitioners were reported by householders as being conveniently located in an around the slum areas, and open till late in the evening. At RS 13, the normal charge for a basic ailment at the time of the study competed with the RS 6 autorickshaw needed to reach the public services within 1-2 KM distance and the loss of earnings of the wage earner if the care seeker needed to be accompanied.

This is supported by the findings of the recent NFHS (1998-99) which provides evidence that the private sector is the most popular source of health care for households in both urban and rural areas of Maharashtra. In urban areas the highest percentage of households use the services of private doctors (47%). For 15% of urban households the main source of health care is government or municipal hospitals (IIPS 2001).

The private sector accounts for three-quarters of all health expenditure in India (Ministry of Health and Family Welfare 1998). People are discriminating in their choice of health care practitioners and services. Basu (1990) concludes that, virtually every field study on the use of medical care in India has concluded that private allopathic practitioners are considered superior to government doctors. The advantages of the private sector that are most often cited are accessibility, convenience and orientation to the client. Their usually flexible hours and perceived commitment to client service are considered key to their success.

Most people in India turn first to the private sector for curative care and even the poor are prepared to pay substantial sums for it. The government on the other hand is the source of most preventative care such as immunisations, antenatal care, family planning services and infectious disease control. Also, it is the government that supports the greatest proportion of inpatient treatment. On average about 60% of all hospitalised cases are admitted to public facilities. This underscores the important role that public hospitals play in providing care at the first-referral level, such as treatment of obstetric complications (Das Gupta et al.1996b).

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Despite the many recognised benefits of the private sector however, there are also many recognised limitations. The private sector tends to focus on curative care because that is what people are prepared to pay for. Also, due to the cost of services the care restricts the access of the poorest groups within the population. Surveys undertaken in five states show that the burden of household health expenditure falls disproportionately on the poor and on rural populations. Contacts with private providers for treatment of illnesses generally cost one and half to two times more than contacts with government providers (World Bank 1993).

Das Gupta explores the preference for private care, for curative treatment in particular and concludes that it can be attributed to a number of factors. '*it is generally assumed in India that anything worthwhile or valuable will cost money, thus medical services that must be paid for are seen as better than government services...in addition, practitioners who charge for their services are expected to be more polite and attentive and to devote more care and concern to patients*'. (Das Gupta et al, 1996, pp79)

The preference for private care is also partly explained by dissatisfaction with government services. Major reasons for dissatisfaction commonly identified relate to rude behaviour by health staff, long waiting times, staff shortages, lack of essential supplies and drugs and despite the nominal cost in reality costs incurred for essential drugs, travel expenses, tips and so forth are often not insubstantial (Das Gupta et al. 1996b). Despite these perceived limitations of public services, the quality of private services often receives less scrutiny. There is however a recognition among the medical and research establishments that the quality of private services (as in the public sector) is variable.

The type of health care services used is influenced by the standard of living of the household, although the private sector is the dominant health care source for households at all standards of living. As expected, with the increase in the standard of living the use of public sector medical services decreases and the use of private-sector medical services increases

However, in terms of maternity care for childbirth private provision was found to be an option that was too expensive for most of the slum households sampled in the study undertaken by Yesudian (1988). The municipal corporation was the major provider for those deliveries inside the city (72.2%) and only a small percentage (9.3%) delivered at a private hospital or nursing home (a total of 81.5% institutional deliveries). This is supported by data from the NFHS-2 (1998-99) which shows that women within Mumbai slums are more likely to deliver in public health facilities and non slum women are more likely to deliver in private facilities.

### 5.1.9 Place of delivery – some comparisons

Maharashtra has a higher percentage of women delivering at a hospital than most other states in India. According the NFHS 1998-99, 80% of deliveries in urban Maharashtra took place in a health facility or institution compared with only 35% in rural areas. Within Mumbai slums 86% of births took place in an institution, 48% in a public institution and 35% at a private provider. At the aggregate level 80% of deliveries in Maharashtra in 1998-99 took place in an institution. This compares favourably with the figure for all India (65%), and the northern states of Haryana (47%), Rajasthan (48%), the eastern states of Bihar (40%) and Orissa (55%) but falls below the southern states Tamil Nadu (92%) and Kerala (99%) (IIPS and ORC Macro, 2001a-h). Table 5.3 shows the percentages of women by place of delivery and by who attended the birth for urban areas of selected states.

Table 5.3 Percentage of women by place of delivery, and attendance at birth in urban areas in India and selected states 1998-99

| State | Institution | | | Assistance at delivery | |
|---|---|---|---|---|---|
| | Public | Private | NGO/ Charitable | Doctor/ ANM/nurse /midwife | TBA/Other |
| India | 29 | 34 | 2 | 73 | 27 |
| Bihar | 12 | 27 | 1 | 47 | 53 |
| Rajasthan | 34 | 13 | 1 | 61 | 39 |
| Orissa | 41 | 14 | 0 | 61 | 39 |
| Haryana | 14 | 33 | 0 | 66 | 34 |
| Tamil Nadu | 44 | 47 | 1 | 95 | 5 |
| Kerala | 42 | 55 | 2 | 99 | 1 |
| Maharashtra | 36 | 43 | 1 | 85 | 15 |
| Mumbai (Slum) | 48 | 35 | 1 | 88 | 12 |

Source: IIPS and ORC Macro (2001), a,b,c,d,e,f,g,h,

According to the NFHS (1998-99) 86% of births in Mumbai took place in a health facility. The figure was lower for slum areas (84%) than non slum areas (92%) (IIPS and ORC Macro, 2001). This level of institutional delivery is relatively unique not only in urban India as a whole but among urban slums specifically. A study carried out in 1993-94 in 10 slum colonies of Delhi revealed that of 1092 women with children under the age of two only 54% delivered in a facility or institution (32.7% in a government hospital, 5.9% in a health centre and 15.5% in a private hospital) and 46% delivered at home (Gupta and Kumar 1996).

## 5.1.9.1 Availability of municipal maternity homes, hospitals and beds in Mumbai

In Mumbai there were 26 municipal maternity homes in 1999, according to the BMC Population Project-V, with the number of beds ranging from 10 to 84, and 14 maternity hospitals with the number of beds ranging from 20 to172. Among these are three teaching and referral hospitals. There are also two large charitable hospitals (catering for as many as 11,000 deliveries a year each) and a numerous, but unknown number of private facilities ranging from nursing homes with 2-4 beds to private hospitals with 40-50 beds.

## 5.2    Section Two

### 5.2.1    A profile of the survey population

This section examines socio-economic data from the community survey for the target population and below compares some of this data with results for slum sample of the NFHS-2 (1998-9).

**Table 5.4**

**Some background socio-economic characteristics of the study population, and where comparable data is available from the NFHS (Mumbai, slum sample)**

|  | Study Population (1999)* | Mumbai Slum (NFHS-2 1998-99)** |
|---|---|---|
| **Religion** | Hindu          50%<br>Buddhist/<br>Neo Buddhist 31%<br>Muslim          18%<br>Christian       1% | Hindu          60%<br>Buddhist/<br>Neo Buddhist 4%<br>Muslim          31%<br>Christian       1% |
| **House owned or rented?** | Owned     74%<br>Rented     26% | |
| **Own a fan?** | Yes          80%<br>No           20% | |
| **Do you boil your water?** | Always        5%<br>Sometimes   34%<br>Never         61% | |
| **Do you filter your water for drinking?** | Always        14%<br>Sometimes    35%<br>Never         51% | |
| **Ability to read?** | Easily           40%<br>With difficulty 11%<br>Not at all       49% | |
| **Last class passed at school?** | Grade 0-4     24%<br>Grade 5-7     47%<br>Grade 8-10    25%<br>Beyond 10      5% | |
| **Marital status** | Currently married  98%<br>Separated/divorced  1%<br>Widowed               1% | Currently married    92%<br>Separated/divorced   2%<br>Widowed                5%<br>Deserted               1% |
| **Age of marriage** | 12 or under     7%<br>15 or below    25%<br>18 or under    71%<br>28 or under    98% | |

| Listens to the radio | Every day | 27% | At least once a week  47% |
|---|---|---|---|
|  | About once a week | 2% |  |
|  | Less often | 18% |  |
|  | Never | 6% |  |
|  | No radio | 47% |  |
| Watch television | Every day | 63% |  |
|  | Once a week or more | 4% |  |
|  | Less often | 16% |  |
|  | Never | 16% |  |

* Community survey (1999)
** Source: IIPS and ORC Macro 2001.

## 5.2.2   Religion and caste affiliation

The majority of the respondents to the community survey (50%) were Hindu, 30.5% were Buddhist or Neo-Buddhist, 17.6% Muslim and the remaining 1.4% Christian (see Table 5.4). This differs from the slum sample in the NFHS-2 which gives the population of slums in the city as 60% Hindu, 31% Muslim and only 4% Buddhist or Neo-Buddhist (Table 5.4). The two populations therefore, had quite different religious profiles.

Respondents to the community survey were asked their caste. Nearly half of respondents (49.5%) said they had no caste, 6% did not know. The remaining 44.5% named one of a total of 47 castes. The largest of these groups were the Maratha caste to which 55 of the women (8.4%) belonged, 32 women (4.9%) were Banjari and 25 (3.8%) were Harijan.

## 5.2.3   Socio-economic status

Three-quarters (74.4%) of respondents to the community survey live in houses that are owned by their family, the remaining quarter live in rented accommodation (see Table 5.4).   Women were asked if they owned a selection of consumer durables. These are used as an indication of relative wealth. The consumer durables ranged from a fan, which 80% of households owned, to a telephone (5 women or under 1% owned a telephone). Other durables included a television (50%), a tape recorder (23%), a sewing machine (6.7%), a fridge (7.4%), a video (1.1%) and a washing machine (0.5%). One in ten households owned a bicycle and one in 100 households owned a scooter or moped. Ninety percent of respondents, however, used electricity for lighting. This is a reflection of the relatively well-established nature of the slums in which this research was undertaken.

## 5.2.3.1 Income

The mean monthly household income of the study population at the time of the survey (1999) was RS 2,900. The median salary was RS 3,000. Household income ranged from a low of RS 300 a month to RS 40,000 a month. To give an idea of what this amount could buy in terms of private delivery care, at the time of the survey, the most frequently quoted price for a normal delivery at private hospitals in the study area was RS 4,000-5,000 almost double the mean monthly household income for the area.

## 5.2.4 Health related behaviour

Two questions were included in the questionnaire schedule to reflect the range of general health related behaviour. Respondents were asked whether they boiled their water for drinking. The majority (60.2%) never boiled their water, 34.2% did sometimes and 5.2% did always. They were also asked whether they filtered their water, a higher percentage filtered their water always than boiled it (14%), and 51% never filtered their water.

## 5.2.5 Educational attainment

Nearly half (49.1%) of respondents could not read at all, 10.6% could read with difficulty and 40.3% replied that they could read easily (see Table 5.4). There was more or less an even split between those who had attended school (50.8%), and those who had not (49.2%). Of those women who had attended school, 24% had passed between Grades 0 and 4, 46.5% had passed between 5 and 7, 25% between grade 8 and 10 and only 5% had passed beyond grade 10. None of the respondents were degree level.

## 5.2.6 Marital status

Over 98% of women interviewed were currently married, the remaining few were either married but the husband lived elsewhere (4 women), separated (2 women) or widowed (5 women). All women were asked at what age they were married - the responses ranged from 2 women who said they were married at age 1, and 1 woman who was married at 28. Twenty five percent of women were married at age 15 or below. Seven percent (45 women) were either 12 or under when they were first married. The most popular age of marriage given was 18, (140 women or 21.5% of women married at this age). Seventy one percent of women (462 women) were aged

18 or below when they first married. Thirty percent of women were married to a relative (195 women). Just over half of these women (116) were married to someone they described as a close relative.

### 5.2.7 Migration

Interviewees were asked if they had lived in Mumbai before they were married. Over half (58.3) had not. This indicates that this population of women are in general relatively new residents within the city. In fact 85% (319) of those who had not lived in Mumbai before marriage lived in a village, the remaining 15% (58 women) responded that they had lived in a town.

### 5.2.8 Access to information

Just over a quarter listen to the radio every week the rest less often (20%) or never (54%). However nearly two thirds (63%) watch television every day, 20.5% at least once a week or less and 16% never watch it (see Table 5.4).

### 5.2.9 Autonomy

The need for women's autonomy to be studied, as an important potential factor affecting maternal health, has been articulated by a number of authors (Fillippi et al, 1990, Bloom et al, 2001). In an urban context, where very poor populations have access to a range of services throughout pregnancy, labour and the postpartum period, maternal care-seeking is key to women's levels of reproductive health.

Socio economic status is not always a good proxy of freedom of movement, access to information or the power to act on information or influence events within the household. Measures of autonomy were therefore developed as part of the interview schedule. Broadly autonomy lies at the heart of family decision-making and is therefore considered a determinant of health seeking behaviour in both pregnancy and once in labour. It is also likely to have an impact on a woman's experience of care. Her ability to negotiate what she wants, or make her concerns heard and respected, will be influenced by her level of autonomy. As a measure of freedom of movement, women were asked whether they would be allowed to take a child who was ill to the doctor unaccompanied. Nearly 1 in 4 said they would need to be accompanied by another adult (see Table 5.5). As an indicator of decision making power within the

household, women were asked if they were allowed to wear clothes of their choice. Over 4 in 10 said they were not (43%). They were also asked about their access to money for housekeeping. Nearly 1 in 10 had no access to money at all, most (7 in 10) were given a lump sum and the remaining 2 in 10 had to ask their husband for money each time they incurred expenses. Most women (82%) were definitely not allowed to work. Despite these findings Matthews et. al.(2003), who examine the role of autonomy in the target population referred to in this thesis in some depth, conclude that autonomy-related care-seeking and delivery planning is not associated with any aspect of autonomy (Matthews et. al 2003). They also conclude, however, that the effects of compromised decision-making due to low autonomy on care seeking are more difficult to draw out from survey data such as that collected in this study.

Table 5.5 Some indictors of the level of autonomy of the study population

| Autonomy | Study population |
|---|---|
| If your child was ill would you be allowed to take him/her to the doctor without the company of another adult? | Yes        76%<br>No         24% |
| Are you allowed to wear clothes of your choice? | Yes        57%<br>No         43% |
| Would you need permission to take up a job? | Yes                    15%<br>No                     4%<br>Definitely not<br>allowed to work     82% |
| Does your husband give you housekeeping in one go or do you have to ask him each time you need to incur expenses? | Gives lump sum            70%<br>Have to ask each time     21%<br>Have no access to money   9% |
| Volunteered at least one reason for when it is right for a man to hit is wife? | Gave one reason        43%<br>Said it is not right    57% |

### 5.2.9.1 Domestic violence – attitudes

Violence against women has received increased recognition in recent years. Not only has domestic violence against women been acknowledged worldwide as a violation of the basic human rights of women, but research highlights the health burdens and

intergenerational effects of such violence (Heise et al., 1998; 1994; Jeejeebhoy, 1998).

*'In patriarchal societies such as India, women are not only socialised into being silent about their experience of violence but traditional norms teach them to accept, tolerate, and even rationalise domestic violence'* (IIPS and ORC Macro, 2001 p54)

Respondents were asked to give reasons they felt justified husband beating his wife. Forty three percent gave at least one reason. This compares with 62% of slum women interviewed in the NFHS-2 (IIPS and ORC Macro, 2001). Fifty eight women (9%) reported that they had at least once been beaten so hard that it had caused injury.

### 5.2.10 In summary

The survey population is principally a lower socio-economic group. Educational attainment, ability to read, ownership of household durables and health related behaviour suggests that at least half of the group could be considered particularly disadvantaged. Most women in the population are migrants to Mumbai and most married young. There is a small group of women who are more educated, they can read and write. The fact that three quarters live in homes owned by their household and 90% have electricity suggests that these slums are relatively well established. Levels of autonomy range from those with relatively high levels of freedom of movement, decision-making power and access to resources to those who, cannot leave unaccompanied even to take a child to the doctor, are not allowed to wear what they want and a smaller group who do not even have access to money let alone housekeeping.

## 5.3    Where did they deliver their babies?

**Figure 5.1: Study population by place of delivery**
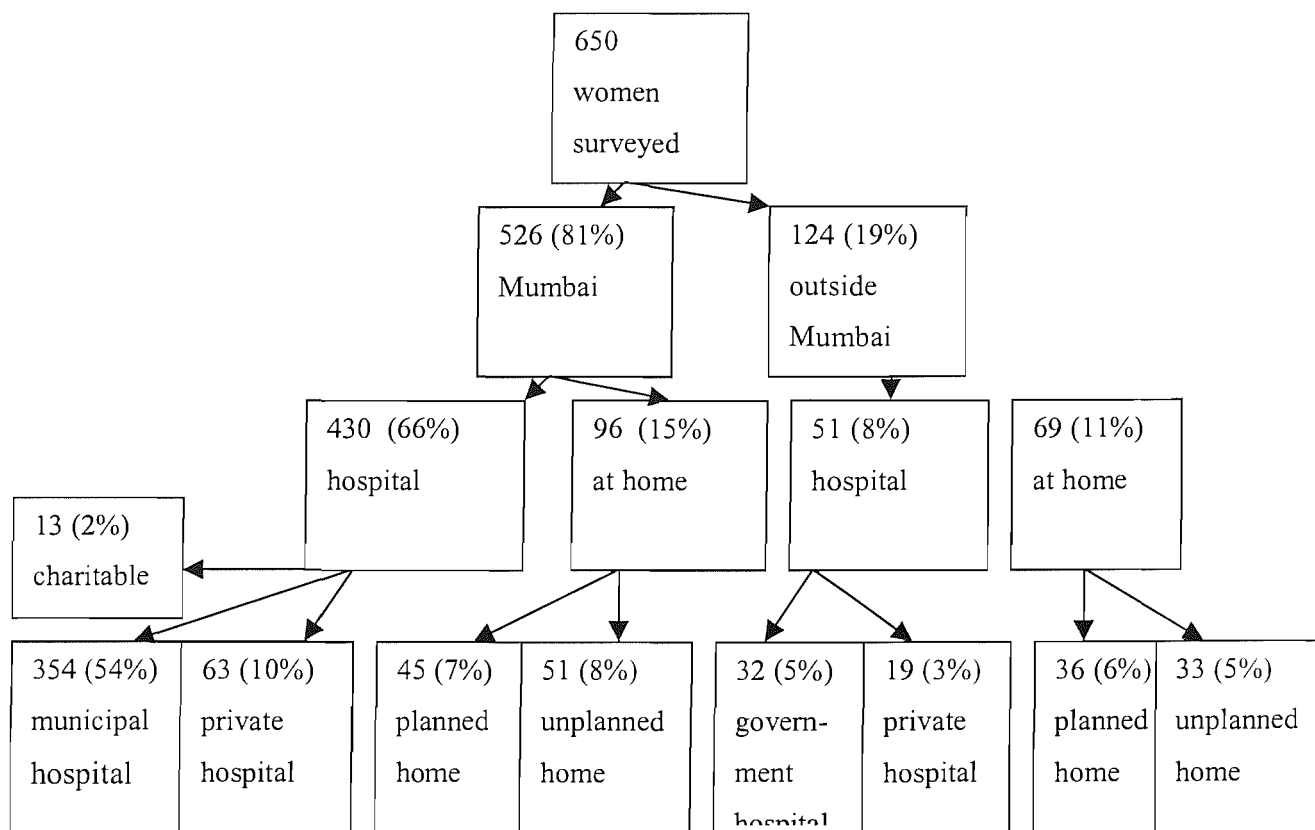


Source: Community Survey 1999

Figure 5.1 provides a schematic overview of where the study population of 650 women delivered their babies. In total nearly three quarters (74%) delivered in an institution of some kind, 59% delivered in a government or municipal hospital, 13% at a private institution and over one in four (26%) delivered at home. Figure 5.1.splits the women into two groups, those who delivered in Mumbai (81% of the group) and those who went outside Mumbai to deliver (19% of the group), and then further by what type of hospital they delivered in or whether their home birth was planned or unplanned. In Mumbai over half of the home deliveries were unplanned. Among those counted as 'home deliveries' are four cases of deliveries en route to hospital. Three of these were deliveries en route in Mumbai and the fourth, a delivery outside of Mumbai. Among those who delivered in Mumbai, 68% delivered in a municipal hospital and 13% in a private hospital, this compares with the NFHS-2 slum population among which a much greater percentage delivered at a private hospital

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(35%) and less at a municipal hospital (48%). Given that private care tends to be the preference among those who can afford it this difference suggests that the study population were relatively more deprived among slum populations in the city.

Table 5.6 below breaks the group down by the pocket within which they live. It groups the women by whether they delivered in a government or private hospital inside or outside Mumbai, or whether they delivered at a charitable hospital or at home. These include all the case study hospitals examined in this thesis. The total count and the percentages are given in each cell.

**Table 5.6 Place of delivery by slum pocket count and [percentage]**

| Pocket Name | Govt Mumbai | Govt outside Mumbai | Private Mumbai | Private outside Mumbai | Charitable | Home | Total |
|---|---|---|---|---|---|---|---|
| New Bharat Nagar Count [% within pocket] | 100 [56] | 7 [4] | 3 [2] | 2 [1] | 1 [0] | 66 [37] | 179 [100] |
| Lakshmi | 48 [39] | 5 [4] | 16 [13] | 4 [3] | 5 [4] | 46 [37] | 124 [100] |
| Nagababa Nagar | 36 [61] | 3 [5] | 13 [22] | 4 [5] | 3 [5] | 1 [2] | 59 [100] |
| Om Ganesh Nagar | 88 [59] | 11 [7] | 12 [8] | 4 [3] | 2 [1] | 33 [22] | 150 [100] |
| Shahaji Nagar | 38 [58] | 4 [5] | 12 [18] | 2 [3] | 2 [3] | 9 [14] | 66 [100] |
| Gautam Nagar | 48 [71] | 2 [3] | 4 [6] | 2 [3] | 0 [0] | 11 [16] | 67 [100] |
| Total | 354 [54] | 32 [5] | 63 [10] | 19 [3] | 13 [2] | 166 [26] | 650[100] |

Source: Community Survey 1999

New Bharat Nagar and Lakshmi had the highest percentage of women delivering at home (37% in each). In New Bharat Nagar 97% of women delivered either at home or in a municipal hospital, with only 3% delivering in a private hospital. In contrast in Shahaji Nagar just over one woman in five (21%) delivered in a private hospital.

## 5.3.1 First births

It is traditional among many sectors of the population for women to return to their natal home for the birth of their first baby. For this reason it is important to compare the behaviour of this group with that of women with higher order births. In total nearly a quarter (24%) of births were first order births (153), and 76% (492) second order and above (see Table 5.7). There was a strong association between women having their first and where they were staying at the time of delivery. Fifty three percent of primigravidae were at their natal home at the time of delivery (more than the expected count had there been no association), compared with only 27% of

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women having second order and above births (which was a lower percentage than expected). Fifty three percent of this group were at their own home at the time of delivery.

**Table 5.7 Percentage of women having their first births by where they were staying when they delivered**

| Birth order/location | Natal home | In-laws home | Own home | Total |
|---|---|---|---|---|
| First births (n=152) | 53%*** | 17% | 30%*** | 100% |
| Second order and above (n=492) | 27%*** | 20% | 53%* | 100% |
| Total (n=644) | 33% | 19% | 48% | 100% |

*Pearson Chi-squared P=0.000*

Source: Community survey 1999
# total number of women (excluding 6 missing cases)
\*        10% significance
\*\*      5% significance
\*\*\*    1% significance

### 5.3.2   Deliveries outside Mumbai

Of women who delivered outside Mumbai (n=107) or 17% of those completing the questionnaire, (over half) delivered at home (52%), 16% (17) delivered at a private hospital, 29% (31) delivered at a government hospital and 1 delivered en route to hospital (see Figure 5.1). Given that Mumbai has some of the highest rates of institutional delivery in the country this pattern is consistent to that expected, with under half of women delivering at an institution. This is illustrated by NFHS-2 data which shows that 35% of women delivering in rural Maharashtra delivered in an institution compared to 81% in urban areas (IIPS and ORC Macro, 2001).

### 5.4   Summary

What this chapter shows is that Mumbai, the commercial centre of India with the largest population in the country performs relatively well in terms of their basic socio-economic and demographic characteristics compared with other areas within India. It has higher than average literacy rates and lower crude birth and death rates. The rapid population growth in the city has resulted in the growth in large slum areas as

population outstrips population. Many of these slums are now well established. The study area falls within Ward M (East) in the Eastern Suburbs of the city. Information from the sample registration system is reviewed to gain a broad overview of this area. The study population falls within this Ward and results of the community survey undertaken in the study area are reviewed to provide a broad profile of respondents. They are essentially a lower socio-economic group of mixed religious affiliation but with a majority of Hindus. The population, however, has a relatively large percentage of Buddhist and Neo-Buddhists compared to the slum population of Mumbai as a whole.

The availability of institutional maternity facilities in the city is examined, and the level of institutional delivery compared with other states and cities. Although not as high as Tamil Nadu, urban Maharashtra is amongst the areas with the highest levels of institutional delivery in the country. Nearly three-quarters of the study population who deliver in Mumbai deliver in an institution of some kind (private or municipal). However, evidence that only 13% of respondents to the community survey who delivered in Mumbai, delivered at a private hospital (compared with 35% of the slum population as a whole (IIPS and ORC Macro, 2001)), suggests that the study area is relatively more deprived than the general slum population. As part of the situation analysis of maternity services the following chapter examines the quality and content of care provided at the main hospitals within the study area at which women in the sample area deliver.

# Chapter Six

## 6.1 A situation analysis: The provision of care

### 6.1.1 Introduction

Chapter Six begins the situation analysis of maternity services in the study area. It draws largely on findings from the provider based methods reviewed in Chapter Four. The chapter provides an overview of the range of municipal and private hospitals that the target population use. It then reviews the quality and content of the provision of care at these establishments using the evidence based framework developed in Chapter Three as a basis for this analysis.

The Chapter is divided into two sections. Section one describes where the respondents to the community survey data delivered and then reviews data from the maternity ward records of the four principle municipal hospitals that service the study area, and where data is available, from one of the private providers in the area. Section two then provides a more in depth situation analysis of the principal hospitals (municipal and private) in the area based on the results of the remaining hospital based methods (observation, provider interviews, quality schedule and exit interviews).

### 6.2    Section one

### 6.2.1    Maternity care in the eastern suburbs of Mumbai

Women resident within the study area can theoretically 'book' at one of four municipal hospitals in, or in relatively close proximity to the study area (see Map Two). These hospitals are Chembur Maternity Home, Shtabdi General Hospital, Rajawadi General Hospital and Sion Teaching Hospital. Or they can choose from one of a number of private providers located in the area. The four municipal hospitals form a hierarchy of care. Chembur Maternity Home lies at the bottom of the care chain and Sion is at the top. Shtabdi and Rajawadi lie in between however Rajawadi is a relatively large general hospital and receives referrals from both Shatabdi and Chembur. Figure 6.1 provides a schematic overview of the referral chain for maternity care in the eastern suburbs. Women are sometimes referred from private maternity homes to one of the larger municipal hospitals. In addition, women who plan a home

delivery but who seek care, for whatever reason during labour tend to present at whichever hospital is closest. According to the WHO definitions of what constitutes a basic essential obstetric care (BEOC) facility, and what constitutes a comprehensive essential care facility (CEOC) (see literature review), Chembur is the former and the other three municipal hospitals are, theoretically, the latter (WHO 1997). Chembur maternity home is dedicated to maternities only. The other three are more general hospitals with maternity wards.

# Figure 6.1. Schematic overview of the referral chain in the study area



```
┌─────────────────────────┐                    ┌──────────────────┐
│  Rajawadi General        │                    │    Private        │
│  Hospital                │                    │    Providers      │
│                          │◄───────────────────│                   │
│  deliveries p.a. = 5300  │                    │ deliveries range  │
│  number of beds = 60     │                    │ from 100 - 3000   │
│                          │                    │ p.a.              │
└─────────────────────────┘                    └──────────────────┘

        ┌──────────────┐                    ┌──────────────────┐
        │  Shtabdi     │                    │  Sion Teaching    │
        │  General     │                    │  Hospital         │
        │  Hospital    │                    │                   │
        │              │                    │ deliveries p.a.   │
        │ deliveries   │                    │   = 7300          │
        │ p.a.= 2500   │                    │                   │
        │ number of    │                    └──────────────────┘
        │ beds = 47    │
        └──────────────┘

┌──────────────────┐
│  Chembur          │
│  Maternity        │
│  Home             │
│                   │
│ deliveries        │
│ p.a.= 2400        │
│ number of         │
│ beds = 30         │
└──────────────────┘
```

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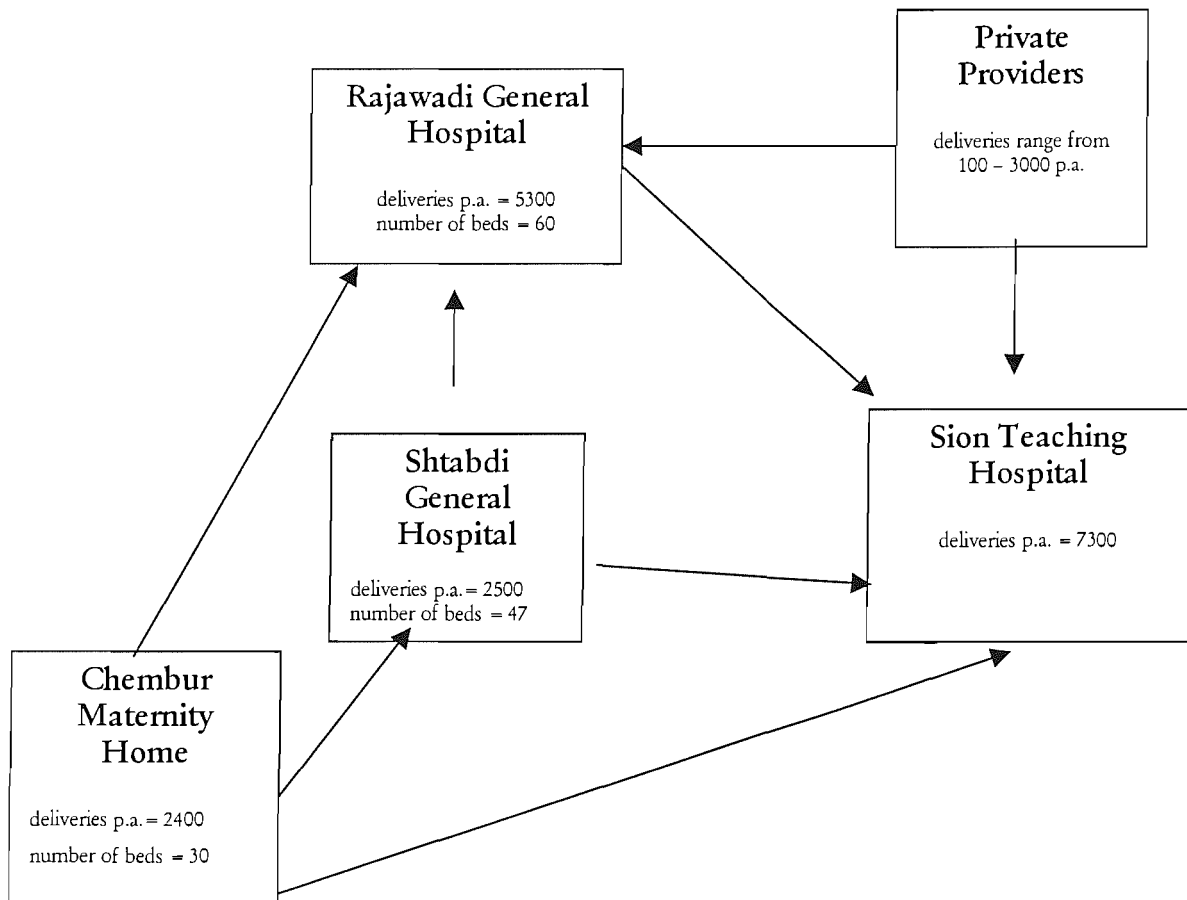
## 6.2.2 The survey population's use of municipal maternity facilities in Mumbai

**Actual delivery**

To-recap, of the 650 respondents to the community survey 81% (n=526) actually delivered in Mumbai. As shown in Figure 6.2.of these 526 women, 354 (68%) delivered in a municipal hospital, 63 (13%) in a private hospital and 96 (19%) delivered at home. Of this group 45 had planned to deliver at home (or 9% of the total) and 51 had planned to deliver in a hospital (see Figure 5.1 in Chapter Five). Of the 354 women who delivered in a municipal hospital in Mumbai 92% of them (324) delivered at one of the 4 hospitals in the referral chain described above.

