

TRANSFER FROM MIDWIFERY UNIT TO  
OBSTETRIC UNIT DURING LABOUR:  
RATES, PROCESS AND  
WOMEN'S EXPERIENCE

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# Abstract

## Background

Midwifery units (MUs) provide midwife-led care for women at low risk of complications. They may be located on the same site as an obstetric unit (OU), in a hospital without obstetric services or separate from any hospital. In MUs, if unforeseen complications arise, transfer to an OU may be necessary.

## Aim

To provide evidence to contribute to the improvement of the transfer process, help make transfer safer and less distressing for women, thereby improving the care and experience of women planning to give birth in MUs.

## Methods

A structured literature review of existing evidence was followed by three integrated component studies using different methods. The content and quality of local NHS transfer guidelines were evaluated. Data from the Birthplace national prospective cohort study were analysed to estimate transfer rates, describe the transfer process and identify factors associated with transfer. The experiences of women transferred were explored in qualitative interviews.

## Findings

Transfer is a common event, affecting around 25% of women planning birth in MUs, although rates in different units vary. Primiparous women are more likely to be transferred than women having a second or subsequent baby. The risk of transfer for primiparous

women increases with increasing age; around 50% of women having their first baby aged 40 years or over are transferred.

Local NHS transfer guidelines are generally of poor quality and pay little attention to women's experience.

Women interviewed after transfer report feeling unprepared for transfer. Sensitive care and clear communication from midwives during labour facilitate feelings of control in women and help women accept transfer as the right decision and not a 'negative' event. Transfer that is perceived by women as "too late" can have potentially serious and long-lasting negative effects.

Women's experience of the transfer journey could be improved by the offer of choice in a number of areas which would help women feel 'cared for' rather than 'transported'.

Having the MU midwife continue to care for the woman after transfer should be considered 'best practice'; where this is not possible a good handover is essential. Women who have experienced transfer should be offered the opportunity to talk to a midwife about their experience.

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# Chapter 1

## Introduction

### 1.1 Topic and scope

The research presented in this thesis addresses the transfer of women from midwifery unit (MU) to obstetric unit (OU) during labour and immediately after birth. In total, around 630,000 women gave birth to a baby in England in the year to 31<sup>st</sup> March 2007 (The Information Centre, 2008). Data reported to the Healthcare Commission for the same year, the most recent year for which these data are available, indicated that around 5% of these women gave birth in an MU (Healthcare Commission, 2008b). MUs provide midwife-led care for women who are at low risk of complications at the start of labour. They may be located on the same site as an OU or at a separate location, either in a hospital without obstetric services or in a building separate from any hospital (Stewart et al., 2004).

MU care is an option for many women; it has been estimated that around 60% of women are 'low risk' at the start of care in labour and therefore would be eligible for MU care (Hollowell et al., in press). The direction of current maternity care policy means that MU care is likely to be increasingly available. MUs operate selection criteria to ensure that they only offer care to women who would be expected to have an uncomplicated labour and birth. Inevitably unforeseen complications may arise, however, necessitating transfer to an OU. Women who need, or request, obstetric or anaesthetic care during labour or after the birth, or whose babies need neonatal care, are transferred to an OU, typically by wheelchair or trolley if the OU is on the same site or by car or ambulance if not. Transfer may take

from a few minutes to substantially longer, depending on the location of the MU and urgency of need. It is therefore an important consideration for women who are thinking about planning birth in an MU, for the midwives working in MUs and for those planning maternity services.

The research described in this thesis was conceived as an 'adjunct study' to the Birthplace in England research programme (Birthplace) (Hollowell, in press). Some data collected by the Birthplace collaborative group were analysed by the author for this thesis, alongside other component studies that were designed and carried out specifically for this thesis by the author.

## **1.2 Maternity care policy and organisation**

Since the early 1990s maternity care policy in England has emphasised the importance of choice for women in many areas of their care. With respect to planning where to have a baby, this has meant a shift away from recommending consultant-led care in hospital for women with straightforward pregnancies towards a position advocating that most women should be able to choose where to have their baby (Campbell and Macfarlane, 1994; Department of Health, 1993, 2004b). The Maternity Standard of the National Service Framework (NSF) for Children, Young People and Maternity Services emphasised choice, local service provision and access by specifying that "Every woman [should be] able to choose the most appropriate place and professional to attend her during childbirth based on her wishes and cultural preferences and any medical and obstetric needs she and her baby may have" (Department of Health, 2004b, p. 27). At the same time, the "Keeping the NHS Local" agenda advocated a move towards providing health services in smaller local hospitals (Department of Health, 2003b). It was supported by the presentation of evidence described as showing that "childbirth in such centres [midwife-led maternity units] is as safe as in consultant-led units, provided that a) admission is restricted to low-

risk women or b) if the midwife unit is not located near a consultant unit, there are efficient escalation protocols for transferring the woman to an acute hospital” (Department of Health, 2004a, p. 28). The maternity standard of the NSF required that service providers and NHS Trusts ensure that “...options for midwife-led care will include midwife-led units in the community or on a hospital site” (Department of Health, 2004b, p. 28) and this policy direction was made explicit in Maternity Matters, the implementation framework for the NSF, which set out a “national choice guarantee” for place of birth, stating that by the end of 2009 and depending on their “circumstances”, “women and their partners will be able to choose between three different options [for place of birth]” including “birth in a local facility... under the care of a midwife” (Department of Health and Partnerships for Children, 2007, p. 5). The current government has reaffirmed a general commitment to choice in maternity care stating that it will “extend maternity choice and help make safe, informed choices throughout pregnancy and in childbirth a reality – recognising that not all choices will be appropriate or safe for all women – by developing new provider networks” (Department of Health, 2010, p. 17).

### **1.2.1 Midwifery units in England**

MUs are maternity units that are managed and staffed by midwives. They provide care for women who, at the start of labour, are at low risk of developing complications (Stewart et al., 2004). There are two broad types of MU. ‘Freestanding’ or ‘stand-alone’ units are situated on a site geographically separate from a hospital obstetric or ‘consultant-led’ unit; ‘alongside’, ‘co-located’ or ‘integrated’ MUs are in the same building or on the same site as an OU. In both types of MU medical, obstetric, anaesthetic and neonatal services are only available if the woman is transferred to the OU. In this thesis the terms ‘freestanding’ and ‘alongside’ are used to denote the two different types of MU and these are abbreviated as FMU and AMU respectively.

### ***1.2.1.1 Historical development of midwifery units***

The way in which the current configuration of maternity care in England has arisen, including the role of MUs in particular, is an important factor influencing their current position within the maternity service. FMUs and AMUs have some common ‘ancestry’, but some different ‘drivers’ of the two types of service are also identifiable. Links with and differentiation from similar units in other parts of the world merit consideration.

Many smaller FMUs grew out of community maternity units that had previously been staffed by midwives with general practitioners on call. As the percentage of births in OUs rose throughout the 1960s and 1970s the number of these ‘isolated general practitioner (GP) units’, fell (Campbell and Macfarlane, 1994; Macfarlane, 2008; Young, 1987). By the 1990s the 100 or so GP units remaining in the UK were almost all run on a day to day level by midwives (Macfarlane, 2008). Some had been threatened with closure for many years, largely because of concerns over safety or cost (Gowers, 2002; Walsh and Downe, 2004). Those that survived did so, sometimes after closure, by ‘evolving’ into or ‘reinventing’ themselves as MUs or ‘birth centres’ (Gowers, 2002). Also since the 1990s a number of new FMUs have been opened in hospitals where OUs had closed (Macfarlane, 2008; Walsh, 2000). More recently, a small number of purpose-built FMUs have been opened, for example the New Forest Birth Centre on the outskirts of Southampton, but these seem to be largely replacements for other MUs that have closed (Southampton University Hospitals NHS Trust, 2009).

Reflecting their different origins, FMUs are based in a variety of types of building including former hospitals, in a separate ‘wing’ or part of a ‘cottage’ hospital, usually with a separate entrance, and in purpose-built settings. Layouts and style of furnishings and décor also vary, but typically include a small number of individual rooms used for labour, birth and postnatal care, usually with ensuite bathrooms and toilets, and may also include a

communal area for sitting/eating, a kitchen area for preparing food and drinks and antenatal care rooms. Birthing pools are commonly available along with other 'birthing aids' such as birthing balls and stools. Furnishings and décor are often 'soft' with the intention of creating a 'home from home' feel.

In contrast with FMUs, AMUs are a more recent phenomenon. A small number of AMUs also began life as GP units; located on the same site as an OU, these were termed 'integrated GP units' and were much fewer in number than the 'isolated GP units' (Campbell and Macfarlane, 1994). Others were opened during the 1990s following the closure of 'isolated GP units' in order to provide women with the option of 'midwifery-led' care (Andres and Rankin, 2005). The most notable change in the provision of MU care in recent years has been the dramatic increase in the proportion of NHS trusts that have moved from providing only OU care to also offering the option of care in an MU. This has come about largely through the opening of new AMUs and appears to have been as a direct result of the explicit national policy commitment since 2004 to offer the option of care in a midwife-led unit to all women with straightforward pregnancies.

As with FMUs, the physical space, layout and decoration of AMUs vary. Again, this variation may reflect the varying development of AMUs; some are purpose-built while others have been created from former 'labour ward' space. As a consequence, some AMUs may be quite 'clinical' in their style and décor, may be separated from the OU only by a set of double doors and may not have their own separate entrance (e.g. Mansfield, 2005). Others have clear separation from the OU, with very similar rooms to those described in many FMUs (e.g. Andres and Rankin, 2005).

MUs are also a feature of maternity care in other parts of the world. In some countries this is partly driven by geography and population density. In countries such as Australia, Norway and Canada, with large sparsely populated rural areas, local maternity units staffed

by midwives and sometimes general practitioners are a common way of delivering community based maternity care to low risk women, where the alternative would be travelling hundreds of miles to the nearest hospital. In the UK, Scotland has a number of Community Maternity Units (CMUs), mostly in less populated rural areas. Most of these are FMUs, but some have non-obstetric medical staff on site who are trained to undertake emergency instrumental and operative deliveries (Hogg et al., 2007). MUs in Germany (David et al., 1999), Sweden (Waldenstrom et al., 1997), Italy (Morano et al., 2007) and New Zealand (Barlow et al., 2004) have also been described. Since the 1970s the United States has also seen the development of the 'birth centre', a term used to cover a variety of organisational models, including some incorporating obstetric care, but usually where midwives take the lead in caring for women and where the essential objective is to provide an "alternative to hospital birth" (Eakins et al., 1989, p. 124).

### ***1.2.1.2 Philosophy of care***

The idea that MUs offer an alternative to hospital birth is indicative of a key defining feature of the care they provide. Both types of MU explicitly work within the same broad philosophy of care. This "low-tech, midwife-led approach to birth" (Rosser, 2001, p. 88) is often referred to as the 'social model' or 'midwifery model' of care (van Teijlingen, 2005). In contrast with the 'medical model', in which labour and birth is seen as an inherently unpredictable and risky process to be managed, with the consequent need to provide a full range of medical services 'just in case', this approach sees 'normal' birth as a 'natural' process. It is argued that most pregnant women will have a straightforward labour and birth requiring the minimum of medical intervention and that it is possible to identify during pregnancy most of the women who will require additional medical assistance. This approach is 'woman-centred' in that the midwife's role is to advise and support the woman through labour and birth. The physical and social environment of the MU is also often

designed to ‘de-pathologise’ and ‘normalise’ the labour and birth process. MUs tend to be small, providing care for only a few women at a time, any medical equipment is likely to be hidden from view and soft non-institutional furnishings are often used to make the environment a more ‘homely’ and ‘friendly’ place for the woman. In this model of care the woman’s birth experience is explicitly an important outcome; birth is seen “not as an isolated clinical episode, but as a transformative life experience, enhancing the long term physical and emotional wellbeing of women and their families” (Royal College of Midwives, 2009, p. 4).

It is important to note that the distinction between the ‘medical’ and the ‘midwifery’ models of care as described, while often presented as a dichotomy, is probably more appropriately described as a continuum. While most, if not all, MUs are likely to align themselves with the ‘midwifery model’, in reality, as the layout, style and décor of MUs varies, there will also be variation in their underlying philosophy of care (Stewart et al., 2004) and, in some, practice may be more closely aligned with the ‘medical model’.

### ***1.2.1.3 Perceived benefits of midwifery unit care***

Proponents of MU care argue that it is associated with clear benefits for women, midwives and the health service. Reviews of outcomes of MU care have shown that women planning birth in MUs are more likely to have a spontaneous vaginal birth, fewer medical interventions and are more likely to be satisfied with their care compared with women planning birth in ‘conventional’ obstetric settings, although these reviews also note that the quality of many of the studies carried out has been poor (Hodnett et al., 2010; Stewart et al., 2004; Walsh and Downe, 2004). It has also been argued that MUs provide a more satisfying working environment for midwives, offering an opportunity for autonomous practice and the development of skills (Page, 2003), fulfilling midwives’ role as “expert professionals skilled in supporting and maximising normal birth” (Royal College of

Midwives, 2007, p. 1). Other arguments put forward in favour of MUs include potential cost savings (Nolan, 2001; O'Sullivan and Tyler, 2007; Rosser, 2001), their potential to offer choice to women (O'Sullivan and Tyler, 2007; Sheeran, 2008) and to address inequity by providing a more accessible and individualised service (Rosser, 2001).

### **1.2.2 Safety of midwifery unit care**

When the research presented in this thesis was planned there was little reliable evidence about the number, type and geographical distribution of MUs in England. Evidence was also lacking about the number and socio-demographic characteristics of women planning to have their baby in MUs. Furthermore, reviews had been unable to quantify accurately whether planning birth in an MU was associated with any increased risk of adverse outcomes (Hodnett et al., 2010; Stewart et al., 2004; Walsh and Downe, 2004).

The Birthplace in England research programme (Birthplace) was commissioned to fill these and other important gaps in the evidence base around place of birth (Hollowell, in press). Birthplace aimed to “provide high quality evidence about processes, outcomes and costs associated with different settings for birth in the NHS in England” (Hollowell, in press, p. 16) and was designed as a series of separate component studies:

1. A stakeholder consensus process to define the terms and definitions for different settings for birth to be used in the rest of the research programme (Rowe, in press)
2. A mapping study to determine how maternity care is organised and provided across England (Redshaw et al., in press)
3. A national prospective cohort study of planned place of birth to quantify the risk of adverse outcomes associated with planning birth in different settings (Hollowell et al., in press)
4. A cost-effectiveness study to examine the cost-effectiveness of intrapartum care in each of the different settings for birth (Schroeder et al., in press)

5. A case studies component to explore women's experience of the different settings and key factors associated with high quality and safe care (McCourt et al., in press)
6. A national study of intrapartum mortality to assess any differences in the rate of intrapartum related death associated with different settings for birth (Hollowell, in press)

### **1.2.3 Terms and definitions**

The definitions for the different settings for birth developed for Birthplace (Rowe, in press) have also been used for the research presented in this thesis. These are:

**Obstetric unit (OU):** an NHS clinical location in which care is provided by a team, with obstetricians taking primary professional responsibility for women at high risk of complications during labour and birth. Midwives offer care to all women in an OU, whether or not they are considered at high or low risk, and take primary responsibility for women with straightforward pregnancies during labour and birth. Diagnostic and treatment medical services including obstetric, neonatal and anaesthetic care are available on site, 24 hours a day.

**Alongside midwifery unit (AMU):** an NHS clinical location offering care to women with straightforward pregnancies during labour and birth in which midwives take primary professional responsibility for care. During labour and birth diagnostic and treatment medical services, including obstetric, neonatal and anaesthetic care are available, should they be needed, in the same building, or in a separate building on the same site. Transfer will normally be by trolley, bed or wheelchair.

**Freestanding midwifery unit (FMU):** an NHS clinical location offering care to women with straightforward pregnancies during labour and birth in which midwives take primary professional responsibility for care. General Practitioners may also be involved in care.

During labour and birth diagnostic and treatment medical services including obstetric, neonatal and anaesthetic care, are not immediately available but are located on a separate site should they be needed. Transfer will normally involve car or ambulance.

Births planned at home made up the other group compared in the Birthplace prospective cohort study, but transfers from home are not considered as part of this thesis.

#### **1.2.4 The current NHS context**

It is important to note that Birthplace and the research reported in this thesis both focus on NHS maternity care. The most recent birth statistics for England and Wales show that less than 0.5% of births took place in non-NHS hospital (Office for National Statistics, 2009) and in 2009 there were 118 independent midwives working in the UK (Symon et al., 2009), so only a very small proportion of women choose non-NHS maternity care.

The Birthplace mapping study provides the information below describing the current NHS context for the research presented in this thesis (Redshaw et al., in press).

##### ***1.2.4.1 Obstetric units (OUs)***

In 2010 there were 177 OUs in England. Almost all (98%) of the 148 NHS trusts providing intrapartum care had one or more OUs; the three that did not each had one FMU with arrangements for transfers to OUs in neighbouring NHS trusts. Just under 50% of trusts had one or more OU, but no MUs. OUs are typically larger than MUs, each unit providing care for between 900 and 7000 women giving birth in 2007, with a median of just over 3200. Capacity, in terms of available delivery (labour ward) beds or spaces, ranged from three to 34, with a median of ten.

##### ***1.2.4.2 Alongside midwifery units (AMUs)***

In 2010 there were 53 AMUs in England, almost twice as many as the number identified to the Healthcare Commission in their Maternity Services Review three years earlier

(Healthcare Commission, 2008b). Fifty-one NHS trusts (35%) had one or more AMU. AMUs are generally larger than FMUs, but smaller than OUs. In 2007, AMUs ranged in size from 93-2380 births per year, with a median of just over 600 births. The number of delivery beds or spaces in each AMU ranged from one to thirteen, with a median of five.

#### ***1.2.4.3 Freestanding midwifery units (FMUs)***

There were 59 FMUs in England in 2010. Since the turn of the century the number of FMUs in England has remained fairly static at around 50-60, although this disguises the fact that some have closed and others opened over that period (Healthcare Commission, 2008b; Walsh, 2005). Out of the 148 NHS trusts in England providing intrapartum care in 2010, 38 (31%) had one or more FMU. In terms of the number of women giving birth there and the number of beds available, FMUs tend to be much smaller than OUs and smaller than most AMUs. In 2007, FMUs ranged in size from 8-548 births per year, with a median of just less than 200 births per year. The number of delivery beds or spaces in each FMU ranged from one to seven, with a median of two.