Figure 6.2 shows the place of delivery of respondents who delivered in Mumbai as a percentage of the total who delivered in the city, as opposed to Figure 5.1 in Chapter Five which shows the place of delivery of all the respondents as a percentage of all respondents.

**Figure 6.2: Percentage of total deliveries in Mumbai by place of delivery**



```
                        ┌──────────────┐
                        │  526 (100%)  │
                        │    Total     │
                        │  deliveries  │
                        └──────────────┘
                           ↙        ↘
        ┌──────────────┐ ┌──────────────┐
        │  417 (80%)   │ │  96 (18%)    │
  ┌─────│  hospital or │ │  at home or  │
  │     │ maternity home│ │  en route    │
  │     └──────────────┘ └──────────────┘
┌──────────┐   ↙    ↘        ↙        ↘
│ 13 (2%)  │
│charitable│
└──────────┘
  ┌──────────┐ ┌──────────┐ ┌──────────┐ ┌──────────┐
  │354 (68%) │ │63 (12%)  │ │45 (8%)   │ │51 (10%)  │
  │municipal │ │ private  │ │ planned  │ │unplanned │
  │hospital or│ │ hospital │ │  home    │ │  home    │
  └──────────┘ └──────────┘ └──────────┘ └──────────┘
```
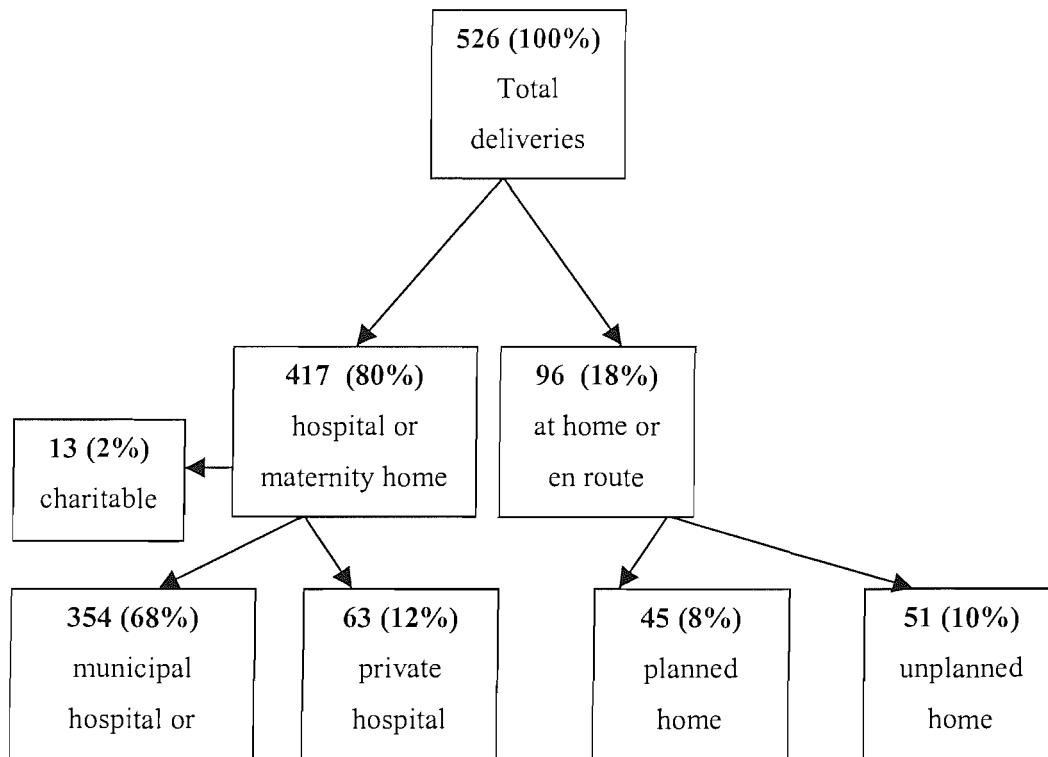
### 6.2.3  Where women booked

In Mumbai a woman must register, or 'book', at the hospital at which she intends to deliver. Her antenatal care is organised by the hospital at which she books, and her booking appointment counts as her first antenatal appointment. In practice not all women deliver at the hospital at which they book. This is usually the result of a referral, or a woman staying at a different place at the time of the delivery.

According to the community survey a total of 398 women booked at one of the four municipal hospitals. This compares with 324 who actually delivered at these hospitals (see Table 6.1). The majority of these women booked at Chembur (263 women or 66% of those who booked at the above). Eighty four (21%) booked at Shtabdi, 41 (10%) booked at Rajawadi and only 10 (3%) booked at Sion. Chembur Maternity Home is relatively central to the survey population, which helps explain the large numbers from this group of women booking at the home. The hospitals further up the referral chain have a wider catchment.

Table 6.1 Number of women who booked at one of the case study hospitals compared with the number who actually delivered at the hospital at which they booked.

| Hospital | Booked (number) | Actual (number) |
|---|---|---|
| Sion | 10 | 24 |
| Rajawadi | 41 | 53 |
| Shtabdi | 84 | 70 |
| Chembur | 263 | 177 |
| All case study municipal hospitals | 398 | 324 |

Source: Community Survey 1999

### 6.2.4 Home deliveries: planned, unplanned and en route to the hospital

Of those who had a delivery at home in Mumbai 53% or 51 responded that they had planned to deliver at hospital. Among those who had planned to deliver in a municipal hospital 33, or 58%, had planned to deliver at Chembur, 15, or 29% at Shtabdi and 3, or 6% at Rajawadi. The remainder planned to deliver at another municipal hospital in the city. Of those who had planned to deliver at an institution, 66% responded that the reason for delivering at a different place than planned was because she did not have time to get to hospital. Timeliness of presentation at hospital (which includes planning to deliver in hospital but not arriving in time), will be discussed further in Chapter Nine.

The above breaks down respondents who delivered in Mumbai by place of delivery. As noted, 91% of respondents who delivered in a municipal hospital in the city delivered in the four hospitals located in the vicinity of the study area: Chembur, Shtabdi, Rajawadi and Sion. The following section presents and compares data from the maternity ward records from each of these hospitals, plus the one private hospital (Inlaks Maternity Home) which agreed to provide this information.

From the maternity ward records for the above hospitals it was possible to obtain basic process and outcome data routinely recorded by staff. These include the number of deliveries, number of peri-natal deaths, number of stillbirths (whether fresh or macerated), the number of caesarean sections performed, the number of maternal deaths and so forth. In this study, three years worth of original records were reviewed. Tables 6.2-6.6 summarise information from the maternity ward records for all of these hospitals for the period 1997-98.

**Table 6.2 Outcome indicators at case study hospitals 1997-98**

| Hospital | Number of deliveries | Number of live births | Number of still births | Still birth rate (number of still births per 1000 live births) | Number of neo-natal deaths | Neo-natal death rate (number of neo-natal deaths per 1000 live births) |
|---|---|---|---|---|---|---|
| Sion | 7272 | 6764 | 308 | 45.5 | 200 | 30.4 |
| Rajawadi | 5334 | 4894 | 243 | 49.6 | 197 | 40.3 |
| Shtabdi | 2523 | 2397 | 74 | 30.9 | 52 | 21.7 |
| Chembur | 2394 | 2365 | 17 | 7.1 | 12 | 5.1 |
| Inlaks (Private) | 78 | 78 | 0 | 0 | na | na |

Source: Maternity ward records 1997-98

As shown in Table 6.2 the total number of deliveries at the case study hospitals during 1997-98 ranged from around 2400 year at the bottom end (Chembur) to 7300 (Sion) at the top end. In the middle lie Shtabdi with about 2500 and Rajawadi with around 5300. Inlaks recorded only 78 deliveries over this period

**6.2.5 Neo-natal deaths**

The neo-natal death rates ranged from 5.1 per 1000 live births at Chembur to 40.3 per 1000 for Rajawadi over this period (see Table 6.2). At Sion the rate was 30.4 and at Shtabdi 21.7. The reliability of these figures however, is not considered high for the following reason. As mentioned in Chapter Four infants were not followed once they left the maternity ward, so, for example, if a very fragile infant was transferred from the maternity ward to the paediatric ward, or to another hospital, and died shortly

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afterwards, the death would not be recorded in the labour ward records of the original hospital. These mortality rates are therefore likely to be underestimates and cannot be relied on to draw any useful conclusions as to the nature of care.

## 6.2.6 Still births

Unlike neonatal deaths which are deaths to infants born alive, which makes it difficult to measure accurately if the death occurs once the infant has left the maternity ward, the identification and recording of a still birth is considered more complete. Staff record the outcome of all births in the maternity ward records, a process which was observed during the study. Rajawadi had the highest still birth rate (49.6 per 1000 live births), followed by Sion at 45.5 per 1000, Shtabdi at 30.9 and then by Chembur at only 7.1 per 1000 live births.

In addition each hospital recorded whether a still birth was a fresh still birth (i.e. had died recently) or a macerated still birth (ie. the foetus has started disintegrating in utero indicating that the death occurred sometime before the woman went into labour). The ratio of fresh still births to macerated still births is regarded as a proxy indicator of the quality of delivery care (Koblinsky et al. 1995). A ratio of 1.0 implies that 50% of the stillbirths or more are due to poor management of labour (Koblinsky et al. 1995). Where the ratio is 1.0 or higher than 1.0 it might warrant a special clinical audit of the quality of the provision of care during delivery.

At Sion the number of fresh still births (184) was higher than the number of macerated still births (124) giving a ratio of 184/124 (see Table 6.3). While this may indicate below optimum standards of delivery care is also likely to reflect delays in referral. In Rajawadi the ratio of fresh still births to macerated still births is lower 117/126. At Chembur the ratio is above one (10/7) but the numbers are relatively small. Finally the results from Shtabdi are confusing. The figures for 1997-1998 suggest only 7 fresh still births but 67 macerated still births. Given the large difference between these two figures they were compared with data from the hospital records in the previous year 1995-1996. In this year, while not so extreme the ratio is still noteworthy. In this year there were 9 fresh still births to 37 macerated still births.

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Table 6.3 Outcome indicators: Number of still births by type – fresh or macerated, and the ratio of fresh to macerated still births at case study hospitals 1997-98

| Hospital | Number of fresh still births | Number of macerated still births | Fresh/macerated still birth ratio |
|---|---|---|---|
| Sion | 184 | 124 | 1.48 |
| Rajawadi | 117 | 126 | 0.9 |
| Shtabdi | 7 | 67 | 0.10 |
| Chembur | 10 | 7 | 1.4 |
| Inlaks (Private) | na | na | Na |

Source: Maternity ward records 1997-98

There are two possible explanations for this. It could be the result of a recording error, however it seems strange that the records for two consecutive years show a similar picture (given that each individual record is completed on the day of delivery and the totals are aggregated monthly and yearly). The second possibility is that the figures are true and therefore might suggest something about the communities around Shtabdi. During the provider interviews staff at Shtabdi reported that a high level of low birth weight babies were delivered at the hospital. They certainly had a high percentage of very low birth weight babies according to the hospital records (see Table 6.4). According to the hospital records over half (58%) of babies born at Shtabdi in 1998 were recorded as weighing under 2.5 kg (i.e. low birth weight). This compares with 33% of babies from Sion. The figures for Chembur and for Rajawadi are in comparison very low however (1.5% and 9% respectively) which puts into question the reliability of all the recorded weight data. In the community survey the mean birth weight based on women reporting the weight of their babies (information that is included on their discharge card) was 2.54 kg, this compares with a mean of 2.64kg at Chembur and 2.59 kg at Rajawadi.

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Table 6.4 Birth weight by hospital as recorded in labour ward records 1997-1998

| Hospital | % of deliveries weighing 2.5kg or less | % of deliveries weighing >2.5kg |
|----------|------------------------------------------|----------------------------------|
| Sion | 33 | 67 |
| Rajawadi | 9 | 91 |
| Shtabdi | 58 | 52 |
| Chembur | 2 | 98 |

Source: Maternity ward records 1997-98

## 6.2.7 Caesarean section rate

Table 6.5 Total number of caesareans and percentage of deliveries born by caesarean section by hospital (1997-1998)

| Hospital | Number of deliveries by caesarean section | % of deliveries by caesarean section |
|----------|---------------------------------------------|----------------------------------------|
| Sion | 1089 | 15 |
| Rajawadi | 538 | 10.1 |
| Shtabdi | 90 | 3.6 |
| Chembur | 0 | 0 |
| Inlaks (Private) | 25 | 32 |

Source: Hospital records 1997-1998

As shown in Table 6.5 above, no caesarean sections were recorded among the records for Chembur for 1998, although three women interviewed as part of the community survey reported having had a caesarean section at Chembur during 1998/1999.

At Shtabdi the caesarean section rate was 3.6%, at Rajawadi it was 10% and Sion 15%, according to the hospital records for 1997-1998. According to the community survey however 16 out of the 358 or 4% who delivered in a municipal hospital in Mumbai had a caesarean section. Among those who had a private delivery 5 out of 62 or 7.5% had a caesarean section. As shown in Table 6.5, the caesarean section rate for the one private hospital (Inlaks) for which information was forthcoming, 32% of deliveries were by caesarean section.

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### 6.2.8 Hospital-based maternal mortality ratio

According to the hospital records the maternal mortality ratios for the 1998 varied from 0 at Chembur to a rate of 606 deaths per 100 000 live births at Sion (see Table 6.6). At Rajawadi the maternal mortality ratio was 102 and at Shtabdi it was 125 per 100,000. Although these figures are based on only one years worth of live births, the data has some value. The fact that Chembur has no maternal deaths is consistent with their policy of turning away any unbooked woman who arrives at the maternity home regardless of the progression of labour or signs of complications. In addition, any booked woman who shows any sign of a complication is referred, and taken by ambulance or in a taxi, to either of the three referral hospitals. The lack of maternal mortality in this hospital therefore cannot be interpreted as being the outcome of the provision of high quality care. This exemplifies the difficulties of using certain outcome figures as measures of quality at the hospital level. So while hospital data is often the only data that exists on maternal deaths the signals that the information may give can be difficult to interpret. The very high death rate at Sion is likely to reflect the severity of referrals, delays in being referred and delays actually reaching Sion.

**Table 6.6 Outcome indicators (peri-natal and maternal deaths) at the case study hospitals 1997-98**

| Hospital | Number of peri-natal deaths | Peri-natal death rate (number of peri-natal deaths per 1000 live births) | Number of maternal deaths | Maternal mortality ratio (number of maternal mortality per 100,000 live births) |
|---|---|---|---|---|
| Sion | 508 | 77.4 | 41 | 607 |
| Rajawadi | 440 | 90 | 5 | 102 |
| Shtabdi | 126 | 526 | 3 | 125 |
| Chembur | 29 | 12.3 | 0 | 0 |
| Inlaks (Private) | Na | na | 0 | 0 |

Source: Maternity ward records 1997-1998

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### 6.2.9   Sex ratio at birth

In addition to the unexplained pattern of fresh to macerated still births at Shtabdi there was another interesting feature of the data from this hospital. Hospitals record the sex of children from all deliveries which makes it possible to calculate a sex ratio at birth for babies born within each individual hospital. While Chembur, Rajawadi and Sion all showed a pattern consistent with what one might expect in this setting, (if a little low), with ratios of 107, 103 and 103 male children to 100 female children respectively, the figures for Shtabdi are difficult to interpret. For the study year, 1997-98, 43% of births were recorded as male and 57% as female giving a male/female sex ratio of 76. This difference is both extreme and the opposite to what one might expect (1154 boys to 1509 girls) in a setting where a preference for boys is the norm (IIPS and ORC Macro, 2001). The records were checked again and then compared with figures for previous years. The pattern was consistent. In the year 1995/96 the ratio was 77 males per 100 females and in 1997/98 the ratio was 82. These figures may be related to the relatively high level of macerated still births - although the number of macerated births is not enough to make up the difference. One alternative explanation might be that women pregnant with boys deliver elsewhere, perhaps at a private hospital. This type of behaviour could skew the sex ratio to this degree. However, very few women replied yes to having known the sex of their child before delivery. But given that finding out the sex of your child is illegal in Mumbai the responses to this question are unlikely to be reliable. It is a very interesting but unexplained aspect of the maternity ward hospital data for Shtabdi.

### 6.3 Section Two - The case study hospitals: A situation analysis based on observation, quality schedule, provider interviews and exit interviews.

Section Two of this chapter takes each of these hospitals in turn, with the exception of Sion[1], and provides a situation analysis of the content and quality of care provided at each based on results from the remaining hospital based methods outlined in Chapter Four (see Table 6.7).

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[1] Access was not permitted to the maternity wards at Sion Teaching Hospital and therefore it is not examined in this section.

**Table 6.7: Summary of the primary methods applied at the municipal case study hospitals**

| Hospital | Methods applied |
|---|---|
| Rajawadi General Hospital<br>Shtabdi General Hospital<br>Chembur General Hospital | Exit interviews<br>Review of case notes (antenatal and labour ward notes)<br>Provider interviews<br>Quality schedule<br>Observation<br>Review of maternity ward records |

### 6.3.1 Case study hospital one: Rajawadi General Hospital

Rajawadi is a large general hospital with a dedicated maternity ward. According to the maternity ward records there are approximately 5000 deliveries per annum at this referral hospital, about 14-19 per day. The caesarean section rate is between 9-10%. The hospital takes referrals from Shtabdi and Chembur and occasionally they refer women to Sion Teaching Hospital. Rajawadi has an on-site Post Partum Centre that is responsible for providing general family planning services, and organising and undertaking sterilisations. According to the quality schedule and provider interviews the hospital also has blood testing and storage facilities on-site and blood is available 24 hours a day, this was confirmed by observation. Typing and Hb tests are normally returned within 1½ hours and within 15 minutes if an emergency, according to staff on the wards, however this was not verified by observation. Due to the scarcity of blood the hospital has a policy whereby patients are required to replace any blood transfused, and staff are advised to try and avoid transfusion in cases where only 1 unit is needed. According to staff at the hospital blood bank, in order to enforce this patients are not discharged until blood has been replaced. The ward receives many referrals from nearby hospitals, both municipal and private according to the maternity records and provider interviews. There is a phone on the ward but there is only one line into the hospital. The switchboard is often very congested and therefore it is difficult to get through. According to staff on the wards, they therefore rarely get a warning of a referral as communication with the hospital is so difficult.

The normal procedure, as reported by staff nurses and the medical doctor, for a woman presenting in labour is as follows. She is first examined by a house officer. If she is in early labour (less than 4 cm dilated) she is moved to the waiting room (10 beds) – here she may move about and is encouraged to lie on her left side in between contractions. Once she is 3-4cm dilated she is moved to the room next door – the delivery room (6 beds, one basin). Curtains for privacy are available in this room. These however, were not in use during the observational phase and the completion of the quality schedule. Women in third stage labour, in supine position and women with their legs in stirrups were not shielded from either each other or staff or visitors who entered the delivery area. There was no basin in the waiting room, one in the examination room, one in the delivery room and one in the toilet attached to the examination and delivery area.

During delivery, according to staff women are required to assume supine position. Even if women were allowed to mobilise prior to delivery (third stage) there is no space in the delivery room to be able to do this. Each of the 6 beds are within an arms reach of each other (observation). It is hospital policy that no visitors or family members are allowed to accompany the woman during labour or delivery.

Once born, babies are checked and wiped clean – within two hours women are shown how to breastfeed before being moved to the post-natal ward (provider interviews). The post-natal ward is separate to the labour and delivery ward. It is a large, light room containing 60 closely spaced beds, most of which have a basic bedside cabinet or table. There is no basin within this room. A side room contained two basic incubators. Wards were unlikely to be sterile, based on observation, and the cleanliness of the toilets was relatively poor. Basins for post-partum women did not always have soap available. However, the ward was well ventilated and women were fed regularly and had easy access to drinking water (observation). At the time of the exit interviews the post-natal ward was relatively full but there were a few empty beds. On a visit to the ward three weeks after the exit interviews had been completed the ward was completely full and eight women (and their babies) were lying on cloth, sometimes mattresses, around the floor of the ward. The staffing levels were the same at this time of high demand as usual, and staff reported being very stretched.

According to providers pubic shaving and enemas are routinely performed on all women presenting in labour (if they arrive with enough time before delivery to perform these). Episiotomies are routine for primigravidae. They are performed on higher parity women if they show signs of tearing. Providers reported only using manual revision of the uterus occasionally; however all of the women interviewed at this hospital on their day of discharge (26) reported having had their uterus revised manually. ANMs reported that the reason for the use of these procedures was that they were 'safe' and 'hospital policy'. Doctors gave reasons relating to safety to justify the use of these procedures. According to providers forceps were the preferred choice for instrumental delivery (verified by hospital records).

Providers reported that women who were labouring in the waiting room were checked hourly, unless in active labour, then they were checked half hourly. Post-natal women waited in the delivery room for two hours while suturing was undertaken and breastfeeding established. Their blood pressure (BP) and temperature were checked before being moved to post-natal ward. Case notes and exit interviews supported provider information. BPs and temperatures were regularly recorded and in general most women had breastfed their baby within an hour of delivery. However, women's reported experience of the waiting room and their case notes did not support provider's reported care for women in labour. Observation and a review of labour notes showed that women were rarely checked, (unless they had raised blood pressure) and they were left to labour alone for long periods. Case notes were at times illegible and sometimes scanty. In addition, access to maternity ward records is not routine and requires special permission.

According to the responses to the exit interview, and verified by observation, women were normally moved to the delivery ward only when they were in very late stage labour. According to staff antibiotics are routinely prescribed for 5 days for all normal deliveries and for 7-14 days for caesarean sections (14 days if the scar becomes infected). Catgut was always used for suturing. This is standard in municipal hospitals and was justified on the grounds of cost. Magnesium sulphate was named by staff as the drug of first choice for pre-eclampsia. Finally, staff did report considering normal deliveries for women with a previous caesarean section but they reported that they

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almost always advised another caesarean. During the study period there was one still birth among the women who completed an exit interview. The woman was put on the large postnatal ward surrounded by mothers and their newborns. She did not know why the baby had died and no member of staff had discussed the baby's death with her. She had not been offered any counselling and was given no additional emotional support (observed and exit interviews).

According to staff, house surgeons on the ward are paid only a small stipend of Rs 4,100 per month and they work 24 hour shifts. Most work additional hours within a private practice of some kind. The same can be said of registrars and lecturers who also receive a monthly stipend of Rs 4,100, according to staff. Honoraries and assistant honoraries who provide expert advice on request and are expected to visit the ward at least once a week receive a stipend of only Rs 500 a month. They usually run their own private practices and are called on only in emergencies. The sister in charge of the ward earns a monthly salary of Rs 11-12,000 per month and work an 8 hour shift. ANMs and staff nurses earn Rs, 8-9000 per month and also work 8 hour shifts. The ward has 1 sweeper and 2 ayabais attached to it, all of whom earn Rs 5-6,000 a month. To put these sums in context, the mean household income of the study population was Rs 2,900 a month. This ranged from a low of Rs 300 a month to a high of Rs 40,000. The median household income was Rs 3000. The salaries of even the most junior staff are relatively high in relation to the populations attending the hospital. Staff had not received any training in the past 12 months.

Table 6.8 uses the quality framework as a structure to highlight elements of care within which quality, according to the description in Chapter Three, is not optimal at Rajawadi. The content is not exhaustive, but provides a useful record of the diversity of quality care identified by the application of the above methods. The table highlights predominantly examples where quality of care is not optimal.

**Table 6.8 The quality framework: Some examples of quality issues identified at Rajawadi**

| Quality Framework | Elements of Care | Quality issues identified |
|---|---|---|
| Provision of Care* | Human and physical resources | ✓ Wages for ANMs, ayabais and sweepers reasonable<br>✗ Low 'wages' for house surgeons – commitment/private work<br>✗ Honoraries – availability unpredictable<br>✗ Training not carried out at all in 12 months before interview<br>✗ Blinds available but not used<br>✗ Delivery room with six beds - no privacy<br>✗ Bed shortages at times of high demand<br>✗ Staff feeling stretched a times of high demand<br>✗ Low blood supplies, blood transfusion given only when over 1 unit required |
| | Referral system | ✗ Difficulty accessing staff from Ward via telephone. One line into hospital, switchboard often engaged.<br>✗ ANC and labour notes for referred women interviewed remained at referring hospital |
| | Maternity information system | ✓ Maternity record for ward completed daily<br>✗ Labour notes often not legible<br>✗ Access to facility records restricted |
| | Use of appropriate technologies | ✗ Use of routine pubic shaving, enemas, episiotomy for primis, manual revision of uterus<br>✓ C-section rate within WHO expected range (10%) |
| | Internationally recognised good practice | ✗ Catgut used for sutures<br>✓ MGSO$_4$ drug of first choice for treatment of eclampsia<br>✗ Women with previous c-section, considered but not actively considered for vaginal delivery.<br>✗ Antibiotics used routinely after every delivery<br>✗ Women not allowed to choose position for delivery<br>✗ Women not allowed social support in labour<br>✗ Variability in consistency of vital test observed and recorded. |

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**Table 6.8 continued**

| Experience of Care | Human and physical resources | ✗ ANMs unable to explain why routine procedures were necessary<br>✗ Toilets with no soap and dirty<br>✓ Women fed regularly and easy access to drinking water<br>✓ Bedside cabinet for personal belongings per bed |
|---|---|---|
| | Cognition | ✗ Woman with still born baby had not been explained what had happened and what the possible reasons for this were. |
| | Respect, dignity, equity | ✗ Privacy not respected (blinds not used) |
| | Emotional support | ✗ Woman with still born baby left on postnatal ward surrounded by live newborn babies, no counselling available<br>✗ Women not allowed social support in labour<br>✗ Staff often leave women to labour alone for long periods |

*The quality of care for the management of emergencies (element five) is not assessed in this study.

## 6.3.2 Case study hospital two: Shtabdi General Hospital

Shtabdi is also a general hospital with a dedicated maternity ward. It is a large, well-ventilated building built around a courtyard with a children's play area in the middle. The maternity ward was dark and dingy compared with the wards at Rajawadi (observation). According to the maternity ward records around 2,500 women a year deliver here, this translates into between 5 and 10 deliveries per day (150-200 a month). The hospital conforms to the WHO definition of a comprehensive essential obstetric care hospital as it undertakes both caesarean sections and blood transfusions. It had a caesarean section rate of 3.6% in the year 1997-98 according to the maternity ward records. It was also possible from the hospital records to identify the religious background of women attending the maternity wards. Three quarters (75%) of women attending Shtabdi, according to the maternity records were Hindu, a fifth (21%) Muslim and only 4% were Buddhist or from scheduled castes.

It has a total of 47 beds. Four of these are in the delivery room that is separate to the labour and post-natal ward. The beds in the delivery room are fixed marble tables/slabs. There is one basin in this room (observation). The remaining 43 beds are in a large room which triples as a labour ward, a post partum ward and post operative ward (including tubal ligations and hysterectomy) – separated broadly into three defined areas. There are no curtains in either the labour ward or the delivery room

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(observation). Privacy in labour is therefore limited. It is hospital policy to prohibit birth supporters/attendants from accompanying women once they present in labour according to providers. Individuals who accompanied the woman to the hospital normally wait in the corridor outside the ward until the baby has been delivered. They are then allowed to see the woman and infant (provider interviews and observation).

Women in labour are unsupported in the sometimes crowded labour ward section of the general ward until they are in established labour (observed and exit interviews). They are then moved to the delivery room where they are required to assume the supine position for delivery (provider interviews, exit interviews and observation). Episiotomies for primigravidae, pubic shaving and enemas are routine. This was both reported by providers and supported by hospital records and exit interviews. According to staff, episiotomies are only given with subsequent deliveries if there is danger of the woman tearing.

Providers reported only occasionally using manual revision of the uterus. They reported undertaking an internal check of the uterus on women who have had a previous caesarean section and delivered vaginally, to check the stitches and see that there was no rupture. Exit interviews suggest that this procedure is used routinely. Pain relief options at Shtabdi are limited. Providers did not report offering any options to women and women did not report using any form of pain relief during labour- even in the event of acceleration of labour using oxytocics and manual revision of the uterus. Anaesthetic injections were reportedly used for suturing. Oxytocics are usually administered intramuscularly according to providers. As discussed in Chapter Three use of any intramuscular oxytocin before the birth of the infant is generally regarded as dangerous because the dosage cannot be adapted to the level of uterine activity and the WHO conclude that this harmful practice should be abandoned (WHO, 1996b).

Antibiotics are routinely prescribed for 5 days for all normal deliveries, and for 7-14 days for caesarean section (14 days if scar becomes infected) according to staff. Post-natal problems such as an infected caesarean scar are not recorded in the maternity ward records (observed). As in all hospitals in the city, a woman receives the post-natal card on discharge. This is required to register a birth and get a birth certificate. The registration of a birth is necessary for obtaining a birth certificate. A birth

certificate is essential for most things in Mumbai (eg. immunisation, registering for education and obtaining food subsidies).

Providers reported, and records support, that each year a number of women abscond (leaves the hospital without being discharged) both with and without the baby. Absconding to avoid a tubal ligation and a fine for higher parity women will be discussed below. The ward does not have baby formula but they do provide cows' milk in cases where the baby is deserted, according to staff on the ward. In these cases sometimes other women agree to breastfeed the baby. Reasons for women to desert a baby according to providers relate to the marital state of the woman - *"usually because the mothers are unmarried"*.

If a baby is born and requires immediate help s/he is transferred quickly to the paediatric unit (just down the hall). If the baby dies the paediatric ward records the death – the delivery ward only records the birth and the discharge of the baby. The management information systems of these two wards function separately (observed and provider interviews). This reduces the reported peri-natal mortality rate as calculated from labour ward registers. Peri-natal mortality is an important outcome indicator.

### 6.3.2.1 Normal procedure at Shtabdi

Once a woman presents in labour she is given a hospital gown to change into and is told to stay in the 'waiting room' (the open room that triples as the post partum ward and post operative ward). She is moved only when in established labour. Registration is done either by the woman, but it can be done by a relative. According to staff nurses registration usually happens within half an hour of arrival. Observation suggested that in reality many people (including women in labour) are left waiting for relatively long periods, being paid little attention. The staff load was heavy at times, but at other times appeared relatively light. Women presenting in labour were often observed waiting and unattended, even at times of little activity.

The labouring woman is first examined by a staff nurse. If necessary a doctor is called to examine her further. The majority of births at Shtabdi are attended by staff nurses alone. The hospital employs only two doctors for this ward, both male, each of whom

work 24 hour shifts. During the first examination providers report taking and recording a woman's BP, temperature, undertaking a vaginal examination and they look at the antenatal records that booked women bring with them. Observation, an examination of labour and delivery case notes and exit interviews with 25 women suggest that the above process is rarely followed. Many of the case notes had only very basic bio-data extracted from ante-natal notes (such as age and religion), no record of a BP or temperature reading and no labour notes bar the abbreviation - FTND - full term normal delivery. Notes were only more complete in the event of a caesarean section or a labour that was sped up (observation and examination of case notes).

According to the quality schedule and provider interviews women are able and are encouraged to walk around in the waiting/labour room. Once 'good pains' are established, or she is 6-7 cms dilated or if her waters have ruptured or if she is high risk, she is moved to the delivery room. Informal discussion with staff and women suggest that women are very often left alone until they are in very late stages of labour.

Provider interviews in conjunction with the quality schedule identified a number of problems experienced at Shtabdi. Providers reported experiencing a shortage of some supplies particularly at the end of the budget year (which is when the case studies were being undertaken). The provider interviews suggested that at times like these (March) when the budget is particularly tight, they try to make clients and their families pay for as much as possible. The hospital has no blood bank on site, although they can type blood. Staff reported that if women require blood relatives are sent, with the necessary blood type to the nearest private blood bank which is not open 24 hours a day) to buy the number of units required. One unit at this private blood bank costs Rs.1,000, according to staff, which is the equivalent to a third of the median household income among users. However, if relatives agree to replace the blood with two units it costs them nothing and if they agree to replace it with one unit it costs Rs 750. As the private blood bank cannot guarantee that a verbal assurance that blood will be replaced will be up-held it often only agrees to the latter two options if the relatives or friends willing to 'donate' are there, and give blood on the spot. This all takes time.

The Hospital also requires relatives to go with a prescription to buy certain anticonvulsants. At the time of the interviews providers reported that they had no anticonvulsants in stock (bar a very small store for exceptional emergencies – not verified). In addition every woman who has delivered is given a prescription for antibiotics which a relative must purchase for them. The pharmacist is not open 24 hours a day.