### **1.3 Why is transfer important?**

MUs set admission criteria for use during pregnancy in order to determine whether a woman is at 'low risk' of complications and therefore eligible to plan birth there. National guidance lists the medical conditions and obstetric complications that are associated with "increased risk for the woman or baby during or shortly after labour, where care in an OU would be expected to reduce this risk" (National Collaborating Centre for Women's and Children's Health, 2007, p. 10). Risk assessment in pregnancy is an inexact science, however, and inevitably a proportion of women with straightforward pregnancies who intend to give birth in an MU will experience complications during labour or birth that necessitate transfer to an OU. Reasons for transfer may include failure to progress, prolonged labour or concerns about the fetus or baby (Stewart et al., 2004). The Maternity

Standard of the NSF requires that care is to be provided in a “...framework which enables easy and early transfer of women and babies who unexpectedly require specialist care” (Department of Health, 2004b, p. 28).

Transfer, particularly from FMUs, and from ‘isolated GP units’ before them, has received attention often because of concerns about safety, but on the basis of flimsy evidence (Campbell and Macfarlane, 1994). It seems likely that women who are transferred because of complications arising during labour are more likely than women who are not transferred to go on to have poorer outcomes simply because they developed complications. It is possible, however, that transfer itself, by delaying access to medical care, also leads to poorer outcomes. Concerns about transfer have often received prominent media coverage when the closure of an OU and its replacement with an FMU is proposed. For example, one commentator on the proposal to close the OU in Banbury and replace it with an FMU was quoted as saying, “The major risk (and psychological trauma) would be in those cases needing emergency transfer in labour from a Banbury midwife led unit to Oxford [26 miles away]” (O’ Dowd, 2007, p. 641). Health Impact Assessments of such proposed reconfigurations of care have also focused on the safety of transfer and have attempted to quantify the percentage of women who are likely to be transferred and the circumstances in which transfer would be necessary (Fell and Haroon, 2008). Individual cases highlighting apparent delays, and potential adverse outcomes, associated with transfer have also received attention (Norfolk). Controversially, it has also been argued that where the transfer rate is too high, this may lead to poorer outcomes as women who might otherwise have had a ‘normal’ birth are exposed to ‘unnecessary medical intervention’ (Tew, 1986).

The primary analysis of the Birthplace prospective cohort study will determine whether there is any increase in the risk of adverse outcomes associated with planning birth in an MU compared with planning birth in an OU. “Transfer, *in itself*, is not an adverse

outcome” (Hobbs, 1997, p. 382), but it is an important issue for women considering planning birth in an MU, to the midwives providing their care and to those planning and commissioning maternity services. In the context of potentially increasing provision of MU care it is essential to ensure that all these groups have appropriate information about transfer so that decision-making, care and the organisation of care is evidence-based. Given that transfer is potentially costly, and in order to avoid unnecessary distress and potential risk to women, it is important to keep transfer rates as low as possible, without increasing the risk of adverse outcomes for women intending to give birth in MUs.

### **1.3.1 Rationale for this research and other relevant evidence**

There is limited evidence about how many women are transferred from MUs during labour. A 2004 structured review of studies of birth centres from around the world showed that intrapartum transfer rates from FMUs varied from 12% to 22% while transfer rates from AMUs were generally higher, varying from 16% to 30% (Stewart et al., 2004). The authors noted however that it was not possible to say whether the differences seen between units of the same type, and the apparent difference between the two types of unit, reflected local transfer policies, changes over time or variation in the criteria used by each unit to include or exclude women from care. Contemporary and accurate estimates of the transfer rate from different types of MU in England and of the extent of variation between units of the same type are needed to inform policy and practice in this area. Studies in the review by Stewart et al (2004) also showed an increased risk of transfer for women having a first baby compared with those having a second or subsequent baby, but given the differences between the studies reviewed it was not possible to quantify this increased risk. Information of this kind, about the factors associated with transfer, is important so that women can make an informed choice about where to plan to have their baby. It can also

be used in the development of appropriate selection criteria for MUs which could in turn lead to a reduction in transfer rates.

As noted by Stewart et al (2004), local guidelines on transfer are likely to influence transfer rates, but the extent to which local guidelines follow current national guidance is not known. National policy, as set out in *Maternity Matters*, says that “well understood, functioning protocols for emergency transfers required in labour, birth or after birth” are a key element enabling women to make an informed choice about place of birth (Department of Health and Partnerships for Children, 2007, p. 34). Local guidelines also have the potential to impact on women’s experience of transfer, but again whether women’s experience is addressed by guidelines in use in MUs is unknown.

There have been a number of evaluations of MUs, both in the UK and other parts of the world. One in depth ethnographic study of an FMU explored, among other things, the nature and philosophy of care and women’s and midwives’ experience of being cared for and working within this type of unit (Walsh, 2006a; Walsh, 2007; Walsh, 2006b). A number of studies of MUs have given information about some aspects of transfer (Stewart et al., 2004) and there has been some research on women’s experience of MU or ‘midwifery managed’ care (e.g. Coyle et al., 2001; Shields et al., 1998; Walker et al., 1995). A small number of studies have explored transfer, or ‘referral’ during pregnancy from a planned home birth, but most of these have not been carried out in the UK (Christiaens et al., 2007; Davies et al., 1996; Lindgren et al., 2008; Loytved and Wiemer, 2008). There is, however, very little contemporary evidence about women’s own experience of transfer from MUs.

In contrast, but also of general relevance when considering women’s experience of MU care and transfer, there is a plethora of evidence relating to women’s experience of maternity care in general. Large scale quantitative research has explored women’s

experience of care throughout pregnancy, labour and birth and postnatally (e.g. Garcia et al., 1998; Green et al., 2003; Green et al., 1990; Redshaw and Heikkila, 2010; Redshaw et al., 2007). These and many smaller scale qualitative studies (e.g. Berg et al., 1996; Gibbins and Thomson, 2001; Melender, 2006) have demonstrated the importance of key concepts such as choice, control and continuity for a positive experience of care and more generally have shown how influential the quality of the relationship between the woman and the midwives looking after her can be (Hunter et al., 2008). Women who are transferred are more likely, simply by receiving care in at least two different places, to experience ‘fractured’ care, so this research is likely to be particularly relevant. The small body of research that has focused on women who experience complicated, prolonged or traumatic labour and birth (e.g. Berg and Dahlberg, 1998; Kjaergaard et al., 2007; Murphy et al., 2003; Nystedt et al., 2005; Nystedt et al., 2006) may be pertinent. Finally, studies on women’s needs in the immediate postnatal period and their experience of becoming a mother, particularly after a traumatic childbirth experience (Affonso, 1977; Nystedt et al., 2008) are also important to consider.

## **1.4 Research aim and objectives**

### **1.4.1 Aim**

The overarching aim of this research was to provide evidence to contribute to the improvement of the process of transfer from MU to OU and help make transfer safer and less distressing for women, thereby improving the care and experience of women planning to give birth in MUs.

### **1.4.2 Objectives**

1. To estimate the rate of transfer during labour and immediately after birth from MUs to OUs throughout England for women in full-term labour.

2. To collect, analyse and summarise local guidelines and protocols for the transfer of women in labour or immediately after birth from MUs throughout England and consider if and how these might impact on transfer rates.
3. To describe the process of transfer, including the reason for transfer, timing and duration.
4. To identify whether socio-demographic and clinical factors, particularly those known at the start of care in labour, are associated with transfer.
5. To explore and describe the experiences, information and support needs of women transferred from MUs to OUs.

## **1.5 Organisation of component studies and structure of the thesis**

These aims and objectives are addressed by:

1. A structured literature review of the evidence on transfer rates, outcomes and women's experience of transfer (Chapter 2),

and by using a multi-methods approach in three integrated component studies:

2. An evaluation of the content and quality of local NHS trust guidelines on transfer (objective 2). Established validated methods for assessing the quality of guidelines were used alongside methods developed by the author for evaluating the content of the guidelines. The results of this study are presented and discussed in Chapter 3.
3. Analysis of data from the Birthplace national prospective cohort study (objectives 1, 3 & 4). The overall aim and primary objective of the Birthplace cohort study and the methods used in that study are outlined in Chapter 4, along with a description of the specific analyses carried out by the author relating to transfer. The results of these analyses are presented and discussed in Chapter 5.

4. A study of women's experience of transfer (objective 5). Chapter 6 describes the methods used in this qualitative study of women's experience of transfer, and the characteristics of the women taking part in the study. The results of this study are presented in Chapters 7 and 8. Chapter 7 focuses on women's expectations and decision-making around place of birth, their experience of MU care and the transfer 'journey'. Findings on women's experience of care after transfer, including their postnatal care and the process of 'coming to terms' with their experience are presented in Chapter 8.

The research presented in this thesis used a multi-methods approach to answer a variety of questions on the same broad topic. The choice of this approach was partly pragmatic; the different component studies were designed, using appropriate methods, to answer distinct research questions. By integrating the findings of the different studies, however, there is the potential to enable a broader understanding of the impact of the organisation and delivery of services, addressing processes and experiences as well as outcomes. The different methods used have, on the whole, been used sequentially and can be seen as distinct studies, but the findings of each study also informed the design and/or analysis of the others. Each study is described in separate thesis chapters, but the results have been considered using a version of 'triangulation' whereby the extent to which their results are in agreement (convergence), where they offer complementary information (complementarity) and where they appear to contradict each other (discrepancy or dissonance) has been considered (O' Cathain et al., 2010). The outcome of this approach is an overarching discussion chapter (Chapter 9) where the results of each study are used to clarify, illuminate or enrich each other and the overall subject of transfer. Some conclusions are offered and the implications of this research for practice, policy and future research are considered

# Chapter 2

## Literature Review

### 2.1 Aims

This literature review aimed to review the evidence to address the following questions in relation to transfer from MU to OU:

1. What admission and transfer criteria do MUs use?
2. What proportion of women is transferred during labour or immediately after birth?
3. What are the clinical, social and demographic characteristics of women who are transferred?
4. What is the process of transfer, including reasons for transfer, time taken and mode of transfer?
5. What are the maternal and neonatal outcomes for women who are transferred?
6. What are women's experiences of transfer?

### 2.2 Methods

#### 2.2.1 Inclusion and exclusion criteria

Published reports were included where they presented original data on at least one of the measures or outcomes described below for women transferred from a MU to an OU during labour or in the immediate postpartum period. Quantitative and qualitative studies of any study design published from 1980 onwards were eligible for inclusion.

### ***2.2.1.1 Measures and outcomes***

The following measures and outcomes of interest were used:

- Numbers and proportion of women transferred (antenatal, intrapartum, postnatal);
- Process of transfer: indications for transfer, time taken for transfer, mode of transfer;
- Clinical measures and outcomes for women transferred: epidural, mode of delivery, gestation at birth, duration of labour, episiotomy, perineal trauma, postpartum haemorrhage / blood transfusion, admission to critical care;
- Clinical measures and outcomes for babies of women transferred: birthweight, Apgar score, breastfeeding initiation, admission to neonatal unit, neonatal death;
- Psychosocial outcomes for women transferred: satisfaction with care and women's experience of transfer.

Where papers reported data on at least one of these outcomes, information on the criteria for admission to and transfer out of the MU was also extracted.

### ***2.2.1.2 Definitions***

The definitions of MU and OU are those used for the Birthplace in England Research Programme, defined in Chapter 1 (Rowe, in press).

### ***2.2.1.3 Exclusions***

The following papers were excluded: non-English language; data from developing countries; transfer from home to OU; those reporting only on a sub-set of women planning birth in a MU, for example, women attempting vaginal birth after caesarean section.

### **2.2.2 Search methods**

The following electronic databases were searched from 1980 onwards or the start of the database if after 1980: British Nursing Index (BNI), Cochrane Database of Systematic Reviews (CDSR), Cumulative Index to Nursing and Allied Health Literature (CINAHL), Database of Abstracts of Reviews of Effectiveness (DARE), EMBASE, Medline. A search strategy previously used for a review of evidence about outcomes from women planning birth in midwife-led birth centres (Stewart et al., 2004) was updated and used to search for papers published since the publication of that review. A second overlapping search strategy focusing on transfers was also used. Searches of electronic databases were carried out in November 2007, July 2008 and November 2010 (Appendix 1). Further relevant studies were identified through checking of reference lists of all included studies and any relevant reviews or discussion papers and through citation searches for included papers which were carried out on the Social Science and Science Citation Indexes.

### **2.2.3 Data handling**

Titles and abstracts of all papers identified by the searches were checked against the inclusion criteria. Full copies of all potentially eligible papers were obtained. These papers were read and classified as included or excluded.

#### ***2.2.3.1 Data extraction and analysis***

A data extraction proforma was created and used for each of the papers included in the review. Given the likely differences between studies, a statistical synthesis of their results was not considered appropriate. The characteristics and results of the studies were therefore summarised in pre-specified structured tables; 95% confidence intervals were calculated for intrapartum transfer rates where possible.

## **2.3 Results**

### **2.3.1 Results of the literature search**

In total, 620 potentially eligible papers were identified, 498 of which were excluded on review of the abstracts. Forty-five unique studies reported in 46 papers, reports or book chapters, published between 1981 and 2010, were included.

### **2.3.2 Characteristics of the studies**

Twelve studies reported data on transfer rates from AMUs; the characteristics of these studies are presented in Table 3. The characteristics of the 27 studies reporting data on transfer rates from FMUs are summarised in Table 4. Two studies reported on transfer rates from both kinds of MU; these are presented in Table 5. In all tables papers from the UK are listed first, with most recently published studies first, and are followed by papers from other European countries, Australia and New Zealand, and the USA.

Twenty-seven papers reported studies of one MU. These typically used a case series design and described the functioning of the unit, giving basic descriptive statistics on the number of women booking, beginning labour and giving birth in that unit over a given period and including some data on transfers. A further seven papers reported similar studies covering more than one MU. Nine of these 33 papers reported cohort studies in which outcomes for women planning birth in an MU were compared with women planning birth in an OU. Four papers focussed on transfers from FMUs. One of these reported descriptive statistics on antenatal and intrapartum transfers in women booking in early labour for birth in a unit in England. Two reported descriptive statistics from studies carried out in the USA and in Germany. The fourth reported a study using data from one FMU in the USA to explore the clinical and socio-demographic factors associated with transfer. Three further papers reported on randomised controlled trials comparing MU care with OU care and reported some data on transfers. One study reported an analysis of routinely collected

population-based data comparing outcomes for women planning birth in MUs with outcomes for women planning hospital birth in Australia.

Five studies focussed on women's experience of transfer. Two used qualitative interview methods, two used survey questionnaires and one study used both of these approaches.

Overall, one third of the studies (15) were carried out in the United Kingdom, slightly fewer in the USA (13), with the remainder carried out in other European countries (9) and Australia and New Zealand (8).

### **2.3.3 Criteria for admission to and transfer from midwifery units**

Eleven of the twelve studies of AMUs reported information on the criteria used to assess eligibility for admission to the unit (Table 1). A smaller proportion of studies of FMUs (9 out of 24) provided this information (Table 2). Admission criteria were not always comprehensively described; some studies only gave a general statement along the lines that "low risk" or "healthy" women with "uncomplicated" pregnancies were eligible for admission to the unit. There were some similarities in the kinds of medical and obstetric criteria used. Almost all MUs used some kind of gestational age criteria, but some only reported a lower limit with no upper limit specified. Multiple pregnancy was also a common exclusion criteria. Some factors were reported only rarely. In one FMU all primiparous women were excluded, while in a small number of other studies it was reported that parity in combination with age or 'grand multiparity' were used as exclusion criteria. Smoking, age and poor antenatal care attendance were other factors that featured infrequently as exclusion criteria. Some studies referred to the use or adaptation of national or professional guidelines for admission criteria, but many provided no such information.

**Table 1: Reported criteria for admission to and transfer from AMUs**

Author (publication date) Location	Criteria for admission to and/or exclusion or transfer from MU
Andres & Rankin (2005) Ayrshire, UK	<p><b>Excluded at booking:</b> 1995-8 Women with history of retained placenta or previous postpartum haemorrhage</p> <p><b>Eligibility at start of or during labour care:</b> All healthy women presenting in spontaneous labour with uncomplicated pregnancy at 37-42 weeks' gestation; up until 2002 needed satisfactory 30 minute CTG before admission (discontinued after implementation of NICE guidelines on fetal monitoring); 1995-6 all women with meconium stained liquor excluded from admission or transferred, after 1996 women with Grade 1 meconium no longer excluded or transferred</p>
Gould et al (2004) London, UK	<p><b>Eligibility at start of labour care:</b> Healthy women with full-term uncomplicated singleton pregnancies</p>
Mahmood (2003) Kirkcaldy, UK	<p><b>Eligibility at start of or during labour care:</b> &gt;37 weeks gestation; single pregnancy; cephalic presentation; spontaneous labour; spontaneous rupture of membranes with clear liquor; normal blood pressure; reactive fetal cardiotocographic tracings</p>
Hundley et al (1994) Aberdeen, UK	<p><b>Excluded at booking:</b> Pre-existing maternal disease; infertility; complicated obstetric history (e.g. previous c-section, difficult vaginal delivery or poor obstetric outcome); height &lt;150cm; maternal age &gt;35 years; multiple pregnancy</p>
Macvicar et al (1993) Leicester, UK	<p><b>Excluded at booking:</b> Previous c-section or difficult vaginal delivery; complicating medical condition; previous stillbirth or neonatal death; previous small for gestational age baby; multiple pregnancy; Rhesus antibodies</p>
Eide et al (2009) Bergen, Norway	<p><b>Excluded at booking:</b> Women with thrombophilia, haemophilia, or drug or alcohol abuse</p> <p><b>Excluded during pregnancy:</b> Significant congenital malformations or fetal/placental disease, irregular attendance for antenatal care</p> <p><b>Eligibility at start of labour care:</b> Healthy women with uncomplicated pregnancies</p>
Morano et al (2007) Genoa, Italy	<p><b>Excluded at booking:</b> Maternal diseases (hypertension, diabetes, epilepsy, cardiac or renal disease, anaemia, severe asthma); complicated obstetric history (previous c-section, previous stillbirth or neonatal death, alcohol or drug abuse); height &lt;150 cm; maternal age &gt;45 years; multiple pregnancy</p> <p><b>Excluded during pregnancy:</b> Hypertension; oligohydramnios</p> <p><b>Eligibility at start of or during labour care:</b> &gt;37 and &lt;41+3 weeks' gestation; single pregnancy; cephalic presentation; spontaneous labour; spontaneous rupture of membranes with clear liquor; normal blood pressure; reactive fetal cardiotocographic tracings</p>
Ryan & Roberts (2005) Sydney, Australia	<p><b>Excluded at booking/ during pregnancy:</b> Major medical problem; on insulin; prescribed and taking two medications orally for preeclampsia; intrauterine growth restriction; substance abuse; planned c-section</p> <p><b>Eligibility at start of or during labour care:</b> Singleton pregnancy &gt;36 weeks' gestation with cephalic presentation</p>