In addition to having no blood stores on site, the maternity ward has no salaried anaesthetists. In the event that they need one they are obliged to draw on a panel of 5-6 who are private and pay a fee for them. Providers (staff nurses and doctors) reported that it was often difficult (especially during the night) to find one who would agree to come *"many are women with children and they do not want to come at night"*. One of the doctors admitted to sometimes pre-empting suspected obstructed labour and deciding on an emergency caeasarean while the anaethetist was still on site. The hospital is therefore, in theory, a comprehensive essential obstetric care unit but with a number of important factors that inhibit its ability to maintain this status at all times. This introduces some important avoidable delays for women trying to access appropriate care. In the event of a complication these delays can aggravate, even provoke, life threatening conditions.

The hospital receives referrals from Chembur maternity home but also refers to Rajawadi and Sion.

*"If a woman who is not registered here comes with a problem/complication we have no responsibility for her. We send her away and tell her to go to another hospital, Rajawadi or Sion."* (ANM at Shtabdi, March 1999).

Staff nurses complained about the lack of gratitude from women during provider interviews.

### 6.3.2.2 Third child policy

One particular recurrent problem that was identified during discussions with providers relates to a particular municipal corporation policy. If a woman has a third live birth

(and her other two children are still alive) policy dictates that she must either undergo a sterilisation by tubal ligation, for which she is paid 120Rs compensation/stipend, or she must pay a fine of 250Rs. According to staff, it is the responsibility of the staff nurses to obtain accurate information about previous births and either impose the fine or organise for a tubal ligation. Staff nurses at the hospital explained that if they suspected that a woman was lying about the number of live children she has they attempted alternative ways of obtaining accurate information. One such strategy consisted of asking one of the woman's other children during visiting hours how many siblings they have. Women will not be discharged until they have paid this fine. According to a medical officer interviewed 'absconding' (going without paying and without being discharged by a doctor) is a criminal offence – 'a police matter'. The hospital caters to a large muslim community so there is reportedly much resistance to admitting to a third parity if they do not want a tubal ligation. For this reason if they deliver in hospital and 'abscond' they are unlikely to return to municipal services for any postnatal checks for either mother or baby. They are more likely to access private services at cost or delay until no choice but to go.

*"They say they cannot pay 250Rs. – they cry, they do not understand that if they cannot pay that amount now how will they look after their child"* (Medical Officer – Shtabdi, March 1999)

According to staff nurses if women do abscond they must pay the fine out of their own wages. This was supported by all staff nurses interviewed but could not be verified by any of the other methods. This motivation provides a strong incentive for staff to watch third parity women and extract payment where they do not agree to a tubal ligation. The staff at Shtabdi appeared to be very tough on this policy. Once a woman agrees to have a tubal ligation the operation is performed within 24 hours of delivering and they stay for at least two additional days. This is an important potential barrier to care. Respondents to the community survey who delivered at home were asked for their reasons for this and nearly a third (8 out of 25 women) who planned to deliver at home responded that one of their reasons for planning a delivery at home was to avoid a fine. This is discussed in more detail in the following chapter.

The following discussion was observed between one of the male doctors and a pregnant woman. The woman presented (with her family) and requested a termination. According the doctor she already had 5 children. She did, however, not want a tubal ligation. The male doctor was abusive during the exchange and later said:

*"these women are too weak to have a tubal ligation but not too weak to get pregnant"*

*"I can't force them but I have to try my best"*

When asked why he did not suggest an alternative method of family planning such as an IUD he responded:

*" I know these type, if we put one in she will just go to a private provider to have it taken out as soon as she leaves"*

Providers at Shtabdi reported having quite regular cases of women whose caesarean section stitches have come apart and must be re-stitched. However they also reported that after a caesarean section they advise women to do no heavy lifting for three months – but if they can they tell them when their husbands are present to get their support *"these women work so hard – we tell them not to, but they go back to their normal routine so quickly"*

The ANC notes women brought with them when in labour were scrappy and incomplete (observation). Occasionally the weight of the woman and her blood pressure was noted per visit, sometimes only one of the two. Very occasionally some advice is written in the notes, mostly, however, this was not the case. For example, one women who had a very high BP reading antenatally was advised, in her notes to *"reduce salt intake".*

Post natal notes for normal deliveries were also scanty. Sometimes the notes were completely empty (observation). There was little evidence of BPs or temperatures being taken regularly (observation and case notes). During discussions with women at the exit interviews the impression was that they knew much less about what was done to them during their labour and delivery and why than at Rajawadi. It was observed that women were rarely talked to by staff. This could partly be explained by the

sometimes heavy workload of staff, but even at times of little activity staff nurses appeared to pay women little attention and usually waited to be called by a woman before engaging in conversation or undertaking basic examinations. Women were discharged more quickly than at Rajawadi. The average stay for a non complicated delivery at Shtabdi was 1-2 days compared with 2-3 days at Rajawadi. Many of the 43 beds were empty during visits and staff nurses appeared to have a considerable number of tea breaks and/or spent time chatting between themselves. They did however put much effort into ensuring that the register was completed by end of the day. Staff were paid the same as staff at Rajawadi (being municipal government employees, and their hours were comparable also).

At both Rajawadi and Shtabdi women attended antenatal clinics at the individual hospitals. It is normal for women delivering in a municipal hospital to have at least one ultrasound examination during pregnancy. Rajawadi had it's own ultrasound equipment and charged women Rs. 50 per scan. As Shtabdi did not have an ultrasound machine women were referred to private practitioners for sonography (provider interviews and antenatal notes). At these practitioners they were charged between Rs. 150 and Rs. 250, 3-5 times greater than municipal charges (and nearly 10% of a mean monthly household income among the study population who delivered in Mumbai).

## Table 6.9 The quality framework: Some examples of quality issues identified at Shtabdi

| Quality Framework | Elements of Care | Quality issues identified |
|---|---|---|
| Provision of Care* | Human and physical resources | ✓ Wages for ANMs, ayabais and sweepers reasonable<br>✗ Low wages for house surgeons – commitment/private work<br>✗ Honoraries – availability unpredictable<br>✗ Hospital neither a BEMOC nor a CEMOC hospital. It performs c-sections but has no guaranteed blood supplies in case of need for transfusion and no resident anaesthetists<br>✗ Shortages of essential drugs reported by staff (eg. Anti convulsants)<br>✗ Labour ward, post-natal ward and pre and post operative ward in the same room with no partitions<br>✗ No staff training in the past 12 months<br>✗ No curtains or blinds<br>✗ No sonography available at hospital |
| | Referral system | ✗ Policy of turning away all unbooked women regardless of stage of labour or condition<br>✗ No telephone on the Ward or within easy access<br>✗ Labour notes and ANC notes do not travel with woman<br>✗ No hospital vehicle in which to transfer referrals |
| | Maternity information system | ✗ Labour notes generally incomplete or with FTND scrawled over them<br>✗ No vital statistics recorded on the notes except where an intervention is made (eg. Oxytocics or C-section)<br>✓ Facility records up-dated each day |
| | Use of appropriate technologies | ✗ Use of routine pubic shaving, enemas, episiotomy for primis, supine position for delivery and manual revision of uterus<br>✗ Oxytocics administered intramuscularly<br>✗ C-section rate below WHO expected range (4%) |
| | Internationally recognised good practice | ✗ Catgut used for sutures<br>✗ MGSO drug of first choice for treatment of eclampsia, but some problems with supplies<br>✗ Women with previous c-section, considered but not actively considered for vaginal delivery<br>✗ Antibiotics used routinely after every delivery<br>✗ Women not allowed to choose position for delivery<br>✗ Women not allowed social support in labour<br>✗ Variability in consistency of vital tests observed and recorded. |

*The quality of care for the management of emergencies (element five) is not assessed in this study.

Table 6.9 continued

| Quality Framework | Elements of Care | Quality issues identified |
|---|---|---|
| Experience of Care | Human and physical resources | ✗ No female doctors<br>✗ ANMs unable to explain why routine procedures were necessary<br>✗ Vital checks not taken routinely |
| | Cognition | ✗ History taken of variable quality, notes for the most part not written up<br>✗ Staff did not usually discuss care with women |
| | Respect, dignity, equity | ✗ Unacceptable 'motivation' techniques used to force women to have a tubal ligation<br>✗ Labouring women forced to pay for essential drugs when supplies low<br>✗ Financial incentives used to increase compliance with third child policy<br>✗ Staff describe women as ignorant<br>✗ Little privacy - no blinds or curtains |
| | Emotional support | ✗ Women not allowed to be accompanied in labour<br>✗ Staff often leave women to labour alone until in very late stage when they are moved to the delivery ward |

### 6.3.3 Case study hospital three: Chembur Maternity Home

Chembur is a municipal maternity home. It is organised to cater for the health needs of women and infants from ante-natal care through to child immunisation. According to provider interviews and supported by observation it provides antenatal, post-natal, family planning, and infant health services on site. It has facilities to test for sexually transmitted infections, to test haemoglobin levels and type blood and give inferon injections to women with severe anaemia. It also organises health visitors to visit women at their homes for specific health checks, to motivate for family planning and immunisation. According to the maternity ward records the maternity home undertakes nearly 2,500 deliveries a year. Sixty three percent of the women who deliver at the home are Hindu, 13% are Muslim and 24% are Buddhist. It is a basic essential obstetric care unit in that it does not routinely undertake either emergency caesarean sections or blood transfusions. According to staff all complicated cases and all unbooked women are transferred to either Shtabdi, Rajawadi or Sion, usually Shtabdi or Rajawadi, as are any women who may require a blood transfusion. There is an operating theatre but this is used for termination of pregnancies and tubal ligations mainly. Very occasionally, according to the Medical Officer, when pre-arranged an Honorary or a registrar will perform an elective c-section or hysterectomy. In the community survey two women of the 177 women who delivered at Chembur reported

having an emergency caesarean section at the maternity home. This indicates that despite not officially being a comprehensive essential obstetric care hospital they do occasionally perform emergency caesareans. Of these two women, one paid also to have a tubal ligation with the operation. Her and her family report paying a tip of Rs 3,500. This is a large amount for this population (above the median and mean monthly household salary) and significantly above the average. The monthly salary of this particular household was reported at Rs 5,000. This suggests that the family paid a 'tip' that was the equivalent to 70% of their monthly household income. The second woman who reported having a caesarean section at Chembur paid a tip of Rs 1200. She did not have a tubal ligation. This 'tip' was the equivalent of nearly 50% of her household's monthly income of Rs 2,500. Although these are only two cases, they do demonstrate that caesarean sections are being performed. Information about the amount of money paid to staff in tips was collected in the community survey but not the exit interviews. As there was a member of staff present during the interviews (translating) it was not appropriate to ask respondents about tips.

According to the quality schedule there are 30 maternity beds in the home. Five of these are labour and delivery beds and 25 are post partum and post operative beds (tubal ligation, hysterectomy etc). They are organised in a large open plan area roughly separated by see-through blinds/separating walls. There were no curtains visible inside either the labour ward, delivery room or in the waiting room (observation). The waiting room/labour room is to the left, separate from the post natal wards and close to the delivery room. The operating theatre and equipment sterilisation room is on same side. To the right is a large room separated by low walls and bars/partitions (observation). It is quite a dark room with the beds placed very close together. This is divided by low walls into the labour ward (five beds with a basin in one part of the room). There are toilets close to this section. The next section is the post partum room, for women who delivered within one day. The final section is for women who delivered two days ago, those who are soon to be discharged (provider interviews and observation).

According to provider interviews working shifts are 8 hours long – 7am-2pm, 2pm-9pm and 9pm-7am. At each shift there are two auxilliary nurse midwives (ANMs) to help with deliveries except for the morning shift when there are four ANMs. There is

one staff nurse on duty each shift to help in the operating theatre and 1 sister in charge. The medical officer has a residence above the hospital and works 24 hour shifts. ANMs, staff nurses and ayabais all live within the complex also (observed). There is one house surgeon attached to the home but they do not always have one present. There is also one honorary attached to the home. They can telephone him for advice in an emergency but usually the medical officer deals with any emergency or they transfer the woman (provider interviews and observation). Between 9am and 5pm there is either a paediatrician or a gynaecologist/obstetrician present. Both also work in one other hospital. There are two operating theatre attendants (auto-cleaner sterilisation equipment), 2 sweepers (female – wash clothes/sheets etc) and 2 ayabais who make and serve food and, according to medical staff assist during delivery by for example holding women's legs. Again, being municipal government employees their salaries were in line with the other two case study hospitals. There is a waiting room for women in labour where they are given enemas, shaved and examined. All rooms had at least one basin in them, with soap and ANMs appeared to wash their hands very thoroughly and regularly (observed). This was much more noticeable than in the other two study hospitals. There are toilets in easy distance of labour, waiting and delivery rooms which were reasonably clean.

### 6.3.3.1 Normal procedure at Chembur

According to providers when a woman presents in labour she is registered and examined in the examination room by an ANM. All women have their temperature, BP and pulse taken (according to provider interviews). When taken this information is clearly noted in the labour notes (observed). In addition to the time of delivery of the baby the labour card used at Chembur also notes the time of delivery of the placenta and the time of the breaking of membranes. Anything important like 'heavy meconium staining' or 'tear' is written on the labour notes in red so that it is easily picked out. Antenatal, labour and post-natal notes were of a consistently high standard. Colour coding and markings to attract attention to important information on the card was used (observed).

According to provider interviews if there is no problem at the first examination the labouring woman is given an enema and shaved. The fetal heart is listened to

regularly. If considered low risk the labouring woman is just observed regularly and encouraged to move around until she is ready to deliver. When she is in established labour she is moved to the delivery room. In the event of a problem ANMs call either the medical officer or house surgeon (if she is on duty). Enemas and pubic shaving are routine and episiotomies are routine for primigravidae and they are used on multigravidae if tearing looks imminent because, according to one ANM, it is *"better to use episiotomy instead. It is safer for the baby"*. However, in practice it appeared from hospital records and exit interviews that episiotomies for primigravidae were not always used. Supine position for delivery is also routine. Women are rarely, if ever allowed to use any other position according to staff and verified by exit interviews. One reason given by an ANM to explain this was that they were *"not trained to deliver in another position"*.

Hospital policy does not allow women to be accompanied by a birth supporter - *"they ask to be accompanied but they are not allowed"* why? *" Hospital policy - [birth supporters are] usually not clean – we need to keep labour room sterile"* (Medical Officer - Chembur). All women are given a prescription for a five day course of antibiotics after delivery according to staff and verified by case notes. This was the only hospital of the three that did not use manual revision of the uterus routinely. This was both reported by staff and supported by exit interviews. Significantly only one woman interviewed (out of 24) had had her uterus revised manually post delivery. When asked about this procedure staff nurses responded that they did not do this routinely: *"Oh no, we must look at the placenta and check if it is all there"*.

The recommended length of stay for primigavidae with an episiotomy is three days. Multigravidae are advised to stay for 2-3 days and women who have had a sterilisation following delivery are advised to stay for 6 days. These are the average lengths of stays that were observed and noted in case notes and at exit interviews.

Oxytocics are used when labour is prolonged, 'uterine inertia', 'post partum haemorrhage', 'not proper uterine pains'. Providers reported that they did not use vaginal pessaries for induction *" because we cannot do c-sections and with vaginal pessaries you cannot control uterine contractions"*. If a woman is 4-5 cms dilated they use epidocin. If the cervix is effaced and there are no contractions then they use

pitocin. In the event of fetal distress they transfer the woman to either Shtabdi, Rajawadi or Sion. Staff reported administering oxytocics intramuscularly. This practice contradicts WHO conclusions that as a general rule oxytocin should only ever be used to augment labour in facilities where there is immediate access to Caesarean section should the need arise (WHO 1996b).

The home has an ambulance and driver resident on site. This is used to transfer patients in cases of emergencies. The transferred woman or infant is always accompanied by a member of staff according to the provider interviews but not verified. All unbooked patients are automatically sent, unexamined, to another hospital. They must make their own way to the other hospital. There is a telephone at Chembur which was functioning at the time of the study.

For post partum care women are told to return in six weeks time – no specific date is assigned. Campbell et al. (2000) conclude that having a specific date for a post natal appointment is the single most important factor associated with actually having a post-natal check. Post natal checks before being discharged from Chembur include family planning advice, information on infant nutrition and babies are checked. They *"hardly ever get women returning with infections because they all get prescribed antibiotics routinely (5 day course)"*.

The hospital still fines for a third live child if the woman will not undergo a sterilisation but observation suggested that they were not as forceful as staff at Shtabdi. This demonstrates that this policy is differentially applied between hospitals. The only bullying observed during case study visits was a staff nurse trying to discourage a woman with a two year old and a newborn from having a TL. She tried to encourage her to wait a few years and use the copper T in the meantime. In general women responded positively about their care and many had returned to the same hospital at which they delivered their first baby. As the hospital had many facilities on site (antenatal, delivery, post-natal, immunisation, and infant nutrition) women who booked here could access many services at the same time and they responded enthusiastically about this. According to the community survey 27% of women delivering in 1997-98 were primis compared with 64% and 68% at Rajawadi and Shtabdi respectively.

**Table 6.10 The quality framework: Some quality issues identified at Chembur Maternity Home**

| Quality Framework | Elements of Care | Quality issues identified |
|---|---|---|
| **Provision of Care** | **Human and physical resources** | ✓ Medical officer resident<br>✓ Staff housing within complex<br>✗ Low wages for house surgeons – commitment/private work<br>✗ Honoraries – availability unpredictable<br>✗ Labour ward, post-natal ward and pre and post operative ward in the same room with no partitions<br>✗ No staff training in the past 12 months<br>✗ Use of wasteful technologies/inappropriate interventions<br>✗ Over prescription of drugs<br>✗ No curtains or blinds |
| | **Referral system** | ✓ Ambulance and driver on site to transfer referred women<br>✓ All referred women accompanied to referral hospital by member of staff<br>✓ Functioning telephone<br>✗ Policy of turning away all unbooked women regardless of stage of labour or condition<br>✗ ANC notes do not travel with woman |
| | **Maternity information system** | ✓ Labour notes well completed, colour coding used to highlight key events<br>✓ Vital tests recorded on notes<br>✓ Facility records up-dated each day |
| | **Use of appropriate technologies** | ✗ Use of routine pubic shaving, enemas and episiotomy for primigravidae<br>✗ Oxytocics used to speed up labour<br>✗ Oxytocics administered intramuscularly |
| | **Internationally recognised good practice** | ✗ Catgut used for sutures<br>✗ Women with previous c-section, considered but not actively considered for vaginal delivery (considered high risk and referred)<br>✗ Antibiotics used routinely after every delivery<br>✗ Women not allowed to choose position for delivery<br>✗ Women not allowed social support in labour<br>✗ Variability in consistency of vital test observed and recorded.<br>✗ Evidence of emergency c-sections being undertaken |

**Table 6.10 continued**

| Quality Framework | Elements of Care | Quality issues identified |
|---|---|---|
| Experience of Care | Human and physical resources | ✗ ANMs unable to explain why routine procedures were necessary<br>✓ Normal stay 3 days for primis<br>✓ Many associated services available on site |
| | Cognition | ✓ Some evidence of including women in discussions about their care |
| | Respect, dignity, equity | ✗ Evidence of large tips to medical officer<br>✗ No blinds for privacy in labour ward |
| | Emotional support | ✗ Women not allowed to be accompanied in labour<br>✗ Staff often leave women to labour alone until in very late stage when they are moved to the delivery ward<br>✗ Accompanied to referral hospital |

## 6.4 Case studies of private hospitals and maternity homes

### 6.4.1 Use of private hospitals

Just over one in ten women interviewed (76 women or 11.6%) delivered in a private hospital. Of these 59 or 78% of those who delivered privately delivered in a facility in Mumbai and the remaining 28% delivered in a private hospital outside of Mumbai. This figure is similar to findings from an earlier study of the utilisation of maternal health services in Mumbai by the urban poor specifically (from the Deonar suburbs in the north east of the city). In this study just one in ten or 9.7% of deliveries took place in a private facility (Yesudian 1988). As noted earlier, this compares with evidence from the recent NFSH-2 which found that 35% of deliveries in slum areas of Mumbai took place in private facilities (IIPS 2001). There was no statistically significant association between income and use of private facilities according to data from the community survey.

As noted in Chapter Four it was not possible to undertake interviews with staff or recently delivered women at private facilities in the area or under take observation, as access was not permitted. The mystery client approach was therefore used at 8 facilities used by the target population. From these interviews it was possible to identify a limited amount of information about the content and quality of care provided at these institutions. In addition two hospitals partly completed a quality schedule. It is not possible to verify the findings from these schedules but the exercise

did provide a limited amount of information relating to hospital policy that is consistent with policies within the municipal case study hospitals.

**Table 6.11: Summary of the primary methods applied at the private case study hospitals and maternity homes**

| Hospital | Methods applied |
|---|---|
| **Chembur Nursing Home** <br> **Hegde Nursing Home** <br> **Kher Nursing Home** <br> **Ashwini Nursing Home** <br> **Chandra Nursing Home** <br> **Sandhya Nursing Home** | Mystery client approach |
| **Inlaks Hospital** | Mystery client approach <br> Review of maternity ward records |
| **Saibaba Nursing Home** | Mystery client approach <br> Review of maternity ward records <br> Quality schedule completed by provider but not supported with interviews |

## 6.4.2 Mystery client approach

The following results provide an overview of the hospitals based on observation and interview using the mystery client approach. To re-cap, the interviewer posed as the sister of a recently pregnant woman doing some research into the private facilities in the locality. A loose questionnaire schedule was used as a basis for the discussion and to ensure some level of comparability between responses (see Appendix One). In all eight private hospitals or homes were investigated. Twenty nine women from the survey population delivered at these facilities: Chandra Nursing Home (14 women), Saibaba Nursing Home (7 women), Ashwini Nursing Home (2), Kher Nursing Home (2), Sandhya Nursing Home (1 woman), Inlaks Hospital (1), Chembur Nursing Home (1), and Hedge Nursing Home (1).

The method has a number of limitations. The visits were short one-off visits and it was not possible to verify information communicated during discussions with providers by observation or formal provider interviews. However, the alternative was not to include any discussion of private providers, bar the analysis of the community survey.

Not all topics were covered in all the private facilities investigated. It was decided to reproduce the original notes of the woman researcher employed and trained to undertake the mystery client work. The notes are limited but provide some information about these providers.

### 6.4.3   Private hospital examples

#### 6.4.3.1 Chembur Nursing Home

*Chembur Nursing Home is located in one of the quieter lanes near the railway station. It is a small cottage like place which occupies the entire ground floor. It appears to be four flats converted into four rooms. Two rooms serve as general ward, each containing between 5-6 beds, one room serves as consulting room, the fourth contains the operation theatre.*

*Impressions*

*The first contact on entering the premises was a woman who appeared to be in her early 60s. She was brusque and dismissive (kept on reading the newspaper while I was speaking to her) and she wasn't very informative. When asked whether the husband would be allowed to accompany her sister during labour she said that this is available at five star places but not at her nursing home. She said, "People who know me will come to me". The home probably caters to the lower middle class. When the interviewer asked whether she could look around the response was "First you get the patient then we will see". The 'ayabai' (there were two of them) was very curious and when asked how many beds were available she said up to 20 could be accommodated. This seemed an exaggerated figure given that there were only 12 beds at most in the general Wards. The home employed no nurses, only doctors.*

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## 6.4.3.2 Hegde Nursing Home

*Hedge Nursing Home is located in one of the busy lanes close to the railway station. It is a sophisticated looking place which occupies the first and second floor of the building. The first floor contains the consulting room (air-conditioned (A/C)), the examination room, one more room with a bed and the Doctor's consulting room.*

*On the second floor there is a variety of options available with respect to rooms. For example, a woman could stay on a general ward or hire a private room (either A/C or non A/C). Private rooms have bathrooms attached and a bed for a relative. The general ward has approximately three beds. The toilet for these is shared. The second floor also has the operation theatre, a kitchen room cum storeroom (medicines, IVs, etc) and a labour room. Another polyclinic occupied the ground floor.*

*The office boy asked whether I had come from the 'Municipality' and asked for a card (suspicious?). The lady doctor was more than willing to talk and was quite informative. She was reassuring when I displayed insecurity regarding my sister's delivery. She said that ideally no medication should be given. Though may prescribe something for vomiting. She also sent the office person to show us around. The toilet was clean and wash basin was inside. A good number of patients were waiting to meet the doctor. Possibly caters to the upper middle class (though lower middle people were also present). There was an operating theatre at the Home and no blood bank on site.*

### 6.4.3.3 Kher Nursing Home

*Kher Nursing Home is located on the road right outside the railway station, almost opposite Ameeta Nursing Home. Another quiet place. It occupies the first floor. There was a reception and uniformed nurses were present. The doctor wasn't around (possibly because it was well past 12 o'clock). I couldn't look around but possibly there were 3-4 general rooms and 2 (?) which served as private rooms though no extra facilities seemed to be available. The impression was generally clean and bright. There was one toilet with wash basin outside it but no soap. There was one operation theatre. The nurse was willing to talk though wasn't very informative. She said that the husband will not be allowed in the labour room. There was an operating theatre at the Home and no blood bank on site. Women and their families needed to make their own arrangements in case of requirement of a blood transfusion.*

### 6.4.3.4 Ashwini Nursing Home

*Ashwini was located in a street away from the main road. It is a quiet place (again possibly because it was late in the afternoon). It occupies the ground floor of a residential building. I saw at least 3 A/C machines on the outside. When you walk in you can see the consulting room. It had a small wash basin. Further down the passage was the waiting room. The lights had been turned out and the uniformed nurses were sitting around watching television. When told I needed some information regarding my sister's delivery, one of the nurses called the doctor. The lady doctor (about 30 years) had a very unfriendly approach. She answered most questions in a very bored fashion. She was visibly annoyed when asked whether my brother-in-law or other family member could accompany my sister in the labour room. There was an operating theatre at the Home and no blood bank on site. There was a label giving a contact number in case of requirement of blood transfusion.*

### 6.4.3.5 Inlaks Hospital

*Inlaks is located on a small lane on a main road. It is a large private hospital spread over six stories. There is a reception, an enquiry counter, an information counter and a payment counter. There were a number of visiting consultants in other fields such as cardiologists and ear, nose and throat specialists. The Maternity ward was on the second floor. There was a lift available, or you could go up a narrow staircase. On the floor there is a reception table for the nurses. The Labour room was right in the lobby (if the door had been open one would look right into it on reaching the head of the staircase). There were four types of rooms available. One deluxe (700Rs with television & refrigerator), one A special (600Rs, A/C, 1 patient per room), two B specials (400Rs, 2 patients per room) and the general ward (3 patients per rooms, very small & cramped). I saw the A special room. It seemed quite comfortable. The nurse was talkative though not very informative. They performed operations on site but had no blood bank. If blood as required this would have to be obtained from a blood bank in Ghatkopar (about 30 minute away). Sonography was available at the hospital.*

***Cost***

*Normal delivery charges approx. 2500Rs and C-section 4500Rs.*

### 6.4.3.6. Chandra Nursing Home

*Chandra Nursing Home is located in a building in the middle of a small colony. It occupies the ground and second floor of the building. The doctor's office was well furnished. A secretary answered all my questions, though in consultation with the doctor. The ground floor passage of the building was very badly lit.*
*The second floor was better. There were beds (general ward) on the second floor but they were for other minor cases and not for use as maternity wards. The secretary was willing to talk as I was prospective client.*

*They usually do scanning in the 4th & 7th month of pregnancy. They do not have the required facilities in the nursing home as yet, but assured me that the scanning would be available there by the time my sister arrived there for the delivery. They have a pathology laboratory attached. They carry out complete blood analysis routinely prior to delivery. This includes blood grouping, etc.*

*She explained that they performed three types of delivery- normal, forceps & C-section. For maternity there is one general ward which has 8 beds. There are partitions such that there are 2 beds per section. The 3 private rooms (A/C with toilets attached) lined a badly roofed passage. The rooms had a very low ceiling making the small room even smaller. There were two beds- one for the patient and one for the relative. The metal roof covering the passage allowed the rain to come in at the door of the last of the three private rooms. Facing this door was a door leading to the operation theatre (OT). This was the most expensive place so far. However it did not have any extra facilities to justify the high cost (especially in the private rooms). Unexpectedly, the patients seemed to belong to the lower middle class.*

*Cost*
*If you register in the general ward the charges are 5000Rs for a normal delivery 10,000Rs for a forceps delivery & 18,000Rs for a caesarean section. But, if you require a private room the same would cost 10,000Rs, 18,000 & 25,000Rs respectively*

### 6.4.3.7 Saibaba Nursing Home

*Siababa Nursing Home is located above a shop (called a 'gala') in an industrial estate. The lady at the reception asked me to speak to the doctor for the required information.*

*After waiting for almost three-quarters of an hour, the doctor arrived (in a brand new car- latest model). He invited me into his consultation room. He asked me who had directed me to him, where do I stay, where does my sister stay, would it possible for my sister to come for an early check up? When I asked how much would the total come to for a normal delivery he quoted about 3500Rs and when I asked how much would it cost for a C-section, he asked why I was thinking in terms of C-section already! The only one so far who answered in this way.*

*He showed me around the place. There were 4 types of rooms. General (150Rs per day)- 3 beds in the room, private non A/C with toilet outside (300Rs), private non A/C with bathroom attached (350Rs) and private A/C (500Rs).*

*Since it is like a small polyclinic, there were 2 consultation rooms and a general ward for the males. Overall a nice place though with box-sized rooms. There was an operating theatre at the Home and no blood bank on site.*

### 6.4.3.8 Sandhya Nursing Home

*Sandhya Nursing Home is located in a building facing a main road. It occupies the 1st floor of the building. One room serves as consulting cum waiting room. The consulting room seemed quite big. The receptionist answered my questions.*

*Information regarding charges was not given saying it was up to the doctor's discretion. But, a C-section would cost near 10,000Rs. A registration fee of about 5,000Rs would be required which was non-refundable. I could not ask too many questions, as she had to attend to a number of patients waiting to see the doctor. She*

*did send a person to show me around the ward. The ward had a small centre table with some chairs for the relatives. There were about 3 private rooms with A/C and 4 non A/C. Both types of rooms had an extra bed for a relative. The charges were 400Rs & 300Rs respectively. The general ward had two beds each. There were about 3 or 4 of these. Some of the rooms had no windows. The labour room had just one bed. The operation theatre adjoined the labour room but no blood bank on site.*

### 6.4.4 How much does it cost to give birth in a private facility in the study area?

The most useful information that this approach provided is an idea of the costs charged by private facilities for maternity in this locality. The approaches varied from an upfront registration fee of 3000Rs for registration, a fee which included all subsequent antenatal visits to a 200Rs registration fee followed by a 100Rs per antenatal visit after registration (see Table 6.12). There did appear to be some consistency in pricing among the facilities at the lower end of the market, with a normal delivery costing between 4 and 5,000 Rs and a caesarean section costing 10,000Rs. At Saibaba these costs were slightly lower at 3,500Rs for a normal delivery and 9,000Rs for a caesarean section. Interestingly the rates charged at Chandra Nursing Home (at which 14 of the survey population delivered) were, with the exception of a normal delivery (4,500-5000Rs), much higher than the rest of the study group. In addition to this a forceps delivery was charged at a differential rate to a normal delivery, the cost of which was similar to the cost of caesarean at the other establishments. At Chandra a forceps delivery would cost a family 10,000 Rs and a caesarean section 18,000 Rs. These costs were significantly higher if the family wanted a private room. In this instance the cost of a normal delivery was 10,000Rs, a forceps delivery was 18,000Rs and a caesarean delivery 25,000Rs. The cost of the latter is the equivalent to at least seven times the median monthly household income of the study population and over half the monthly household income of the household with the highest income in this group according to the community survey.

Beyond a good idea of the range that it could cost to deliver in a private institution it is not possible from this approach to make anything other than general observations

about the size, capacity and likely clientele of the above hospitals. Hygiene and privacy were not measured bar a few very general observations.

In addition to the information about costs two additional factors are worth mentioning. All of the private providers had an operating theatre and performed caesarean sections regardless of their size but none of them had their own blood bank and each responded that if blood was needed the family would need to make its own arrangements.

**Table 6.12 Cost in rupees of maternity care at private hospitals investigated in study area (1999-2000)**

| Hospital | Registra tion | Cost for normal delivery | Cost for forceps delivery | Cost for C-section | Cost for special to private room (per day) | Cost for private room and normal delivery | Cost for private room and forceps delivery | Cost for private room and C-section |
|---|---|---|---|---|---|---|---|---|
| Chembur | 3,000 | 5,000 | | 10,000 | 800 | | | |
| Hedge | 450 + 100 per ANC | 8-9,000 | | 10,000 | 4,000- 5,000 | | | |
| Kher | 250 + 100 per ANC | 4-5,000 | | 10,000 | | | | |
| Inlaks | | 2,500 | | 4,500 | 400-700 | | | |
| Chandra | | 5,000 | 10,000 | 18,000 | | 10,000 | 18,000 | 25,000 |
| Saibaba | | 3,500 | | 10,000 | 150-500 | | | |
| Sandhya | 5,000 | | | 10,000 | 300-400 | | | |
| Ashwini | 250 + 100 per ANC | | 4-5,000 | 10,000 | 500-600 | | | |

Source: Mystery Client Interviews 1999

### 6.4.5 Quality schedule and hospital records

Attempts were made to obtain more detailed information about the above hospitals using similar techniques to those used at the Municipal Hospitals. However, only two private hospitals (Inlaks and Saibaba) agreed to provide more information about the number of deliveries they perform. Only the Director of Saibaba Nursing Home completed the quality schedule. Access to these two hospitals was facilitated by the Director of Maternal and Child Services in Mumbai Municipal Corporation.

### 6.4.5.1 Inlaks Hospital

Only information from the hospital records were made available for Inlaks, the quality schedule was not completed.

Inlaks Hospital recorded 78 deliveries between April 1997 and March 1998, an average of 6 deliveries a month. The number of deliveries per month ranged from 3 in July to 14 in October. Thirty seven of the women delivering were multi-parous the remaining 41 were primigravidae. According to the records 25 women delivered by caesarean section (10 recorded as emergency and 15 as elective). This indicates a total caesarean section rate of 32%, an elective rate of 19% and an emergency rate of 13%. This rate is considerably higher than that recorded at even the case study municipal tertiary hospital in this area. Only 2 forceps deliveries are recorded. Fifty three women, or 70% of all women who delivered here had an episiotomy. If we subtract the women who delivered by caesarean section from the total it would appear that 100% of women delivering vaginally in this hospital were given an episiotomy.

Fifteen percent of women were aged under 20, 5% were over 35 and the remaining 80% were aged between 20 and 35 (inclusive). Eighty two percent of women were Hindu, 14% were Muslim and 6% were Christian. Fifty four percent of babies born were female and 46% were male.

**Table 6.13 Data from hospital records of two private providers (Inlaks hospital and Saibaba nursing home) 1997-1998**

| Indicators | Inlaks | | Saibaba | |
|---|---|---|---|---|
| Number of deliveries p.a. | 78 | | 56 | |
| Number of primis | 41 | | na | |
| Number multiparous | 37 | | na | |
| Number of vaginal deliveries | 53 | | 52 | |
| Number of caesarean deliveries | 25 | Rate 32% | 4 | Rate 8% |
| Number of episiotomies | 50 | Rate per vaginal delivery 100% | 33 | Rate per 100 vaginal deliveries 63% |
| % Women aged under 20 | 15% | | na | |
| % Women aged 20-35 | 80% | | na | |
| % Women aged over 35 | 5% | | na | |
| %Hindu | 82% | | na | |
| %Muslim | 14% | | na | |
| %Christian | 6% | | na | |

Source: Hospital records from Inlaks Hospital and Saibaba Nursing Home 1997-98

### 6.4.5.2 Saibaba Nursing Home

The Director of Saibaba Nursing Home completed the quality schedule independently As shown in Table 6.13. Saibaba Nursing Home has about 60 women delivering at the home a year (between 4-5 a month). This, as with the other private hospitals for which average numbers of deliveries is noted, is a relatively low throughput per week. The nursing home employs up to 5 staff nurses and one sister, one house surgeon, one anaesthetist and one paediatrician. The remaining staff are support staff (five ayabais, one receptionist, one sweeper and two male attendants). The hospital reported using the following procedures routinely: enema, pubic shaving, intravenous infusion, rectal examination, supine position for delivery and episiotomy for first births. Women with a previous caesarean section are actively considered for a vaginal delivery in subsequent pregnancies (according to the Director). Catgut is selected as the suture material of first choice. Finally the recommended length of stay for an uncomplicated delivery at Saibaba is 4 days and for a caesarean section 6-8 days. Table 6.13 summarises what information was volunteered about the number and type of births.

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According to this information the c-section rate is about 7% and the episiotomy rate for vaginal deliveries is 63%.

The limitation of this information is that it is unverified. The quality schedule was completed and returned and there was no opportunity to discuss the information. What this information does indicate is that, as with the municipal hospitals a number of inappropriate procedures are being used routinely. Unlike, municipal hospitals women who deliver at Saibaba are also routinely given an intravenous glucose infusion. The capital and revenue costs of running a nursing home with an operating theatre cannot be insignificant. In addition, according to the hospital records only 4 women were delivered by caesarean section in 1997-98, yet the Director reports employing a full time anaesthetist, house surgeon, paediatrician and up to 5 staff nurses. This suggests that the anaesthetist is either employed as and when he or she is needed, or that the services of the anaesthetist are required more frequently than 4 times a year, as the hospital records would suggest. Epidurals for pain relief are not offered by this hospital (another responsibility for an anaesthetist). Ultimately, the difficulty of obtaining reliable information from the private sector suggests that they are fearful of being transparent about their work in case this invites scrutiny, and ultimately greater regulation.

## 6.5    Summary

Chapter Six provides a situation analysis of the institutional environments within which 80% of all women who gave birth in Mumbai delivered based on the provider based methods and the exit interviews. It brings together findings from multiple data sources to start building a picture of the basic structure, content and quality of services available to the urban poor in this area of one of the world's largest cities. It provides an indication of the range of the services available to many women in urban slums in India. As a city Mumbai has one of the largest percentages of women in this socio-economic group accessing institutional care – a trend that, under the current policy environment, is likely to grow within other large cities in the Sub-Continent. What these case studies indicate is that institutional maternity care in both the private and the municipal sector is of variable content and quality. The issues range from a lack of basic drugs, poor note taking, weak blood transfusion protocols to the routine

use of unnecessary and in some cases potentially harmful procedures that would not be considered humane or evidence based.

For the private sector direct methods of data capture were hindered by the reluctance of largely unregulated private institutions to participate. This reflects the uncomfortable relationship that exists between the private and public sector. The former has a closed door approach to scrutiny and is nervous of regulation, a feature of many private providers around the world.

Chapter Seven presents results from the community survey. It further examines the quality and content of the provision of care at the case study hospitals examined in this chapter based on responses by the target population about their care during labour and delivery. In particular it examines factors that determine a woman's place of delivery in the slums of the eastern suburbs and considers the extent to which 'quality' influences utilisation and choice of place of delivery.

# Chapter Seven

## 7.1  What determines place of delivery?

### 7.1.1  Introduction

Chapter Seven builds on the situation analysis of quality of care at institutional maternity services in the study area, drawing on results from the community survey. Section one examines results from the community survey are examined to identify factors which determine where women in the slums of the eastern suburbs deliver; whether at a municipal hospital or a private hospital; or whether a woman has a planned home delivery or an unplanned home delivery. Section two of this chapter focuses on responses to questions in the community survey that ask women directly about factors that influenced their choice of place of delivery and considers the extent to which quality influences utilisation and choice of place of delivery.

## 7.2  What determines place of delivery?

Multiple factors influence where a woman plans to deliver her baby (see literature review, chapter two) such as the availability of health care facilities, socio-economic and educational status and distance, both relative and actual (see Thaddeus and Maine 1994). All women in Mumbai theoretically have access to 'free' municipally provided delivery services and there are a large number of private alternatives also. Therefore 'availability of services' is likely to influence the place of delivery less than in areas where there are either considerable logistical barriers to accessing services (such as lack of transport, poor roads and so forth) and/or where services are a relatively long distance away from the pregnant woman, such as rural areas.

Chapter Seven aims to identify the major factors that determine the study population's planned and actual place of delivery using the methods described above. Poor quality care is described by Thaddeus and Maine (1994) as a potential 'delay' for women accessing adequate care once at a facility. In this thesis it has been suggested that

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women's experience of care and the reputation of the quality of the provision of care may influence women's choice of provider.

## 7.2.1 Where did the respondents deliver?

Of the 650 women interviewed in the community survey 513, or 81% delivered in Mumbai. To re-cap of these, 68% delivered in a government facility, 12% in a private facility, 2% in a charitable hospital and the remaining 18% delivered at home (this includes 3 women who delivered en route to a hospital). This group is made up of 45 women, who planned to deliver at home and 51 who had an unplanned delivery at home. In the following analysis the latter two groups are treated as distinct categories as the motivating factors for women who have planned home deliveries are distinct from those who plan to have a hospital delivery but have an unplanned home delivery instead.

The outcome groups for delivery are therefore: municipal hospital delivery, private hospital delivery, planned home delivery and unplanned home delivery.

The results of the community survey made it possible to examine a number of factors identified in the literature review as contributing to the place of delivery. These factors are examined below and analysed to establish which, if any were significantly associated with where women in this population delivered. Factors examined include; distance; access; religion; education; economic status; birth order and location.

### 7.2.1.1 Distance/Access

According to the community survey, 74% percent of women delivering in a hospital took less than 30 minutes to reach the first hospital, 21% took between half an hour and an hour and only 6% took over an hour (25 women). Eighty four percent of women travelled to hospital by auto-rickshaw, 11% took a taxi and 3% walked. In Mumbai, even at night, auto-rickshaws are available 24 hours a day. In addition, all of the pockets were within 5 km of a Government Hospital. This does not mean that there are not delays to reaching hospital. Out of the 51 women who had an unplanned home delivery 39 reported that they did not have time to get to the hospital (nearly half of these had labours that were under 3 hours long). This group is examined in

more detail in Chapter Nine which considers factors that influence timeliness of presentation for those intending to deliver at a hospital.

Respondents were asked if anything specific delayed their arrival to the hospital, the cost of the journey to the hospital was not mentioned by any of the respondents as a specific cause for delay. Distance or time taken to travel to the hospital becomes an issue when a woman is referred as it can take over an hour to travel from Chembur to Rajawadi, or Sion at busy times of the day (as evidenced by the timing between departure from home and arrival at the hospital of delivery by respondents).

### 7.2.1.2 Religion

Interestingly data from the community survey suggest that there is no significant relationship between a woman's religion and place of delivery. This is likely to reflect the likelihood that factors such as educational status of the woman and income are not generic across individual religious groups and are more likely to be stronger determinants of where a woman delivers her baby in this setting. However Table 7.1 shows some differences in place of delivery by women of different religious backgrounds, although as stated these are not statistically significant. For example, according to the survey a greater percentage of planned home deliveries (66%) were to Hindu women compared with only 44% of private deliveries. In contrast Buddhists formed a comparatively larger percentage of private deliveries (32%) than they did planned home deliveries (20%). The Table (7.1) also shows that Muslim women made up a comparatively large percentage of women having unplanned home deliveries compared to the other places of delivery where they make up a small percentage.

### 7.2.1.3 Socio-economic status

A number of indicators of socio-economic status were available from the community survey and it was considered important to select an indicator which reflects more than just income. Given the range in household size and composition household income was not considered the most indicative indicator of socio-economic status in this instance. One of the factors that was tested was whether or not the family home was owned or rented. Interestingly there was no significance between this and place of delivery, although a higher percentage of women who had a private delivery lived in a

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house owned by her family (79%), compared to 67% of women who had a planned home delivery (see Table 7.1).

Three other indicators of socio-economic status, however, were highly significantly associated with place of delivery: whether there was rubbish outside the household, whether the family owned a fan and whether there was at least one family member in permanent service.

Interviewers were asked to note whether or not there was rubbish in the immediate vicinity of the house. Sixty two percent of women, who had a planned home delivery had rubbish outside their home compared with 17% of women who had a private delivery and 26% of women who had a municipal delivery. This is more than would be expected were their no association. The existence of rubbish outside a property may reflect a less settled community, less care with personal and familial hygiene, less capacity or space to dispose of rubbish and more overcrowded conditions where more households are living in close proximity making effective rubbish disposal problematic. It is an indicator that, to some extent, encapsulates some of the less recognised outcomes of poverty (Table 7.2).

The second indicator of socio-economic status that was significantly related (p=0.001) to place of delivery was whether or not the family owned a fan. This is a consumer durable that would be considered a necessity by most living in the overcrowded and hot slum developments of M' Ward and, compared to other consumer durables respondents told us about (such as telephone, television, VCR) relatively affordable. Only 5% of women who had a private delivery did not own a fan, less than expected in the absence of a relationship, in contrast 38% of planned home deliveries were to women whose households did not own a fan (see Table 7.2).

Finally, as shown in Table 7.2, place of delivery is significantly associated with whether or not at least one member of the family works in permanent service (thus giving the family a relatively secure monthly income). A higher percentage than expected of private deliveries were to women from households with at least one person in permanent service (43%), compared with 25% of municipal deliveries and 9% of planned home deliveries.

Table 7.1 Percentage of women who delivered at a municipal or private hospital or had a planned or unplanned home delivery in Mumbai by selected socio-economic factors where the association is not significant (n=513)

| Socio economic variables | Municipal | Private | Home Planned | Home Unplanned |
|---|---|---|---|---|
| Own house | 76 | 79 | 67 | 75 |
| Religion Hindu | 51 | 44 | 62 | 47 |
| Muslim | 15 | 22 | 18 | 29 |
| Buddhist | 32 | 32 | 20 | 24 |

Source: Community Survey 1999

Table 7.2 Percentage of women who delivered at a municipal or private hospital or had a planned or unplanned home delivery in Mumbai by selected socio-economic factors where the association is significant at the 99% level (n=513)#

| Socio economic variables (overall % significance of association – pearson chi-squared) | Municipal | Private | Home Planned | Home Unplanned |
|---|---|---|---|---|
| Rubbish outside the house *** | 26 | 17 | 62*** | 20 |
| Do not own a fan *** | 22 | 5*** | 38*** | 33 |
| At least one member of family in permanent service *** | 25 | 43*** | 9*** | 12** |

Source: Community Survey 1999
*       10% significant
**      5% significant
***     1% significance
# E.g. Twenty six percent of respondents who delivered at a municipal hospital had rubbish outside their house compared with 17% of respondents who had a private delivery.

## 7.2.1.4 Birth order

In terms of actually where women gave birth and birth order the association was strong (p=0.000). Eighty seven percent of primigravidae delivered in an institution and 13% delivered at home, compared with 70% of women having second order births or above giving birth in an institution and 30% delivering at home, higher than expected were there no significant association.

## 7.2.1.5 Educational status

Two indicators thought to reflect the influence of education in a household were examined. These were; how well a woman could read (either easily, with difficulty or not at all); and whether the household contained an educated female (ie. one who had obtained any of the following levels of educational attainment: up to middle pass, beyond middle pass and beyond secondary).

Table 7.3 below demonstrates the strong association between place of delivery and the presence of an educated female in the household. Over 9 out of 10 of unplanned home deliveries were to women who lived in a household with no educated female, higher than expected were the null hypothesis true, and 78% of those who had an unplanned delivery also lived in a household with no educated female (p=0.000). This compares with 43% of those having a private delivery (lower than expected) and 62% of municipal deliveries. Conversely 38% of private deliveries were to women from households in which there is a woman who attained middle or above level of education (higher than expected). The impact of education at the higher levels of attainment is likely to be compounded by socio-economic status.

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**Table 7.3  Percentage of women who deliver at one of the following places in Mumbai by the level of education of the highest educated female in the household. (n=513)**

| Place of delivery | Municipal | Private | Home Planned | Home Unplanned | Percentage by level of education of highest educated female (all respondents) |
|---|---|---|---|---|---|
| % No educated female | 62 | 43*** | 93*** | 78 | 64 |
| % Up to middle pass | 24* | 19 | 2*** | 8 | 20 |
| % Beyond middle | 13 | 25*** | 4 | 14 | 3 |
| % Beyond secondary | 2 | 13*** | 0 | 0 | 3 |
| Total % | 100 | 100 | 100 | 100 | 100 |

Source: Community survey 1999

*Pearson Chi-squared P=0.000*
*      10% significant
**     5% significant
***    1% significant

The second factor reflects the educational attainment of the respondent themselves. Women were asked whether they could read. As shown in Table 7.4, of respondents who had a planned home delivery just over 82% could not read at all compared with the ability to read of respondents who delivered at a private hospital. In this case only 30.2% could not read. The association between ability to read and place of delivery was very strong (p=0.000). Only 7% of those who had a planned home could read easily, a lower percentage than expected were the null hypothesis true, compared with 59% of those who had a private delivery. In addition a high percentage of women (67%) who had an unplanned home delivery could not read at all compared with those delivering in either a private (30%) or a municipal hospital (45%).

Table 7.4 Percentage of women who delivered a municipal hospital, a private hospital, had an unplanned or a planned home delivery in Mumbai by ability to read (%)

| Ability to read/Place of delivery | Municipal | Private | Home Planned | Home Unplanned | Total |
|---|---|---|---|---|---|
| Easily | 43 | 59** | 7** | 26* | 40 |
| With difficulty | 12 | 11 | 11 | 8 | 12 |
| Not at all | 45 | 30*** | 82*** | 67** | 49 |
| Total (n=513) | 100 | 100 | 100 | 100 | 100 |

Source: Community survey 1999
*Pearson Chi-squared P=0.000*
\*        10% significant
\*\*      5% significant
\*\*\*    1% significant

## 7.2.1.6 Location

One of the most interesting findings from this analysis was the relationship between place of delivery and residence of the woman. Women who were interviewed came from one of 6 slum pockets and there was a significant relationship between where a woman lived and where she delivered.

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Table 7.5 Percentage of women within each pocket who deliver at one of the following locations in Mumbai: municipal, private, home planned and home unplanned

| Place of Birth/ Location | Municipal | Private | Home Planned | Home Unplanned | Total |
|---|---|---|---|---|---|
| Guatem Nagar (n=57) | 86* | 7 | 2 | 5 | 100 |
| New Bharat Nagar (n=159) | 68 | 2*** | 21*** | 10 | 100 |
| Lakshmi Nagar (n=90) | 53** | 18* | 6 | 23*** | 100 |
| Nagababa Nagar (n=51) | 73 | 28*** | 0*** | 0*** | 100 |
| Om Ganesh Nagar (n=117) | 75 | 11 | 4* | 9 | 100 |
| Shahji Nagar (n=52) | 75 | 23*** | 2*** | 0*** | 100 |
| Total (n=513) | 70 | 12 | 9 | 10 | 100 |

Source: Community survey 1999
Pearson Chi-squared p=0.000
\*       10% significant
\*\*      5% significant
\*\*\*     1% significant

Table 7.5 shows the percentage of women within each pocket by place of delivery. The association is very strong (p=0.000). The data reveals some interesting patterns. Notably over a fifth (21%) of women from New Bharat Nagar had a planned home delivery, a far higher percentage than in any other pocket (higher than expected). This compares with only 2% of women from this pocket who had a private delivery in Mumbai. Of particular interest is the fact that a high percentage of women from Lakshmi Nagar had an unplanned home delivery (23%).

A higher percentage of women from Nagababa Nagar and Shahji Nagar than expected were there no significant association, had a private delivery than in the other four pockets (28% and 23% respectively). No one in these two pockets had an unplanned

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home delivery. Finally, in Guatem Nagar 86% of women delivered in a municipal hospital, a higher percentage than any other pocket.

In many respects location reflects the overall characteristics of a community and may be more predictive of place of delivery than the individual characteristics of women and their households. If this were the case the relevance to policy would be that health interventions or targeted health messages would be better aimed at communities as a whole and sub-groups within those communities than groups of women with particular characteristics (such as no education). For example, from this analysis women in Lakshmi Nagar are more likely to have an unplanned home delivery. Why? If unplanned deliveries were entirely unpredictable because they were linked to the uncertain length and progression of labour then we would expect unplanned deliveries to be more or less evenly spread. Where this is not the case it indicates that certain characteristics of either location or background or both put some women at greater risk of this event and health professionals would need to know why before they could offer any intervention aimed at reducing this event.

The similar behaviour of women living within the same communities is not unexpected. To the outsider it is difficult if not impossible to differentiate between urban communities or to identify the measures the community use to identify their neighbourhood, such as ethnicity, caste, class or income level, but areas do have individual identity to the people who live in the area.

### 7.2.1.7 Socio-economic differentials between the slum pockets

A review of basic socio economic variables between the slum pockets does reveal certain features which could help explain the differential behaviour of women shown above. New Bharat Nagar, for example, which has the highest percentage of planned home deliveries also has highest percentage of women who have never attended school (60%) of all the slum areas and Nagababa Nagar, which has the highest percentage of private deliveries has the lowest, with only 18% never having never attended school. Other socio economic variables, such as the ownership of various consumer durables, ownership of the property and the primary source of water to the household were examined but the patterns were not significant or so distinctive. There are some notable variations in the socio economic characteristics of respondents from

different slum pockets. For example, the percentage of women who have never attended school ranges from 18% in Nagababa Nagar to 60% in New Bharat Nagar. The percentage of households owning their house as compared to those who rented their house was similar throughout the pockets, with 34% renting in Lakshmi Nagar at the lower end compared with 20% in Nagababa at the higher. Finally, the percentage of household owning a fan reflected these patterns with New Bharat Nagar again having the lowest percentage of households owning a fan (50%) compared with only 5% of households in Shahaji Nagar and Nagababa Nagar who did not own a fan.

One aspect of health seeking behaviour in pregnancy that has been frequently observed but rarely studied in detail is the way in which the social support networks of which women are part, influence behaviour. The interaction between these networks undoubtedly influence the choice of health care provider, the likelihood and timing of accessing antenatal care and problem solving in the event of a complication or unexpected event but standard social science perspectives usually ignore this type of relational information. Given that locality has come out as being so strongly associated with place of delivery, future research should attempt to model the social networks within these areas to help better understand factors that determine choice of place of delivery within these communities.

### 7.2.2   Summary

Among this group of women who delivered in Mumbai the majority (68%) delivered in a municipal hospital. However it was possible to identify groups who had a higher probability of delivering elsewhere. Consistent with previous studies this analysis suggests that more highly educated women, and higher socio-economic groups are more likely to deliver in a private hospital than the their less educated lower socio economic status counterparts among which planned home deliveries are more likely. Location is also an important predictor of place of delivery. In this analysis Lakshmi Nagar has a disproportionate number of unplanned home deliveries. Religion appears not to be significantly related to place of delivery.

## 7.3 Section Two

### 7.3.1 'Quality' and choice of provider

The focus of this thesis is quality and there is a basic assumption that the experience of quality can influence choice of place of delivery, either directly, through a woman's own previous experience of childbirth or indirectly through the experience of other women in her family or community, and the reputations that are formed through such experiences. It is however, very difficult to pinpoint the relative importance of quality at a population level. In the community survey women were asked questions about why they planned to deliver where they did. Women were asked to select factors that influenced their choice of place of delivery. From this information it is possible to identify some of the factors that women report as influencing their choice of place of delivery.

It was anticipated that at a general level it would be possible to broadly predict the place of delivery from a range of characteristics of women and their households and communities. It is also anticipated that these characteristics are stronger predictors of place of delivery at the population level than factors which reflect experience of care (such as reputation, previous delivery or whether recommended by a friend or relative). This does not mean however that quality does not influence choice of place of delivery but that it is difficult to quantify the relative importance of this factor. This section examines the association between a women's place of delivery and factors that she reports as influencing this decision.

One limitation of this analysis is that focus groups were not undertaken (see Chapter Four). Focus groups would have been an ideal forum for trying to establish some of the less conscious factors that influence choice of place of delivery.

### 7.3.2 What influences choice of hospital?

According to the community survey, of those who delivered at the three principal case study hospitals 95% of those who delivered at Chembur had planned to deliver there, 97% of those at Shtabdi and 85% at Rajawadi. Referral was the main reason for delivering in a hospital other than planned. Sixty seven women planned to deliver in a private hospital in Mumbai and 63 actually delivered at one.

### 7.3.2.1 Reputation and recommendation

The most popular responses to the question that asked women why they planned to deliver where they did were 'good reputation', 'nearby', 'good value for money', 'free service', 'recommended by friends/relatives' and 'delivered here before'. The association between a hospital having a good reputation and where a woman booked was significant, see Table 7.6. Nearly 8 out of 10 women (79%) who delivered at a private hospital selected 'good reputation' as a factor that influenced their choice of hospital, this compares with 64% of women who booked at a Municipal hospital.

Analysing the extent to which the reputation of the hospital influenced women who planned to deliver at one of the principal three case study Municipal hospitals revealed that, slightly more women gave 'good reputation' as a response for planning to deliver at Rajawadi (67%) than at Chembur (63%) and Shtabdi (56%), however the relationship was not significant. In other words the reputation of the individual case study hospitals is not a significant predictor of which hospital a woman is likely to plan to deliver at. In addition, where a woman planned to deliver was not significantly related to whether or not the place of delivery was recommended by a relative or neighbour.

### 7.3.2.2 Free service, value for money and affordability

A greater percentage of women who planned to deliver at a private hospital reported 'good value for money' as one of the factors that influenced their choice of hospital compared with women who planned to deliver at a municipal hospital (32% compared with 17%). This association was significant (see Table 7.6). This is not unexpected as government services are theoretically free and therefore value for money is not a factor likely to influence choice of place of delivery to any significant degree. This is confirmed in the finding that 43% of women planning to deliver at a municipal hospital selected 'free service' as a factor that influenced their choice of place of delivery compared with 6% of women who delivered in a private hospital (see Table 7.6). It is not clear why anyone delivering in a private hospital responded that the services would be free, it may be that the women knew someone, or was related to someone who worked in the hospital.

**Table 7.6 The percentage of women who reported good reputation, good value for money, free service and/or nearby as a reason for booking at the type hospital at which they delivered (n=373)#**

| Reason given for booking at hospital of choice (% significance of overall association using pearson chi-squared) | Muncipal | Private |
|---|---|---|
| Good reputation *** | 64 | 79*** |
| Good value for money *** | 17 | 32*** |
| Free service *** | 43* | 6*** |
| Nearby ** | 67** | 49 |

**Source: Community survey 1999**

| * | 10% significant |
|---|---|
| ** | 5% significant |
| *** | 1% significant |

# women who delivered at the same hospital at which they had booked in Mumbai

Extending this analysis to those women who planned to deliver in one of the four case study municipal hospitals, the association is still significant (p=0.006) such that a greater percentage of women than expected selected this as a reason for planning delivery at Shtabdi and a lower percentage than expected for Chembur and Rajawadi (see Table 7.7). Sixty two percent of women who had planned to deliver at Shtabdi selected 'free service' as a factor influencing their choice of delivery compared with 43% of those who planned to deliver at Rajawadi and 35% at Chembur. One possible explanation could be that Shtabadi may have a reputation for not charging fees or tips compared with the other hospitals.

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**Table 7.7 The percentage of women who gave free service, affordability or nearby as a reason for booking at one of the case study municipal hospitals (n=324#)**

| Reason for booking (% significance of overall association using pearson chi-squared) | Shtabdi (n=70) | Sion (n=24) | Chembur (n=177) | Rajawadi (n=53) |
|---|---|---|---|---|
| Free service *** | 62 | 20 | 43 | 35 |
| Affordability * | 38 | 40 | 23 | 20 |
| Nearby *** | 82 | 40 | 75 | 39 |

Source: Community survey 1999

Pearson Chi-squared = 0.00
*          10% significant
**        5% significant
***      1% significant

#women who delivered at the same case study hospital at which they had booked in Mumbai

### 7.3.2.3 Location

A greater percentage of women (67%) selected proximity of the hospital as a reason for planning to deliver at a municipal hospital compared with 49% of women who planned a private delivery (see Table 7.7). This association was significant (p=0.014)

A greater percentage of women selected 'nearby' as a reason for planning to deliver at Chembur and Shtabdi (82% and 75% respectively) than Rajawadi and Sion (p=0.000). The association was strongly significant for Rajawadi where only 39% of women selected nearby as a reason for booking there. These responses are consistent with the location of the sample pockets in relation to the hospitals, Chembur and Shatabdi are physically much closer to the sample pockets than Rajawadi and Sion.

### 7.3.3   Why did you deliver at a hospital?

Women were asked why they had chosen to deliver at a hospital, as opposed to at home. Of all women who had planned to deliver in a hospital 94% of respondents to the community survey gave 'safer than home' as the reason. During the exit

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interviews with women delivering at three of the municipal case study hospitals it was possible to probe reasons for choosing a hospital delivery over either a home delivery or a private hospital. The overwhelming response was that it was safer to deliver at hospital than at home. The reasons for not delivering at a private hospital were divided into those (the majority 65/70) who cited the cost as being prohibitive and those (5/70) who said why should they spend the money to deliver in a private hospital when they can deliver for free at a municipal hospital.

In summary, a nearby location and free service are more likely to be reported as factors influencing choice of place of delivery by women planning to deliver in a municipal hospital than those planning a private hospital delivery. For women planning to deliver in the latter, value for money and reputation are more likely to be reported as influencing their choice than those planning a municipal hospital delivery.

## 7.3.4   Place of delivery: Home

### 7.3.4.1 Why plan to deliver at home?

In order to understand the reasons that women give for planning to deliver at a hospital it is necessary to look at the group who planned not to deliver at a hospital and examine their reasons for this decision.

Forty five women planned to deliver at home in Mumbai, however a total of 81 women out of the total sample of 650 planned to deliver at home and it is the responses of this group that informs the discussion below. Women could choose between a number of options and they also had the opportunity to include specific reasons for choosing a home delivery that were not offered as a selection. They were asked for their primary reason.

Of those who planned to deliver at home 30 gave 'was comfortable' as their primary reason for this. Ten gave because 'home birth is traditional in my community', 2 because they could 'continue their duties if at home' and 10 because they were 'told to by relatives'. Four reported that it was 'too time consuming at hospital'. The remaining 25 women gave as their primary reason something that could be considered

related to negative experiences or perceptions of the quality of hospital care (see Table 7.8).

**Table 7.8 Quality-related reasons given by women for planning to deliver at home**

| Primary reason for delivering at home | Number of respondents |
|---|---|
| Hospital staff not helpful | 1 |
| To avoid fine/ did not want ligation | 4 |
| Too expensive at hospital | 2 |
| Not clean at hospital | 2 |
| Not safe at hospital | 2 |
| Experience of hospital not nice | 14 |
| Total | 25 |

Source: Community survey 1999

Women were able to select other reasons for a home delivery after giving their primary reason. Of these responses 15 women gave a reason that reflects negatively on the quality of hospital care (experience and perceived).

**Table 7.9 Additional quality-related reasons given by women for planning to deliver at home**

| Reason | Number of responses |
|---|---|
| To avoid fine/did not want a ligation | 4 |
| Too expensive at hospital | 3 |
| Too time consuming | 1 |
| Hospital not clean | 2 |
| Hospital not safe | 2 |
| Experience of hospital not nice | 3 |
| Total | 15 |

Source: Community survey 1999

An examination of the 'quality of care' of home delivery is beyond the scope of this project. What is of interest is information about those who deliver at home that reflects in someway the actual or perceived quality of care at government hospitals.

The reasons cited above confirm that the current policy of fining women who refuse to have a ligation if they have 2 surviving children does influence higher parity women's choice of place of delivery. In total 8 women, or nearly 10% of those who planned a home delivery gave as one reason for this choice their desire to avoid a tubal ligation. In addition 21 women cite as a primary reason for planning to deliver at home a factor that reflects poorly on hospital care, these include not a nice experience in hospital, hospital is not safe, not clean, too expensive and staff unhelpful. The significance of selecting one of these factors as a primary reason for delivering at home is that in these cases women's bad perception of hospital care is more of a motivating factor for delivering at home than one of the other possible options (such as home delivery more comfortable or traditional in my community).

### 7.3.5 Summary and conclusion

Quality is clearly an issue when selecting place of delivery. But what the above findings suggest is that reputation and whether the hospital was recommended and value for money are factors that influence a woman's choice of private facility, location and whether the service is free appear to be the most conscious motivators for selecting a municipal hospital. Perhaps the most revealing group are those who choose to deliver at home. There are those who plan a home delivery for reasons such as a home delivery being more comfortable, or tradition. There are, however, at least 25 women who selected a reason that reflects poorly on the quality of care perceived as offered at a hospital. This means that over 20% of all women who planned a home delivery gave a reason for their choice that has explicitly negative connotations of hospital care. This indicates that as anticipated, quality of care can directly (and indirectly) influence choice of place of delivery. These findings also demonstrate that broad predictors of choice of place of delivery.

# Chapter Eight

## 8.1 Situation analysis: experience of care

### 8.1.1 Introduction

The following chapter builds on the situation analysis of quality of care. It presents results and analysis of data from the community survey, supported where relevant by data from the quality schedule and exit interview. The chapter examines quality of care at the municipal case study hospitals based on user responses. The elements of quality described in Chapter Three provide the backdrop for this analysis. The chapter is divided into two sections. The first examines data that provide an insight into the process of care within the case study hospitals, that is; the nature and content of the care received and experienced during labour and delivery as reported by users. Section two focuses explicitly on how users describe, or report their experience of care; from their experience of the labour ward environment to their treatment by staff.