Table continued overleaf

Table 1 continued:

Author (publication date) Location	Criteria for admission to and/or exclusion or transfer from MU
Homer et al (2000) Sydney, Australia	<p><b>Eligibility at start of labour care:</b> Low risk according to strict criteria (not stated)</p>
Campbell et al (1981) Melbourne, Australia	<p><b>Excluded at booking / during pregnancy:</b> 74 medical and obstetric risk factors, including: hypertension; heart disease, renal disease; medication for epilepsy; drug abuse; diabetes; infertility; previous c-section; maternal age &gt;34 in primigravidas and &gt;39 in multigravidas; parity &gt;3; multiple pregnancy; non-vertex presentation after 37 weeks</p> <p><b>Excluded at start of or during labour care:</b> &lt;38 weeks' gestation; premature rupture of membranes &gt;12 hours before start of regular contractions; non-vertex presentation; evidence of fetal distress; estimated fetal weight &lt;2,500 or &gt;4,000 grams; hypertension; proteinuria; failure to progress (defined); cord prolapse; vulval varicosities or cervical oedema; intrapartum haemorrhage &gt;50ml; postpartum haemorrhage; evidence of active infectious process; development of other severe medical/surgical problem; any condition requiring &gt;12 hours of postpartum observation</p>
Greulich et al (1994) Los Angeles, USA	<p><b>Excluded at booking/during pregnancy:</b> Parity &gt;8; previous difficult delivery; weight &gt;225lb; hypertension; proteinuria; untreated syphilis; client in custody; spontaneous rupture of membranes and not in labour with signs of amnionitis; abnormal vaginal bleeding; multiple; pyrexia; unidentifiable presenting part; thick meconium; acute or chronic medical condition; non-vertex presentation</p> <p><b>Eligibility at start of labour care:</b> Gestational age 36-42 weeks or &gt;43 weeks in certain circumstances, estimated fetal weight 2,500-4,000 grams, prior c-section in certain circumstances</p> <p><b>Excluded during labour care (transfer criteria):</b> Abnormal fetal heart rate pattern indicative of fetal distress; evidence of amnionitis; hypertension; intrapartum haemorrhage; prolonged second stage &gt;2-3 hours; failure to progress during active labour; maternal request; maternal request or need for epidural</p>

**Table 2: Reported criteria for admission to and transfer from FMUs**

Author (publication date) Location	Criteria for admission to and/or exclusion or transfer from MU
Saunders et al (2000) London, UK	<p><b>Included at booking:</b> Primiparous (excluded for first 6 months after opening); Parity &lt;4 without previous complication or where recurrence of complication would not be anticipated; Maternal age 18-36 for primiparas and 18-40 for multiparas; height &gt;149cm; BMI 20-30 before pregnancy; singleton pregnancy; no history of diabetes, epilepsy or hypertension; smoking &lt; 20 per day; no previous caesarean section; &lt;3 previous miscarriages; previous babies weighed &lt;4500g</p> <p><b>Excluded during pregnancy:</b> Proteinuria; hypertension</p>
Campbell et al (1999) Dorset, UK	<p><b>Excluded at booking:</b> Parity &gt;4; multiparous women aged &gt;37; primiparous women aged &gt;34; height &lt; 5 feet; previous medical history (diabetes, cardiac disease, renal disease, deep vein thrombosis, pulmonary embolus); recent infertility; previous c-section; pelvic disproportion; Rhesus antibodies; habitual postpartum haemorrhage; &gt;2 previous abortions; previous stillbirth or neonatal death; previous pelvic floor repair or myomectomy</p>
Gottvall et al (2004) Stockholm, Sweden	<p><b>Excluded at booking:</b> Diabetes; medication for epilepsy; alcohol abuse; drug abuse; smoking; previous c-section with no subsequent normal delivery; multiple pregnancy</p> <p><b>Excluded during pregnancy:</b> High blood pressure; gestational diabetes</p> <p><b>Excluded at start of labour care:</b> 1989-1997, &lt;37 or &gt;42 +6 weeks gestation; from 1997 &gt;41+6 weeks' gestation excluded; from 1998 electronic fetal monitoring used as admission test</p>
Schmidt et al (2002) Norway	<p><b>Eligibility at booking:</b> At least one previous normal delivery</p> <p><b>Eligibility during pregnancy:</b> Uncomplicated pregnancy</p> <p><b>Eligibility at start of labour care:</b> &gt;37 and &lt;42 weeks gestation; normal delivery expected</p>
David et al (1999) Berlin, Germany	<p><b>Excluded at booking:</b> Severe debilitating illness; diabetes; previous c-section or other uterine surgery; morbid obesity; known cephalopelvic disproportion</p> <p><b>Excluded during pregnancy:</b> Multiple pregnancy; gestational hypertension; gestational diabetes; fetal growth restriction; noncephalic presentation; placenta previa; vaginal bleeding; polyhydramnios or oligohydramnios; genital herpes; smoking during pregnancy</p> <p><b>Excluded at start of or during labour care:</b> Premature prolonged rupture of membranes &gt;24 hours; &lt;37 or &gt;42 weeks gestation; meconium stained amniotic fluid; non-reassuring cardiotocogram; vaginal bleeding</p>
Nguyen et al (2009) San Diego, USA	<p><b>Eligibility:</b> Women considered at low risk for medical complications</p>

Table continued overleaf

Table 2 continued:

Author (publication date) Location	Criteria for admission to and/or exclusion or transfer from MU
Roberts & Sward (2001) Salt Lake City, USA	<p><b>Excluded at booking:</b> Drug abuse; maternal medical complication or chronic disease; previous caesarean delivery</p> <p><b>Excluded during pregnancy:</b> Multiple pregnancy; malpresentation; oligohydramnios; polyhydramnios; intrauterine growth retardation; pregnancy-induced hypertension; severe anaemia; active herpes lesion; placenta previa; known birth defect</p> <p><b>Excluded at start of or during labour care:</b> &lt;37 or &gt;42 weeks gestation; rupture of membranes &gt;12 hours without active labour; malpresentation; abnormal bleeding; thick meconium stained liquor; evidence of chorioamnionitis or other active infectious process; cord prolapse; arrest of labour; fetal distress; any medical, surgical or obstetric development requiring more complex treatment; postpartum haemorrhage; retained placenta; postpartum infection; perineal trauma requiring repair</p>
Holz et al (1989) Maryland, USA	<p><b>Excluded at booking:</b> Diabetes; hypertension; cardiovascular disease; kidney disease; obesity; smoking; substance abuse; poor nutritional habits</p>
Scupholme et al (1986) Miami, USA	<p><b>Eligibility at booking:</b> Registered for antenatal care at the FMU by 28 weeks' gestation if no prior antenatal care and by 34 weeks if prior antenatal care elsewhere</p>

#### 2.3.4 Transfer rates

Forty-one papers reported data on the proportion of women transferred during labour or immediately after the birth (Table 3, Table 4 and Table 5). In seven these were the only data relating to transfer that were presented. Overall, intrapartum transfer rates ranged from 3.7% (Scherman et al., 2008) to 38.5% (Campbell et al., 1981). Transfer rates below 10% were reported in five papers (David et al., 2009; Holt et al., 2001; Roberts and Sward, 2001; Scherman et al., 2008; Schmidt et al., 2002). Three of these were studies of extremely isolated FMUs in Australia (Scherman et al., 2008) and Norway (Holt et al., 2001; Schmidt et al., 2002). Transfer times from these units could be several hours and criteria for planning birth in an MU are likely to have been more restrictive than in most FMUs in the UK, although this is not clear from the reports of the studies. It is likely however that that many more women would have been transferred to obstetric care during pregnancy than in less isolated units. Another study with a particularly low transfer rate

(7.6%) reported only on women having a second pregnancy planning birth in FMUs in Germany (David et al., 2009). The authors of the fifth paper in this group, a study of an FMU in the USA, commented on the midwives' "stringent" adherence to the unit's admission criteria and noted that a number of women were admitted directly to the OU after initial assessment in labour at the FMU and so were not included in the number transferred during labour (Roberts and Sward, 2001).

In general, transfer rates from AMUs were higher than from FMUs. Transfer rates from AMUs ranged from 14.1% in a study of one AMU in Italy (Morano et al., 2007) to 38.5% in one AMU in Australia (Campbell et al., 1981) with most between 20-30%. The highest rate from an FMU was 29.6% in a study of one FMU in the north of England, but in this study all women booked for FMU birth made a final decision about place of birth after assessment at home in early labour by an FMU midwife (Smethurst, 1998). Almost all 'intrapartum transfers' took place at this stage, before admission to the FMU. Excluding these women and using only those women admitted to the FMU in labour as the denominator, would give a very low intrapartum transfer rate of 5.4%.

This difference between AMUs and FMUs was also apparent in studies carried out in the UK, with the exception of the one study already referred to where the authors report an intrapartum transfer rate of 29%, but it is likely that this is not comparable with rates reported in other studies (Smethurst, 1998). In five studies of AMUs, the transfer rate ranged from 19% (Mansfield, 2005) to 30.9% (MacVicar et al., 1993). In four other studies of single FMUs in England, three carried out in the 1990s (Campbell et al., 1999; Gowers, 2001; Saunders et al., 2000) and the other from 2000 to 2008 (Rogers et al., 2010) the transfer rates were 12.7%, 12.2%, 11.9% and 20% respectively. Two of these were studies of the same FMU over different time periods (Rogers et al., 2010; Saunders et al., 2000). It is possible that the increased transfer rate is a reflection of changing admission criteria, but

in the second paper no information about admission criteria was given. In a third study of 22 FMUs in Scotland the overall transfer rate was 17.5%, but rates from individual units varied from 0 to 33%, a reflection of wide variation in the geographical location and isolation of these units and of very small numbers of women planning birth in some units (Hogg et al., 2007).

**Table 3: Characteristics of studies and proportion of women transferred from AMUs**

Author (publication date) location	Study type Sample Data collection	Transfer rates % (n)		
		Antenatal	Intrapartum (95% CI)	Postnatal
Mansfield (2005) London, UK	Case series			
	All women receiving care in one AMU October 2003-September 2004	No data	<b>19.0 (n=702)</b>	No data
	Data collection method not stated			
Andres & Rankin (2005) Ayrshire, UK	Case series			
	All women admitted to one AMU April 1995-March 2005	No data	<b>22.4 (21.6-23.2) (2,241/10,009)</b>	No data
	Data extracted from records			
Gould et al (2004) London, UK	Case series			
	All women admitted to one AMU April 2002-April 2003	No data	<b>30.6 (27.6-33.8) (265/866)</b>	No data
	Data extracted from records			
Mahmood (2003) Kirkcaldy, UK	Case series			
	All women booking for care in one AMU January 1995-December 1996	26.3 (875/3322)	<b>26.4 (24.7-28.2) (646/2,447)</b>	No data
	Data collected on study forms and extracted from medical records			
Hundley et al (1994) Aberdeen, UK	Randomised controlled trial			
	All women randomised at booking to give birth in one AMU October 1991-August 1993	38.2 (727/1900)	<b>25.8 (23.4-28.5) (303/1,173)</b>	No data
	Data extracted from medical records and study questionnaires			
Macvicar et al (1993) Leicester, UK	Randomised controlled trial			
	All women randomised at booking to give birth in one AMU March 1989-February 1991	25.5 (539/2115)	<b>30.9 (28.6-33.3) (480/1,553)</b>	1.6(25/1,553)
	Data sheets completed after delivery from medical records			

Table continued overleaf

**Table 3 continued:**

Author (publication date) location	Study type Sample Data collection	Transfer rates % (n)
		Antenatal Intrapartum (95% CI) Postnatal
Eide et al (2009) Bergen, Norway	Prospective cohort study	
	Low risk first time mothers at 36-42 weeks' gestation admitted to one AMU November 2001-May 2002	No data <b>29.4 (23.9-35.5) (74/252)</b> No data
	Data collected on study specific form from notes	
Morano et al (2007) Genoa, Italy	Case series	
	All women admitted in labour to one AMU January 2001-December 2005	No data <b>14.1 (12.4-16.1) (203/1,438)</b> 2.1 (30/1438)
	Data collection method not clear	
Ryan & Roberts (2005) Sydney, Australia	Retrospective cohort study	
	All women attending one hospital for care and eligible for care in AMU May 1995-April 1996	No data <b>25.7 (22.6-29.1) (185/720)</b> No data
	Data extracted from computerised medical records	
Homer et al (2000) Sydney, Australia	Retrospective cohort study	
	All women admitted to one AMU during 1995	No data <b>30.2 (25.7-35.3) (111/367)</b> No data
	Data extracted from medical records	
Campbell et al (1981) Melbourne, Australia	Case series	
	All women satisfying criteria for booking at one AMU in 1980	21.8 (37/150) <b>38.5 (29.0-49.1) (37/96)</b> 8.3 (8/96) including 3 for maternal reasons
	Data collection method not clear, possibly extracted from records	
Greulich et al (1994) Los Angeles, USA	Case series	
	All women admitted in labour to one AMU 1981-1992	No data <b>16.8 (16.4-17.1) (6,099/36,410)</b> <b>over 12 year period, but declining from 22% in 1981 to 8% in 1992</b>
	Data extracted from records	No data

**Table 4: Characteristics of studies and proportion of women transferred from FMUs**

Author (publication date) Location	Study type Sample Data collection	Transfer rates % (n)
		Antenatal Intrapartum (95% CI) Postnatal
Rogers et al (2010) London, UK	Case series All women booking for delivery in one FMU March 2000-April 2008 Data routinely collected	29.9 (1526/5099) including 195 for non-medical reasons <b>20 (18.6-21.3) (712/3573)</b> 9.1 (260/3573) including 182 for maternal reasons
Hogg et al (2007) Scotland, UK	Case series All women booked for care in any of 22 FMUs in 2005 Data extracted from medical records using study forms	No data <b>17.5 (15.7-19.4) (295/1686) up to 1hr after birth</b> 3.9 (65/1686) maternal and neonatal beyond 1hr
Gowers (2001) Sussex, UK	Case series All women cared for during labour at one FMU April 1998-March 1999 Routine data systems. Also survey of women who were transferred (see Table 12)	No data <b>11.9 (8.1-17.0) (25/210)</b> No data
Saunders et al (2000) London, UK	Retrospective cohort study All women booked for delivery in one FMU in two years from 1st September 1997 Data extracted from medical records, birth registers and computerised maternity information systems	24.8 (146/589) including 29 for non-clinical reasons and 2 miscarriages <b>12.2 (9.2-15.3) (54/441)</b> 7.3 (32/441) including 16 for maternal reasons
Campbell et al (1999) Dorset, UK	Prospective cohort study All women meeting criteria for booking at one FMU November 1992-June 1993 Data extracted from records using questionnaires	27.1 (212/782) <b>12.7 (10.2-15.8) (72/565)</b> No data
Smethurst (1998) Goole, UK	Case series All women booked for care in one FMU July 1996-June 1998 Audit of routinely collected data	34.9 (67/192) including 11 who decided to have home birth <b>29.6 (21.6-37.6) (37/125) but this includes 33 women assessed by FMU midwives in early labour and not admitted to FMU. Excluding these women and those who opted for a home birth at this point gives 5.4 (0.3-10.6)</b> <1% (1/125) for retained placenta
David et al (2009) Germany	Case series All women having second pregnancy starting labour in any of 80 FMUs 2000-2004 Data extracted from routine data sets of out- of -hospital births	No data <b>7.6 (7.0-8.3) (518/6812)</b> 2.4 (261/6812) for maternal reasons

**Table continued overleaf**

Table 4 continued:

Author (publication date) Location	Study type Sample Data collection	Transfer rates % (n)
		Antenatal Intrapartum (95% CI) Postnatal
David et al (2006) Berlin & Bavaria, Germany	Prospective cohort study	No data
	All women transferred from 15 FMUs to hospital September 1999-August 2001	<b>14.2 (411 women transferred, no denominator)</b>
	Study data collection sheets	No data
Gottvall et al (2004) Stockholm, Sweden	Retrospective cohort study	14.0 (n booked=3256)
	All women booked for care in FMU October 1989-December 1999	<b>18.0 (n booked=3256)</b>
	Data extracted from medical records	2.0 (n births=2200)
Schmidt et al (2002) Norway	Case series	No data
	All women admitted to any of 10 FMUs June 1995-June 1997	<b>4.5 (3.5-5.9) (58/1275)</b>
	Data extracted from notes using study forms	4.5 (57/1275) including 20 for maternal reasons
Holt et al (2001) Lofoten Islands, Norway	Population-based prospective cohort study	24.2 (152/628)
	All women living in geographical area of one isolated FMU and giving birth 1997-8	<b>8.6 (6.3-11.6) (41/476), but only 29/476 (6.1%) were in labour</b>
	Data extracted from medical records	No data
David et al (1999) Berlin, Germany	Retrospective cohort study	No data
	All women who started labour in two FMUs August 1992-July 1994	<b>18.2 (15.7-21.1) (146/801)</b>
	Data extracted from notes	3.6
Waldenstrom et al (1997) Stockholm, Sweden	Randomised controlled trial	13.9 (124/890)
	All women randomized to take part in trial in one FMU October 1989-June 1993	<b>23.1 (20.2-26.3) (176/762)</b>
	Data extracted from medical records and study questionnaires	2.2 (17/762)
Scherman et al (2008) Queensland, Australia	Case series	10 (17/170)
	All women booking in one FMU June 2005-June 2006	<b>3.7 (1.5-8.2) (6/164) n includes 11 high risk women who had not planned to give birth in FMU</b>
	Data collected prospectively by midwives and from notes for missing data	1.2 (2/164)
Barlow et al (2004) New Zealand	Case series	No data
	All women attending one FMU April 1991-2001	<b>11.3 (9.6-13.3) (136/1,203)</b>
	Data extracted from records	Overall rate may include postnatal and neonatal transfers
Nguyen et al (2009) San Diego, USA	Case series	34.6 (626/1808) including for non-medical reasons
	All women planning birth in one FMU February 1994-November 2006	<b>28.3 (27.4-32.8) (355/1182)</b>
	Data extracted from medical records. Also two questionnaires to women	No data

Table continued overleaf

Table 4 continued:

Author (publication date) Location	Study type Sample Data collection	Transfer rates % (n)
		Antenatal Intrapartum (95% CI) Postnatal
Roberts & Sward (2001) Salt Lake City, USA	Case series	No data
	All women admitted in labour to one FMU July 1997- June 1999  Data extracted from medical records	<b>8.2 (5.1-12.8) (18/220)</b> 4.1 (9/220) including 1 for maternal reasons
Fullerton et al (1997) California, USA	Case series	28.3 and 19.1 (2 FMUs)
	All women admitted for intrapartum care to two FMUs 1993-1994 (1994 only for one FMU)  Data extracted from medical records	<b>25.1 and 20.0</b> 1.1 and 1 (% of births)
Garite et al (1995) California, USA	Case series	12.5 (228/1830)
	All women booking for care at one FMU over 20 month period – not clear when  Data extracted from medical records	<b>24.2 (22.0-26.6) (341/1,407)</b> 1.7 (24/1407)
Rooks et al (1989) USA	Case series	No data
	All women admitted in labour to 84 FMUs mid 1985-1987  Data extracted from medical records onto study data collection forms	<b>11.9 (11.3=12.5)</b> <b>(1,405/11,814)</b> 2.5 (294/11,814) including 100 for maternal reasons
Holz et al (1989) Maryland, USA	Case series	No data
	All primiparous women aged 25-43 years admitted to one AMU 1985-May 1988  Data extracted from records	<b>25.0 (19.6-31.2) (57/228)</b> No data
Eakins et al (1989) California, USA	Case series	16.7 (150/898)
	All women booked for care at one FMU 1979-1985  Data extracted from medical records	<b>18.4 (15.6-21.6) (127/690)</b> 1.7 (12/690) including 7 for maternal reasons
Feldman & Hunt (1987) New York, USA	Retrospective cohort study	8.0 after 37 weeks gestation and before start of labour
	All women booked at one FMU May-July 1981  Data extracted from medical records	<b>14.0 (n=77)</b> no data
Scupholme et al (1986) Miami, USA	Retrospective cohort study	No data
	All women starting labour in one FMU November 1982-January 1984  Data extracted from medical records	<b>21.6 (16.8-27.3) (54/250)</b> No data
Reinke (1982) Seattle, USA	Case series	12.7 (56/441)
	All women booking for care in one FMU 1978-1981  Data collection method not clear	<b>21.3 (17.4-25.8) (82/385)</b> 2.9 (11/385)

Table continued overleaf

Table 4 continued:

Author (publication date) Location	Study type Sample Data collection	Transfer rates % (n)		
		Antenatal	Intrapartum (95% CI)	Postnatal
Bennetts & Lubic (1982) USA	Case series			
	Sample of women from each of 11 FMUs May 1972-December 1979  Data extracted from records	No data	<b>15.4 (13.8-17.1) (298/1,938)</b>	No data
DeJong et al (1981) Seattle, USA	Case series			
	All women booking for care at one FMU 1978-9  Data extracted from medical records	14 (21/150)	<b>16.3 (10.6-24.0) (21/129)</b>	No data

Table 5: Characteristics of studies and proportion of women transferred in studies of AMUs and FMUs

Author (publication date); location	Study type Sample Data collection	Transfer rates %		
		Antenatal	Intrapartum	Postnatal
Laws et al (2010) Australia	Population-based comparative study			
	All women planning birth in any of all “birth centres” (AMU or FMU) in four states or territories, Jan 2001- Dec 2005  Data from routine population-based data collection system	No data	<b>33.9% (22,222 women intending at onset of labour to give birth in birth centre)</b>	No data
Waldenstrom & Lawson (1998) Australia	Case series			
	All women booking for care in any of 19 AMUs and 3 FMUs (but number of units with complete statistics on bookings and transfers increased from 6 in 1991 to 18 in 1995), 1991-1995  Questionnaires returned by each birth centre	Average proportion over 5 years: 22.2% ranging from 18.6% to 23.4%	<b>23.5%, ranging from 19.8% to 25.6%</b>	No data

### 2.3.5 Clinical and socio-demographic characteristics of women who are transferred

The parity of women who were transferred was reported in 17 papers. Four of these were studies of AMUs and the remainder of FMUs; five were carried out in the UK (Table 6 and Table 7). Overall, in all studies, nulliparous women (those having their first baby) were more likely to be transferred than women having second or subsequent babies.

Nulliparous women accounted for the majority of transfers in all but one study. In this study of remote FMUs in Norway, 13.1% of nulliparous women were transferred compared with 3.3% of parous women, but because almost seven times as many parous women planned birth in an FMU, parous women accounted for over 60% of transfers (Schmidt et al., 2002). In the five studies carried out in the UK where data were reported on parity, nulliparous women made up between 67% and 89% of transfers (Hogg et al., 2007; Hundley et al., 1994; Mahmood, 2003; Rogers et al., 2010). One study only reported on parity in transfers during the first stage of labour; nulliparous women made up 64% of these transfers (Saunders et al., 2000). Transfer rates for women having their first baby were between three and seven times higher compared with women having a second or subsequent baby (Hogg et al., 2007; Hundley et al., 1994; Mahmood, 2003; Rogers et al., 2010).

Other very limited socio-demographic data were reported in only three papers (Table 7); all were studies of FMUs, two carried out in the USA and one in Germany (Bennetts and Lubic, 1982; David et al., 2006; Holz et al., 1989).

**Table 6: Parity of women transferred during labour from AMUs**

<b>Author (publication date) Location</b>	<b>Parity</b>
Mahmood (2003) Kirkcaldy, UK	38.9% (488/1254) of nulliparous women transferred; (75.5% of transfers)  13.2% (158/1193) of parous women transferred; (24.5% of transfers)
Hundley et al (1994) Aberdeen, UK	42.8% (255/596) of nulliparous women transferred; (84.2% of transfers)  8.3% (48/577) of parous women transferred; (15.8% of transfers)
Morano et al (2007) Genoa, Italy	92.0% (127/138) of women transferred for reasons other than epidural were nulliparous
Campbell et al (1981) Melbourne, Australia	62.1% (23/37) of nulliparous women transferred; (62.1% of transfers)  23.7% (14/59) of parous women transferred; (37.8% of transfers)

**Table 7: Parity and other characteristics of women transferred during labour from FMUs**

<b>Author (publication date) Location</b>	<b>Parity</b>	<b>Socio-demographic factors</b>
Rogers et al (2010) London, UK	35.1% (630/1795) of nulliparous women transferred; (88.5% of transfers) 4.6% (82/1778) multiparous women transferred; (11.5% of transfers)	No data
Hogg et al (2007) Scotland, UK	31.4% (197/627) of nulliparous women transferred; (66.8% of transfers) 9.3% (98/1059) of parous women transferred; (33.2% of transfers)	No data
Saunders et al (2000) London, UK	63.6% of women transferred in first stage of labour were nulliparous	No data
David et al (2006) Berlin & Bavaria, Germany	58.3% of transfers were nulliparous compared with 48.7% of those giving birth in FMUs 41.7% of transfers were parous compared with 51.3% of those giving birth in FMUs	Transferred women “came mainly from the middle classes”; median age 34 years; 6% of transfers were single women; 6.4% migrants. No data from comparison group
Schmidt et al (2002) Norway	13.1% (21/160) of nulliparous women transferred; (36.2% of transfers) 3.3% (37/1115) of parous women transferred;(63.8% of transfers)	No data
Holt et al (2001) Lofoten Islands, Norway	16.0% (26/163) of nulliparous women transferred; (63.4% of transfers) 4.8% (15/313) of multiparous women transferred; (36.6% of transfers)	No data
Scherman et al (2008) Queensland, Australia	9.3% (5/54) of nulliparous women transferred; (83.3% of transfers) 0.9% (1/110) of parous women transferred; (16.7% of transfers)	No data
Nguyen et al (2009) San Diego, USA	60.0% (485/808) nulliparous women transferred; RR 2.0 (1.4-2.9)* 72.6% (53/73) parous with caesarean history; RR 2.6 (1.7-3.8)* 50.7% (356/702) parous without caesarean history with previous hospital delivery RR 2.1 (1.5-3.0)* 34.0% (66/194) parous without caesarean history without previous hospital delivery (reference group)*	53.8% (840/1561) Hispanic women transferred RR 1.4 (1.1-1.7)* 69.5% (41/59) Non Hispanic black RR 1.2 (0.9-1.6)* 52.1% (88/169) Non-Hispanic white/other (reference group)*
Garite et al (1995) California, USA	46% of nulliparous women transferred 13% of parous women transferred	No data

**Table continued overleaf**

**Table 7 continued:**

<b>Author (publication date) Location</b>	<b>Parity</b>	<b>Socio-demographic factors</b>
Rooks (1989) USA	28.9% of nulliparous women or their babies transferred 7.3% of parous women or their babies transferred	No data
Holz et al (1989) Maryland, USA	No data	44.4% (12/27) older women (aged 35-44) transferred 22.4% (45/201) younger women (aged 25-34) transferred
Eakins et al (1989) California, USA	28.3% (112/396) of nulliparous women transferred; (88.2% of transfers) 5.1% (15/294) of parous women transferred; (11.8% of transfers)	No data
Bennetts & Lubic (1982) USA	Transferred women had “fewer living children” than women who were not transferred	Transferred women were “more educated” than women who were not transferred
DeJong et al (1981) Seattle, USA	18% of nulliparous women transferred; (17/21, 81.0%, of transfers) 11% of parous women transferred; (4/21, 19.0%, of transfers)	No data

\*Analyses combine antepartum and intrapartum transfers. Adjusted RRs – variables in model: parity and birth history, labour progress, fetal heart rate, psychosocial assessment, number of nutrition assessment visits, race and ethnicity, mother’s place of birth.

### **2.3.6 Reasons for transfer and process**

The reasons for transfer were reported in 33 papers; ten were studies of AMUs and the remainder looked at FMUs (Table 8 and Table 9). ‘Slow’ progress, ‘failure’ to progress or prolonged labour was the most commonly reported reason for transfer, with prolonged rupture of membranes, fetal distress or meconium staining of the liquor and epidural request also featuring in many studies. While differences between reasons for transfer from different types of unit were difficult to tease out, there was some indication that epidural request featured more often in studies of AMUs than in studies of FMUs (AMU 6 out of 10 studies; FMU 8 out of 21 studies) and that when it did feature the proportions of women transferred for epidural were higher from AMUs than from FMUs (AMU range 9-53%; FMU range 6-27%).

**Table 8: Reasons for intrapartum transfer from AMUs**

<b>Author (publication date) Location</b>	<b>Reasons for transfer</b>
Andres & Rankin (2005) Ayrshire, UK	Delay in first stage 38%; epidural 25%; meconium 9%; delay in second stage 8%; irregular fetal heart rate 6%; miscellaneous other 14%
Gould et al (2004) London, UK	Maternal request for epidural 53%; slow progress in labour 23%; suspected fetal compromise (inc. meconium and fetal heart rate irregularities) 13%; hypertension 3%; antepartum haemorrhage 3%; other 6%
Mahmood (2003) Kirkcaldy, UK	Meconium stained liquor first stage 35.4%; prolonged labour requiring augmentation 25.5%; prolonged SROM with no contractions 11.8%; FHR abnormalities 10.2%; prolonged second stage 5.3%; undiagnosed malpresentation 3.6%
Hundley et al (1994) Aberdeen, UK	Delay in 1 <sup>st</sup> stage 24.8%; meconium stained liquor 24.4%; fetal heart irregularities 15.5%; delay in 2 <sup>nd</sup> stage 10.9%; pregnancy induced hypertension 9.2%; epidural request 9.2%; other 5.9%
Macvicar et al (1993) Leicester, UK	Failure to progress (1 <sup>st</sup> / 2 <sup>nd</sup> stage) 26.7%; meconium stained liquor (1 <sup>st</sup> / 2 <sup>nd</sup> stage) 24.6%; rupture of membranes >12h 12.9%; fetal heart irregularities 8.3%
Eide et al (2009) Bergen, Norway	Epidural request 42%; fetal heart concerns 30%; prolonged labour 14%
Morano et al (2007) Genoa, Italy	Fetal compromise or delay in 1 <sup>st</sup> /2 <sup>nd</sup> stage or meconium stained liquor 68%; epidural request 32%
Homer et al (2000) Sydney, Australia	Slow progress in labour 39%; request for epidural 16%; meconium staining 14%; fetal distress 12%
Campbell et al (1981) Melbourne, Australia	Delay in first stage 27%; hypertension 18.9%; meconium stained liquor 18.9%; delay in second stage 10.8%; inadequate pain relief 10.8%; other reasons included fetal heart irregularity, haematemesis, breech presentation, proteinuria
Greulich et al (1994) Los Angeles, USA	Failure to progress 47.6%; abnormal fetal heart rate 25.3%; hypertension 7.7%; fever 3.5%; other 16%

For obvious reasons, the process of transfer, including the distance travelled, time taken and mode of transport, was reported only in studies of FMUs. Twelve papers reported some data; three of these studies were carried out in the UK, but in one of these general information was provided, rather than data about actual transfers. In one study of 22 FMUs in Scotland, the time from the decision to transfer to recorded assessment by an obstetrician in the OU ranged from 0.5 to 13.5 hours with most being between 45 minutes and 3 hours. A small number of very long transfer times were reported as being due to the length of time between arrival in the OU and recorded assessment by an obstetrician (up to 11 hours in one case). Ambulance travel times, available for 185 of the 295 transfers ranged from 0.22 hours to 3 hours (Hogg et al., 2007).

**Table 9: Reasons for intrapartum transfer from FMUs and the process of transfer**

Author (publication date) Location	Reasons for transfer	Distance to obstetric unit	Time taken for transfer	Mode of transport
Rogers et al (2010) London, UK	Failure to progress (1 <sup>st</sup> stage) 30.2%; meconium stained liquor 20.1%; concern over fetal wellbeing 14.4%; failure to progress (2 <sup>nd</sup> stage) 12.6%; epidural request 8.4%; hypertension/proteinuria 3.9%; other 10.4%	No data	No data	No data
Hogg et al (2007) Scotland, UK	Failure to progress (1 <sup>st</sup> stage) 28.5%; Failure to progress (2 <sup>nd</sup> stage) 19.7%; Meconium staining 15.6%; Epidural request 10.2%; Fetal distress (1 <sup>st</sup> stage) 8.5%; Retained placenta 7.8%; Malposition 6.4%	No data	0.5 – 13.5hrs; median 1.9hrs (time from transfer decision to recorded assessment in OU in 230/295 transfers) 0.22 – 3hrs; median 0.58 hrs (travel time from leaving MU to arriving at OU in 185 transfers)	Ambulance and air ambulance
Saunders et al (2000) London, UK	Delay in 1 <sup>st</sup> or 2 <sup>nd</sup> stage 33.3%; Meconium/fetal distress 22.2%; Epidural request 5.6%; Other 16.7%; Unknown 22.2%	6 km	Data for 7 of the 10 second stage transfers. Time from ambulance request to arrival at FMU 5-27 minutes. Journey time available for 3 transfers, ranged from 13-31 minutes	All second stage transfers by ambulance
Campbell et al (1999) Dorset, UK	Most frequent reasons for transfer: insufficient progress in the first stage; request for epidural; high head	No data	No data	No data
Smethurst (1998) Goole, UK	Epidural 19%; prolonged rupture of membranes 16%; maternal choice 16%; bleeding 14%; failure to progress 11%; fetal concerns 8%. Note that most of these were before admission to FMU.	25 miles	“About 30 minutes”	Ambulance
David et al (2009) Germany	Failure to progress in 2 <sup>nd</sup> stage; high fetal station; fetal heart rate abnormality	No data	No data	No data
David et al (2006) Berlin & Bavaria, Germany	Premature rupture of membranes 29.3%; protracted delivery / uterine inertia 25.4%; fetal heart rate abnormalities 14.1%; arrest of labour in the first stage 12.6%	Bavaria: 1-55km; median 4km. Berlin: 0.2-30km; median 1km	5 - 60min; median 15min (journey time)	78% parents' or midwife's car; 22% ambulance

Table continued overleaf

Table 9 continued:

Author (publication date) Location	Reasons for transfer	Distance to obstetric unit	Time taken for transfer	Mode of transport
Schmidt et al (2002) Norway	Prolonged rupture of membranes 25.9%; prolonged first stage 24.1%; unstable fetal heart / fetal distress (meconium) 13.8%; other reasons include: unstable lie, need for pain relief, bleeding and other	70-240km	2 - 3.5hr by ambulance, but most use helicopter/airplane reducing time to 1h (no data presented)	Airplane, helicopter, ambulance
Holt et al (2001) Lofoten Islands, Norway	Request for epidural 26.8%; prolonged rupture of membranes 22%; pre-eclampsia 14.6%; suspected infection 12.2%; fetal heart rate abnormalities 9.8%; 1st stage delay 4.8%	No data	Journey time 30 minutes by air, no data presented	Helicopter and fixed wing air ambulance
David et al (1999) Berlin, Germany	Fetal distress 32.9%; failure to progress 28%; inadequate labour 19.2%; prolonged labour 15.7%	No data	No data	No data
Scherman et al (2008) Queensland, Australia	Prolonged 1st stage (5/6); epidural request (2/6)	Approx. 64km	80 - 145min in 4/6 transfers where data were available; mean 114min (time from decision to transfer to arrival at OU)	Ambulance
Barlow et al (2004) New Zealand	Most frequent reason: failure to progress in first stage of labour	“20 minutes road travelling time”	“20 minutes road travelling time”, but no data on transfer times	No data
Nguyen et al (2009) San Diego, USA	Premature ROM 24.5%; failure to progress 21.2%; preterm labour 16.9%; fetal heart concerns 7.0%; meconium 5.9%; hypertension 5.4%; maternal infection 5.1%; maternal pain 3.1%	No data	No data	No data
Roberts & Sward (2001) Salt Lake City, USA	Failure to progress 55.6%; epidural request 22.2%; assisted delivery needed 11.1%; other 11.1%	No data	No data	79% private car; 21% ambulance
Fullerton et al (1997) California, USA	*Failure to progress 32.3%, 20.4%; meconium 12.7%, 4.9%; fetal distress 5.4%, 22.3%; prolonged ROM 15.1%, 17.5%; hypertension 13.2%, 5.8%; pain management 4.9%, 2.9%; malpresentation 3.1%, 5.8%; fever 9.2%, 3.9%	No data	No data	No data

Table continued overleaf

Table 9 continued:

Author (publication date) Location	Reasons for transfer	Distance to obstetric unit	Time taken for transfer	Mode of transport
Garite et al (1995) California, USA	Failure to progress 36.9%; PROM/no labour 20.8%, non- reassuring fetal heart rate 12.0%; meconium 7.6%; pre-eclampsia 5.9%; pain relief 3.2%	No data	No data	No data
Rooks et al (1989) USA	Failure to progress 57.5%; meconium stained liquor 13.4%; fetal distress 10%	No data	In sample of 387 with data on time, 39.7% of those with "emergency complications" were "in transit" for less than 6 minutes, 13.7% "in transit" for more than 15 minutes	No data
Holz et al (1989) Maryland, USA	Failure to progress 75.4%; fetal distress (meconium and fetal heart concerns) 21.0%; retained placenta 1.7%; hematoma 1.7%	No data	No data	98% midwife's car; 2% ambulance
Eakins et al (1989) California, USA	Prolonged or arrested labour 55.9%; meconium staining 16.5%; prolonged labour and meconium 9.4%; prolonged ruptured membranes 7.1%; abnormal fetal heart rate 6.3%; analgesia request 1.6%; breech 1.6%	No data	No data	No data
Scupholme et al (1986) Miami, USA	Premature rupture of membranes 31.5%; secondary arrest of labour 27.8%; 2nd stage >2hours 13.0%; prolonged latent phase >18hours 11.1%; other reasons 16.7%	No data	No data	No data
Reinke (1982) Seattle, USA	Rupture of membranes without progress/post dates/ high temp 20.7%; failure to progress 1st stage 20.7%; failure to progress 2nd stage 16.0%; meconium 8.6%	No data	No data	No data
Bennetts & Lubic (1982) USA	Prolonged labour (>18h) 11.7%; obstructed labour 10.7%; premature rupture of membranes 9.8%	No data	No data	No data
DeJong et al (1981) Seattle, USA	70.6% (12/17) nulliparous women transferred for failure to progress in first/second stage	No data	20 - 120min; mean 44min (journey time)	90.5% private car; 9.5% ambulance

\*Study of two FMUs: 1<sup>st</sup> figure relates to one unit, 2<sup>nd</sup> figure to the other

### **2.3.7 Mode of delivery, maternal and neonatal outcomes**

Twenty-one papers reported on mode of delivery, maternal outcomes or neonatal outcomes in babies of women who were transferred (Table 10 and Table 11). All but seven of these papers reported on mode of delivery only.