### 8.1.2 Section One

### 8.1.2.1 Process of care

The process of care relates to the way in which health care is delivered. Measuring process instead of outcomes is regarded an attractive option for several reasons (Pitrof and Campbell 2000). Many processes have confirmed links with outcome. There are many randomised controlled trials (RCT) of interventions (refer to Chapter 3) that demonstrate that certain harmful outcomes can be prevented at a predictable rate. In addition attempts to improve unfavourable outcomes aim to change the processes leading to these outcomes. Finally, many women do not have complications and most complications do not lead to serious health outcomes. In practice therefore processes are more frequent than serious adverse outcomes, and *'may be more common than complications since all women may be eligible for a procedure'* (Pittrof and Campbell 2000 p.30).

In this thesis there is an emphasis on processes that have either been shown by RCTs to have a higher risk of a poor health outcome (such as routine pubic shaving or

routine episiotomy), or other less directly health related outcomes identified in other studies (such as feelings of isolation, neglectful treatment or levels of verbal or physical abuse). Often the emphasis of audits within maternity services is on processes with confirmed links to serious health outcomes. Less attention has been paid to the process of care which affects women's experience of care and is indirectly linked to the health outcome, but also an indication of how a health system respects the reproductive and human rights of the women who access their services.

## 8.2. Use of processes in municipal and private hospitals in Mumbai

### 8.2.1 'Preparation for delivery': The first examination

All respondents who delivered in a hospital in Mumbai were asked in the community survey whether a number of processes and procedures had happened to them when they arrived at hospital. They were asked whether at their first examination they had had their blood pressure taken, whether they had had their temperature taken, had they had at least one vaginal examination, an abdominal examination and had someone listened to the baby (auscultation of the foetal heart rate). These are all identified in Graham et. al.'s (2000) list of minimum skills required of a skilled attendant. In addition they were asked if they had had their pubic hair shaved and had they been given an enema (see module 4 of quality schedule, Appendix One).

Of all women who delivered in a hospital in Mumbai and who were examined before delivery (n=407), 93% had at least one vaginal examination, 68% had their blood pressure taken and 23% their temperature taken. A stethoscope was used on 61% of women to listen to the foetal heart rate and 27% of women had an abdominal examination. Sixty three percent of women had their pubic hair shaved and 65% were given an enema.

### 8.2.2 Waiting times

According to data from the community survey nearly two thirds of women were interviewed or examined within fifteen minutes of arrival, 88% within half an hour, and 92% within an hour. Only 1% waited up to an hour and a half. Six percent of all women, however said they were not interviewed or examined at all. One in ten users

who delivered at Chembur report not being examined, nearly one in ten (9%) who delivered at Shtabdi and 2% who delivered at Rajawadi. This is predominantly users who delivered within an hour of arriving at hospital and will be examined further below.

### 8.2.3   Processes during the first examination.

Table 8.1 below provides a summary of the extent to which users report individual checks and procedures at their first examination by type of hospital (private or municipal).

### 8.2.3.1 Blood pressure

As shown in Table 8.1 only 23% of women who delivered at a private hospital did not have their blood pressure checked compared with 39% of women who delivered at a municipal hospital in Mumbai. This relationship was statistically significant (p=0.013) such that more women than would be expected were their no relationship did not have their blood pressure checked at a municipal hospital.

Table 8.1 Summary Table: Percentage of women who report undergoing a range of processes during their first examination by type of hospital (n=417 women who delivered at an institution in Mumbai)

| Type of process (association significant at x%) | Municipal (n= 354) | Private (n= 63) |
| --- | --- | --- |
| Blood pressure** | 61 | 77 |
| Temperature*** | 18 | 37 |
| Auscultate foetal heart rate** | 55 | 70 |
| Abdominal examination** | 22 | 34 |
| Enema** | 59 | 74 |
| Shaved# | 57 | 61 |

Pearson chi-squared
#        not significant
*        10% significant
**       5% significant
***      1% significance
Source: Community survey 1999

## 8.2.3.2 Temperature taken and auscultate foetal heart rate

A greater percentage of women who delivered at a private hospital had their temperature taken than would be expected were there no association (37% compared with 18% at a municipal hospital). This association was strongly significant (see Table 8.1). Meanwhile nearly 55% of women who delivered at a municipal hospital had the heart rate of her foetus listened to compared with 77% of women delivering at private a hospital. This was less than would be expected were there no association.

## 8.2.3.3 Abdominal examination

Only 22% of women who delivered at a municipal hospital reported having her abdomen examined compared with 34% of women who delivered in a private hospital (see Table 8.1). This association is significant at the 5% level. In both cases the percentage of women having their abdomen examined is low.

## 8.2.3.4 Pubic shaving and enema

There was no significant relationship between whether a woman was shaved and where she delivered. At municipal hospitals 58% of women were shaved compared with 61% at private facilities. However the relationship between place of delivery and having an enema was significant such that more women than expected had an enema at private hospitals. Seventy four percent of women who delivered at a private hospital had an enema compared with 59% of women who delivered at a municipal hospital (see Table 8.1).

## 8.2.3.5 Content of first examination by case study hospital

An analysis by case study hospital demonstrates that there are significant differences by hospital in the level of some of these processes. For example, a statistically significant greater percentage of women were shaved at Shtabdi and Sion and a smaller percentage at Chembur and Rajawadi (p=0.070) (see Table 8.2). The significance is stronger for the differences in the level of enemas given to women during their first examination. A much greater percentage of women (77%) were given an enema than at Shtabdi than at any of the other case study hospitals (43% at Rajawadi and 54% at Chembur (see Table 8.2).

Table 8.2 Percentage of women who report not having a check or procedure during their first examination (n=316 women who delivered at the municipal case study hospitals in Mumbai)

| Percentage who did not have the following at first examination (association significant at x%) | Sion (n=24) | Rajawadi (n=53) | Shtabdi (n=70) | Chembur (n=177) |
|---|---|---|---|---|
| Enema*** | 42 | 57 | 23 | 46 |
| Vaginal examination** | 4 | 4 | 14 | 19 |
| Blood Pressure** | 21 | 45 | 27 | 47 |
| Auscultate foetal heart rate*** | 25 | 59 | 31 | 52 |
| Shaved** | 25 | 53 | 37 | 47 |
| Temperature taken# | 84 | 83 | 81 | 82 |

Source: Community survey 1999

Pearson Chi squared
\#      not significant
\*      10% significant
\*\*     5% significant
\*\*\*    1% significance

In terms of other checks a greater percentage of women had a vaginal examination at Sion and Rajawadi than at the other two hospitals; 96% at both compared with 81% at Chembur and 86% at Shtabdi (see Table 8.2). The percentage of women who had their BP taken varied significantly such that a smaller percentage of women did not have their BP taken at Shtabdi (27%) and Sion (21%) than would be expected were their no significant relationship compared with 47% at Chembur and 45% at Rajawadi (see Table 8.2).

Finally it is also possible to see from Table 8.2 that 69% of women had the foetal heart listened to at Shtabdi compared with 48% at Chembur and 41% at Rajawadi.

The inclusion of Sion did not affect the significance of this association. The association between the percentage of women having their abdomen examined and hospital of delivery is not significant, nor is the association between the percentage of women having their temperatures taken and hospital of delivery.

In total 13 women who delivered at the case study hospitals gave the reason for not being examined being that their baby came out too soon.

## 8.2.3.6 Delivery within one hour of arrival at hospital

In terms of time between arrival at the first hospital and delivery 16% of all women who delivered in a hospital or home delivered within an hour of arrival. Only 9% delivered in this time at Shtabadi compared to nearly a quarter (24%) of women who delivered at a private institution within Mumbai. Forty four percent of all women delivered within 2 hours of arriving at the institution at which they delivered (48% at Chembur and 32% at Rajawadi).

Of those who delivered within one hour in a municipal hospital 24% of women were not examined and 20% of women delivering in a private hospital were not examined. Of those who delivered within 10 minutes of arrival the percentages not examined were higher, as would be expected, with 54% of women delivering within 10 minutes of arrival not being examined at a municipal hospital and 60% of women delivering within 10 minutes of arrival not being examined at a private hospital. There was no significant association between the percentage of women who delivered within an hour of arrival and hospital of delivery.

Of those who delivered within one hour of delivery 65% of women who delivered at a private hospital had their blood pressure taken compared with only 35% of women at a municipal hospital (see Table 8.3).

**Table 8.3 Percentage of women who delivered within an hour of arrival who had their blood pressure taken at least once by type of hospital (n=100#)**

| Type of Hospital | Yes |
|---|---|
| Municipal (n=80) | 35 |
| Private (n=20) | 60 |
| Total (n=100) | 40 |

*Pearson Chi-squared P=0.041*

# Total number of women who delivered within an hour of arrival at a hospital in Mumbai

Source: Community survey 1999

This pattern is similar for the taking of temperatures. A higher percentage of women (25%) who delivered within a hour of arrival at a private hospital had their temperature taken compared with only 6% within the same group delivering at a municipal hospital (see Table 8.4). There is no evidence to suggest that routinely taking a woman's temperature at the first examination is an effective use of time. However, what this shows is that when time is limited private providers are more consistent at undertaking basic checks than municipal providers.

**Table 8.4 Percentage of women who delivered within an hour of arrival who had their temperature taken at least once by type of hospital**

| Type of Hospital | Yes |
|---|---|
| Municipal (n=80) | 6 |
| Private (n=20) | 25 |
| Total (n=100) | 10 |

*Pearson Chi-squared P=0.012*

# Total number of women who delivered at a hospital in Mumbai

Source: Community survey 1999

In addition a smaller percentage of women who delivered within an hour of arrival had their pubic hair shaved (p=0.008). This is true also of vaginal examination (p=0.017). There was no significant association however between late presentation and the percentage of women having an enema, or the foetal heart listened to or her abdomen examined. This suggests that when under time pressure the four 'procedures' that are differentially affected by late presentation, by hospital, are BP, pubic shaving, temperature taken and having a vaginal examination, with municipal hospitals not undertaking these checks on a greater percentage of women compared with private hospitals.

A closer examination of the group who delivered within an hour of arriving by individual hospital provides more interesting insights into the priority that some checks are given over others. Table 8.5 below shows the checks that were undertaken on later presenters by individual hospital. What this shows is that at Shtabdi, for example, out of 12 such women 4 had their blood pressure taken and 8 did not. This compares with 6 who were shaved and given an enema and 6 who were not. This indicates that these latter two routine procedures are sometimes being administered in advance of essential basic health checks. As observed women are often 'prepared' for delivery before they are examined by an ANM or doctor.

In addition to this, there is evidence from the observational study and the exit interviews that shaving and enemas are being administered by ayabais who are often responsible for 'preparing' the woman for delivery.

**Table 8.5 Percentage of women who delivered within an hour of arrival who report having the following checks and procedures by hospital.**

| Hospital | Temperature | | Vaginal Exam | | BP Pressure | | Pubic Hair | | Enema | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Y | N | Y | N | Y | N | Y | N | Y | N |
| Shtabdi  n=12 | 0 | 100 | 50 | 50 | 33 | 67 | 50 | 50 | 50 | 50 |
| Sion  n=4 | 50 | 50 | 75 | 25 | 75 | 25 | 75 | 25 | 75 | 25 |
| Chembur  n=45 | 2 | 98 | 67 | 33 | 33 | 67 | 22 | 78 | 36 | 64 |
| Rajawadi  n=11 | 18 | 82 | 91 | 9 | 27 | 73 | 18 | 82 | 18 | 82 |

Source: Community survey 1999

### 8.2.3.7 Summary and discussion

A number of basic checks have been used as a guide to how thorough the first examination is by hospital (see summary table 8.6). The first notable point is that there is significant variability between the content of the first examination a women has on arrival at hospital. The second notable point is that some of the checks, such as taking BPs and abdominal massage are not being done on a large percentage of women, while over half of women, and in some cases up to three quarters, are

undergoing two procedures that are not evidence-based, carry risks to both the woman and in the case of pubic shaving to the care provider, and are uncomfortable and humiliating for the woman (see quality framework Chapter Four: inappropriate technologies). Private hospitals are as likely to shave a woman and give her an enema as municipal facilities. This suggests that these procedures are considered good practice within health practitioners in this environment. They are therefore treated in much the same way as the other routine checks that should ideally be made on a woman when presenting in labour.

**Table 8.6 Summary table – Percentage of women who report having one of the below checks and procedures at first examination by hospital and by type of hospital**

| Hospital/First Examination | Percentage of users reporting having below checks or procedure at first exam | | | | | | |
|---|---|---|---|---|---|---|---|
| | Vaginal exam | BP taken | Temperature taken | Stethoscope for fetal heart rate used | Abdominal examination | Pubic Hair Shaved | Enema |
| Rajawadi n=53 | 96 | 55 | 14 | 48 | 14 | 48 | 43 |
| Shtabdi n=84 | 86 | 73 | 17 | 69 | 23 | 69 | 77 |
| Chembur n=70 | 81 | 53 | 21 | 41 | 25 | 59 | 54 |
| Municipal All n=417 | 86 | 61 | 18 | 55 | 22 | 58 | 59 |
| Private n=63 | 89 | 77 | 37 | 77 | 34 | 61 | 74 |

Source: Community survey 1999

Of the women who delivered in a municipal hospital 39% did not have their blood pressure taken and 45% did not have the foetal heart rate listened to at their first examination, compared with 23% for both at a private hospital (see Table 8.6). This demonstrates that the care women receive at their first examination when they present at a municipal and to a lesser degree a private hospital is not optimal. Basic checks are not consistently taken and unnecessary procedures are performed on a majority of women. The evidence however does suggest that women are more likely to expect a more thorough first examination at a private hospital than at a municipal hospital.

This only measures the level at which the checks were undertaken on women and it is not possible to draw any conclusions as to the clinical quality of care in the performance of these checks. This more clinical audit of quality would require a different approach to that taken in this study. Data from the community surveys

provides evidence that checks are not being consistently undertaken on women and that in a number of cases they are not being carried out at all.

## 8.3.1 Processes during delivery

In the second part of section one the focus is on a range of processes during labour and delivery that are discussed in some detail in the quality framework. These include induction and augmentation of labour, instrumental delivery, caesarean delivery, episiotomy, glucose drip, professional assistance during delivery, social support in labour, position at delivery, manual revision of the uterus and tubal ligation. The extent to which some of these procedures are being used in municipal and private hospitals is summarised in Table 8.7 below.

**Table 8.7 Summary table: Percentage of women who report having one of the below procedures during labour by type of hospital (%)**

| Type of Hospital (association significant at x%) | Municipal % (n=354) | Private % (n=63) |
|---|---|---|
| Glucose Drip*** | 13 | 49 |
| Episiotomy** (n=103^) | 62 | 47 |
| Manual revision of uterus # | 37 | 50 |
| Induction and/or augmentation*** | 23 | 55 |
| Instrumental delivery# | 14 | 21 |
| Caesarean delivery# | 5 | 8 |
| Position at delivery – supine# | 98 | 99 |

^ Number of first deliveries

Pearson chi squared
| #   | Not significant   |
|     | * 10% significant |
|     | ** 5% significant |
|     | *** 1% significance |

**Source: Community survey 1999**

## 8.3.1.1 Induction and augmentation

Over half (55%) the women who delivered at a private hospital had their labour induced or augmented (see Table 8.7) compared with 23% of women who delivered at a municipal hospital. The association between place of delivery and induction/augmentation was strongly significant (p=0.000) such that a greater percentage of women who delivered in a private hospital had their labour induced or augmented than would be expected were their no significant relationship.

## 8.3.1.2 Forceps and ventouse deliveries recorded

Contrary to international best practice as discussed in Chapter Three, the evidence suggests that forceps were the preferred choice for those performing instrumental deliveries. While a woman was able to say whether she had had an instrumental delivery she was not able to tell whether the instruments were forceps of ventouse. However, the hospital records from the case study hospitals show that ventouse deliveries are hardly used and that most instrumental deliveries are performed using forceps. In total 17% of women delivering in a hospital in Mumbai had an instrumental delivery according to the community survey. At municipal hospitals 14% of women reported having an instrumental delivery and 21% at private hospitals in Mumbai. This was significant at the 10% level.

## 8.3.1.3 Episiotomy

Nearly two thirds of all primigravidae at municipal hospitals (62%) had an episiotomy. This compares with 47% of all primigravidae at private hospitals. The lower percentage of episiotomies at private hospitals is due to high percentage of primigravidae who had a caesarean section. Twenty one percent of primis at private hospitals in Mumbai had a caesarean section compared with 5% at municipal hospitals. The episiotomy rate among women at risk (i.e. excluding caesarean deliveries) is 70% at private facilities and 61% at municipal hospitals.

## 8.3.1.4 Glucose drip and manual revision of the uterus

Nearly half of women who delivered at a private hospital report being given a glucose drip during labour (as Table 8.7). This was significantly greater than the 13% of women who had a glucose drip at a municipal hospital.

Manual revision of the uterus is a procedure that carries significant risks and should only be occasionally undertaken (see quality framework). A comprehensive examination of the placenta should be used to indicate whether any retained material remains in the uterus after delivery. During the exit interviews however, 100% of the 25 women interviewed at each Rajawadi and Shtabdi reported having had their uterus revised manually. Staff responded that manual revision of the uterus was not routine but in a later discussion admitted that they often did this to check nothing remained in the uterus. According to the data from the community survey the association between the level of use of this procedure and type of hospital was not significant, but high numbers of women reported that they had undergone this procedure: 134 women or 37% of women delivering at municipal hospitals compared with 31 or 50% of women delivering at private hospitals. In all 38% of the total survey population who delivered in a hospital in Mumbai reported that they had their uterus examined manually after delivery.

### 8.3.1.5 Assistance during labour

At delivery, according to the community survey, the principal attendant for most women was an auxiliary nurse midwife (ANM) at a municipal hospital (75% of deliveries) and a doctor at a private hospital (73%).

Table 8.8 Percentage of women who report having a doctor, auxiliary nurse midwife, ayabai or no-one as their principal, attendant by hospital

| Hospital/ Principal carer | Doctor | Auxilliary Nurse Midwife | Ayabai | No-one |
|---|---|---|---|---|
| Rajawadi (n=53) | 31 | 69 | 0 | 0 |
| Shtabdi (n=70) | 24 | 68 | 4 | 1 |
| Chembur (n=177) | 16 | 80 | 5 | 0 |
| Municipal (n=354) | 23 | 75 | 2 | 0 |
| Private (n=63) | 73 | 27 | 0 | 0 |

Source: Community survey 1999

The community survey however revealed that a small group of women delivered in hospital with the principal support of an untrained person (an ayabai). Five percent of women who delivered at Chembur and 4% of women delivering at Shtabdi responded that an ayabai was the principal person assisting her during delivery.

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### 8.3.1.6 Social support

The quality schedule revealed that there is a policy in all municipal hospitals that prohibits women being accompanied in labour by a person of her choice. This was also true of the private hospitals investigated using the mystery client approach. Data from the community survey supports this reported policy. Only one woman delivering in a private hospital said they had anyone other than hospital staff present during labour or delivery. When respondents to the exit interviews were asked who they would they have liked to have been with them if they had the choice. Fifty four percent said they would have liked their mothers (n=236), 15% said they would have liked their fathers, and 13% would have liked their mother in law or another female relative.

### 8.3.1.7 Position at delivery

The quality schedule together with staff interviews revealed that women routinely deliver on their back, in line with reported hospital policy. According to the data from the community survey 98% of the women who delivered in a hospital of any kind in Mumbai delivered lying on their back. This compares to only 5% of all women who delivered at home. According to the community survey 95% of women who delivered at home were squatting or standing when they delivered, this is consistent with evidence that when women are able to choose the position in which they deliver, an upright position is favoured.

### 8.3.1.8 Tubal ligation

This aspect of care is not discussed in the quality schedule, but was a policy within municipal hospitals that was revealed in the process of the research. To re-cap women who had two or more live births at the time of delivery of the index child were fined 250Rs if they did not agree to have a tubal ligation. If they did agree to one they were given 120Rs. In total 46% of the sample population (who delivered at a hospital) had two or more children alive at the time of the birth of the index child. Of this group 26% (n=57) paid the fine, 43% (n=96) had a tubal ligation and 31% did not have to choose (see Table 8.9).

Table 8.9  Percentage (%) of women who were at risk of a tubal ligation by whether they paid the fine, had the procedure or did not have to choose by hospital

| Hospital | Paid 250 Rs | Had tubal ligation and got 120 Rs | Did not have to choose |
|---|---|---|---|
| Shtabdi (n=45) | 24 | 58 | 18 |
| Sion (n=6) | 33 | 0 | 68 |
| Chembur (n=88) | 34 | 47 | 19 |
| Rajawadi (n=23) | 35 | 35 | 30 |
| All women who had a municipal hospital delivery in Mumbai (n=198#) | 26 | 43 | 31 |

Source: Community survey 1999

# total number of women at risk of a tubal ligation who delivered in a municipal hospital in Mumbai

Among the case study hospitals 58% of women at risk at Shtabdi had a tubal ligation compared with 47% at Chembur, 35% at Rajawadi and 43% of the total group who delivered in a municipal hospital. This is consistent with the observations made and discussions with staff at the Shtabdi. The motivation techniques to encourage higher parity women to have a tubal ligation were more forcefully applied at Shtabdi than at the other two case study hospitals visited.

Of the 70 women who did not have to choose, 26 gave 'delivery at a private hospital' as a reason for not having to choose. Other reasons that women gave for not having to choose included the following:

- too weak (28)
- ran away (5)
- gave false information (3)
- hospital staff was a relative (3)
- told a lie (5)

## 8.4     Section Two

### 8.4.1   User's differential experience of care

One of the aspects of this situation analysis is to examine data from the community survey, not just about the extent to which certain procedures were being used, but how women experienced the care they received in the facility within which they delivered. Module four of the community survey asked women about a number of features of the environment within which they laboured and delivered (see module 4 or the quality schedule, Appendix One). These related to the state of the bed, whether the room was airy, whether they were examined in a crowded room, whether they were close to the toilets and so forth. These were aspects of care deemed to be important to women. They are based on the outcome of the piloting and cognitive testing process when piloting an earlier version of the module (see chapter four). The questions were framed in two ways in order to balance the emphasis. For example women were asked both:

a) How did you feel about the labour room? Was it too far from the toilets? yes/no
*and*
b) How did you feel about the labour room? Was it too close to the toilets? yes/no

Box 8.1 below gives the wording of the main questions that will be examined in this section. The analysis compares responses to these questions by type of hospital, by individual case study hospital and by background characteristics.

**Box 8.1        Experience of care - Questions from module four.**

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- *What did you think of the following - being shaved, enema, examined in a crowded place?*
*OK/no opinion/not happy/didn't happen*


- *How did you feel about the labour room?*
*airy/not enough air/ too crowded/ close to the toilets/ too far from the toilets/ bed clean/bed dirty (yes/no)*

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- *Do any of the following describe your treatment by doctors/anms/ayabais during labour or delivery?*

*kind and understanding, fairly kind and understanding/neglectful/hurried/shouted at you/ slapped/hit you*

## 8.4.2 The environment of the labour room

In general a greater percentage of women who delivered in a private hospital was significantly more positive about the labouring environment (such as whether their bed was clean, was the room airy and so forth) than women who delivered in a municipal hospital or any of the three case study hospitals.

Nearly 9 out of 10 women who delivered at a private hospital in Mumbai described the labouring environment as airy compared with nearly 6 out of 10 women who delivered at a municipal hospital (see Table 8.10). The association was strongly significant.

**Table 8.10  Percentage of women who responded that they felt the labour ward was airy, their bed was clean, their bed was dirty, the labour ward was too crowded, they were too far from the toilets and/or they were too far from the staff desk, by type of hospital (n=417#)**

| Environment of the labour ward (association significant at x%) | Municipal (n=354) | Private (n=63) |
|---|---|---|
| Airy*** | 59 | 87 |
| Bed clean*** | 43 | 86 |
| Bed dirty*** | 37 | 3 |
| Too crowded*** | 35 | 5 |
| Too far from the toilets# | 24 | 34 |
| Too far from the staff desk# | 28 | 10 |

Source: Community survey 1999

\# women who delivered an institution in Mumbai

Pearson chi squared
| # | not significant |
| * | 10% significant |
| ** | 5% significant |
| *** | 1% significance |

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At the individual case study hospitals 53% of women delivering at Rajawadi, 49% at Shtabdi and 62% at Chembur described the labour ward as airy. Less than half of women delivering in a municipal hospital described their beds as clean compared with 86% of women who had a private delivery (see Table 8.10).In contrast when asked if their beds were dirty only 2% of private users said yes. This compares to 42%, 64% and 34% of women at Rajawadi, Shtabdi and Chembur respectively (see Table 8.10).

Women were asked if they felt the labour room was too crowded. Thirty five percent of women delivering at a municipal hospital said yes, the labour ward was too crowded compared with only 6% at the private hospitals. This association was strongly significant such that less women than expected delivering at private hospitals said that the labour room was too crowded.

The below Tables 8.11 and 8.12 provide a summary of the responses that women gave by to questions relating to their experience of the labour ward. Table 8.11 focuses on 'positive' experiences and Table 8.12 on 'negative' aspects.

**Table 8.11     Summary of women's positive responses to questions relating to the labouring environment? Percentage of women responding 'yes' by hospital.**

| Hospital | Airy | Close to the toilets | Close to the staff desk | Bed clean |
|---|---|---|---|---|
| Rajawadi  (n=53) | 53 | 53 | 9 | 35 |
| Shtabdi (n=70) | 49 | 49 | 31 | 31 |
| Chembur (n=177) | 62 | 66 | 8 | 49 |
| Private Hospitals (n=63) | 87 | 55 | 8 | 86 |
| All Hospitals (n=417) | 65 | 57 | 13 | 52 |

Source: Community survey 1999

Table 8.12 Summary of negative responses to questions relating to the labouring environment? Percentage of women responding 'yes' by hospital.

| Hospital | Not enough air | Too crowded | Too far from the toilet | Too far from the staff desk | Bed dirty | Did not have a bed |
|---|---|---|---|---|---|---|
| Rajawadi (n=53) | 33 | 41 | 28 | 24 | 42 | 16 |
| Shtabdi (n=70) | 46 | 46 | 29 | 39 | 64 | 4 |
| Chembur (n=177) | 25 | 29 | 19 | 24 | 34 | 5 |
| Private Hospitals (n=63) | 9 | 5 | 34 | 10 | 3 | 0 |
| All Hospitals (n=417) | 26 | 30 | 26 | 23 | 30 | 6 |

Source: Community survey 1999

### 8.4.3 Women's experience of care

Women were asked what they felt about being shaved, having an enema or being examined in a crowded place. Of those for whom these happened 6% said they were not happy with the first two procedures and 9% were not happy being examined in a crowded place (see Table 8.13). These responses varied slightly by hospital with a higher percentage of women at Rajawadi saying they were not happy with being shaved (13%) and having an enema (17%). The difficulty of asking questions of this kind, however, are that the responses reflect partly what women expect. Many, especially those who had had a previous hospital delivery, knew that they would have these procedures while being prepared for labour. Four of the women interviewed during the exit interviews reported having shaved before leaving for the hospital.

Table 8.13 Percentage of users who had negative perceptions of procedures by hospital

| Hospital | Not happy having pubic hair shaved | Not happy having an enema | Being examined in a crowded place - not happy |
|---|---|---|---|
| Rajawadi (n=53) | 13 | 17 | 13 |
| Shtabdi (n=70) | 7 | 7 | 19 |
| Chembur (n=177) | 7 | 5 | 19 |
| Private (n=63) | 7 | 10 | 5 |
| All hospitals (n=417) | 6 | 6 | 9 |

Source: Community survey 1999

### 8.4.4. Summary

The above findings suggest that at the very least over a fifth of women delivering at one of the case study hospitals report negative experiences of the labour ward. Over a third of those delivering at one of the case study hospitals report that their bed was dirty. Shtabdi fares worst with nearly half of women saying that there was not enough air and that ward was too crowded. Over 60% of women delivering there report having a dirty bed and nearly two fifths felt they were too far from the staff bed. Table 8.12 also records the percentage of women who reported not having a bed. At Rajawadi 16% reported having no bed.

### 8.5     Interaction with staff

In addition to questions about how they felt about the labour ward women were also asked about their experience of interaction with staff during their stay. All women were asked directly what of the following options best described the treatment they received by staff of all grades: kind and understanding, fairly kind, neglectful/hurried, shouted at or slapped.

### 8.5.1   How did women feel they were treated?

The first two categories (very kind and understanding and fairly kind) have largely positive connotations and the following reflect a more negative experience of care (neglectful, hurried, shouted at, and slapped).

### 8.5.2   Treatment by doctors

Doctors perform relatively well in all institutions. Their treatment (by those women who were cared for at any point by a doctor) is for the most part described as positive - although they perform significantly better at private institutions with 100% of women responding kind and understanding treatment or fairly kind treatment compared with 92% of women who delivered at municipal hospitals (see Table 8.14). The difference is significant. In no instance does a woman respond that she was shouted at or hit by a doctor. When examined by hospital doctors perform relatively less well at Shatabdi compared to the other case study hospitals. Here 18% of respondents select neglectful or hurried as their description of treatment by doctors (see Table 8.14 for summary breakdown by category and hospital).

## Table 8.14 Experience of treatment by doctors by type of hospital (%)

| Type of hospital/rating | Kind | Hurried/ Neglectful | Shouted/ slapped |
|---|---|---|---|
| Municipal (n=315) | 92 | 8 | 0 |
| Private (n=59) | 100 | 0 | 0 |
| Total (n=374) | 93 | 7 | 0 |

*Pearson Chi-squared P=0.025*

# Total number of women who delivered at a hospital in Mumbai and came into contact with a doctor

Source: Community survey 1999

### 8.5.3 Treatment by auxilliary nurse midwives

Nearly all women (95%) who came into contact with an ANM at a private hospital described their treatment as kind and understanding or fairly kind (8.15). One woman described her care as hurried or neglectful and two women said that they were shouted at or slapped. There is a difference in being shouted at and slapped and the data was examined for each. In this instance one woman was shouted at and one was slapped. Most women at municipal hospitals described their care as kind, but 10% said their care from ANMs was hurried or neglectful and 15% said they were shouted at or slapped by an ANM. Table 8.18 breaks this down by case study hospitals where 3% of women at Shtabdi and 1% of women at Chembur report being slapped.

## Table 8.15 Experience of treatment by ANMs by type of hospital (%)

| Type of hospital/rating | Kind | Hurried/ neglectful | Shouted/ slapped |
|---|---|---|---|
| Municipal (n=356) | 75 | 10 | 15 |
| Private (n=61) | 95 | 2 | 3 |
| Total (n=417#) | 86 | 9 | 5 |

*Pearson Chi-squared P=0.077*

# Total number of women who delivered at a hospital in Mumbai and came into contact with an anm

Source: Community survey 1999

### 8.5.4 Treatment by ayabais

Ayabais are female helpers who work on the maternity wards to help feed users, clean sheets and so forth. Users reported experience of treatment from ayabais was less positive than doctors and ANMS. The majority of women rated them kind or fairly kind, but 21% of women at municipal hospitals rated them as hurried and neglectful

and 8% said that they were shouted at or slapped by an ayabai (Table 8.16). Only one percent of women who attended one of the case study hospitals were slapped by an ayabai and 6% were shouted at. A significantly greater percentage of women delivering at a private hospital than would be expected were the null hypothesis true, described ayabais as kind (92%) and there were no cases of a woman being shouted at or slapped by an ayabai.

**Table 8.16 Experience of treatment by ayabais by type of hospital. Percentage of women who describe their treatment by ayabais as kind, hurried/neglectful or shouted/slapped.**

| Type of hospital/rating | Kind | Hurried/ neglectful | Shouted/ slapped |
|---|---|---|---|
| Municipal (n=353) | 70 | 21 | 8 |
| Private (n=60) | 92 | 8 | 0 |
| Total (n=413#) | 74 | 19 | 7 |

*Pearson Chi-squared P=0.002*

\# Total number of women who delivered at a hospital in Mumbai and came into contact with an ayabai

**Source: Community survey 1999**

### 8.5.5. Experience of treatment by staff at the case study hospitals

The below tables, 8.17 and 8.18 break women's responses down by case study hospital. In general women's reported experience of care was less positive of the lower grade staff, with the exception of Shtabdi where an equal percentage of women described both doctors and ayabais as hurried and neglectful. Also at Shtabdi 3% of women were slapped by an ANM.

**Table 8.17 Positive experience of treatment by staff by case study hospital Percentage of women, by hospital who describe their treatment by staff as either kind and understanding or fairly kind.**

| Hospital | Kind and understanding (%) | | | Fairly Kind (%) | | |
|---|---|---|---|---|---|---|
| | Doctors | ANMs | Ayabais | Doctors | ANMs | Ayabais |
| Rajawadi | 51 | 37 | 22 | 41 | 51 | 47 |
| Shtabdi | 42 | 16 | 11 | 40 | 33 | 32 |
| Chembur | 48 | 29 | 15 | 48 | 58 | 52 |
| All case study hospitals | 58 | 42 | 28 | 36 | 45 | 47 |

Source: Community survey 1999

Table 8.18 Negative experience of treatment by staff by case study hospital. Percentage of women, by hospital, who describe their treatment by staff as either neglectful or hurried, shouted at, or slapped.

| Hospital | Neglectful/Hurried (%) | | | Shouted at (%) | | | Slapped (%) | | |
|---|---|---|---|---|---|---|---|---|---|
| | Doctors | ANMs | Ayabai | Doctors / | ANMs | Ayabai | Doctors | ANMs | Ayabai s |
| Rajawadi | 7 | 6 | 22 | 0 | 4 | 10 | 0 | 0 | 0 |
| Shtabdi | 18 | 14 | 18 | 0 | 4 | 8 | 0 | 3 | 0 |
| Chembur | 5 | 9 | 24 | 0 | 2 | 7 | 0 | 1 | 1 |
| All case study hospitals | 6 | 9 | 18 | 0 | 3 | 6 | 0 | 2 | 1 |

Source: Community survey 1999

## 8.5.6. Summary

A greater percentage of women who deliver in a private facility than women who deliver in a municipal hospital report positive treatment from staff with whom they come into contact. Despite this there is one case of a woman being slapped in the private sector. Within the municipal sector responses about treatment are less positive, with ayabais receiving the most negative responses. Shtabdi stands out as performing less well than the other two case study municipal hospitals. There are more cases of neglectful and hurried treatment in all categories and a greater percentage of women being either shouted at or slapped by some carer. Shouting has negative connotations but it is arguably not a robust indicator of unacceptable behaviour in labour. Despite this the variability evident between the municipal sector and the private sector suggests that women can deliver in an environment in which they are not shouted at and therefore this is an avoidable aspect of care. More ayabias shouted at women in all municipal hospitals with one in ten women from Rajawadi responding that they were shouted at by an ayabai.

Slapping is a more reliable indicator of unacceptable behaviour. In total 3% of all respondents (or 11 women) responded that they were slapped by either an ANM or an Ayabai. There were no cases of slapping in Rajawadi. In the remaining categories ANMs appear to be the most likely to slap a woman with 3% of women in private hospitals reporting being slapped by an ANM.

## 8.6. What influences women's experience of care?

Despite the variation in women's rating of the type of care she received between the individual case study hospitals the association was not significant. This suggests that women can expect similar treatment regardless of which of the three municipal hospitals they deliver at. However, when treatment by ANMs is cross tabulated with religion the association is strongly significant (p=0.002) such that a greater percentage of Muslim women (84%) responded that their treatment was generally positive (see Table 8.24) compared with 66% of Buddhists. Conversely 34% of Buddhists rated their care negatively.

This finding is important. What it suggests is that either women's experience of care is different, such that Buddhists are treated worse than Muslims or Hindus (thus demonstrating an inequitable quality of care), or that women of different religions have different expectations and are thus more or less likely to describe their care as poor depending on their expectations.

**Table 8.19 Experience of treatment (either very kind or kind (positive) and either hurried, neglectful, shouted at or slapped (negative)) by religion**

| Religion/treatment | Positive | Negative |
|---|---|---|
| Hindu (n=202) | 74 | 26 |
| Muslim (n=67) | 84 | 16 |
| Buddhist (n=137) | 66 | 34 |
| Total (n=413#) | 74 | 26 |

*Pearson Chi-squared P=0.002*

# Total number of women who delivered at a hospital in Mumbai minus 7 from 'other religion' category

Source: Community survey 1999

## 8.7 Experience of Care: Cognition and support

Two questions detailed in Box 9.2 below were included in the community survey questionnaire as a less direct means of assessing a woman's experience of care.

**Box 8.2 Questions that aim to measure the level of cognition and support in labour and immediate post-partum period experienced by the study population.**

*a) Were you left alone at a time when you were afraid to be alone during labour or delivery?*

*Responses: Yes during labour; yes, immediately post-partum; no.*

*b) Did the person who was attending you most in labour explain to you clearly what was happening?*

*Responses: Yes definitely; to some extent; not at all.*

### 8.7.1 Cognition (see element eight of quality framework)

Women were asked whether their principal carer explained to them what was happening. The association between this and type of hospital was not significant. In total 78% of women who delivered in a hospital in Mumbai felt that their principal carer did not explain to them what was happening at all.

### 8.7.2 Support

Women were asked whether they were left alone at a time when it worried them to be alone (see Box 8.2). A quarter of all women who delivered at a hospital in Mumbai felt that they were left alone either during labour or immediately post-partum at a time when it worried them to be alone. This did not vary significantly by type of hospital. Support in labour, as shown in Chapter Four can have a direct impact on the progression of the labour and outcome of the delivery. In the absence of the support of a person of her choice it is perhaps more important that a woman receives support from staff during labour and immediately post-partum. Being left alone at a time when it worries the woman to be alone may have a negative impact on both the progression of the labour and the psychological state of the new mother. It is also an indication of sub-optimal care.

### 8.7.3 What influences levels of support and cognition?

There is no significant variation in the experience of these two factors by type of hospital therefore a number of other factors that might reveal a significant variation in care were examined. Further analysis did reveal other factors that did appear to influence a women's experience of support and cognition. These factors relate to background characteristics of women than where they delivered including religion and whether or not a woman boiled her drinking water, which is used as a proxy for sensitivity to health messages.

### 8.7.4 Religion

Whether a woman felt the person caring for her explained clearly what was happening or not was significantly related to her religion (see Table 8.20). A greater percentage of Hindus felt that they had been explained to clearly, or to some extent (28%), compared with only 8% of Muslims and 20% of Buddhists.

**Table 8.20 Percentage of women by religion who report being explained what was happening to them either definitely or to some extent.**

| Religion | Yes definitely, or to some extent |
|---|---|
| Hindu (n=208) | 28 |
| Muslim (n=67) | 8 |
| Buddhist (n=138) | 20 |
| Total (n=413#) | 22 |

*Pearson Chi-squared P=0.005*

# Total number of women who delivered at a hospital in Mumbai (minus 7 'others' in relgion category)

**Source: Community survey 1999**

Religion was also significantly associated with whether a woman felt she had been left alone at a time when it worried her to be alone (see Table 8.21). A greater percentage of Buddhist women felt they were left alone at a time when it worried them to be alone (30%) compared to 13% of Muslim women and 25% of Hindu women.

**Table 8.21 Percentage of women by religion who report being left alone during labour or immediately after the birth at a time when it worried them to be alone**

| Religion | Left alone during labour or immediate post-partum | Not left alone |
|---|---|---|
| Hindu (n=208) | 25 | 75 |
| Muslim (n=67) | 13 | 87 |
| Neo-buddhist (n=138) | 30 | 70 |
| Total (n=413#) | 25 | 75 |

*Pearson Chi-squared P=0.060*

# Total number of women who delivered at a hospital in Mumbai minus those in 'other religion' category

**Source: Community survey 1999**

It is difficult to interpret the above results. Again it could be a real effect related to the way in which providers of care respond to women of different religious backgrounds. It is also likely to be related to the differential expectations that women of different religious backgrounds have, with perhaps Muslim women having lower expectations than those of Buddhist. Focus groups would have been a useful way of trying to understand this finding and are recommended for any future research in this area.

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### 8.7.5 Socio-economic status and levels of cognition and social support

Is there an association between socio-economic status and whether a woman felt they had been explained what was happening to them by their principal attendant?

### 8.7.6 Odds of being left alone or being explained what was happening: Logistic regression

Forwards stepwise logistic regression was used to model the following dichotomous outcomes:

- Being left alone at a time when it worried the user to be alone

- The principal person attending to a user explaining to her what was happening to some extent or definitely.

Parsimonious models for the above are shown in Tables 8.22 and 8.23. All likely correlates were tried in the models and eliminated by forward substitution. Boil water refers to whether or not a woman responded that she boiled her drinking water (either always, sometimes or never).

**Table 8.22     Logistic regression to model being left alone**

| Factor | Level | Parameter estimate (SE) | Odds ratio | N |
|---|---|---|---|---|
| Timing of antenatal booking | 1-4 months | | 1.00 | 33 |
| | 5-7 months** | 0.561 (0.0411) | 1.752 | 425 |
| | 8-9 months and unbooked*** | 1.332 (0.545) | 3.788 | 68 |
| Boil water | Always or sometimes | | 1.00 | 211 |
| | Never*** | 0.985 (0.234) | 2.679 | 315 |

Source: Community Survey 1999
\*        significant at 1% level
\*\*      significant at 5% level
\*\*\*    significant at 10% level

Users who booked late or not at all had nearly 4 times the odds of being left alone compared with those who booked within the first 4 months of pregnancy (see Table 8.22). In addition users who did not boil their water had 2.7 times the odds of being

left alone at a time when it worried them to be alone compared with users who sometimes or always boiled their water (see Table 8.22).

In relation to the other outcome (being explained what was happening), ownership of home and ability to read were the most significant factors. Users who lived in households who rented their homes had half the odds of being explained what was happening compared to those who lived in homes that were owned by their household. In addition, users who could not read, or could read with difficulty had less than half the odds of being explained what was happening to them compared with users who could read easily (see Table 8.23).

**Table 8.23 Regression to model being explained what was happening**

| Factor | Level | Parameter estimate (SE) | Odds ratio | N |
|---|---|---|---|---|
| **Home owned or rented** | Owned | | 1.00 | 397 |
| | Rented** | -0.569 (0.265) | 0.566 | 129 |
| **Ability to read** | Easily | | 1.00 | 210 |
| | With difficulty*** | -0.845 (0.357) | 0.430 | 61 |
| | Not at all*** | -0.833 (0.231) | 0.435 | 255 |

Source: Community Survey 1999
*          significant at 1% level
**        significant at 5% level
***      significant at 10% level

These findings further support the emerging picture of differential experience of care related to background characteristics of users. This is a significant finding that strongly suggests more research is needed to identify the extent to which this finding reflects a *real* differential experience of care or a different expectation of care. Whatever the relative balance, evidence that women do not report that they are being explained to and that they are reporting feeling alone during labour and immediately post-partum highlights an important quality issue.

### 8.7.7 Staff rating and being left alone

By grouping treatment by ayabais into two groups one broadly positive (kind and understanding and fairly kind) and the other including the remaining more negative responses and cross tabulating these with whether women felt alone when if worried

them to be alone demonstrates, as might be expected that a greater percentage of women who felt they were left alone also reported more negative care by ayabais compared to those women who did not feel they had been left alone (44% compared with 20%) (see Table 8.24). This suggests that a woman's negative experience of care is the result of a number of factors that influence her overall experience, such that she does not only feel alone and worried, but she feels her treatment by staff, in this case ayabais, is hurried or neglectful, or she is shouted at or slapped. This is important to remember when designing interventions aimed at improving a woman's experience of care.

**Table 8.24 The percentage of women who reported positive or negative treatment by ayabais by whether they felt alone when it worried them to be alone.**

| Alone | Treatment by ayabais | |
|---|---|---|
| | Positive | Negative |
| Yes (n=104) | 56% | 44% |
| No (n=309) | 80% | 20% |
| Total (n=413#) | 74% | 26% |

*Pearson Chi-squared P=0.000*

# Total number of women who delivered at a hospital in Mumbai who came into contact with an ayabai

**Source: Community survey 1999**

### 8.7.8. Summary

The analysis in this chapter of the community survey data demonstrates that there is no significant difference in the level of use of inappropriate technologies by type of hospital. In addition data indicate that private hospitals undertake more thorough checks during first examination and that women who deliver in a private hospital report a more broadly positive experience of care with respect to the labouring environment. However, while there is a significant difference in responses, by type of hospital related to how women experienced aspects of care (such as cleanliness of the bed and how kind and understanding staff were) women were as likely to feel left alone when they were afraid to be alone regardless of where they delivered, and similarly likely not to be explained what was happening to them by their principal carer. The conclusion that can be drawn from this is that apart from women's experience of the labour room environment, their treatment by staff and the consistency of vital checks taken, type of hospital is less likely to determine how a

woman's experiences care during labour. This is determined partly by their religious and their socio-economic background. Table 8.25. below summarises some of the quality issues identified in the analysis of women's experience of various aspects of care undertaken in this chapter.

**Table 8.25      The Quality Framework: Provision of care.**

**Examples of quality issues identified in Chapter Eight**

| Quality Framework | Elements of Care | Examples of quality issues identified in Chapter Eight |
|---|---|---|
| Provision of Care | Human and physical resources | ✗ Inconsistency in taking of vital checks<br>✗ Some women reporting unskilled staff as principal attendant in municipal hospital<br>✗ 16% if women delivering at Rajawadi did not have a bed |
| | Referral system | |
| | Maternity information system | |
| | Use of appropriate technologies | ✗ Evidence of routine enemas, pubic shaving,<br>✗ Excessive use of episiotomy, manual revision of the uterus<br>✗ Evidence of inappropriate routine procedures taking precedence over basic recommended vital tests<br>✗ Relatively high level of augmentation and induction in private hospitals<br>✗ Relatively high level of intravenous glucose infusion among private deliveries |
| | Internationally recognised good practice | ✗ No social support of woman's choice in labour<br>✗ Supine position for delivery enforced in both private and municipal<br>✗ Forceps first choice for instrumental delivery<br>✗ Inconsistencies in taking of vital checks |

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**Table 8.30 continued: The Quality Framework: Experience of care.**

**Examples of quality issues identified in Chapter Eight**

| Quality Framework | Elements of Care | Examples of quality issues identified in Chapter Eight |
|---|---|---|
| Experience of Care | Human and physical resources | ✗ 37% of women delivering in a municipal hospital report that their bed was dirty<br>✗ 64% of women delivering at Shtabdi described their bed as dirty<br>✗ 35% of women who delivered in a municipal hospital felt the labour ward was too crowded<br>✓ 86% of women who delivered at a private hospital described their bed as clean.<br>✓ 5% of women who delivered at a private hospital felt the labour ward was too crowded.<br>✗ 45% of women who delivered at a municipal hospital did not have the foetal heart rate listened to<br>✗ 66% of women who delivered at a private hospital did not have her abdomen examined.<br>✗ 39% of women who delivered at a municipal hospital did not have their blood pressure taken. |
| | Cognition | ✗ 78% of women were not explained what was happening to them during labour and delivery |
| | Respect, dignity, equity | ✗ 6% of all women were not happy having an enema and being shaved<br>✗ 9% of women were not happy being examined in a crowded place<br>✗ 15% of women delivering in municipal hospitals were slapped or shouted at in labour by ANMs.<br>✗ 8% of women delivering in municipal hospitals were slapped or shouted at by ayabais<br>✓ 95% of women who delivered in a private hospital described ANMs as kind<br>✓ 100% of women who delivered in a private hospital described doctors as kind<br>✗ 18% if women who delivered at Shtabdi described treatment by doctors as hurried or neglectful.<br>✗ Experience of treatment by ANMs is associated with religion<br>✗ Whether a woman is explained what is happening in labour by her principal attendant varies by religion and socio-economic status<br>✗ Whether a woman is left alone at a time when it worried her to be alone varies by religion and socio-economic status |
| | Emotional support | ✗ No social support in labour allowed in either municipal or private hospitals<br>✗ 25% of women felt alone during labour or the immediate post partum period when it worried them to be alone<br>✗ 20% of women felt alone at some point when it worried them to be alone and describe their treatment by ANMs as negative |

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# Chapter Nine

## 9.1    Timeliness of arrival

### 9.1.1    Introduction

Twenty four percent of respondents to the exit interviews delivered within an hour of arriving at hospital and 39 respondents to the community survey had an unplanned home delivery because they did not get to the hospital in time. This chapter will use these two sources of data to examine whether timeliness of presentation is unpredictable or establish whether there are certain factors that might explain why some women arrive with such little time before delivering and others do not. This was identified in the literature review (Chapter Two) as an area that has to-date received no specific attention. The relationship between quality of care and timeliness of arrival has not been examined and it is not clear whether there is a relationship, and if there is what the nature of the relationship might be. Is it simply that labour is so unpredictable that this pattern of timing arrival at hospital once in labour is inevitable? Or is it that certain groups of women are more likely to face delays in reaching hospital, or stay at home longer increasing the chance of arriving within an hour of delivery? Could these delays be related to perceptions of quality?  As a result of the large percentage of women arriving with such a short time before delivery, or not arriving at all it was considered important to examine whether any significant factors could be identified, using the data collected as part of this research, to explain this pattern.

While there is no universally agreed optimum time of arrival once in labour, late presentation in this study is defined as *women who arrive at the facility at which they deliver within one hour of the delivery* or *women who plan a hospital delivery but who do get to hospital in time*. The former is considered the minimum time desirable that staff would reasonably need to take an adequate medical and pregnancy history and examine antenatal notes, undertake vital checks, and identify any high risk conditions or complications (although no literature or guidelines exist to support or refute this). In the event of a complication time is required to either:

a) refer if the facility is only a basic essential obstetric care unit

b) contact specialist staff (eg. honoraries for advice, anaesthetists and/or paediatricians) and

c) take bloods and receive results

d) assemble necessary drugs/blood/fluids and equipment for treatment.

## 9.1.2 The data: The exit interviews

The data used to examine timeliness of arrival are drawn predominantly from the 70 exit interviews undertaken at the three case study hospitals. The quality of the data from the exit interviews is considered more accurate than the data from the community questionnaires for questions relating to timing of arrival at hospital and associated events. During the exit interviews women were asked about the timing of the events surrounding their labour and delivery; from the time that they felt they were in labour; to the time they left for the hospital; the time it took to travel to the hospital; and the time of arrival at the hospital until the time of delivery. Respondents were interviewed within days of their delivery, prior to discharge from hospital. The labour notes, which record the time of registration and delivery, were used in conjunction with the exit interview.

This data is analysed in conjunction with background information about the women and data relating to their pregnancy and previous complications in pregnancy. The analysis seeks to identify factors that are significantly associated with or might help explain late presentation (defined as delivery within an hour of arrival). Section one of the chapter examines factors that influenced the timing of arrival at hospital of the respondents.

## 9.1.3. The data: The community survey

In the community survey 51 women had an unplanned home delivery. From this group 39 responded that the reason for this was that they did not have enough time to get to the hospital, and six gave specific reasons for their delay in getting to hospital. This group are also considered 'late presenters' and factors that might explain the delays they experienced are examined. These women were considered home deliveries in the community survey and responded to the module four designed for

home deliveries. Unfortunately such a high number of unplanned home deliveries were not anticipated and therefore some of the questions that could have been asked of this group were not. The analysis is therefore somewhat restricted by the data that are available for this group.

In section two the behaviour of those respondents to the exit interviews who had had a complication in pregnancy or in a previous childbirth is compared with that of the behaviour of those who had not had such a complication. The approach taken in this section is relatively experimental as it makes a number of assumptions about the quality of care that women with previous complications at delivery or during the current pregnancy experienced when in hospital. The elements of care from the quality of care framework that this approach relates to are predominantly the provision of human and physical resources and cognition. It is assumed that under ideal conditions women who had had direct contact with hospital based maternity services as a result of a complication would present either earlier on average than the comparison group, or that there would be no significant difference in the timing of their presentation at hospital. If this is not the case then this is considered as an indirect indicator of poor communication, or cognition, during previous contact with institution-based health professionals.

### 9.1.4 Background information about the respondents to the exit interviews

An overview of selected background information about the respondents to the exit interviews compared with the community survey shows broadly similar characteristics with some differences (see Table 9.1). The most noticeable difference is in religion. A larger percentage of respondents to the exit interviews were Hindu, 69% compared with 50% in the community survey. Also, a greater percentage of women from the exit interview said that they could read easily, 59% compared with 40% for the group as a whole. A smaller percentage of women lived in houses that were owned by their families than in the community survey. In terms of autonomy, a greater percentage of women from the exit interviews said that they could take a sick child to the doctor unaccompanied (84% compared with 76%). Finally a greater percentage of women (over 50%) gave at least one reason to justify when it is right for a man to hit his wife compared with 43% of respondents in the community survey.

Table 9.1    Selected background/autonomy indicators from the exit interviews and the community survey

| Indicators | Exit Interviews (n=70) | Community          Survey (n=526#) |
|---|---|---|
| **Ease of writing a letter** | Easily   59%<br><br>With difficulty  4%<br><br>Not at all    36% | 40%<br><br>11%<br><br>49% |
| **Religion of Household** | Hindu   69%<br><br>Muslim 13%<br><br>Buddhist  17%<br><br>Christian/Other  1% | 50%<br><br>18%<br><br>31%<br><br>1% |
| **Tenure** | Owned   60%<br><br>Rented   40% | 74%<br><br>26% |
| **If your child was ill would you be allowed to take him/her to the doctor without the company of another adult?** | Yes        84%<br>No          16% | Yes        76%<br>No          24% |
| **Volunteered at least one reason for when it is right for a man to hit is wife?** | Gave one reason        53%<br>Said it is not right    47% | Gave one reason        43%<br>Said it is not right    57% |

# = number of respondents to the community survey who delivered in Mumbai

## 9.1.5   Late presenters

Seventeen (24%) of the above respondents to the exit interview delivered within an hour of arriving at hospital (see Table 9.2). Of this group over half (n=9) actually delivered within half an hour of delivery. Over 50% of women delivered within 2.5 hours of arriving.

**Table 9.2** Number and percentage of women by the difference and timing of arrival at hospital

| Delivered within 30 minutes | 31-60 minutes | 61 minutes plus |
|---|---|---|
| n=9      (13%) | n=8   (11%) | n=53   (76%) |

### 9.1.6 Referrals

Ten percent of the group (n=7) delivered in a hospital different from the one at which they first presented. Four of these women were referred for a complication in labour and the remaining 3 were turned away without examination at the first hospital as they had not booked. The referral process inevitably delays the time within which a women arrives at the hospital at which she finally delivers, and therefore they will be excluded from the group when analysing aspects of late arrival. They will be considered separately. The group who were turned away from the first hospital are however included in the study group as the 'delay' in arriving at the hospital of delivery is considered avoidable. Excluding referrals still result in 24% of women arriving 'late'.

### 9.1.7 Why do women present 'late'? What determines timing of arrival?

For a woman who plans to deliver at a facility and has either no symptoms or has symptoms but does not recognise them - timeliness of presentation is the outcome of a number of variables. There is no literature that identifies these as factors that directly influence timeliness of arrival (see Chapter Two), therefore a range of factors that are *likely* to influence timing of arrival are identified below:

- Length of labour
- Parity
- Quality of antenatal care
- Previous complications (during current pregnancy or previous delivery)
- Referral procedures
- Immediate circumstances surrounding onset of labour eg. child care arrangements
- Distance/mode of transport to facility

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- Autonomy
- Socio/economic and educational status

These will be examined below with reference to the study group (from the exit interviews).

### 9.1.7.1 Antenatal care

Where maternal health services are functioning optimally one might expect that health behaviour messages were effectively communicated at particular points of contact during the pregnancy or previous delivery. Antenatal care is the most obvious point of contact at which health providers would ideally exchange information with the pregnant woman and offer her appropriate advice. This would necessarily include information about how to recognise labour, how to recognise a complication and strategies to access care in the event of both or either (see literature review, Chapter Two). This planning element of antenatal care is often under-exploited. Examining the content and quality of ANC in any depth is beyond the scope of this thesis, but as it is such an integral part of preparation for labour the number of antenatal visits is briefly examined. Women were split into two groups; those who had delivered within an hour of arrival; and those who had not. This group was cross tabulated with women who had had between 0 and 2 antenatal visits and women who had had 3 or more antenatal visits. The association was significant, but in the opposite direction to that expected. In this group only 9% of women who had had only between 0 and 2 visits delivered within an hour compared with 31% of the group who had had 3 or more ANC visits (see Table 9.3.)

Table 9.3      Percentage of women who delivered within an hour of arrival by number of antenatal visits

| Delivery time | Number of antenatal care visits | |
| --- | --- | --- |
| | 0-2 visits | 3 plus visits |
| One hour and under (n=17) | 9 | 31 |
| Over one hour  (n=53) | 91 | 69 |
| Total (n=70) | 24 | 76 |

1999   Pearson chi squared = p=0.057          Source: Exit interviews 1999

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The number of visits is not an indication of the quality or content of the visits. More research would need to be undertaken to explain the above the results.

## 9.1.7.2 Distance and transport

Distance and transport are not considered to be as influential in delaying women accessing care in Mumbai compared to rural areas given the distances and the transport options available in the city. It took only six women more than half an hour to get to the first hospital at which they presented, one of these took 45 minutes and the remaining five took about an hour. However two of the women whose journey to the hospital lasted an hour were late presenters. One of these women had a very short labour (under three hours) making the one hour journey relatively long. This was her fourth pregnancy. The second woman had a seven hour labour. She left for the hospital after about five and half hours of labour, travelled for an hour and delivered within half an hour of arrival at the hospital. Only one woman walked to the hospital, the remaining 69 took a rickshaw. Two women responded that obtaining transport delayed their progress to the hospital. Both went into labour at night. One said she could not get a rickshaw and the other said she thought she would not be able to get one as it was night-time so she waited. Only one woman responded that distance had delayed her. She had been staying away from home at her sister-in-laws when she went into labour. Despite this she was not a late presenter.

## 9.1.7.3 Length of labour

Length of labour is an obvious factor to examine in relation to timing of presentation. There was, as expected a significant association between length of labour and delivery within an hour (see Table 9.4.). Sixty two percent of women who had a labour of under three hours delivered within an hour of arrival compared with 30% of women who had been in labour for between 4 and 8 hours and 10% of women who had been in labour for nine hours or more. If a woman has a short labour she is at risk of presenting 'late' wherever she is in the world, unless she plans to deliver at home. The group of particular interest are those who do not have particularly short labours but who present 'late'. In total 40% of late presenters had labours that lasted between 5 and 27 hours

Table 9.4    The percentage of women who delivered within an hour of arrival by length of labour

| Length of labour | Length of labour (hours) | |
|---|---|---|
| | One hour and under | Over one hour |
| 0-3 (n=13) | 62 | 38 |
| 4-8 (n=20) | 30 | 70 |
| 9 plus (n=33) | 10 | 90 |
| Total (n=66#) | 26 | 74 |

Pearson chi-squared p=0.057

Source: Exit interviews 1999

# total number of women excluding referred women

## 9.1.7.4 Unplanned home deliveries

The length of labour of the other group of 'late presenters' in this study i.e. those women in the community survey who had an unplanned home delivery (n=51) was examined. There was a strong significant association between length of labour and where a woman delivered. Forty seven percent of women who had an unplanned home delivery had a labour of three hours or under compared with only 17% of women who delivered at a municipal hospital, 21% of women who delivered at a private hospital and 29% of women who had a planned home delivery (see Table 9.5.)

Table 9.5 Percentage of women by length of labour and by place of delivery and percentage of women by whether they did not book or the timing of their first antenatal appointment by place of delivery

| Length of labour[1] | Municipal hospital (n=354) | Private hospital (n=63) | Planned home delivery (n=45) | Unplanned home delivery (n=51) | Total % (n=513) |
|---|---|---|---|---|---|
| 0-3 | 17 | 21 | 29 | 47 | 22 |
| 4-8 | 55 | 41 | 58 | 37 | 52 |
| 9 plus | 28 | 38 | 13 | 16 | 26 |
| First antenatal appointment[2] Did not book | 8 | 10 | 16 | 10 | 9 |
| Months 1-4 | 6 | 13 | 4 | 10 | 6 |
| Months 5-7 | 82 | 71 | 80 | 84 | 91 |
| Months 8-9 | 4 | 6 | 0 | 6 | 13 |

Pearson chi-squared p=0.000[1]

Pearson chi-squared p=0.088[2]

Source: Community Survey 1999

The month of the first antenatal (or booking) appointment of respondents to the community survey was examined. The association is significant at the 10% level. As shown in Table 9.5 no women who had an unplanned home delivery booked in the first four months compared with 13% of women who had private deliveries. However, similar percentages in all groups registered late (i.e. in months 8 or 9). As expected a greater percentage of women having a planned home delivery did not book.

### 9.1.7.5    Socio-economic factors

Other factors such as religion and access to information that may have an effect on timeliness of presentation were examined from the exit interviews. Only two factors had a striking and significant effect on timeliness of presentation: maternal education and parity.

### 9.1.7.5.1    Maternal education

Maternal education had an effect such that women with higher levels of schooling were more likely to present sooner than less educated women. Of those who delivered late 56% had no schooling or between 0-4 years compared to 31% of the group with 5-7 years education and 13% of the group with grade 8 or above.

**Table 9.6**    **Percentage of women who delivered within an hour of arrival at hospital or above by level of education**

| Delivery time after arrival | Level of schooling | | |
|---|---|---|---|
| | No schooling or grade 0-4 | Grades 5-7 | Grade 8 and above |
| One hour or less (n=16) | 56 | 31 | 13 |
| Over one hour (n=50) | 32 | 28 | 40* |
| Total (n=66#) | 38 | 29 | 33 |

\# total women excluding 4 referrals

Pearson chi-squared p=0.097

Source: Exit interviews 1999

### 9.1.7.6 Parity

A similar percentage of multiparous women (3 plus) present late at a 5% significance as do less educated women. In both groups 56% of women deliver within an hour of arrival. This is not unexpected as parity is strongly associated with length of labour. Higher parity women tend to have shorter average labours than low parity women. In this group only 7% of the group who had labours of between 1 and 3 hours were first parity compared with 58% who were parity 3 or above. Table 9.7 below shows that only 19% of women who delivered within an hour were parity one compared to 56% who were parity 3 or above. As parity is so strongly associated with late presentation (and length of labour) health messages to higher parity women planning to deliver in a hospital would ideally communicate this to this group to encourage them to leave for hospital sooner after labour has commenced than they may have left in earlier labours.

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Table 9.7     Percentage of women who delivered within an hour of arrival at hospital or above by parity

| Delivery time after arrival | Parity | | |
|---|---|---|---|
| | Parity One | Parity Two | Parity Three plus |
| One hour or less (n=16) | 19 | 25 | 56 |
| Over one hour (n=50) | 46 | 32 | 22 |
| Total (n=66#) | 40 | 32 | 30 |

# total women excluding 4 referrals

Pearsons chi-squared p=0.028

**Source: Exit interviews 1999**

### 9.1.7.7 Length of time at home before making way to hospital

There was no significant relationship between the time that women stayed at home before making their way to hospital and late presentation. Six women left for hospital immediately and 20% went within an hour of going into labour. Fifty four percent went within the first five hours. Thirty percent went between 5 hours into labour and up to 24 hours of going into labour and 10% went after between 25 hours and 96 hours of labour (2 women went after 72 hours of labour and 2 after 96 hours). Only one of those who delivered within an hour had waited over 24 hours at home.

### 9.1.7.8     Other reasons for 'delays'

Women were asked during the exit interviews if there were any specific reasons for any delay. The reasons women gave for being delayed in getting to the hospital included:

- Had to wait for child care
- Had to wait for husband/brother/mother
- No one to take me at night
- Didn't want to disturb mother
- Had been leaking for 2 days but did not know this was a problem – did not tell anyone
- Went home after failed to get admission to first hospital because unbooked

- Had to wait for transport
- Distance (was staying with sister in law)
- Night-time so thought wouldn't get a rickshaw so waited

According to the exit interviews 25% of women who expressed some kind of delay arrived within one hour, similar to the group as a whole. As visible in the above list some of the delays are linked to the timing of the onset of labour. For example going into labour at night may increase the risk of a delay in accessing transport, while going into labour during a work day may mean the woman must wait until her husband can be contacted and returns home to accompany her.

### 9.1.7.9 What reasons did providers give for so many women arriving 'late'?

During the provider interviews staff were asked what they felt from their experience contributed to late presentation. The most frequent two responses were:

- *"usually they come here at the last minute"*
- *"often women don't come until they are in established labour"*
- *"women have to wait for their husbands"*
- *"ignorant – don't understand"*

### 9.1.7.10 Delivery at a second hospital (referral or admittance refused)

In total 10% of women delivered in a hospital different from that at which she first presented. Three of these women were unbooked and therefore refused treatment at the first hospital and 4 were referred for a complication. Out of these 7, 2 women were late presenters, one woman who had not booked and one who was referred from Chembur for high BP. Below specific examples are examined briefly.