In all but one of the studies, between half and two thirds of women had a non-instrumental vaginal birth following transfer. In three of the five studies carried out in the UK and reporting data on mode of delivery, around 50% of transferred women had a non-instrumental vaginal birth (Andres and Rankin, 2005; Gould et al., 2004; Hogg et al., 2007). These studies collected data in 1995-2005 (Andres and Rankin, 2005), 2002-3 (Gould et al., 2004) and 2005 (Hogg et al., 2007). In a fourth study of an AMU in Scotland carried out in 1995-6, rates of vaginal birth were higher at 62% for nulliparous women and 82% for parous women (Mahmood, 2003). In the fifth, much smaller, study rates of vaginal birth were much higher at just under 90% (Smethurst, 1998). However, this study is less comparable with the others as most reported 'transfers' took place before admission to the unit. Apart from in this study, caesarean section rates for transferred women in UK studies were also similar, at around 20%. In the one study that reported these data by parity, caesarean section rates were lower for parous women (Mahmood, 2003). Up to 30% of women in these UK studies had an instrumental vaginal delivery following transfer.

**Table 10: Maternal and neonatal outcomes in women transferred during labour from AMUs**

Author (publication date) Location n (transfers)	Mode of delivery	Maternal outcomes	Neonatal outcomes
Andres & Rankin (2005) Ayrshire, UK n=2,241	Normal vaginal 51% Ventouse / forceps 29% Caesarean section 20%	No data	No data
Gould et al (2004) London, UK n=265	Normal vaginal 52.5% Ventouse 22.6% Forceps 4.9% Caesarean section 20%	No data	No data
Mahmood (2003) Kirkcaldy, UK n=646 (488 nulliparous, 158 parous)	Normal vaginal: Nulliparous 62% Parous 82% Ventouse / forceps: Nulliparous 20% Parous 6% Caesarean section: Nulliparous 18% Parous 12%	Episiotomy: Nulliparous 42.2% (22.3%)* Parous 10.1% (4.3%)* All 34.4% (12%)* 3 <sup>rd</sup> degree perineal tear: Nulliparous 0.8% (0.5%)* Parous 0% (0.2%)* All 0.6% (0.3%)* Primary postpartum haemorrhage: Nulliparous 4.7% (0.9%)*, Parous 3.8% (0.9%)* All 4.5% (0.9%)*	5 minute Apgar <7: 1.2% (0.3%)* 1 minute Apgar <7: 13.6% (5.7%)* Admission to NNU >48hr in NNU 4.0% (0.9%)*
Eide et al (2009) Bergen, Norway n=74	Normal vaginal 58.1% Ventouse 6.8% Forceps 13.5% Caesarean section 21.6%	No data	No data
Morano et al (2007) Genoa, Italy n=203	Normal vaginal 50.2% Ventouse / forceps 6.9% Caesarean section 42.9%	No data	No data
Greulich et al (1994) Los Angeles, USA n=6,099	Normal vaginal 68.7% Ventouse / forceps 17.4% Caesarean section 14%	No data	No data

\*Figures in brackets are for comparison group of women giving birth in AMU  
NNU: Neonatal Unit

Maternal and neonatal outcomes after transfer were reported in seven studies, two of which were carried out in the UK (Hogg et al., 2007; Mahmood, 2003). All these papers reported some comparison data from women giving birth in MUs, although no statistical analyses were presented so results should be interpreted with caution. All five studies reporting data on episiotomy indicated higher rates in women who were transferred compared with those who were not (David et al., 2006; Eakins et al., 1989; Hogg et al., 2007; Mahmood, 2003; Reinke, 1982).

**Table 11: Maternal and neonatal outcomes in women transferred during labour from FMUs**

Author (publication date) Location n (transfers)	Mode of delivery	Maternal outcomes	Neonatal outcomes
Hogg et al (2007) Scotland, UK n=295	Normal vaginal 50% Ventouse / forceps 30% Caesarean section 19%	Gestation at delivery (mean weeks): 39.6 (39.6)* Mean length of first stage (hours:mins): 8:51 (6:15)* Mean length of second stage (hours:mins): 1:51 (0.32)* Episiotomy: 26% (4%)* 1 <sup>st</sup> /2 <sup>nd</sup> degree perineal tear: 28% (42%)* 3 <sup>rd</sup> /4 <sup>th</sup> degree perineal tear: 4% (<1%)* >1000ml blood loss: 9.5% (<1%)*	Mean birthweight (kg): 3.47 (3.49)* Admission to NNU: 12% (2.9%)* Neonatal death: 1/295 (2/1391)*
Smethurst (1998) Goole, UK n=37, but data on mode of delivery only available about 28 (includes 24 transferred before admission to FMU)	Normal vaginal 89.3% Ventouse 3.6% Caesarean section 7.1%	No data	No data
David et al (2009) Germany n=518	Normal vaginal 55.4% Caesarean section 35.9%	No data	No data
David et al (2006) Berlin & Bavaria, Germany n=411	Normal vaginal: Nulliparous 57.9% Parous 56.9% All 59.2% Ventouse / forceps: Nulliparous 13.3% Parous 12.3% All 11.9% Caesarean section: Nulliparous 28.7% Parous 30.6% All 28.9%	Episiotomy: Nulliparous 33.3% (11.3%)* Parous 26.2% (2.6%)* 3 <sup>rd</sup> /4 <sup>th</sup> degree perineal tear: Nulliparous 2.4% (1%)* Parous 2.7% (0.5%)* >1000ml blood loss: Nulliparous 1.9% (2.4%)* Parous 0% (1.8%)*	5 minute Apgar <7: Nulliparous 5% (2%)* Parous 1.4% (1%)* All 3.6% Admission to NNU: Nulliparous 14.4% (0.9%)* Parous 5.4% (0.5%)* All 9.8%
Schmidt et al (2002) Norway n=58	Normal vaginal 69% Ventouse 10.3% Forceps 3.5% Caesarean section 17.2%	No data	Birthweight (median g): 3495 (3640)*
David et al (1999) Berlin, Germany n=146	Normal vaginal 56% Ventouse 21% Forceps 6% Caesarean section 16%	No data	No data
Scherman et al (2008) Queensland, Australia n=6	Normal vaginal 4/6 Ventouse 1/6 Caesarean section 1/6	No data	No data

Table continued overleaf

**Table 11 continued:**

<b>Author (publication date) Location n (transfers)</b>	<b>Mode of delivery</b>	<b>Maternal outcomes</b>	<b>Neonatal outcomes</b>
Barlow et al (2004) New Zealand <b>n=136</b>	Normal vaginal 56.6% Ventouse / forceps 22.1% Caesarean section 21.3%	No data	No data
Roberts & Sward (2001) Salt Lake City, USA <b>n=18</b>	Normal vaginal 66.7% Ventouse 11.1% Forceps 11.1% Caesarean section 11.1%	No data	No data
Garite et al (1995) California, USA <b>n=341</b>	Normal vaginal 54% Ventouse / forceps 19% Caesarean section 27%	No data	No data
Rooks et al (1989) USA <b>n=1,405</b>	Caesarean section 37.1%	No data	No data
Holz et al (1989) Maryland, USA <b>n=57</b>	Normal vaginal 45.6% Forceps 19.3% Caesarean section 35.1%	No data	No data
Eakins et al (1989) California, USA <b>n=127</b>	Normal vaginal 68.5% Forceps 17.3% Caesarean section 14.2%	Episiotomy 40.2% (11.2%)* Perineal trauma: 21.3% with "lacerations" (55.2%)*	5 minute Apgar <7: 28.3% (1.8%)*
Reinke (1982) Seattle, USA <b>n=82</b>	Normal vaginal 48.8% Forceps 25.6% Caesarean section 22%	Mean length of 1 <sup>st</sup> stage (hours): Nulliparous 18.3 (13.3)* Parous 8.2 (8.6)* Mean length of 2 <sup>nd</sup> stage: Nulliparous 2hr 19m (1hr 15m)* Parous 1hr 14m (26m)* Episiotomy: 59.6% (20.1%)* 3 <sup>rd</sup> /4 <sup>th</sup> degree perineal tear: 25.6% (1.7%)	Birthweight: "No significant difference between those born at FMU and those transferred" Mean Apgar at 5 mins: 8.5 (9.1)*
DeJong et al (1981) Seattle, USA <b>n=21</b>	Caesarean section 2/21	Mean length of 1 <sup>st</sup> stage (hours): Nulliparous 15.2 (11.6)* Parous 18.9 (8.5)* Mean length of 2 <sup>nd</sup> stage (hours): Nulliparous 3.3 (1.2)* Parous 1.8 (0.5)*	No data

\* Figures in brackets are for comparison group of women giving birth in FMU/FMUs

Five studies reporting on perineal trauma showed mixed results with one showing a higher rate in transferred women (Reinke, 1982), two reporting similar rates (David et al., 2006; Mahmood, 2003), one where rates were lower in transferred women (Eakins et al., 1989) and one where rates for transferred women were lower for 1<sup>st</sup> or 2<sup>nd</sup> degree tears, but higher for 3<sup>rd</sup> or 4<sup>th</sup> degree tears (Hogg et al., 2007). Three studies reported data on postpartum haemorrhage, with two reporting apparently higher rates in transferred women (Hogg et al., 2007; Mahmood, 2003) and one with inconclusive results (David et al., 2006). The three studies reporting data on length of labour indicated that women who were transferred had longer labours than those who were not (DeJong et al., 1981; Hogg et al., 2007; Reinke, 1982); one of these was a very small study with only 21 women transferred (DeJong et al., 1981).

Four studies reported Apgar scores for babies of women who were transferred and presented comparison data from babies of women who gave birth in MUs. Three appeared to indicate higher proportions of babies with low Apgar scores at 5 minutes after birth for babies of women who were transferred (David et al., 2006; Eakins et al., 1989; Mahmood, 2003), while another showed similar mean Apgar scores at 5 minutes (Reinke, 1982). Three studies reported higher rates of admission to a neonatal unit in babies of women who were transferred (David et al., 2006; Hogg et al., 2007; Mahmood, 2003).

None of the three studies reporting data on birthweight showed any apparent difference between babies of women who were transferred and those of women who gave birth in an MU (Hogg et al., 2007; Reinke, 1982; Schmidt et al., 2002).

### **2.3.8 Women's experience of transfer**

Women's experience of transfer was addressed in five studies, with findings reported in six papers (Table 12). Four studies were carried out in the UK (Creasy, 1997; Gowers, 2001; Walker, 2000; Walker et al., 1995; Watts et al., 2003) while the fifth took place in Australia (Shaw, 1985). Three used qualitative interview methods (Creasy, 1997; Walker, 2000; Walker et al., 1995; Watts et al., 2003) and three reported data from survey questionnaires (Gowers, 2001; Shaw, 1985; Watts et al., 2003). One study was published only as an internal NHS audit report (Gowers, 2001).

Three studies combined the experiences of women transferred to obstetric care during pregnancy with those of women transferred during labour or immediately after birth and two also included women transferred from planned home births (Creasy, 1997; Watts et al., 2003). These studies were based on small convenience samples; in total, across all studies, 36 participants were transferred during labour or immediately after birth from an MU. However, some similar themes were apparent across some studies. The potential for women to feel disappointed after transfer emerged from three studies, with one study also highlighting the ways in which giving birth in an MU was important to women's sense of themselves as a "good" or "natural" mother. Choice, control and continuity also emerged as important themes. One study suggested that feelings of disappointment could be ameliorated by preparation and explanation during the antenatal period, during labour and postnatally (Creasy, 1997). In one study, the aim was to explore the impact of the establishment of an FMU in a hospital where obstetric services had previously been available (Watts et al., 2003). In this study the concerns of the women who were transferred appeared to focus on safety. In one study, an internal NHS audit of women's and partners' experience of transfer from one FMU, while most women were satisfied with their experience, several women expressed concern at not being transferred earlier and

some commented on the uncomfortable journey and that their partner could not travel with them in the ambulance (Gowers, 2001).

**Table 12: Women’s experience of transfer: characteristics of studies and results**

<b>Author (publication date) Location</b>	<b>Study type Sample; Method; Analytical approach</b>	<b>Results</b>
Watts et al (2003) England	<p>Mixed methods case study evaluation</p> <p>10 women transferred from home or FMU to obstetric care during labour (<b>5 transferred from FMU</b>; 5 from home). Participants also included 59 women who gave birth in FMU, 41 women who gave birth at home and 54 women who gave birth in OU as part of case study of the impact of changing an OU into a FMU.</p> <p>Structured postal questionnaire; 10 qualitative interviews, but not clear if transfer group were interviewed; outcome data abstracted from maternity records.</p> <p>Descriptive statistics and basic thematic analysis</p>	<p><b>Worries</b></p> <p>Women who were transferred were “not as satisfied” as women who had given birth where they had planned. Women reported worries about delays and the distance they needed to travel. Feelings of “insecurity”, “uncertainty” and comments about lack of “life-saving equipment”. Most women wanted obstetric services to return to the unit so that transfer was not necessary if complications arose.</p>
Gowers (2001) Sussex, UK	<p>Audit</p> <p>17/25 women transferred during labour from one FMU April 1998-March 1999</p> <p>Postal questionnaire using structured and open-ended questions</p> <p>Basic descriptive statistics. No formal analysis of responses to open-ended questions, but comments are summarised and many extracts quoted</p>	<p><b>Information</b></p> <p>Women given information antenatally, but more in depth information needed, particularly about prolonged labour.</p> <p><b>Timing of transfer</b></p> <p>8 (47%) women felt they should have been transferred earlier. Women’s responses refer to prolonged labour, being tired and exhausted, lack of progress and being ‘encouraged’ to keep going.</p> <p><b>Ambulance journey</b></p> <p>Uncomfortable with some concerns that partners were not able to accompany women in the ambulance</p>

Table continued overleaf

Table 12 continued:

Author (publication date) Location	Study type Sample; Method; Analytical approach	Results
Creasy (1997) Sheffield, UK	<p>Qualitative interview study</p> <p>12 women transferred from home or hospital GP Unit (similar to AMU) care to obstetric care in late pregnancy or labour (<b>5 transferred from GP unit during labour or immediately after birth</b>; 5 transferred from booked GP unit birth in late pregnancy; 2 transferred from home during labour or immediately after birth). Sample selected from larger study of community maternity service.</p> <p>30 minute semi-structured interviews 3-8 weeks postnatally</p> <p>“Grounded theory” using “constant comparison”</p>	<p><b>Potential for disappointment</b></p> <p>Women had “set their heart” on particular hopes and felt “cheated” by transfer. “Strategies” used by women who weren’t disappointed, eg. what happened was beyond their control or it was important to “try” for a natural labour. Disappointment could be ameliorated by:</p> <ol style="list-style-type: none"> <li>i. <b>Preparation and explanation</b> Women who were prepared beforehand for the risk of transfer were better able to adjust. Explanation at the time of transfer helped. More dramatic complications dealt with better (e.g. in labour) than some less clear-cut antenatal problems. Readiness of woman to hear explanations - better explanations were tailored to woman’s physical/mental state at the time.</li> <li>ii. <b>Debriefing</b> Important for women to develop clear narrative of what happened and understand why. MWs and GPs helped with this - this was appreciated by women when it happened.</li> <li>iii. <b>Continuity of carer</b> Women aware of difficulties community MWs had in hospital setting (no longer responsible for care, some stayed). Positive continuity from community MW after birth.</li> </ol>
Walker et al (1995) and Walker (2000) South of England, UK	<p>Qualitative interview study</p> <p>18 women booked for care in FMU ten miles from OU, all of whom transferred to care of OU. 6 interviewed just after being informed of need to transfer to OU care in late pregnancy, 9 after transfer during late pregnancy (5 interviewed on postnatal ward, four a few months later at home), <b>3 transferred during labour</b> (1 interviewed on postnatal ward, 2 a few months later at home). Ten partners contributed to interviews. Postnatal home interview participants selected to maximise variation in sample.</p> <p>Interviews ranged from 30 minutes to 3 hours, “direct questions kept to a minimum”.</p> <p>“Based on grounded theory” using “constant comparison”.</p>	<p><b>Loss of choice and control</b></p> <p>Loss of choice could lead to feelings of loss of control. Local identity important in choosing place of birth. Loss of choice of “ideal” birth. Some women ignored symptoms to try to ensure choice of FMU birth was not lost.</p> <p><b>Loss of continuity and support</b></p> <p>Loss of familiar environment and supportive caregiver. Gap between expectations of MU birth and reality of OU birth “shock”. Staff attitudes different. Tensions between MWs from MU and OU. Language used by FMU MWs to introduce idea of transfer e.g. “I’m sorry but...” may reduce confidence in OU.</p> <p><b>It is unfair</b></p> <p>Women felt “cheated” and expressed externally directed anger and resentment. Blaming MWs in MU. Disappointment, sadness and regret.</p>

Table continued overleaf

Table 12 continued:

Author (publication date) Location	Study type Sample; Method; Analytical approach	Results
Shaw (1985) Melbourne, Australia	<p>Cross-sectional study using questionnaire and qualitative interview study</p> <p>189 women (74%) transferred from AMU (during pregnancy, labour and postpartum) over 3 year period returned questionnaires about labour and birth experience 1 week or 3 months after birth. 8 of these women took part in interviews 10-14 weeks after birth (selected from 31 who had expressed interest in taking part on questionnaire). <b>6 of these transferred during labour or immediately after birth.</b></p> <p>“Partially structured, focused interviews”.</p> <p>No information on analysis</p>	<p><b>Postal questionnaire study</b> Women transferred during labour had more positive perceptions of transfer than women transferred in pregnancy or postnatally. Women transferred in labour were self critical and not likely to criticise MU staff or procedures.</p> <p><b>Interview study</b> Women were resigned, dissatisfied and disappointed at transfer, some believing that actions by staff might have precipitated or prevented transfer - comments on inflexibility of MU rules. Some women did not report symptoms so as not to be transferred antenatally. Giving birth at MU was central to some women’s perceptions of childbirth and their own constructs of what is a “good” or “natural” mother. Some expressed disappointment and resentment towards others who were not transferred or who had natural birth. Strong relationship with MU MWs can be a problem when transfer is required if not prepared for possibility.</p>

## 2.4 Discussion

This literature review aimed to provide an overview of research relating to the issue of transfer from MUs, identify the gaps in the evidence and provide a background context for the studies carried out by the author.