### 9.1.7.10.1 Women who delivered at a hospital other than the one she presented at first.

#### Case one - unbooked

Arrived at one hospital at 20.30 but was unbooked at that hospital. It took 3 ¼ hours between her arrival at the first hospital and her arrival at second hospital. This was

due to delays in waiting to be seen in the first hospital, being refused care and her and her family having to make their own arrangements to reach the second hospital.

## Case two - unbooked

Parity 2 woman who had lost first child aged under one. Arrived at 12 noon at the first hospital but as with case one she was turned away as she was not booked at that hospital. It took 3 hours before she arrived at the second hospital at which she delivered within half an hour.

## Case three - referred

Parity 2 woman. In labour for 4 hours before leaving for first hospital (Chembur). Referred from Chembur for high blood pressure and severe anaemia. It took 2 hours between her arrival at the first hospital and her admittance to the maternity ward at the Rajawadi. She delivered within 35 minutes of arrival at the second hospital. She travelled to Rajawadi in the ambulance based at Chembur, and was accompanied by a member of staff from Chembur

## Case four – referred

Arrived at Shtabdi at 3pm. There were no foetal movements at this hospital and she was referred to Rajawadi for a scan (as Shtabdi does not have ultrasound equipment). She had to make her own way to Rajawadi (accompanied by a relative, not by hospital staff) and was admitted to the maternity ward at Rajawadi at 10 pm, after waiting for 2 hours for a scan. She delivered within an hour of her arrival at the maternity ward (still born)

From this small sample it is difficult to make any more than some general observations about both the policy of turning away unbooked women unexamined and the quality of referral. Undoubtedly the former avoidably increases the risk of late presentation. Further evidence of this is the case of one of the respondents to the community survey who was turned away from Chembur for being unbooked and told to go to Rajawadi. She had an unplanned home delivery.

As regards referral, the existence of an ambulance on site at Chembur for the purpose of transporting referred women reduces delays related to accessing transport

(assuming the ambulance is reliable 24 hours a day – not verified) compared with Shtabdi where women must make their own way to the referral hospital. The two hour wait for a scan in advanced labour is an example of an avoidable delay, which in this case certainly contributed to late presentation.

### 9.1.8 Summary

The above analysis suggests that a woman is more likely to be a late presenter if she is multiparous, has no or little education and that being unbooked puts a woman at greater risk of late presentation. Those women who are referred are at particular danger of avoidable delay where timeliness of appropriate care may be essential to save a woman or infants life or prevent serious morbidity. In addition, women who have labours of three hours or less (this is related to parity) have a higher probability of arriving at hospital within an hour of delivery or having an unplanned home delivery. Interventions would need to target women of higher parity and women with a history of short labours specifically. The group who have longer labours, but who still present late are less easy to identify, but women with lower levels of education do appear to be at greater risk. The recommendation would be to improve communication of health messages and cognition at points of contact with the pregnant woman, primarily at antenatal visits to make sure that planning for delivery is actively considered by the woman and her family and preparations made to avoid preventable delays.

## 9.2    Section Two

### 9.2.1    Complications and subsequent behaviour

One factor that has not been examined so far is the timing of presentation of the group who have had either a complication in a previous labour or were admitted to hospital during the current pregnancy. Under optimal conditions women who have had a previous complication, or have been identified antenatally as high risk, would attempt to get to hospital soon after labour starts. The assumption behind this line of inquiry is that maternity wards not only see women in labour, they also deal with women admitted to hospital during pregnancy for specific problems (eg. blood transfusion for anaemia). Given that so many women appear to be arriving at hospital in labour with

such a short time before delivery, it is important to establish how the behaviour of women who have had a previous complication which has required either admission to a maternity ward during pregnancy, or specific action during a previous delivery indicating a serious complication compares with women with no previous complications (in delivery or pregnancy). This is examined below.

To re-cap, this analysis uses contact with maternity services as a result of a complication in a previous delivery or admission as proxy for the quality of the provision of human and physical resources and the quality of cognition (see Quality Framework, Chapter Three). This approach recognises that ideally women who have been in contact with institutional based maternity services as a result of a complication would have more targeted health messages communicated to them about preparing for labour compared with those who have only accessed community based maternity services for routine checks.

### 9.2.2   Previous contact with hospital based maternity services

During the exit interviews women were asked if they had experienced any significant adverse effects or complications in previous pregnancies or deliveries which necessitated specific care by MCH personnel and/or any complication in the most recent pregnancy which resulted in a hospital admission. The question was less concerned with any accurate diagnosis of a complication, which is notoriously difficult (Ronsmans 2001), but the fact that the woman herself reported having had specific poor outcome (still birth) or an intervention to treat a complication (such as a blood transfusion or a caesarean section) in a previous delivery.

### 9.2.3   Complications

Twenty three women were identified as having had either a complication in a previous delivery and/or who had been admitted to a maternity ward at least once during their most recent pregnancy. This latter group was identified during the exit interviews through the ante-natal notes which were examined at the time of the interview. The notes recorded admissions to the maternity ward with a brief reason for the admission. Information was verified during the interview. Table 9.8 shows the

group with a brief description of the complication as recorded on the antenatal notes or as reported by the women in the case of previous complications. Thirteen women had had a complication that required specific care in a previous delivery and 15 women had been admitted to hospital during pregnancy. Four women fell into both groups (see Figure 9.1).

**Figure 9.1      Complications in previous delivery or current pregnancy**

**Complications in a previous          Admission to hospital in current pregnancy**

**labour**
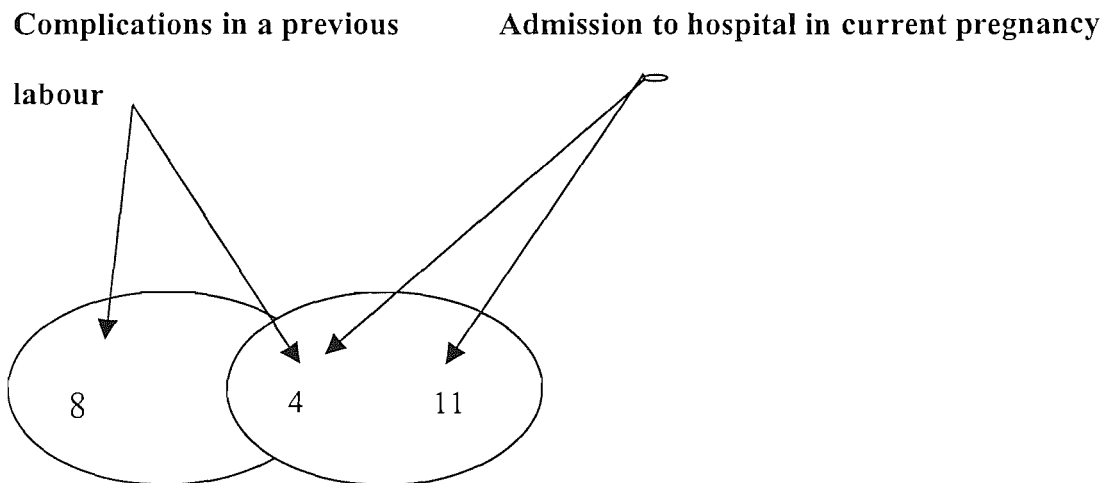
Table 9.8    The 'previous complication group' by complication.

| Description of complication in previous delivery n=13 | Description given for admission to maternity ward in current pregnancy n=15 |
|---|---|
| Caesarean section  x 4 | Admitted c/o fever |
| Still birth x 5 | Admitted c/o chest pain |
| Blood transfusion for post partum bleeding x 2 | Admitted @ 4 months, early labour, given duvadilan |
| Referral in labour for high blood pressure x 2 | Admitted high blood pressure x 2 |
|  | Admitted trace urine alb |
|  | Admitted $5^{th}$ month c/o back and leg pain |
|  | Admitted inferon injection (anaemia) x 3 |
|  | Admitted c/o vomiting/giddiness |
|  | Admitted vdlr positive (positive STI test) |
|  | Admitted – no details |
|  | Admitted premature labour |
|  | Admitted leaking pv @ 5 months |

Source: Exit interviews and case notes 1999

### 9.2.4   Results

The behaviour of the complication group above is compared with the comparison group. Table 9.9 examines the length of time that women were at home before making their way to the hospital in both the complication group and the comparison group. Table 9.10 then examines the percentage of parity 2 plus women who had had a previous delivery who booked late by whether or not they had had a previous complication.

Table 9.9    Length of time at home of complication group and comparison group

| Mean time at home for women with complications in previous delivery and/or admission to maternity ward in pregnancy (n=23) | Mean time at home for women with no previous complications (n= 47) | Percentage of women who were admitted to maternity ward during pregnancy and presented late | Percentage of women who had a complication in a previous delivery and presented late |
|---|---|---|---|
| 90 minutes | 52 minutes | 32% | 25% |

Table 9.10    Percentage of parity two plus women who booked early or late by whether or not they had had a complication during a previous delivery.

| Complication in previous delivery | Time of booking | |
|---|---|---|
| | Earlier – trimester one or two | Late – trimester three of never |
| Yes (n=13) | 37 | 59 |
| No (n=27) | 63 | 41 |
| Total (n=40) | 100 | 100 |

\# total number of women parity two or above

Pearson chi-squared p=0.175                    **Source: Exit interview 1999**

### 9.2.5    Findings

●   Table 9.9 shows that of those who had had a previous complication the mean wait at home before coming to hospital was 90 minutes compared with 52 minutes for those with no previous complications.

●   A third of women who were admitted to the maternity ward during the current pregnancy arrived within an hour of delivery and ¼ of those with complications in a previous delivery presented within an hour of delivery (see Table 9.9).

●   Table 9.10 shows that of those who book late 59% had had a complication in a previous delivery compared with 41% of those who have not had a previous complication. This suggests that those with complications in a previous delivery tend to book later than the comparison group (p=0.0175)

If women who have had a previous contact with a maternity facility following a previous complication in labour or in the current pregnancy and wait at home longer, on average than women with no previous complication – it is reasonable to suggest that this indicates that the standards of the provision of care and 'cognition' criteria are not optimal within maternity wards.

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This analysis inevitably reflects quality of antenatal care also. If a woman had had a previous complication at delivery requiring hospital care outside of Mumbai it would be expected that this information would have been communicated at an antenatal appointment and reflected in the preparation for labour discussions. All but the 3 unbooked women had had at least one antenatal appointment.

## 9.3    Summary

### 9.3.1   What do these findings suggest?

- A significant percentage (24%) of all women present within one hour of delivering (many within ½ hour)

- 33% of women who have had a previous complication in childbirth or pregnancy present within one hour of delivering

- Women who have had a previous complication in childbirth attend antenatal care later than those with no previous complications

- The average stay at home before leaving for hospital is higher for women with previous complications than for those with none

- The referral system can delay timely treatment – despite usually complicated cases being referred

- The policy of turning away unbooked women in labour increases the likelihood of being a late presenter

- Education has an effect – the higher the level the longer the time between arrival and delivery

- Parity has an effect - multiparous women are more likely to be late presenters and are more likely to stay longer at home on average than primigravidae.

## 9.4    Discussion

The finding that nearly one in four women deliver within an hour of arrival at hospital and that a third of women who had been admitted to the maternity ward in the current pregnancy stay at home on average longer and present later than the comparison group raises a number of questions that cannot be answered in the context of this research project. Do women of certain characteristics have a higher chance of a complication in pregnancy or delivery? Do these same characteristics increase her

likelihood of presenting late once in labour? Does presenting late increase the probability of potentially minor complication becoming very serious?

Preparing a woman for recognising and planning for labour is an important function of ANC. The role that maternity staff in hospitals play in communicating health messages to women who are admitted in pregnancy or who have a serious complication at delivery is less clear and has certainly received less attention.

The above analysis is relatively experimental and examines the behaviour of a relatively small group of women. What the results do is raise a number of issues that require further investigation but which could be used to help inform maternal health policy and improve quality of care. Clearly more work needs to be carried out to understand the impact of late presentation on care in labour and delivery. Targeted health messages would need to be designed to encourage earlier presentation by women planning a hospital delivery who are at risk of avoidable late presentation, if this is found to adversely influence care in labour and outcome. This would include higher parity women, women with a history of short labours, previous complications and women of lower educational status. The responsibility of hospital based staff for communicating such health messages to 'at risk' women is also in need of more attention. This research suggests that targeted advice to women (and their families) at risk of late presentation should be made at every opportunity - both ANC and by hospital-based health professionals.

As women were not asked about the health messages they received during their previous delivery or on admission to the maternity ward in pregnancy it is not possible to draw any direct conclusions about the quality of care. It is possible however to use late presentation by women who have had specific contact with hospital based maternity staff as a proxy indicator of poor cognition.

# Chapter Ten

## 10 Discussion, recommendations and conclusions

### 10.1 Discussion

The overall direction and structure of this thesis were articulated in the introductory chapter. Key elements of quality in institutional maternal care have been described and a quality framework developed. The framework was then used as a guide to structure a situation analysis of the quality of care provided and experienced within a specific service environment; urban slums in the east of Mumbai. An overview of this study area and target population has been provided and the results of a range of methodologies examined. Thus quality-related data for the overall assessment of quality within this particular environment has been established. In this chapter the results are drawn together and discussed in some depth. The discussion will complete the situation analysis undertaken in this thesis and will use the quality framework to structure the discussion. This discussion is followed by an analysis of the opportunities and limitations of the key methodologies employed to measure quality in this research. The absence of a critical body of quality focused research studies in the field of safe motherhood mean that these practical insights, together with the quality framework developed constitute a significant contribution to the body of knowledge within this field. Together they can be drawn on to inform the structure and process of future quality focused research and assessment exercises within institutional maternity services in the developing world.

### 10.2 A situation analysis of quality: Provision of Care

#### 10.2.1 Human and physical resources

The situation analysis identified a number of issues related to the quality of human and physical resources at the municipal case study hospitals. There was evidence at Rajawadi of women having no bed at the hospital at which they delivered (16% of respondents to the community survey) and of staff who expressed that they felt overwhelmed at times of high demand. In addition curtains and blinds were identified as either not being available, or being available but not being used. In two of the three municipal institutions the maternity wards were used for both labouring women and post-partum women. All these factors indicate that not only is the general

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infrastructure of this facility always of sufficient size to cope with demand and that, at times, the skill mix that fails to cope sufficiently with the patient flow but also that the maternity wards in two of the municipal hospitals are not adequate to perform their function in a manner consistent with international recognised good practice.

Other factors of sub-optimal provision of human and physical resources identified include: evidence of caesarean sections being performed at institutions that are not properly equipped to perform life saving operations (both Shtabdi and Chembur), anaesthetists (for Shatabdi) who were difficult to contact at certain times of the day, and surgical operations being performed with no blood bank on site. These indicate the type of 'delays' that could prevent users receiving timely and appropriate care in the event of an emergency. Blood would reportedly have to be bought by relatives from private blood banks, which were not open 24 hours a day, for relatively large sums of money in relation to average household income in the study population. Problems with stocks of essential drugs were identified at one municipal hospital (Shtabdi). In addition, all the private facilities were equipped with operating theatres but there were strong indications that there were neither blood banks on site nor full time anaesthetic cover. One of the most worrying findings from this study is that there are occasions when women at municipal hospitals are attended by ayabais, who are unskilled women who help with the general running of the ward (cleaning and cooking). In this situation women clearly do not have skilled attendance at delivery. Finally there had been no training in the year prior to the study for staff of any grade at the case study municipal hospitals.

## 10.2.2 Referral

Standards for a number of criteria that would be necessary to ensure a high quality referral are not met in all hospitals. However, the maternity home at the bottom of the referral chain, Chembur, does have an ambulance and a driver on site to transport referred women to the referral hospital. It also has a policy of sending an appropriate member of staff with the referred woman (and baby). At Chembur they also did not express problems with shortages of essential drugs that they might need to stabilise a woman and they had a functioning telephone which they could use to communicate with the referral hospital. In contrast, at Rajawadi the switchboard was often very busy and it was difficult to contact the labour ward. Also, at Shtabadi there was no

dedicated phone within the labour ward. Referral hospitals would therefore often have no warning that a referral was on the way. There was evidence that antenatal notes for a woman were kept at the hospital from which she was referred. Shtabdi, as mentioned above, had problems with stocks of essential drugs at particular times of the year, it had no resident anaesthetists and no blood stocks. This could introduce considerable delay for a referred woman needing to access timely and appropriate care. Women referred from Shtabdi would have to make their own way to the referral hospital and would not be accompanied by a member of staff from the hospital.

Finally, the practice of turning away unbooked women from Chembur and Shtabdi, unexamined, regardless of the progression of her labour, introduces a delay in such women accessing care. As unbooked women have had no antenatal visits and therefore no case notes, one would expect recording women's pregnancy histories and health background to take longer at the hospital that is eventually reached. This contributes to an additional delay in accessing timely appropriate care and is evidence of sub-optimal quality within the case study referral chain. In addition, the rapid referral, of any unbooked woman (with no examination), or any booked women with any sign of fetal or other distress may help explain the low neo-natal and peri-natal death rates at Chembur, indeed this practice may exacerbate the neo-natal death rates at other hospitals further up the referral chain.

### 10.2.3 Maternity information system

The labour ward records were completed daily at each hospital. They were complete and legible at the municipal case study hospitals and, based on observation, relatively accurate. The quality of the labour and post-natal notes however was variable. At Chembur a colour coding system had been introduced to highlight information that needed to be easily accessible. The notes were legible and clear. The quality of the clinical content of the notes was not assessed. At Shtabdi the labour and post-natal notes were scrappy, illegible and incomplete. Many of the labour notes had no more than FTND scrawled across the page (Full Term Normal Delivery). Even when a woman had had an episiotomy, or tear, this information was not included. More information was included when a labour was augmented or a caesarean section undertaken, but this was still limited. At Rajawadi however, while the notes were not as clear as at Chembur it did appear that more time was taken to note the progress of

the labour, blood pressure and other readings and some detail about the outcome, blood loss and so forth. The clinical accuracy of notes was not assessed.

From discussions with providers it was clear that there was no formal system in place to review the case notes of poor outcomes or to attempt to identify avoidable factors to improve care in the future. Nor were case notes or hospital records accessible without special permission. Data were required to be aggregated from the hospital records and sent to the central statistics office of the Municipal Corporation of Greater Mumbai (MCGM). It was not clear what happened to the information once it reached this office. There was a confidential enquiry into maternal death system but there was evidence of this being incomplete. The MCGM made the enquiry notes available for 17 women who had died from maternal causes in 1995/1996. These were, according to the MCGM the only maternal deaths in the city that year. This information contradicted evidence from the labour ward register of just one hospital (Rajawadi) which alone recorded 42 maternal deaths in the same year. This indicates a system of enquiries into maternal deaths that is seriously deficient.

## 10.2.4 Use of appropriate technologies

One of the most striking findings of this situation analysis is evidence of the routine use, at both municipal and private establishments, of procedures which are not evidence-based and which ignore the WHO's guidelines on care of women in labour as referred to in Chapter Three. Routine enemas, pubic shaving, episiotomies for first births were hospital policy in all hospitals (including the two private hospitals which self-completed the quality schedule). It was also hospital policy that women should lie down to give birth to her baby. There was evidence of oxytocics being administered intramuscularly in municipal hospitals. Oxytocics were also being administered at Chembur a BEOC facility without the facilities to undertake an emergency caesarean section. In addition there was evidence of high levels of manual revision of the uterus (in both municipal (37%) and private hospitals (50%). Data also indicate high levels of intravenous infusion at private institutions, induction and augmentation. This evidence supports data from around the world that women delivering in private institutions are receiving increasing levels of interventions (Johanson et al. 2002).

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The caesarean section rate fell within expected levels at Rajawadi at 10% but below the 5% minimum suggested by the WHO at Shtabdi[1]. There was also evidence of caesarean sections being performed at both Chembur and Shtabdi which have variable access to life saving skills and equipment.

## 10.2.5 Internationally recognised good practice

In obstetrics there are many examples of good practice (Benbow et. al., 1997). In this study only an illustrative selection has been used. The findings from the municipal case study hospitals were not encouraging in this respect. While magnesium sulphate was reported as the drug of first choice for the treatment of eclampsia, shortages hampered use of this drug at certain times of the year at Shtabdi. Providers reported that they did consider women who had had a previous caesarean section for a subsequent vaginal delivery, but they also reported that in practice they usually advised them to have another caesarean. Prophylactic antibiotics were routinely used for caesarean sections, but they were also routinely used for all deliveries, so it is not clear whether this policy is consistent with good practice by default, or a conscious decision to work within internationally recognised standards of care. Catgut, rather than polyglycolic sutures was the normal material for suturing. This was not necessarily the favoured option but it was the material that all municipal institutions used. This was justified on the grounds of cost and availability. Women were not supported in labour by a person of their choice, and there is evidence that many women spent much of their labour with no support from staff either. Finally, many of the vital checks as defined by Graham et. al. (2001) on women either in labour or post-partum were not consistently taken or recorded at any of the three case study hospitals.

## 10.2.6 Management of emergencies

The quality of the management of emergencies was not assessed in the course of this research. The assessment of criteria for this element would have required clinical time and expertise not available to the researcher. Its exclusion does not detract from the importance of the findings relevant to the other nine elements of care. Ultimately,

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[1] Ronsmans (2001) examine data which indicate that setting an arbitrary minimum caesarean section rate may enhance an over-interventionist culture and may cause more harm than good.

however, the quality of the management of emergencies is critical to the prevention of maternal mortality and morbidity and would need to be included in any study aiming to establish the quality of care in an emergency.

## 10.3 Experience of Care

### 10.3.1 Human and physical resources

Women responded to a number of questions about how they felt about the labour and post partum room. Responses to these questions were significantly more positive from users of private facilities. A greater percentage of users of municipal facilities than private clients describe their bed as dirty, the labour ward as crowded and the ward not airy enough. The community survey revealed that ayabais were performing procedures such as enemas and pubic shaving. There was also evidence that there were cases where ayabais were the primary attendants to women at delivery.

### 10.3.2 Cognition

Three quarters of women responded that their principal attendant did not explain what was happening to them. This figure was similar at both municipal and private facilities. In addition there is evidence that women with poor outcomes were not explained the reasons for the outcome. This evidence suggests that the majority of women are not involved in decisions about their care and indeed are not even informed about what is happening to them and why. There was evidence that higher parity women are being motivated using financial incentives and disincentives to be sterilised (women having a third baby, with two surviving children). This approach compromises effective communication between provider and users. Some users, who wanted to avoid a fine, and did not want to be sterilised, either withheld accurate information about them self, or planned a home delivery. This approach of motivating women using financial incentives to agree to a sterilisation is contrary to both the internationally ratified Plan of Action from the International Conference on Population and Development (1994) and the International Conference on Women (1995).

Finally, evidence suggests that women who had been admitted to the maternity ward in pregnancy as a result of a complication, or who had had a serious complication in a

previous delivery stayed at home for longer on average than women with no previous complications. This indicates that staff on maternity wards, and at antenatal appointments, are not communicating necessary health messages effectively to women with previous complications.

## 10.3.3 Respect, dignity and equity

A number of issues were identified that indicate that the quality of this element of care is not optimal. Users did undergo unnecessary procedures and a number expressed that they were not happy with having to undergo these procedures. They were examined in crowded places and curtains or blinds were either not available or not used regularly to shield women who were being examined. Users laboured in public areas, sometimes unsupported for long periods. While the majority of women delivering at municipal hospitals did report that staff treated them kindly and with understanding, one in four women delivering at a municipal institution described some level of negative experience of care from ANMs, with 10% reporting that they felt their care was hurried or neglectful and 15% reporting that they were shouted at or slapped in labour. Reports of the type of treatment users received at private hospitals were generally more positive for all grades of staff. Despite this, 3% of women reported being either shouted at or slapped at a private facility.

The way in which women experienced care did not vary significantly by type of hospital. Seventy eight percent of women who delivered at a municipal hospital said they were not explained what was happening, compared with 75% of women who delivered privately. However, the percentage who was not explained what was happening varied significantly by background characteristics. For example, a significantly smaller percentage of Muslim women reported being explained what was happening compared with Hindu and Buddhist women. In addition a smaller percentage of women who never boiled their water were not explained what was happening to them. These findings are not easy to interpret. They may reflect real differences in treatment of women of different backgrounds by staff, but it is likely also to reflect the expectations of women of different backgrounds and the extent to which they engage in conversations and be informed about what is going on. For women of very low social status who are uneducated women or/and with little

freedom of movement, their expectations of care are likely to fall below that of their more educated, higher status counterparts (Sen, 2002).

Finally there was evidence that women at public hospitals were paying unauthorised 'tips' to medical staff and were sometimes expected to pay for essential drugs. Within the private sector the pricing system indicates that the use of certain procedures is encouraged by a pricing system which charges families 8,000 Rs extra (or over twice the medium household monthly income of 3,000 Rs for private deliveries) for a forceps delivery, rather than a normal delivery. This evidence raises an important quality related issue. If specific clinical interventions are costed differentially by private providers a financial incentive exists that may compromise clinical judgement. The reverse is true for the public sector, such that where certain interventions are more costly in terms of time and financial or human resources this too may influence clinical decisions. Neither of these situations is optimal in terms of supporting high quality institutional maternity care.

**10.3.4 Emotional support**

As noted, women were not permitted to be supported in labour by a person of their choice, and many of them were left for long periods unsupported by staff. One in four women describe feeling that they were left along either during labour or immediately post partum at a time when it worried them to be alone. This figure did not vary significantly by type of hospital, with 25% of women at municipal hospitals feeling alone and 24% at private hospitals. As with responses to questions about whether or not their principal attendant explained to them what was happening, the percentages of women feeling alone when it worried them to be alone varied significantly by background characteristics. A greater percentage of Hindu and Buddhist women felt alone when it worried them to be alone compared with Muslim women. This again is difficult to interpret and is likely to partly reflect the differential expectations of quality, combined with actual unsupportive care. Staff did not describe the emotional and supportive role among their responsibilities, and evidence from one case in the exit interviews of a still birth provides some evidence of a system of care that is deficient in providing emotional support.

**Table 10.1    The Quality Framework: A summary of evidence**

| Quality Framework | Elements of Care | Examples of quality issues identified |
|---|---|---|
| **Provision of Care** | **Human and physical resources** | ✓ Wages for ANMs, ayabais and sweepers reasonable<br>✗ Low 'wages' for house surgeons – commitment/private work<br>✗ Honoraries – availability unpredictable<br>✗ Training not carried out at all in 12 months before interview<br>✗ Maternity ward being used as both labour ward and postpartum ward<br>✗ Bed shortages at times of high demand (16% of women delivering at Rajawadi did not have a bed)<br>✗ Staff feeling stretched a times of high demand<br>✗ Low blood supplies, blood transfusion given only when over 1 unit required<br>✗ No blood bank at some hospitals performing surgical deliveries<br>✗ Shortages of essential drugs e.g. magnesium sulphate at Shatabdi<br>✗ Use of wasteful and inappropriate technologies<br>✗ Inconsistency in taking of vital checks<br>✗ Some women reporting unskilled staff as principal attendant in municipal hospital |
| | **Referral system** | ✗ Difficulty accessing staff from Ward via telephone at referral hospital. One line into hospital, switchboard often engaged.<br>✗ Evidence of ANC and labour notes for referred women interviewed remaining at referring hospital<br>✗ Policy of turning away all unbooked women regardless of stage of labour or condition at municipal hospitals at bottom end of referral chain<br>✗ No telephone on the ward at Shtabdi, or within easy access<br>✗ No hospital vehicle in which to transfer referrals at Shatbdi and women made to travel with no health professional<br>✓ Ambulance to transport referrals and women accompanied by health professional at Chembur |
| | **Maternity information system** | ✓ Maternity record for ward completed daily<br>✓ Colour-coding for clarity at Chembur<br>✗ Labour notes often not legible at all hospitals<br>✗ Labour notes scanty (particularly at Shtabdi)<br>✗ Access to facility records restricted<br>✗ Evidence of confidential enquiry into maternal deaths deficient |
| | **Use of appropriate technologies** | ✗ Routine enemas, pubic shaving,<br>✗ Excessive use of episiotomy, manual revision of the uterus<br>✗ Evidence of inappropriate routine procedures taking precedence over basic recommended vital tests<br>✗ Relatively high level of augmentation and induction in private hospitals<br>✗ Relatively high level of intravenous infusion among private deliveries (49%) |
| | **Internationally recognised good practice** | ✗ No social support of woman's choice in labour<br>✗ Supine position for delivery enforced in both private and municipal<br>✗ Catgut used for sutures<br>✓ MGSO drug of first choice for treatment of eclampsia<br>✗ Women with previous c-section, considered but not actively considered for vaginal delivery.<br>✗ Antibiotics used routinely after every delivery<br>✗ Women not allowed to choose position for delivery<br>✗ Variability in consistency of vital test observed and recorded. |

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**Table 10.1 continued.** **The Quality Framework: A summary of evidence**

| Quality Framework | Elements of Care | Examples of quality issues identified |
|---|---|---|
| Experience of Care | Human and physical resources | ✗ ANMs unable to explain why routine procedures were necessary in some municipal hospitals<br>✗ Toilets dirty with no soap at Rajawadi<br>✗ 37% of women delivering in a municipal hospital report that their bed was dirty<br>✗ 64% of women delivering at Shtabdi described their bed as dirty<br>✗ 35% of women who delivered in a municipal hospital felt the labour ward was too crowded<br>✓ 86% of women who delivered at a private hospital described their bed as clean.<br>✓ Only 5% of women who delivered at a private hospital felt the labour ward was too crowded.<br>✗ 45% of women who delivered at a municipal hospital did not have the foetal heart rate listened to<br>✗ 66% of women who delivered at a private hospital did not have her abdomen examined.<br>✗ 39% of women who delivered at a municipal hospital did not have their blood pressure taken. |
| | Cognition | ✗ 78% of all women were not explained what was happening<br>✗ Woman with still born baby had not been explained what had happened and what the possible reasons for this were.<br>✗ Women with previous complications that involved contact with institutional services present later than women with no previous complications |
| | Respect, dignity, equity | ✗ Evidence of blinds not used – lack of privacy<br>✗ 9% of women were not happy being examined in a crowded place<br>✗ 15% of women delivering in municipal hospitals were slapped or shouted at in labour by ANMs.<br>✓ 95% of women who delivered in a private hospital described ANMs as kind<br>✓ 100% of women who delivered in a private hospital described doctors as kind<br>✗ 18% if women who delivered at Shtabdi described treatment by doctors as hurried or neglectful.<br>✗ Experience of treatment by ANMs is associated with religion<br>✗ Whether a woman is explained what is happening in labour by her principal attendant varies by religion and socio-economic status<br>✗ Whether a woman is left alone at a time when it worried her to be alone varies by religion and socio-economic status |
| | Emotional support | ✗ No social support in labour allowed in either municipal or private hospitals<br>✗ 25% of women were felt left alone during labour or the immediate post partum period when it worried them to be alone<br>✗ 20% of women felt alone at some point when it worried them to be alone and describe their treatment by ANMs as negative<br>✗ Woman with still born baby left on postnatal ward surrounded by live newborn babies, no counselling available<br>✗ Evidence of staff at Municipal hospitals leaving women to labour alone for long periods<br>✗ Similar percentage of women from municipal and private hospitals felt alone when it worried them to be alone |

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## 10.4 What has been learnt from the process of implementing the quality framework?

The principal contribution of this thesis to the international field of safe motherhood is the description of elements of quality of care specific to institutional maternity care and the development of a quality framework to inform service and community based assessments of quality. The review of literature undertaken as part of this research process identified quality in maternity services as being an area of growing interest, but an area that was based on a relatively limited body of work, much of which had been taken directly from work that focused on measuring quality in family planning (Bruce et. al. 1990). The unique contribution of this work is its explicit focus on maternity care and the drawing together of evidence from medical, health policy and social science disciplines to support the process of identifying and improving the quality of care both provided to and experienced by pregnant women within an institutional labour and delivery environment. The combination of evidence from these broad fields highlights the integrated nature of multiple areas of the provision and experience of care.

In practice, while it is possible, to an extent, to compartmentalise specific aspects of care within a particular element of care, as demonstrated in this thesis, the reality is that care described in all elements are interrelated and that some are more immediately critical to saving life than others. This does not detract, however, from the benefits that this framework does offer in terms of supporting the process of identifying specific aspects of care, providing a structure by which to articulate them and an approach that recognises that women's experience of care is linked to outcome. It also provides an explicit mechanism for measuring aspects of care which constitute basic human and reproductive rights and should therefore be upheld, not only for their possible life-saving benefits, but also to ensure that measuring whether these rights are respected forms an integral part of this holistic approach to the measurement of quality.

The artificial separation of certain aspects of care, both which may need to be in place for care to be optimal (e.g. the presence of a fully equipped operating theatre is no good in the absence of a fully trained and available anaesthetist), and the

identification of examples of sub-optimal care within two elements, of which one is of more immediate and direct importance to outcome (such as an absence of life-saving drugs compared with dirty toilets), both highlight aspects of the framework that need to be addressed during the process of identifying strategies to improve care. Ultimately the quality framework is only a tool to support a process aimed at highlighting specific examples of poor care and/or of improving poor care (see idealised process for improving quality of care in introductory chapter). The decision-making process that would follow an exercise of this kind would necessarily focus on the problems identified and the resources available to the service in general, human and otherwise. This process of prioritisation, however, can occur once a comprehensive situation analysis has been undertaken. Many of the issues highlighted in this example would require considerable resources to address (such as the lack of blood supplies on site, unstable provision of essential drugs and problems with access to key staff in the case of an emergency). Other issues, however, would be less costly to address; such as the improvement of maternity information systems; addressing the policy that results in all unbooked women being referred regardless of progress of labour; the reduction in the use of routine inappropriate or wasteful procedures, such as enemas, routine shaving and routine episiotomies. These latter issues would require some resources (particularly training costs), but more importantly they would require a culture change in the way that care is currently provided. These examples of two different types of quality issues highlighted using this framework, would need to be addressed using very different strategies. The important factor, with respect to this tool, is that it has provided the structure to ensure that the quality of multiple aspects of care can be examined.

Prioritisation of strategies to implement change is the next step. Using this framework as a basis for informing decision-makers of evidence of sub-optimal or unacceptable care, ensures that the process of decision-making is based on a complete overview of all of the quality issues fundamental to high standards of institutional maternity care, rather than examining the results of a purely clinical audit or a user focused investigation into experience of care. An obvious example of an outcome that may occur if these two aspects of care are not considered in tandem would be where a fully equipped hospital offering high standards of clinical care has staff that do not explain to clients what is happening, and treat them with little respect, perhaps even do not

speak their language. In this situation the taking of a complete medical history and explaining danger signs to look out for once discharged will be compromised. This situation will increase the risk of a poor physical outcome if critical elements of a woman's medical history are not communicated, or a woman returns home but does not understand the importance of seeking further care if, for example, her discharge begins to smell or her caesarean scar begins to swell and leak.

### 10.4.1 Methodological contributions and limitations

The process of implementing the quality framework during this research involved the selection of, and in some cases the development of, a range of methodological tools for the purpose of collecting quality related data for the situation analysis of quality of care in the study environment (see Chapter Four). The experience of implementing these methods is reviewed below. While the review is not comprehensive it draws attention to some of the more useful aspects of the methods employed, and some of the less useful aspects. These lessons will be interesting to future researchers who aim to collect quality related data in this field. As so little work that involves the measurement of quality within institutional maternity services has been undertaken these initial insights will be of particular interest.

To summarise; a variety of methodologies were used in the process of collecting data. These ranged from service based methods: examining hospital records, observation, the creation and use of a quality framework, provider interviews, exit interviews and the mystery client approach at private providers. In addition a large community based survey was undertaken to capture data from women outside of the hospital environment and data from women who did not have a hospital delivery. How these methods were designed and implemented is reviewed in Chapter Four.

As a general point, the use of such a variety of methods was considered entirely appropriate. By combining specific service based methods such as observation and provider and exit interviews with a review of hospital records and case notes a degree of triangulation was achieved. In practice it was not always possible to verify a particular issue, such as staff reporting that client's families were obliged to purchase life saving drugs when supplies were low. However, a degree of judgement was

required. In this case it was not possible to verify this claim beyond evidence that more than one member of staff reported this practice. However, given that the possible implications on outcome of this practice are potentially life-threatening it was considered sufficient evidence that this issue needed to be highlighted in the results of the situation analysis as a matter of concern requiring further attention.

Specific methodological and measurement lessons learnt for individual methods are reviewed below.

### 10.4.1.1    Community-based survey

The use of a community-based method is critical to assessing care as reported by women outside of the hospital environment, and of women who deliver at home whether planned or unplanned. The use of a community survey made it possible to obtain information indirectly about the content and process of care that is often difficult to obtain from providers directly. For example, information relating to operational delivery rates is, as in this research, often not forthcoming from private providers, who fear regulation. In the absence of hospital-type specific caesarean section rates, survey data can be used for calculating an aggregated rate for private providers as a whole.

This research exercise demonstrates that a community survey is an important method of obtaining data about the level at which specific vital checks and interventions are being undertaken in a particular hospital, or type of hospital. Using a survey technique to estimate the process of care is more straight-forward than trying to measure outcomes. These processes are more common than adverse outcomes and less prone to problems of interpretation. They either happened or they did not and therefore they are events that can be picked up relatively accurately via a community survey.

Community surveys, in this context, have particular limitations in relation to collecting meaningful information about levels of satisfaction. In order to collect a sufficient quantity and quality of information for this purpose it is necessary to ask questions that are detailed enough to reveal how women and their families discriminate among service attributes. In practice, surveys from developing countries are reported to have noted uniformly high levels of satisfaction despite great variability in the quality of services (Simmons and Elias, 1994). A commonly cited

drawback of surveys is that they lack depth and meaning (Warwick 1983). Findings may attain a high level of precision but still be difficult to interpret outside a qualitative framework. A related limitation is that, if used alone survey methods are ill-suited to the study of complex social relationships and intricate patterns of interaction. This is an additional justification for the multiple methodology approach taken in this study.

Cognitive testing, which was used to improve the clarity and accuracy of the questionnaire modules, is recommended as tool to support the design of questionnaire modules. As many of the questions relied on recall of the timing of events, the organisation of the questions was key to aiding this process. During the cognitive testing of the first draft, respondents found the scattering of questions relating to the timing of events confusing. A second draft drew all such questions together, such that by recalling the first event it was easier to remember the sequence and thus timing of events that immediately followed on from each other.

One specific aspect of the above survey is considered a methodological contribution in this field. It relates to the tools designed as part of this study to assess women's experience of care. The inclusion of the following questions in the questionnaire schedule helped to capture user's experience of care in a more subtle way than direct questions about how they felt they were treated.
*Did you feel alone at a time when it worried you to be alone?* and
*Did the person who attended you most in labour explain to you what was happening?*

When the responses to these two questions were analysed data revealed that unlike the more direct questions about how women felt about their care there was no significant difference in the care that women received by type of hospital.

## 10.4.1.2    Exit interviews

In this research exercise interviews were designed to last for no longer than half hour and a member of hospital staff (not from the maternity wards) assisted the principal researcher with translation for the interviews. In practice this was not ideal and an independent translator was needed (but not available) for certain key questions. In

addition, ideally a trained woman from within the communities served by the hospitals would have conducted the interviews, in place of the principal researcher. Unfortunately the Municipal Authorities would only allow this work to be conducted by the principal researcher supported by a member of the hospital staff.

In the exit interview schedule (see Appendix one), women were asked about tips paid to staff as well as questions (identical to those included in the community survey) relating to both the labouring environment and their treatment by staff. It was evident when conducting these interviews that women were not comfortable answering these questions under the circumstances and that the responses could not be relied on as accurate (courtesy bias). This highlighted the importance, but also the difficulty, of establishing full collaboration for such a study. All partners need to understand and respect the importance of the effective application of each methodology. A well-designed exit interview questionnaire schedule will not produce reliable data if the methods of employment are not appropriate. It is also worth noting that a study of this magnitude was not sufficiently important to the Mumbai authorities to play any more than a supporting, rather than a partnership role, and therefore the measurement difficulties described above were, in this example, unavoidable.

Despite these drawbacks the approach did have certain important benefits, with respect to some of the questions included in the exit interview, which are worth noting. The interviews were very effective in obtaining information about the course of the woman's labour, the decision-making process governing the timing of her presentation and choice of facility and her actual experience of care (as distinct from her perception of quality of care). Where as large-scale retrospective surveys with an eight month recall or more may suffer from recall errors, this approach enabled a relatively accurate picture of the timing of certain events from labour and birth through to the immediate post-natal period.

As access to each woman's notes was available it was possible to confront inconsistencies as they arose and probe certain events in more detail. For example, there were occasions where the recorded time of arrival at the labour ward was later than the recorded time of delivery. This occurred where the woman delivered within half an hour of arrival at the hospital. Normally a family member would register the

arrival of the woman while the woman herself went straight through to the labour ward. It would not have been possible to assess the quality of either note taking or information on case notes were in not possible to interview women themselves about the events recorded.

## 10.4.1.3     Review of case notes in conjunction with exit interviews

Within this service environment it was possible to determine that the quantity and quality of information recorded in case notes at municipal hospitals, was variable. Despite their variable quality, they afforded some important insights, especially when used in conjunction with an exit-interview. For this reason it is recommended that when possible an examination of case notes, in conjunction with an interview with the client, should form part of any quality assessment exercise. For example, while the exact time of delivery recorded by staff was very accurate, it was sometimes not clear whether delivery occurred in the morning (am) or afternoon/evening (pm), through either poor handwriting or omission of the time of day. The exit interview enabled clarification. Exit interviews helped distinguish between poor management and poor record keeping. For example, case notes alone do not reveal whether or not blood pressure is being routinely taken on arrival, but that staff are failing to record this in case notes, or whether blood pressure is simply not being taken at all. They do, however, reveal if it is being routinely taken and recorded, and can therefore be used as an indicator of good quality.

## 10.4.1.4     The quality schedule and provider interviews

The quality schedule (see Appendix One) was designed by the author of this thesis specifically for this research project. It was used in part to guide the provider interviews and to ensure that comparable questions were asked of each service site and that a comprehensive approach to measuring quality was undertaken. The questions on the quality schedule were asked of all staff. By asking all staff the same questions it was possible to identify and probe different responses to the same questions. Verification was also possible using other data collection techniques. Inconsistencies sometimes arose. One drawback of provider interviews is that they often elicit responses that reflect idealised behaviour. In a structured interview many

providers respond with what they know should be the case, rather than an accurate description of existing services (Simmons and Elias, 1994). For example, staff at one hospital answered a direct question from the quality schedule to the effect that, manual revision of the uterus[2] after delivery, was only occasionally used. From women's responses at exit interviews, it became evident that this procedure was being used routinely in two of the case study hospitals. Staff were then re-approached, and the actual situation clarified. In theory manual revision of the uterus at the facility was only meant to be conducted occasionally. In practice however, staff nurses were revising the uterus manually on a routine basis. But this was only revealed once findings from the exit questionnaires were available.

In practice it was not always possible to complete the quality schedule in its entirety. For example, it was not possible to compile a list of equipment and essential drugs in any of the hospitals, this was mostly due to time constraints of staff. It is also true that, in the one hospital where it was not possible to obtain this information, the matron in charge held tight control of the drug cupboard and permission to access this cupboard was not forthcoming. Given that it was not possible to obtain a full list of equipment and drugs, staff were instead asked to name supplies of which they experienced shortages most frequently. The lesson for any future research in this area is that a complete audit of supplies is not possible without the time, resources and full participation of staff and hospital managers. It also demonstrates an alternative approach that could be taken to determine which supplies staff suffered a shortage of most frequently and when. This does not fully compensate for a full audit, but highlights key shortages experienced.

### 10.4.1.5 Facility records

Maternity ward records and case notes can provide important data about both the age and parity of women delivering at a particular hospital, but also outcome data such as whether the baby was live or still born, whether the woman had a caesarean delivery

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[2] Manual revision of the uterus refers to the revision of the uterus by hand by attendants, immediately post delivery. This practice is normally used to remove retained fragments of the placenta. As an invasive technique its use should not be routine (WHO 1997).

or forceps. Observation of the case notes and a review of the maternity records demonstrated two areas where data was consistently weak: age and parity.

It was evident from an examination of case notes together with the opportunity to question women directly that a large number of them did not know their age. This is an issue that is likely to be common to other poor populations in other environments within the developing world. In this example the antenatal cards of women always noted an age, but this very often did not tally with the age the woman thought she was. This demonstrates the need for researchers to identify an alternative strategy for determining age where it is anticipated that age data will not be reliable. In this case the exit interviews were relied on for the most accurate age information. Where a woman did not know her age an attempt was made to calculate it from other information collected during the exit interview, such as, age at marriage. Where the age at marriage was also unknown, age at menarche was used.

The second piece of data that was not considered reliable in this example was parity. The policy within municipal hospitals to motivate women having a third live child to have a sterilisation was considered detrimental to the accuracy of the parity data provided by higher parity women potentially at risk. With this in mind the parity data recorded on the antenatal card and labour notes were not considered reliable. The exit interviews were therefore used as a mechanism for exploring a woman's complete pregnancy history and the parity calculated on this basis was relied on. It is important to remind women throughout any face to face interview that the information she is providing is completely confidential. This does not guarantee reliable data but recognises that depending on the circumstances of a particular policy and service environment basic information such as this can be extremely sensitive and steps may need to be designed to try and reduce such inaccuracies.

### 10.4.1.6 Mystery client approach

The mystery client approach is not favoured as a means of collecting reliable and comparable service based data. However, what this research project demonstrates is the reluctance of private providers to participate in a quality focused study of this kind and therefore the need to consider alternatives if this situation arises. It raises an important issue. In order to undertake a comprehensive review of quality of care of all

key institutional service providers within a specific environment it is important to involve representatives from key service areas. In this example only 13% of women delivered in a private institution, but in Mumbai as a whole 43% of women in slum areas deliver at private institutions according to the NFHS 1998-1999. The private sector does provide a substantial sector of care in labour and delivery throughout India and the difficulty encountered in achieving active participation in this study reflects the lack of regulation and enforced transparency by the private sector in general. This situation is not ideal in terms of either investigating, or regulating quality in the private sector and is an issue that will need to be addressed by the international health community. The indirect data collected about care women received in private institutions via the community survey demonstrates that they are equally as likely to use inappropriate and wasteful technologies that are not evidence based, not explain to clients what is happening to them and to leave them alone when it worries them to be alone. In addition they were more likely to have a number of interventions; for example 55% had their labours induced or augmented, 49% had a glucose drip and 24% had an instrumental delivery. This evidence, together with evidence from the mystery client approach, such that differential rates were being charged by some hospitals for a vaginal delivery compared with a forceps delivery, and the evidence that even the smallest provider had a fully equipped operating theatre but not evidence of blood bank and full-time anaesthetist, indicates that care at these institutions is not optimal but that under the current circumstances there is no means in place to address these shortcomings and protect clients of these services.

In this example the mystery client interviews were not considered comprehensive enough and it is recommended that any future investigations into quality of care within the private sector investigate alternative means of either involving the sector directly or obtaining more complete and comparable data indirectly.

**10.4.2 Limitations of the study**

In the above section the benefits and limitations of specific methods employed in this research are reviewed. Below a number of more general limitations of this study are identified.

### 10.4.2.1    Lack of qualitative data

The lack of good qualitative data was a limitation to this study. Focus groups discussions and in-depth interviews would have gone some way to helping to interpret some of the findings. In addition it would have been useful to be able to feed findings about their care back to users to gain a deeper insight into some of their experiences and expectations.

### 10.4.2.2    Larger group of unplanned home deliveries than expected

The group who had unplanned home deliveries was larger than the group that had planned home deliveries. This was much higher than anticipated and the questionnaire modules would have benefited from more questions that enabled a more in-depth analysis into the behaviour of this group compared to the other groups.

### Lack of social network analysis

The finding that location has such a strong association with place of delivery calls for further research to analyse the social networks within the slum pockets examined in order to identify factors which determine not only a woman's place of delivery but her experience of care. This type of analysis would also have helped to interpret the behaviour of a woman once she goes into labour.

### 10.4.2.3    No information about previous exposure to health messages at contact with institutional services

As women were not asked about the health messages they received during their previous delivery or on admission to the maternity ward in pregnancy it is not possible to draw any direct conclusions about the quality of care. It is possible however to use late presentation by women who have had specific contact with hospital based maternity staff as a proxy indicator of poor cognition.

### 10.4.2.4    Researcher led study not provider led

As this research was primarily researcher led not provider led the data was not as complete and the quality not as high as it might have been had full collaboration and the resources to make this possible been available. It was not appropriate to specify exact standards and measure care against these within the confines of this research project. The agreement of standards can only practically and usefully be possible

where those both those responsible for delivering care and those receiving it are all involved in the process of agreeing standards.

## 10. 4.3 Research Recommendations

In addition to the methodological insights that have been drawn from this study a number of research and policy recommendations have also been identified.

### 10.4.3.1 Framework not exhaustive in content

The framework is not exhaustive in its content. This needs to develop. As the framework is applied more widely and adapted to suit local situations it will become a more robust and useful as a tool to structure quality assessments. Ideally the framework needs to be used for the purposes of identifying mechanisms aimed at implementing change (as described in the idealised process for improving quality of care) and lessons from this process shared.

### 10.4.3.2 Adaptations to framework needed for locations with limited institutional services

The framework has been designed essentially for institutional delivery and for application in areas where services are widely available and accessible. In these situations institutions have a proportionally greater role in preventing delays in accessing appropriate care. The framework needs to be adapted to take into account factors that influence care to women who deliver in a hospital where services are limited. In addition the principles of this framework could be applied to evaluating the quality of both antenatal and post-natal care.

### 10.4.3.3 New indicators of experience of care needed

New indicators for directly and indirectly measuring a woman's experience of care need to be developed and tested. In light of the difficulties associated with interpreting aspects of women's experience of care this work needs to be carefully supported by qualitative techniques which can help tease out the relationship between poor provision of care and poor experience of care.

### 10.4.3.4 Timing of arrival

Little is known about what is an optimal time to arrive at hospital and how timing of arrival influences care. The high percentage of women presenting late at hospital and having an unplanned home delivery indicate that more research is necessary into the background characteristics of late presenters and factors that influence the timing of arrival at hospital in an urban area.

### 10.4.3.5 Application of framework in institutions at same level of referral chain

Using this framework to structure comparative analysis of the quality of the provision and experience of care across a range of locations would provide a comparable structure by which to organise both the gathering of information and the analysis of results. This could provide a very powerful tool by which care within institutions can be directly compared. A research study that applied the framework in institutions at the same level in the referral chain and compared findings would be informative.

### 10.4.3.6 Research into target setting needed

In order to change behaviour evidence is needed that standards of care are falling below levels that have been agreed as acceptable. Comparing how institutions perform relative to each other is distinct from what targets individual institutions and systems set for themselves. Research into setting targets for the less familiar and less understood experience of care indicators is needed.

### 10.4.3.7 More research into late presentation needed

An examination specifically of the behaviour of late presenters has not been undertaken before. Usually research into maternal health has focused only on the delays that affect women with a complication. This work is predominantly concerned with care in normal labour, recognising that complications can occur unpredictably and that care in an uncomplicated labour is integrally linked to care in an emergency. More research is needed in this area but the analysis in this thesis does identify a new approach.

### 10.4.4 Policy Recommendations

### 10.4.4.1 Improve communication of health messages at all contact points with pregnant women

The recommendation would be to improve communication of health messages and cognition at points of contact with the pregnant woman, primarily at antenatal visits to make sure that planning for delivery is actively considered by the woman and her family and preparations made to avoid preventable delays.

### 10.4.4.2 Targeted advice to groups at risk of late presentation needed

While the analysis in Chapter Nine is relatively experimental and examines the behaviour of a relatively small group of women the results raise a number of issues that require further investigation but which can be used to help inform maternal health policy. More work needs to be carried out to understand the impact of late presentation on care in labour and delivery. Findings from this research indicate that targeted health messages may need to be designed to encourage earlier presentation by women planning a hospital delivery who are at risk of avoidable late presentation, if this is found to adversely influence care in labour and outcome. The responsibility of hospital based staff for communicating such health messages to 'at risk' women is also in need of more attention. This research suggests that targeted advice to women (and their families) at risk of late presentation should be made at every opportunity - both ANC and by hospital-based health professionals.

### 10.4.4.3 Integrating experience of care and human and reproductive rights into safe motherhood goals important

Increasing institutional delivery is not in itself a sufficient goal of safe motherhood. High quality provision and experience of care both improves women's psycho-social and health outcomes and needs to become an integral part of any strategy to reduce maternal mortality and morbidity. Health authorities need to recognise that a users' experience of care is linked to health outcomes and therefore real measures to improve users experience are needed. In addition targets need to be set which reflect the degree to which the process of care is consistent with basic human and reproductive rights.

### 10.4.4.4 Trained and skilled cadre of midwives needed in India

India has no cadre of highly trained midwives, indeed it does not even have an established midwifery qualification UNFPA (2002). At present nurses have some training in midwifery, but they are not fully trained midwives. India needs to address

this. The vast majority of deliveries are uncomplicated and women do not need to deliver with the support of a doctor to have a safe delivery. Skilled midwives are an essential component of a partnership approach to reducing poor maternal outcomes as proposed by Graham et.al. 2001. Indeed, if a high quality referral system is in place home delivery with a skilled attendant is arguably preferable to an institutional delivery.

### 10.4.4.5 Training packages for maternal health professionals need to include quality of care modules

Training of new doctors and midwives/auxiliary nurse midwives and retraining packages for existing health professionals are essentially components of any approach to improve both the quality of the provision and quality of the experience of care.

### 10.4.4.6 Greater transparency within and regulation of private sector is needed

Greater regulation of the private sector is needed. If private providers are to profit from the care they provide, users need more transparency about the care they are being provided. As long a higher level of intervention equates to higher profits the danger that financial incentives will motivate decisions about the process of care above good clinical judgement will remain. Indeed, greater transparency and a basic level of agreed standards of care should be a requirement before a practitioner is even permitted a licence to practice.

## 10.5 Discussion and conclusion

Mumbai has one of the largest percentages of women delivering in an institution within India. Among the study population described in this thesis 82% of women who delivered within Mumbai delivered in a hospital or maternity home, 13% of women delivered in a private facility and 68% at a municipal hospital, 10% have unplanned home deliveries and 9% have planned home deliveries. The figure for institutional delivery surpasses the target of 80% of deliveries in institutions set by the National Population Policy of India, 2000 (MOHFW, 2000). The city thus provides a good example of a range of providers of maternity care available to urban slum populations in an environment where institutional delivery is the norm rather than the exception. Three municipal hospitals (Sion, Rajawadi and Shtabdi), one municipal maternity home (Chembur) and a number of private institutions of varying size made up the specific case study hospitals reviewed either directly via observation, exit interviews and provider interviews or indirectly via a community survey of women resident in the study area (derived of 6 slum pockets) who had delivered within 8 months of the survey interview.

This situation analysis identifies a number of specific areas where institutional maternity services used by women in the eastern suburbs of Mumbai is not of optimum quality and is not based on good evidence. The review of evidence from this research project is structured using the quality framework developed in this thesis and is based on the descriptions of quality integral to this. Some of the results support findings of observational studies of actual practice on labour wards in Zimbabwe, China and South Africa (Qian 2001, Mahomed 2000, Smith 2001). The type of evidence that this study has provided reinforces anecdotal evidence that there is significant scope to improve quality of care in much of the developing world. Not only does this research reinforce the concept that quality is associated with utilisation, choice of provider and outcome, but it provides evidence that much of the care provided within institutions, both public and private, is inappropriate and does not conform to best practice. As long as this situation continues pregnancy outcomes are at risk.

The world-wide trend is to deliver in institutions and there is now an understanding that in the event of a complication the only strategy to avoid the complication becoming a severe morbidity or mortality is to access high quality, appropriate obstetric care in a timely manner. This emphasises the need to improve quality of care in the institutions that do exist. Over 40% of women in developing countries now deliver in health institutions. This suggests that millions of women in the developing countries are currently exposed to established obstetric and midwifery practice which include an array of procedures, checks and interventions for managing labour. Evidence reviewed in this thesis show that not all of these procedures benefit women, their routine use is not supported by evidence and they are in some cases not only unnecessary but potentially harmful and often waste scarce resources. Findings also support the conclusion by Graham et. al. (2001) that a health professional is not necessarily a skilled attendant. In addition user's experience of childbirth in these institutions is not optimal. Users are being left unsupported, there is evidence of physical and verbal abuse and institutional delivery which does not guarantee of skilled attendance. There is no substantive difference in the quality of care (beyond the quality of the provision of human and physical resources) that women receive and experience at private providers, indeed they are at greater risk of certain interventions. Regulation of private providers is limited in India, but this evidence highlights the need to make private providers as well as public providers accountable for their actions. Scrutiny of care via agreed standards, certainly in the developed world, is well established as good practice in most fields of medicine. It ensures accountability, transparency and guards against the inefficient and wasteful use of resources. These standards, certainly in the European Community, now fall within the context of Human Rights legislation which affords individual certain rights which can be defended by law. These standards need to be established for maternity care in the developing world context and integrated into the process of care.

## 10.5.1 Implementing change

The focus of this research has been the description of quality and the implementation of a quality framework to guide a situation analysis of quality. It does not however address how care that is not acceptable may be improved in practice (steps 7-10 in the idealised process to improve care described in the introductory chapter). In many respects this is the next big challenge for the maternity services. In practice quality

assessments need to be linked to mechanisms for finding and implementing solutions (Ronsmans, 2001 and Crombie et al. 1997). The successful implementation of a quality assessment is as much about content as it is about process. Amoono-Lartsen (1985) concluded that when performance criteria are agreed upon as achievable and acceptable by health centre staff, their use in evaluating quality of care can provide an impetus for improving care and in-service training of staff. While feeding results back to staff is a necessary component of the assessment process, research has generally found that in the absence of explicit recommendations, little impact on practice is observed (Mancey-Jones and Bruga, 1997; Mugford et al., 1991; Mooney and Ryan, 1992; Robinson 1994). Mancey-Jones and Bruga. conclude that the impact of 'active feedback' where data is disseminated with specific recommendations, is uncertain. While some authors in developing countries have reported short-term improvements in clinical practice, following a clinical audit (Mitchell and Fowkes, 1985), others have reported that active feedback alone has failed to change practice even where the relevant practitioners have acknowledged the need for change (Lomas et.al., 1991). In practice, recommendations will often need to be supported by additional time and resources such as further education and training and supportive supervision. Where the lack of obvious signs of improvement resulting from an assessment process is partly the result of inadequate resources, staff morale will be difficult to sustain.

In their review of literature on perinatal audit in developing countries Mancey-Jones and Bruga (1997) report finding no published systematic evaluations from developing countries on the effects of perinatal audit on specific elements of practice, nor on participants' knowledge, attitudes or motivation. In published work they report that assertions about the positive impact of audit on staff morale, motivation and communication are not substantiated. Audit does not necessarily have a positive effect on participants' attitudes as it may be perceived as threatening, and the critical analysis necessary in this type of process may lead to a deterioration of staff relationships, particularly in cultures where criticism is experienced as aggression. Findings from an ongoing study involving maternal near miss audits in hospitals in West and North Africa suggest that while staff often readily identify examples of substandard care, translating the recognition of poor quality care into positive behaviour change is a more complex process. The steps needed to yield such change and so improve outcome are still not clear (Ronsmans, 2001). Little improvement in

the provision of quality of care can be expected until the process of implementing a successful assessment is better understood.

In a recent initiative aimed specifically at changing practice in obstetric care 'The Better Births Initiative' focuses on a limited number of procedures for which change is considered achievable using existing resources. A mixture of an interactive workshop and self audit were designed and implemented to bring about change in behaviour among health professionals in South Africa. Smith (2001) found that the change in behaviour that did occur was not the outcome of a planned or logical process but more the result of experimentation by providers. She concludes that '*rather than introducing evidence into practice using planned methods that seek to identify barriers and ways to overcome them, efforts to change health professional behaviour should encourage innovative thinking and experimentation*' (Smith 2001, p.4.).

### 10.5.2 Factors facilitating implementation of change

How the assessment process is organised will vary depending on multiple factors; management style: location, political will, financial backing and so forth. However, certain features need to be in place for it to bring about measurable change. These have been explored by Cleaves (1980); Stocking (1992); Greco and Eisenberg (1993) and Walt (1994) and adapted by Mancey-Jones and Bruga (1997) who divide the factors necessary to facilitate change into four groups: context, content, process and actors (see Figure 2, taken from Mancey-Jones and Bruga 1997).

**Figure 10.1 Factors facilitating implementation of change**

| Context | ■ The local culture is accepting of the concept of 'constructive criticism'<br>■ Environment is non-threatening, open and supporting of change<br>■ The assessment and recommendations are appropriate to the level of resources |
|---|---|
| **Content** | ■ Proposed change is appropriate for the specific problem identified<br>■ Change is recognised as likely to be effective, supported by research of consensus opinion<br>■ Change is compatible with current beliefs and practices<br>■ Change represents a small incremental change from current practices<br>■ Proposed change is simple, involving few individuals |
| **Process** | ■ A combination of a number of strategies are used to implement the change including:<br>■ Recognition of positive behaviour<br>■ Presentation of supportive evidence from research<br>■ Education activities and supervision<br>■ Follow-up audit and feedback<br>■ Financial incentives<br>■ Administrative regulations |
| **Actors** | ■ Willing to participate in audit process<br>■ Recognise need for change and improvement<br>■ Feel involved in the decision making<br>■ Persons in position of power committed to change and improvement<br>■ Personal incentives for change |

Source: Taken from Mancey-Jones and Bruga 1997

## 10.6 Conclusion

The framework developed in this thesis draws together experience and evidence from the extensive medical, health policy and social science literature on all aspects of quality in maternity care to create a flexible quality assessment framework specifically for use at the institutional level in developing countries. It divides quality into two elements that are conceptually distinct but closely related in practice: firstly into the provision of quality of care, and second into elements relating to users' experience of that care.

These two important aspects of quality of care in pregnancy and childbirth are intrinsic components of a basic reproductive rights approach. The benefits of improving quality of care to mothers at delivery are multiple. Not only could we expect to see an increase in timely and effective use of services and improved psycho-social and health outcomes: improved quality has been shown to curtail inappropriate use of limited resources, reduce the use of ineffective and harmful technologies, eliminate inefficiencies, optimise the use of existing inputs and promote following of correct procedures.

It has taken the international community up to the 1990s to realise that the important factor is that deliveries are far safer with professional assistance and that when a serious problem appears a pregnant woman should have access to an appropriately equipped health service (Van Lerberghe and De Brouwere, 2001). After years of the maternal mortality ratio as the dominant indicator of safe motherhood, it is now recognised that maternal mortality measurements need to be complemented by information about other elements of the care that women receive and experience. Procedures and interventions that increasing numbers of women undergo during childbirth may be unacceptable even if they do not exacerbate mortality or morbidity. But they do need to be recognised as being unacceptable before change can even be considered. Indeed, the numbers of women having an institutional delivery increase world-wide and government targets, such as the recent National Population Policy ratified by the Government of India the Ministry of Health and Family Welfare (MOFHW, 2000) that has as an explicit target the growth in the percentage of institutional deliveries nationally, to 80%, in the absence of any explicit approach or

commitment to assess and improve the quality of services that women receive is very worrying. Not exacerbating mortality or morbidity is not a sufficient goal for a provider, nor is discharging a live mother and baby after delivery. Providing care that is consistent with international good practice; avoiding the use of inappropriate technologies; and providing care that is humane, respectful, equitable and evidence-based are goals that need to be integrated into any policy that aims to increase the numbers of users delivering at institutions.

In a recent publication Van Lerberghe and De Brouwere (2001) conclude that change will ultimately come about only when pressure for resources and pressure for accountability by the public itself and professional organisations is sufficiently powerful. Information is power and as illustrated by the example of urban slums in Mumbai, this framework provides a structure which facilitates the accumulation of evidence that can be used to highlight examples of sub-optimal or/and unacceptable care.

With this in mind it is important to review what contribution this study has made to the field of safe motherhood internationally:

1) Firstly it reviews literature spanning multiple disciplines and from this describes 10 specific elements of quality within institutional maternity services. This fills a gap in the current body of literature and provides the most wide ranging definition of quality in this field to date.

2) It develops a framework which captures two inter-related, but distinct aspects of quality – that of the provision of care and the experience of care. The framework could be drawn on and adapted by other researchers, health professionals and managers to support and structure the assessment of quality in a practical way with the purpose of informing the design of strategies to implement change and improve quality.

3) It uses this framework in practical way to guide a situation analysis of quality of care within a specific geographical location: the eastern suburbs of Mumbai and documents the methodologies employed in the process and informs future

researchers of some of the contributions and limitations of these methods when employed in this study.

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