Although a formal quality assessment of the studies was not carried out, in general, the studies identified did not appear to be of high quality. Most were reports of relatively small case series, describing some aspects of one MU, or retrospective cohort studies. A relatively small number of studies were carried out in the UK and at least half of all the studies were carried out in the 1980s and 1990s giving limited generalisability to the current UK context. The MUs that were the subject of these studies were described in a variety of ways, as: “community maternity units”, “midwife managed units” and “free-standing”, “midwife-led”, “out-of-hospital”, “stand-alone” or “alongside” “birth centres”. In some studies, because of poor reporting, it was difficult to ascertain exactly what kind of unit was

being described, but all appeared to fit as either an FMU or an AMU using the definitions developed for the Birthplace research programme (Rowe, in press).

Eligibility for booking and/or admission to the unit and any exclusion criteria used during pregnancy and during labour are important factors that have the potential to impact on transfer rates. This information was not reported in all studies and was not always clear and comprehensive when it was reported. Studies of AMUs were more likely to provide this information, but it is not clear whether this was because they had more clearly defined criteria. In some cases it seemed likely that the AMU was a less well-established model for maternity care and therefore it was felt necessary to give more information describing the unit. Several of these studies reported on “new” units; one of these described the unit as a “new concept in obstetric care” and provided a list of 97 “conditions precluding management” in the unit (Campbell et al., 1981). In contrast, studies of FMUs were more likely to refer to using admission criteria developed for another unit and published elsewhere. There was some evidence of units using or adapting national or professional guidelines when setting their admission or transfer criteria, but there was also evidence of local policy making and guideline development. One paper gave a detailed description of the “development of entry and exit criteria”, by a multi-disciplinary working party, for the new AMU that was the subject of study (Mahmood, 2003). In terms of the actual criteria used, a number of medical and obstetric conditions were commonly used as exclusion criteria; gestational age (typically 37-42 weeks) and singleton pregnancy were typically used as inclusion criteria. Other factors, including parity, maternal age, smoking and poor antenatal care attendance were much less widely used criteria.

As was noted in one paper, the stringency of admission criteria, or midwives’ adherence to admission criteria, is one factor that may impact on transfer rates (Roberts and Sward, 2001). This is likely, for example, to be the reason for the low transfer rates seen in studies

of units in particularly remote locations. Less easy to see, but also a likely influential factor on intrapartum transfer rates, is the point at which admission or exclusion criteria are applied. For example, in some studies women with prolonged rupture of membranes were excluded antenatally or on admission so do not figure in intrapartum transfer rates; in others they were counted as having been admitted to the unit, but subsequently transferred. In one study which focussed on transfers from an FMU in the north of England, all women planning to give birth in the unit were assessed at home in early labour by a midwife (Smethurst, 1998). All women 'transferred' at this point were included in the 'intrapartum transfer rate' reported by the study author. In other studies it is likely that some of these women, for example those with prolonged rupture of membranes, meconium stained liquor or bleeding, would not have been admitted to the unit so would not have featured in the transfer rate.

It is likely that admission criteria play a part in the higher transfer rates seen in studies of AMUs compared with those seen in FMUs. Partly because of their proximity to an OU and perceived 'safety', AMUs may have less strict criteria for admission. In contrast with FMUs, in some AMUs women do not need to 'book' in advance for intrapartum care in the unit; all healthy women with an uncomplicated pregnancy are automatically booked for care as the 'default' option. There was also evidence in some studies, particularly of new AMUs, that while emphasising 'normality' and midwifery-led care, these units and their midwives were doing so against the background and under the influence of the 'medical model' of childbirth. The tensions inherent in this situation were apparent in several papers. The authors of one paper commented, "Initially when the MLU opened there was anxiety and opposition from both midwifery and medical staff. Some midwives were more comfortable in the medical environment using electronic monitoring, working within defined medical guidelines and sharing responsibility" (Andres and Rankin, 2005, p. 644).

The authors of another paper wrote of the “emphasis... on promoting normality”, but also of the “highly medicalised nature” of the OU and therefore the “strong emphasis on physical safety” in the AMU (Gould et al., 2004, p. 252). In this context therefore, it is possible that criteria for transfer during labour in AMUs are more stringent and more closely followed. In contrast, it has been argued that midwives working in FMUs are more experienced and confident in supporting women in normal birth so may be less likely to transfer women to obstetric care unless absolutely necessary (Walsh, 2007, p. 97). There is a diverse literature on midwives’ experience and their perceptions of working in different settings and within different models of maternity care (e.g. Hundley et al., 1995), but this is a broader issue beyond the scope of this thesis.

Aside from the demonstrated difference in transfer rates from the two types of MU, these studies provided very little evidence about the socio-demographic or clinical factors associated with transfer. Nulliparous women were between three and seven times more likely to be transferred than women having a second or subsequent baby, but information about any other socio-demographic or clinical risk factors for transfer was lacking. This kind of information would be valuable to midwives advising women and to women themselves when considering where to plan to have their baby. The process of transfer, including mode of transport and duration, was another important area with the potential to impact on women’s experience, where the available studies provided little useful information.

Most of the studies, across both types of unit, described similar reasons for transfer, with failure to progress, indications of fetal distress and prolonged rupture of membranes featuring most commonly. The fact that many, and possibly most, transfers are for this kind of complication in labour, for which there is no commonly accepted classification system or threshold to define levels of concern, means that the skill and judgement of the

midwife is crucial in determining the potential risks and benefits of transfer for the woman and her baby. The one evident difference between the two types of unit was that epidural request appeared more frequently and for higher proportions of women transferred in studies of AMUs than in FMUs.

Evidence on outcomes for women and babies after transfer was almost entirely limited to 'process' outcomes, and mode of delivery in particular, reflecting the kinds of data that are typically measured and available. All women who are not transferred from an MU have a normal vaginal birth. Based on the evidence of three of the five studies carried out in the UK that provided data on mode of delivery, this was reduced to around 50% in women who were transferred (Andres and Rankin, 2005; Gould et al., 2004; Hogg et al., 2007).

One earlier UK study reported higher rates of vaginal birth, particularly for women having a second or subsequent baby (Mahmood, 2003). Accurate quantification of the proportion of women who might expect to have a 'normal' birth following transfer and any risk factors associated with not having a 'normal' birth would again be useful for midwives and women planning where to have their baby.

Finally, this review provided some limited, but intriguing, evidence about women's experience of transfer from five studies. Two studies focused on transfer during pregnancy or labour from an AMU and three on transfer from an FMU, one of which included transfer during pregnancy and labour. The potential for women to feel disappointed after transfer emerged from three studies, with one study also highlighting the ways in which giving birth in an MU was important to women's sense of themselves as a "good" or "natural" mother (Shaw, 1985). Choice, control and continuity also emerged as important themes. One study suggested that feelings of disappointment could be ameliorated by preparation and explanation during the antenatal period, during labour and postnatally (Creasy, 1997). One study, where the focus was a newly established FMU

which had previously been an OU, found that women were anxious and worried about the safety of transfer and the loss of obstetric services (Watts et al., 2003). In another study, an audit of women's and partners' experiences of transfer from one FMU, concerns were expressed by a number of women that they had been transferred too late in the context of prolonged labour and exhaustion (Gowers, 2001). Some were also concerned about discomfort during the ambulance journey and wanted to be able to have their husband accompany them in the ambulance (Gowers, 2001). These studies were all based on small convenience samples and included in total, across all five studies, only 36 women who were transferred from an MU during labour or immediately after the birth, indicating a clear need for better quality contemporary evidence in this area.

# Chapter 3

## Content and Quality of Local NHS

### Guidelines on Transfer

#### 3.1 Background

Local clinical guidelines for the transfer of women in labour are a possible factor in variation in transfer rates and have the potential to impact on quality of care and the safety of the transfer process. A widely used definition states that guidelines are “systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances” with the specific purpose to “make explicit recommendations... with a definite intent to influence what clinicians do” (Field and Lohr, 1990, p. 38; Hayward et al., 1995, p. 571).

National NICE guidelines for the care of healthy women and babies during childbirth in England and Wales cover indications for intrapartum transfer, but do not give comprehensive guidance on the process of transfer, including, for example decision-making and communication (National Collaborating Centre for Women's and Children's Health, 2007). A report on the minimum standards for the organisation and delivery of care in labour recommended that, “There should be written multidisciplinary evidence-based clinical guidelines, which are accessible and reviewed every 3 years at each birth setting... [and that these] should include... management of transfer of mother and/or baby to obstetric unit” (Royal College of Obstetricians and Gynaecologists et al., 2007, p. 14). The current Clinical Risk Standards for Maternity developed for the NHS Clinical

Negligence Scheme for Trusts includes a criterion that there should be a local guideline or protocol describing “the process for ensuring that there is an effective system in place for the safe transfer of women by ambulance” focusing on communication and documentation of care (NHS Litigation Authority, 2011, p. 134).

The proliferation of clinical guidelines over recent years has been accompanied by a growing recognition that the quality of guidelines varies and of the need for recognised criteria against which to judge guideline quality (AGREE Collaboration, 2003). The perceived benefits of local clinical guidelines include the capacity to reflect local priorities, services and circumstances and to promote increased local ownership, which may be of importance in terms of effective implementation (Hutchinson and Feder, 1999). Good quality local clinical guidelines on transfer have the potential to improve the quality, safety and appropriateness of care for women planning birth in an MU.

The quality of guidelines can be seen as independent from content. Given that there is relevant national guidance on some aspects of transfer (National Collaborating Centre for Women's and Children's Health, 2007) it is of interest to evaluate the extent to which local guidelines explicitly refer to or apply this guidance. Other aspects of the style and content of local guidelines may also give some insight into the apparent priorities and approach to care in the setting in which they are used.

### **3.2 Aim**

The aim of this study was to collect, describe and systematically appraise the quality and content of NHS Trust guidelines on the transfer of women from MU to OU during labour.

### **3.3 Method**

#### **3.3.1 Data collection**

Data from the Healthcare Commission's (HCC) Maternity Services Review (Healthcare Commission, 2008a) were used to identify all NHS trusts in England with at least one MU and the named contacts for each of these MUs. These trusts formed the sampling frame for this study. Data from the Maternity Services Review indicated that in some trusts with more than one MU, each MU might use different guidelines for intrapartum transfer.

Because of this, guidelines were requested from each MU, rather than from each trust.

In October 2007 an email was sent to the named contact for each MU introducing the study and asking them to provide any guidelines and/or protocols used in their MU relating to the transfer of women during labour (Appendix 2). A further email was sent in December 2007 to contacts at units that had not yet responded. The timing of this study, shortly after the publication of the NICE Intrapartum Care Guidelines (National Collaborating Centre for Women's and Children's Health, 2007), meant that several respondents indicated that their guidelines were being reviewed or updated. When this happened respondents were asked to send the guidelines that were currently in use.

#### **3.3.2 Appraisal of quality of guidelines**

To evaluate the quality of the guidelines the Appraisal of Guidelines for Research and Evaluation (AGREE) Instrument was used (AGREE Collaboration, 2003). The AGREE Instrument is an internationally developed and validated generic tool for assessing the quality of clinical practice guidelines. Using this instrument, each guideline is assessed using 23 items, organised into six domains. Each domain relates to a different dimension of guideline quality:

1. Scope and purpose (three items). This relates to the overall aim of the guideline, the clinical question and the target population it covers.
2. Stakeholder involvement (four items). This focuses on whether patients and target users of the guideline were involved in its development.
3. Rigour of development (seven items). This addresses the methods used to search for evidence and formulate recommendations.
4. Clarity and presentation (four items). This relates to the format and ease of understanding of the guideline.
5. Applicability (three items). This deals with the potential cost, behavioural and organisational barriers to implementing the guideline.
6. Editorial independence (two items). This is concerned with the independence of the guidelines from the funding body and acknowledgement of possible conflict of interest in the development group.

Each item is scored on a four-point Likert scale ranging from 4 'Strongly Agree' to 1 'Strongly Disagree', with two mid points 3 'Agree' and 2 'Disagree'. Finally, an overall assessment of the quality of the guideline is made, taking each of the appraisal criteria into account. This is scored on a four-point categorical scale: 'Strongly recommend', 'Recommend (with provisos or alterations)', 'Would not recommend', 'Unsure'.

Each guideline was anonymised, removing all names of NHS trusts, units, geographical locations and individuals as well as telephone numbers, and identified with a unique number. The author and two colleagues (a consultant in public health with a background in obstetrics and a research midwife) appraised each guideline independently using the AGREE Instrument as described. Following this independent appraisal, the appraisers

met to discuss their scores on items where for any given guideline appraisers' scores differed by at least two points. Where errors or inconsistencies in interpretation of items were identified, scores were revised; these revised scores were used for all analyses.

Overall assessments for each guideline were discussed and consensus reached on which guidelines could be recommended for use in practice.

### **3.3.3 Evaluation of the content of guidelines**

Each guideline received was read in full by the author in order to gain a general overview of their nature and content. Descriptive features of the guidelines, including length, overall topic and date of issue were noted. Common themes and areas of divergence between guidelines were identified and noted. A framework for summarising and comparing guidelines was developed based on the common themes identified and using criteria derived from relevant national guidance.

#### ***3.3.3.1 Evaluative framework and scoring system***

Guidance contained within the NICE guideline on Intrapartum Care (National Collaborating Centre for Women's and Children's Health, 2007) and the Clinical Risk Management Standards for Maternity developed for the NHS Clinical Negligence Scheme for Trusts (CNST) (NHS Litigation Authority, 2007) was used as a standard against which each guideline was compared. The NICE guideline recommends that trusts should develop clear guidelines on both the indications for and the process of transfer; a list of 11 indications for intrapartum transfer is given. The CNST Standards at the time included a Level 1 criterion that trusts should have clear multidisciplinary guidelines to ensure effective transfer of information when mothers move between care settings, including guidelines for midwives transferring women from home or MUs into OUs. According to this guidance, these guidelines should include information on the circumstances in which transfer should be made, how transfer should be arranged, which staff should escort the

woman, what equipment will be necessary, monitoring in transit and who should be informed.

Together these two documents give guidance about the content of clinical guidelines relating to intrapartum transfer which covers the indications or criteria for transfer and the process of transfer. Based on this guidance a scoring system was developed which was used to evaluate each guideline and provide a measure of the extent to which the content of the guidelines met with national guidance.

The scoring system was made up of two elements: the criteria for transfer and the process of transfer (Table 13). For the 'criteria' score, the content of each guideline was compared with the 11 indications for transfer given in the NICE guideline (National Collaborating Centre for Women's and Children's Health, 2007). If all 11 indications were listed in a guideline, it was given the maximum possible score of three; if some specific criteria were given, but not all those listed in the NICE guideline, the score was two; guidelines that gave only non-specific criteria for transfer, such as 'deviation from normal' or referring to 'midwifery judgement' were given a score of one. If the criteria for transfer were not addressed, the guideline was given a score of zero for that element. For the 'process' score the content of each guideline was compared with the guidance on maternal transfer in the CNST Maternity Standards (NHS Litigation Authority, 2007), which listed five essential items of information relevant to the process of transfer. Here, each guideline was given one point when one of these items was addressed, up to a maximum score of five. If the process of transfer was not addressed, the guideline was given a score of zero for that element.

**Table 13: Scoring system for the content of guidelines**

Criteria for transfer		Process of transfer	
Factor	Score	Factor	Score
Not addressed	0	Not addressed	0
Non-specific criteria*	1	How to arrange transfer	+1
Some specific criteria given	2	Which staff to escort	+1
All criteria listed in IPCG**	3	What equipment necessary	+1
		Monitoring in transit	+1
		Who to inform / communicate with	+1
<b>Maximum possible score</b>	<b>3</b>	<b>Maximum possible score</b>	<b>5</b>

\*For example, referring to midwifery judgement, 'deviation from normal' only

\*\* (National Collaborating Centre for Women's and Children's Health, 2007)

### 3.3.4 Analysis

#### 3.3.4.1 Response analysis

In order to assess the presence of response bias, data from the HCC Maternity Services Review on configuration of care within trusts in England and the number of births in the year to 31<sup>st</sup> March 2007 were used to compare trusts that returned relevant guidelines with those that did not using Fisher's exact test and the t test respectively (Healthcare Commission, 2008a).

#### 3.3.4.2 Analysis of guideline quality

Following the instructions for use of the AGREE Instrument, standardised domain scores for each guideline were calculated by summing the three appraisers' scores and standardising them as a percentage of the possible maximum score a guideline could achieve for that domain, that is  $[(\text{obtained score} - \text{minimum possible score}) / (\text{maximum possible score} - \text{minimum possible score})] \times 100$ . This means that the possible range for standardised domain scores is 0-100%. The instructions for the use of the AGREE Instrument state that domain scores are independent and should not be aggregated to form a single quality score.

Intraclass correlation coefficients were calculated for appraisers' total scores for each domain to assess the inter-rater reliability within each domain. Mean and median domain scores with 95% confidence intervals and the proportion of guidelines scoring less than 30%, 30-60% and more than 60% were calculated for all guidelines. Scores for the highest scoring and lowest scoring domains were compared with scores for other domains using Wilcoxon matched pairs signed rank sum tests for non-parametric data. The number of births in the trusts producing 'recommended' guidelines was compared with the number of births in the other trusts using the t test.

### ***3.3.4.3 Analysis of guideline content***

The median criteria and process scores were calculated for all guidelines and according to configuration of care within the trust. The number and proportion of trust guidelines achieving each of the different possible scores was calculated and tabulated for all trusts and according to configuration of care.

## **3.4 Results**

### **3.4.1 Response and configuration of care**

Fifty-two NHS trusts in England were identified as having at least one MU, with 82 MUs identified in all (Healthcare Commission, 2008a). Guidelines were received from 39 (75%) trusts (Figure 1). All but five of these trusts (90%) reported having one type of MU only, with just over half having one or more FMUs. The guidelines received from five trusts could not be included in the appraisal as they were not relevant to the topic (Figure 1). Guidelines from 34 trusts (65%) were therefore included in the appraisal.

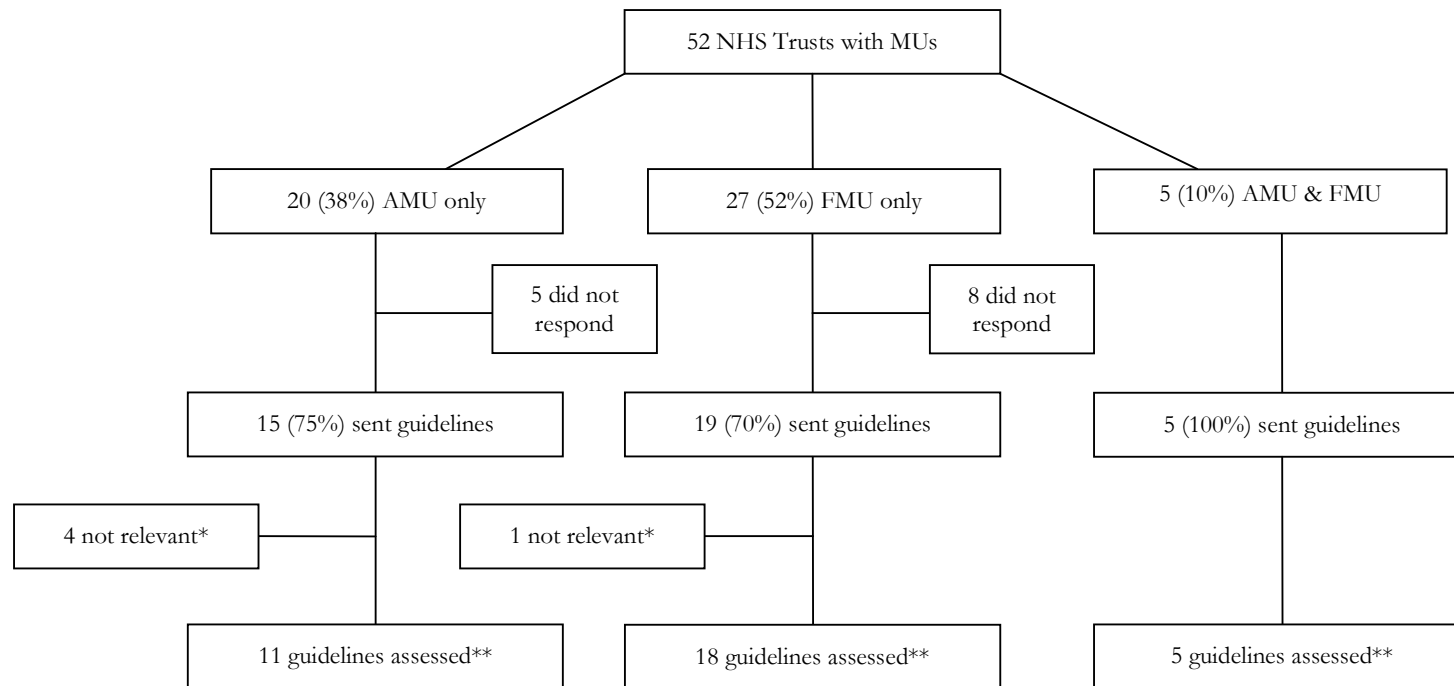
There was no statistically significant difference between responding and non-responding trusts in terms of configuration of care or the number of births (Table 14).

**Table 14: Characteristics of responding and non-responding trusts**

	Responded n=34		Did not respond n=18		p value
	n	%	n	%	
<b>Configuration of care</b>					0.18*
AMU only	11	55.0	9	45.0	
FMU only	18	66.7	9	33.3	
AMU & FMU	5	100.0	0		
<b>Number of births**</b>					
mean [sd]	4602	[2251]	4355	[1710]	0.69
range	282 - 10005		2415 - 10140		

\* p value calculated using Fisher's exact test as expected cell <5

\*\* Number of births in trust in year to 31<sup>st</sup> March 2007 (Healthcare Commission, 2008a)



**Figure 1 Configuration of care within NHS Trusts with MUs; number of guidelines sent and assessed**

\*3 'AMU only' trusts sent guidelines that did not cover maternal transfer; 1 'AMU only' trust sent a draft guideline for a planned FMU that was not relevant to the AMU; 1 'FMU only' trust sent a guideline that did not cover maternal transfer.

\*\*When trusts sent more than one guideline document, these were counted as one guideline.

### 3.4.2 Descriptive summary of guidelines

Most trusts (68%) sent one guideline addressing the transfer of women during labour; the remainder sent between two and five separate documents (Table 15). The guidelines varied considerably in length; the median number of pages was nine, but some guidelines consisted of only one page and two were over 100 pages long. This variation in length was, in part, a factor of variation in the main topic and content of the guidelines.

**Table 15: Number of guideline documents sent by each trust, publication dates and the main topic of guidelines**

	Number of trusts	
	n	%
<b>Number of separate documents</b>		
1	23	68
2	6	18
3	2	6
4	1	3
5	2	6
<b>Date of issue / ratification</b>		
no date	3	9
2003	2	6
2004	5	15
2005	9	26
2006	6	18
2007	9	26
<b>Topic of guideline*</b>		
Transfer of women in labour	16	47
Transfer of care in maternity	11	32
Criteria for midwifery care	6	18
Specific aspects of care in labour	4	12
General midwifery care in labour	6	18
General midwifery care	3	9
Transfer of patients	1	3

\* Adds up to more than 100% because for some trusts transfer was addressed by more than one guideline

Most guidelines (79%) focused specifically and entirely on the transfer of women during labour or on the transfer of care or referral throughout maternity care and a smaller proportion (18%) covered intrapartum transfer in the context of inclusion and exclusion criteria for midwifery care during pregnancy and birth. In some trusts, intrapartum

transfer was addressed as part of guidelines on specific aspects of care during labour or as part of clinical guidelines for midwifery care, either during labour or throughout pregnancy and birth. Not surprisingly, these types of guideline tended to be longer than those focusing specifically on transfer. One guideline covered the transfer of women during labour as part of a trust-wide guideline on the transfer of patients between hospitals.

All but three of the guidelines included information about the date of issue or ratification of the guideline. For most of these (71%), this date was within three years of the date when the guidelines were requested. On most of the remaining guidelines there was an indication that the guideline was due for review.

### 3.4.3 Guideline quality

#### 3.4.3.1 *Inter-rater reliability*

In the assessment of guideline quality, intraclass correlation coefficients for the three appraisers showed moderate to good inter-rater reliability for all domains, with best agreement for the “stakeholder involvement” domain (Table 16).

**Table 16: Inter-rater reliability for each quality domain\* (n=34)**

Domain	ICC**	95% CI
Scope and purpose	0.75	0.59 - 0.86
Stakeholder involvement	0.93	0.86 - 0.96
Rigour of development	0.84	0.65 - 0.92
Clarity and presentation	0.63	0.44 - 0.78
Applicability	0.64	0.42 - 0.79

\*Calculated for only five domains, because all guidelines received minimum possible score from all three raters for domain 6, editorial independence.

\*\*Intraclass correlation coefficient calculated using absolute agreement and two-way random effects model

### 3.4.3.2 Quality scores

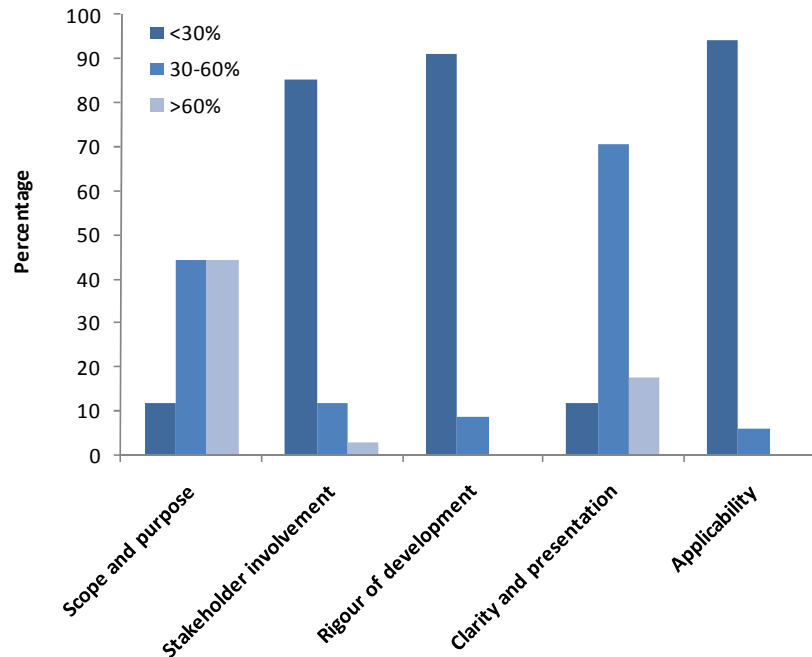
The mean and median quality scores for five of the six domains are shown in Table 17.

None of the guidelines scored at all on the editorial independence domain so these scores are not shown. Scores across the other five domains ranged from 0 to 92.6%.

**Table 17: Domain scores (percentages) for all guidelines (n=34)**

Domain	Mean	95% CI	SD	Median	95% CI	Range	Interquartile range
Scope and purpose	56.2	48.4 - 64.0	22.3	59.3	44.4 - 74.1	0 - 92.6	40.7 - 77.8
Stakeholder involvement	15.3	9.6 - 20.9	16.2	9.7	2.8 - 22.2	0 - 72.2	2.8 - 25.0
Rigour of development	15.0	9.9 - 20.2	14.7	9.5	7.6 - 19.0	0 - 57.1	6.3 - 20.6
Clarity and presentation	45.3	40.0 - 50.6	15.2	43.1	38.9 - 50.0	13.9 - 77.8	35.4 - 52.8
Applicability	7.1	3.6 - 10.6	10.1	3.7	0.0 - 3.7	0 - 37.0	0 - 7.4

‘Scope and purpose’ scores were statistically significantly higher than scores for the other four domains ( $p < 0.01$ ) (Table 17); 15 of the 34 guidelines (44%) scored more than 60% on this domain (Figure 2). In contrast, for the ‘stakeholder involvement’ domain only five guidelines scored more than 30% and only one scored more than 60% (Figure 2). Two of the guidelines showed evidence that the views of patients had been sought in the development of the guideline and only one gave any indication of piloting among users.



**Figure 2: Percentage of guidelines scoring low, medium and high in five domains of the AGREE Instrument**

None of the guidelines scored above 60% on ‘rigour of development’ with all but three scoring less than 30%. For the ‘clarity and presentation’ domain six of the guidelines scored above 60% and only four scored less than 30%. ‘Applicability’ scores were significantly lower than for all other domains ( $p < 0.05$ ); none of the guidelines scored above 60% on this domain and only two scored more than 30%. Only two guidelines gave any indication that the cost implications of applying the recommendations had been considered.

### ***3.4.3.3 Overall assessment of quality***

Only three of the 34 guidelines assessed were judged by the appraisers to be of sufficient quality to be able to recommend (with provisos or alterations) for use in practice. The domain scores for each of these three guidelines are shown in Table 18. The three trusts

producing these guidelines represented all three types of configuration of care, that is in addition to an OU one trust had an AMU only, one had an FMU only and the third had both types of MU. Trusts producing the recommended guidelines were larger, in terms of number of births per year, than the rest of the sample (mean births/year = 7709 vs. 4301,  $p=0.01$ ).

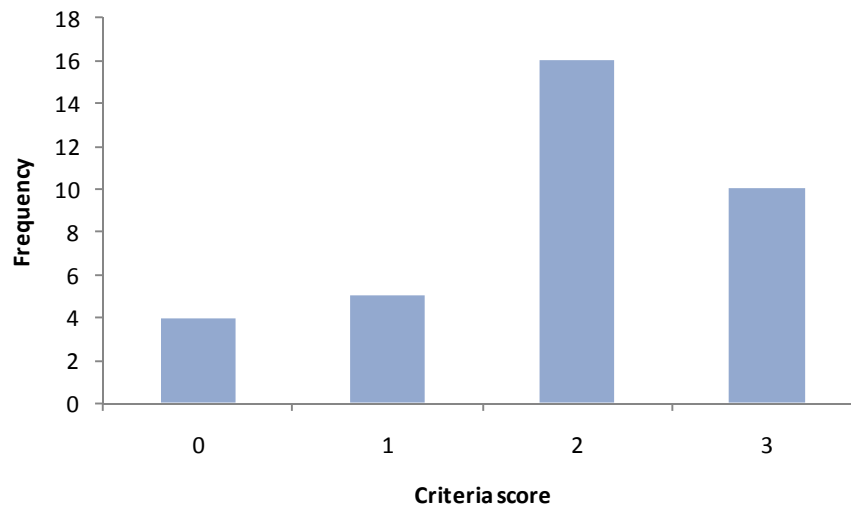
**Table 18: Domain scores for the three recommended guidelines**

ID	Scope and purpose	Stakeholder involvement	Rigour of development	Clarity and presentation	Applicability
A3	81.5	72.2	54.0	77.8	14.8
AF1	77.8	30.6	55.6	72.2	25.9
F24	74.1	38.9	57.1	66.7	37.0

### 3.4.4 Guideline content

#### 3.4.4.1 *Criteria for transfer*

Figure 3 shows the distribution of criteria scores, indicating the degree to which specific criteria for transfer were indicated in the guideline.



**Figure 3: Distribution of scores for the criteria for transfer**

The median score for this element was two; just over three quarters of the guidelines (26 guidelines) received a score of two or more, indicating that some specific criteria for transfer were provided (Table 19). In around one third of these (9 guidelines), the criteria given conformed to those listed in the NICE guideline on intrapartum care (National Collaborating Centre for Women's and Children's Health, 2007).

In four guidelines, the criteria or indications for transfer were not addressed and in a further four only non-specific criteria for transfer were given. Examples of these included:

*If the progress of labour deviates from the normal pathway, medical aid must be sought. For a woman in labour at home or in MLU [midwifery-led unit] transfer to the nearest consultant unit is the recommended action.* Guideline F4

*In an emergency or when there is deviation from normal...* Guideline F20

There was some suggestion of variation in scores across different configurations of care, but numbers were small in all groups (Table 19). Trusts with only AMUs tended to have higher scores for this element; ten out of the eleven trusts with AMUs only (91%) scored two or higher, compared with 14 out of the 18 trusts with FMUs only (78%). More than half of the 'AMU only' guidelines conformed to the NICE intrapartum care guideline compared with less than a fifth of the 'FMU only' guidelines.

**Table 19: Criteria scores for guidelines according to configuration of care**

Configuration of midwifery unit care		Criteria score n %								Median score
		0		1		2		3		
AMU only	n=11	0		1	9.1	4	36.4	6	54.5	3
FMU only	n=18	1	5.6	3	16.7	11	61.1	3	16.7	2
AMU & FMU	n=5	3	60.0	0		2	40.0	0		0
All trusts n=34		4	11.8	4	11.8	17	50.0	9	26.5	2

### 3.4.4.2 Process of transfer

Figure 4 shows the distribution of process scores which indicate the extent to which guidelines covered the five recommended aspects of the process of transfer. The median score for this element was three; just over two thirds of trust guidelines scored three or over, indicating that they addressed three or more of the information items relating to the process of transfer (Table 20).

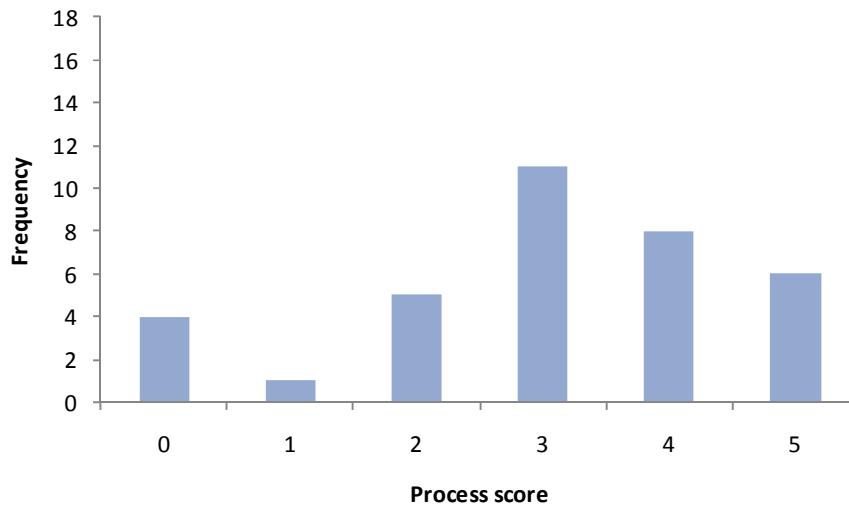


Figure 4: Distribution of scores for the process of transfer

Four guidelines did not address the process of transfer at all and a further seven addressed only one or two items. Low scoring guidelines tended to cover how to arrange the transfer and communication about the transfer, but were less likely to address equipment and monitoring during the transfer and, to a lesser extent, which staff should accompany the woman during transfer.

**Table 20: Process scores for guidelines according to configuration of care**

Configuration of midwifery care		Process score n %										Median score		
		0		1		2		3		4			5	
AMU only	n=11	4	36.4	0		3	27.3	3	27.3	1	9.1	0		2
FMU only	n=18	0		1	5.6	1	5.6	4	22.2	6	33.3	6	33.3	4
AMU & FMU	n=5	0		0		2	40.0	2	40.0	1	20.0	0		3
All trusts	n=34	4	11.8	1	2.9	6	17.6	9	26.5	8	23.5	6	17.6	3

Again there was variation between different configurations of care in the extent to which guidelines addressed all elements relating to the process of transfer; trusts with only FMUs were more likely to have higher process scores. Sixteen out of the eighteen FMU only trusts (89%) scored three or over for the process element compared with four out of the eleven AMU only trusts (36%).

### 3.5 Discussion

This evaluation was based on guidelines obtained from 34 of the 52 (65%) NHS trusts in England with MUs in 2007. Although the initial response rate (75%) was high, the exclusion of some irrelevant guidelines meant that the useable response was lower than would be ideal. Data from the HCC Maternity Services Review indicate that all 52 trusts reported having a protocol or guideline covering intrapartum transfer (Healthcare Commission, 2008a), but it is not possible to make any judgements about the quality or content of guidelines in trusts that did not respond. In terms of configuration of care and the number of births in the trust there was no evidence of systematic differences between trusts that sent relevant guidelines and those that did not, although with the small numbers involved it is difficult to rule out the role of chance with confidence.

In terms of quality, only three of the 34 guidelines evaluated were judged by the appraisers to be of sufficient overall quality to recommend (with provisos or alterations). This is a reflection of the guidelines' overall poor scoring on four of the six quality domains. The

pattern of scoring across domains, with guidelines scoring reasonably well for ‘scope and purpose’ and ‘clarity and presentation’, but poorly for ‘stakeholder involvement’, ‘rigour of development’ and ‘applicability’, is very similar to that described in another quality appraisal of local guidelines (Verwey et al., 2006). In that study, which evaluated local hospital guidelines for the assessment of suicide attempters in The Netherlands, the ‘editorial independence’ domain, which scores whether conflicts of interest between guideline developers were recorded and whether the guideline was editorially independent from the funding body, was not used as it was considered irrelevant for the subject. In the study reported in this chapter, none of the guidelines scored more than the minimum on this domain and it could be argued that for an appraisal of guidelines developed at a local level this domain is not relevant.

Apart from problems with the relevance of the “editorial independence” domain, there were few difficulties with applying the AGREE instrument to these local guidelines. It is a straightforward instrument to use and comprehensive guidance is provided. All the appraisers were using the instrument for the first time and while it is not standard practice to revise scores after discussion, this process helped identify and remove scoring errors and inconsistencies in the interpretation of some items, which may not have arisen with appraisers who were more familiar with the instrument. It was apparent that most of the guidelines scored poorly overall. Some guidelines scored well, however, and overall most items were straightforward to apply to the guidelines under scrutiny, suggesting that it is possible and appropriate to use this rigorous instrument on local guidelines.

Overall, the guidelines performed particularly poorly on the two domains that focus most on the methodology of guideline development: ‘rigour of development’ and ‘stakeholder involvement’. Most contained very little, if any, description of the methodology used for guideline development. Only two of the guidelines showed evidence that the views of

patients had been sought in the development of the guideline and only one gave any indication of piloting among users. Low scores on these domains may, in part, reflect poor reporting of methodology within the guidelines themselves. This appraisal was dependent on the information contained within the guidelines; any supporting documentation or background information on guideline development was not requested, so it is possible that this information was simply missing from the guidelines themselves. However, given the many other differences between low and higher scoring guidelines in terms of style and content it seems very unlikely that the lower scoring guidelines were developed using a rigorous methodological approach.

This evaluation exposes apparently severe shortcomings in the quality of most of these guidelines evaluated against the stringent criteria set out by the AGREE instrument. The better quality guidelines in this study, as judged by the appraisers' overall recommendations, were developed by larger trusts and broadly in line with the approach advocated by the AGREE collaboration (AGREE Collaboration, 2003). Given their size, these trusts are likely to have more resources to commit to guideline development. In contrast with a mean of over 7000 births per year in these trusts, the smallest trust in this study recorded less than 300 births per year. The high costs of *de novo* guideline development (Penney and Foy, 2007) mean that there may be an argument for a system that could facilitate increased collaboration and sharing of guidelines between trusts. One possible solution could be a central repository for local guidelines, perhaps co-ordinated by an appropriate royal college or professional body.

The extent of variation in the style, layout and content of these local guidelines was notable. In some trusts, guidelines on transfer were embedded within longer guidelines on midwifery care, but most transfer guidelines appeared to be 'stand-alone' documents, some with explicit links to other guidelines within the trust. More than a quarter of the

guidelines evaluated were over three years old or were due for review. During the year before this evaluation was carried out NICE published their guideline on intrapartum care which contained specific guidance on indications for transfer during labour to an OU (National Collaborating Centre for Women's and Children's Health, 2007). Just less than a quarter of the guidelines evaluated gave indications for transfer that conformed to those listed in the NICE guideline while a further half of the guidelines gave some specific indications for transfer, but these did not match those given in the NICE guideline. More 'AMU only' guidelines conformed to the NICE guideline compared with guidelines used in 'FMU only' trusts. It is possible that this reflects a more prescriptive 'medical' approach to care in AMUs, but it is also possible that because some AMUs are relatively new this may reflect the more recent development of their guidelines. Given that this evaluation was carried out on guidelines collected in 2007, and many guidelines were due for review at the time, it is likely that more local guidelines now reflect national guidance in this area. Around a quarter of the guidelines did not address the indications for transfer or gave no specific indications for transfer, referring to "deviation from normal", appearing to give more scope for clinical judgment.

Variation between guidelines in trusts with different configurations of care was more evident in relation to the ways in which the process of transfer was addressed. Not surprisingly, given that the process of transfer from an AMU is likely to be relatively straightforward, fewer guidelines from 'AMU only' trusts addressed a broad range of issues relating to the process of transfer compared with 'FMU only' trusts. While lower scores here do not necessarily mean that the guideline is inadequate, it is also important to consider women's experience of transfer; there may be aspects of the transfer process that impact on women's experience, even from an AMU, that should be incorporated into clinical guidelines. The stronger emphasis on the process of transfer in guidelines used in

FMUs is again not surprising given their geographical separation from OUs and may be a key way in which they seek to minimise risk for women.

While this evaluation provides evidence about the quality and content of local NHS guidelines on transfer, it does not tell us to what extent and how guidelines are used in everyday clinical practice. The implementation of guidelines is an important area where there is a large body of evidence relating to the effectiveness of different strategies (Penney and Foy, 2007). The way that transfer guidelines are used by midwives is beyond the scope of the research reported in this thesis, but is an area where further research would be worthwhile.

The evaluation of the quality of local NHS guidelines reported in this chapter was published in the journal *Quality and Safety in Health Care* in 2010 (Rowe, 2010) and is reproduced in Appendix 3.

# Chapter 4

## Prospective Cohort Study Methods

### 4.1 Context

Chapter 5 presents the results of analyses carried out by the author using data collected in a national prospective cohort study of planned place of birth which was conducted by the Birthplace in England research programme collaborative group. In this chapter the overall aim and primary objective of the Birthplace cohort study is presented, the methods used in that study and the specific analyses carried out by the author relating to transfer from MU to OU during or immediately after labour are described. The centres where Birthplace data collection took place and participation in those centres are also described. Throughout this chapter, methods relating to the Birthplace cohort study are indicated by the use of the word 'Birthplace'; work carried out by the author for this thesis, using Birthplace data, is indicated by the word 'transfer'. A full description of the methods of the Birthplace national prospective cohort study can be found in the published report (Hollowell et al., in press).

### 4.2 Birthplace cohort study aim and primary objective

The Birthplace cohort study aimed “to compare aspects of the safety of birth by planned place of birth at the start of care in labour: at home, in FMUs, in AMUs and in OUs in England” (Hollowell et al., in press). Its primary objective was “to compare intrapartum and early neonatal mortality and specific neonatal morbidities... for babies of women judged to be at ‘low risk’ of complications at labour onset” (Hollowell et al., in press).

### **4.3 Birthplace cohort study design**

The study was a prospective cohort study. Planned place of birth at the start of care in labour was the exposure; the primary outcome was a composite measure of intrapartum and early neonatal mortality and specific neonatal morbidities.

#### **4.3.1 Definitions**

The definitions used in the Birthplace cohort study were also used for the transfer analyses carried out by the author. Those relevant to the research on transfer presented here were the following.

##### ***4.3.1.1 Risk status***

Risk status was defined using the medical conditions and situations listed in the NICE Intrapartum Care guidelines as resulting in “increased risk for the woman or baby during or shortly after labour, where care in an obstetric unit would be expected to reduce this risk.” (National Collaborating Centre for Women's and Children's Health, 2007). These pre-existing risk factors were listed in the Birthplace data collection form (Appendix 4). Where women had one or more of the listed risk factors they were classified as at ‘higher risk’; women without any of the listed risk factors were classified as ‘low risk’.

##### ***4.3.1.2 Planned place of birth***

Planned place of birth was defined as the place where the woman intended to give birth at the start of her care in labour, and where she received care from a midwife during established labour. In this way four groups of women were defined:

1. Women planning birth at home
2. Women planning birth in an FMU
3. Women planning birth in an AMU
4. Women planning birth in an OU.

#### ***4.3.1.3 Inclusion and exclusion criteria***

In MUs and for women planning birth at home, data were collected about **all** women who received care from an NHS midwife during labour in their planned place of birth. Women in the following groups were excluded from analyses for the Birthplace cohort study and from transfer analyses carried out by the author.

- Women who had a caesarean section before the start of labour
- Women who presented in labour before 36 completed weeks' gestation
- Women with a multiple pregnancy
- Women who had no antenatal care

Data about women in these groups were not collected in OUs because of the potential burden of data collection associated with the greater numbers of women in these settings.

#### ***4.3.1.4 Research ethics approval***

The Birthplace cohort study received research ethics approval from the Berkshire Research Ethics Committee in October 2007 (ref: 07/H0505/151). An amendment to the original protocol was approved by a sub-committee of the Berkshire Research Ethics Committee in April 2008. Specific ethics approval was not required for the transfer analyses carried out by the author.

Women's consent to take part in the study was not required as all data collected were routinely recorded in women's notes and no personally identifiable data were returned to the Birthplace study co-ordinating centre.

#### ***4.3.1.5 Study sites***

All MUs in England, both FMUs and AMUs, and including those that opened during the data collection period, were invited to take part in the Birthplace cohort study. In addition

the study aimed to collect data about births planned at home in every NHS trust providing intrapartum maternity care for planned home births in England and in a stratified random sample of 37 OUs. The original target numbers of trusts, units and participants and the planned duration of data collection in each setting are shown in Table 21. The actual duration of data collection varied across trusts and units.

**Table 21: Target number of participating trusts and units, recruitment targets and planned duration of data collection in Birthplace cohort study**

Unit type	Target number of participating NHS trusts or units	Target number of women	Planned duration of data collection per NHS trust or unit
Home birth	150	17,000	16 months
Freestanding midwifery units	57	5,000	6 months
Alongside midwifery units	50	5,000	6 months
Obstetric units	37	30,000*	3 months
Total	294	57,000	-

\*expected to include around 20,000 women at 'low risk' of complications at the start of care in labour  
Source: Birthplace in England research programme. Final Report Part 4 (Hollowell et al., in press)

#### **4.3.1.6 Data collection**

Data were collected by midwives attending women in labour using a study specific data collection form that was tailored to each setting (Appendix 4). Midwives started a data collection form while they were caring for the woman during labour and completed the form after the birth using information routinely recorded in the woman's notes. When a woman was transferred from her planned place of birth during or immediately after labour the form was transferred with the woman and completed in the new setting. Where a data collection form was not started for an eligible woman data were collected retrospectively from maternity and other notes.

Prospective data collection for planned home births began in three NHS trusts in July 2007, spread to other sites from January 2008 and continued until April 2010.

Retrospective data collection for eligible women who were missed continued until November 2010. The dataset was closed to new women in December 2010.

Data collection in each site was co-ordinated by one or more local co-ordinating midwives (LCMs) who communicated with midwives about the study, ensured that data collection forms were available to midwives, kept a record of the number of women eligible to take part in the study, collected completed forms from midwives, checked forms for completeness, removed the front sheet containing personally identifying information, returned completed forms for data entry and responded to data queries from the co-ordinating centre at the National Perinatal Epidemiology Unit (NPEU).

#### ***4.3.1.7 Data management***

Data were double entered by a data management company. Data queries generated by range checks and logical checks were sent to local co-ordinating midwives throughout the period of data collection and responses double entered at the study co-ordinating centre. Further cleaning then took place to identify and remove any remaining internal inconsistencies and unexpected values, in particular those relating to: planned place of birth, timing of transfer (where relevant), gestational age, inconsistent or unexpected dates and/or inconsistent date-time sequences and multiple records for the same birth. Most data cleaning was carried out by the Birthplace team. The author cleaned data and coded free text relating to risk factors identified at the start of care in labour, mode of transfer, reasons for transfer, place of birth and transfer timing variables.

#### **4.4 Objectives of analyses relating to transfer**

The objectives of the transfer analyses carried out by the author were:

1. To estimate the proportion of women transferred during or immediately after labour from FMUs and AMUs to OUs in England.
2. To describe the characteristics of women transferred, the transfer process, including primary reason for transfer, time taken and mode of travel.

3. To identify whether socio-demographic and clinical factors, particularly those known at the start of care in labour, are associated with transfer.

## **4.5 Analysis**

### **4.5.1 Dataset**

Changes to the timetable of the Birthplace prospective cohort study caused by the addition of extra data collection at the request of the funders and delays in securing research governance approval in all relevant NHS trusts meant that a preliminary dataset was only available to the author in December 2010, almost two years after the date that had originally been anticipated. Transfer analyses were carried out on a ‘first freeze’ of the Birthplace database as at 25<sup>th</sup> March 2011. The Birthplace research team continued to chase missing data after that date and also carried out further data cleaning and free-text coding. Birthplace analyses presented in the Birthplace report (Hollowell et al., in press) were based on the final frozen database, as at 6<sup>th</sup> May 2011 and, as a result, included 173 additional women in the sample overall, including 19 more women in the AMU group and 16 more women in the FMU group. Given the overall sample size, the difference in the size of these groups is unlikely to have had a material effect on the overall findings.

### **4.5.2 Software**

All analyses were conducted using Stata SE version 11.1 (StataCorp, 2009).

### **4.5.3 Clustering and weighting**

Women in the Birthplace prospective cohort study were ‘clustered’ within units. The likelihood that women and the care they receive in one unit are more similar to each other than to women receiving care in other units means that it is important to allow for the presence of clustering in any statistical analysis. Not to do so could potentially lead to estimating standard errors that are inappropriately small and therefore confidence intervals

that are too narrow and p-values that are too small. To allow for this, each MU was defined as the primary sampling unit and robust variance estimation was used in the calculation of standard errors.

In addition, the duration of participation of each unit in the study varied, meaning that women receiving care in different units did not have the same probability of taking part in the study. In order to adjust for this, probability weights derived by the statisticians analysing the Birthplace prospective cohort study were incorporated into the transfer analysis so that the weight applied to each observation was inversely proportional to the duration of data collection in that unit. Women and babies within the same unit were given the same weight in the analysis.

#### **4.5.4 Characteristics of the sample**

The following socio-demographic and clinical characteristics, in the following groups and categories, were summarised for all eligible women in the cohort study by planned place of birth:

- Ethnicity: White; Indian; Pakistani; Bangladeshi; Black Caribbean; Black African; Mixed; Other
- Understanding of English language: Fluent; Some understanding; No understanding
- Marital or partner status: Married / living with a partner; Single / unsupported
- Index of multiple deprivation score, derived by LCMs from the woman's postcode using an online converter: grouped as quintiles from 1, least deprived, to 5, most deprived
- Maternal age: grouped as <20; 20-24; 25-29; 30-35; 35-40; ≥40 years

- Parity: Number of previous pregnancies of  $\geq 24$  weeks gestation, 0, 1, 2,  $\geq 3$ , and Nulliparous, Multiparous
- Body mass index (BMI) in pregnancy: grouped as Not recorded;  $< 18.5$ ; 18.5-24.9; 25.0-29.9; 30.0-35.0; 35.1-70
- Pre-existing risk status: Number of risk factors, 0, 1,  $\geq 2$ , and type of pre-existing risk, Low risk; Medical condition only; Obstetric history only; Both medical and obstetric
- Risk factors identified at the start of care in labour: Number of risk factors, 0, 1,  $\geq 2$
- Gestation at birth: grouped as completed weeks 37, 38, 39, 40, 41, 42-44
- Birthweight: grouped as 1000-2499, 2500-2999, 3000-3499, 3500-3999, 4000-4499, 4500-7500g

Unweighted frequencies and weighted percentages are presented for binary and categorical variables. For continuous variables, distributions of data were examined using histograms and box plots. Suspicious outliers were examined in detail for clinical and statistical plausibility and the effect of including or excluding them was explored in subsequent sensitivity analyses. These analyses showed that including these outliers made no difference to any of the results so those presented are based on all eligible women including any outliers. Where examination of frequency distributions suggested it was appropriate, the mean and standard deviation were calculated; where frequency distributions indicated non-normality the median, inter-quartile range and range are presented. Frequencies and weighted percentages of missing data are included in tabulations of the characteristics of the sample. Given the small percentage of missing data for each of these variables ( $< 1\%$  for most variables) subsequent tables do not show the

percentage of missing data. For a large minority of women (17%) body mass index was not recorded in their maternity notes; midwives were given the option to indicate this on the data collection form rather than leaving this question blank. In order to include these women in all analyses, a 'not recorded' category was used for body mass index.

Associations between socio-demographic and clinical characteristics were explored using a correlation matrix and in univariable cross-tabulations.

#### **4.5.5 Transfers**

The number and percentage of women transferred, the primary reason for transfer and aspects of the transfer process, including timing and mode of transfer, were summarized. Given the differences between the two types of MU and the socio-demographic and clinical differences between women planning birth in each setting, all analyses relating to transfers were carried out separately for each type of unit.

##### ***4.5.5.1 Univariable analyses***

The association between each socio-demographic and clinical characteristic and transfer in each type of MU was explored in univariable analyses using cross-tabulation. Confounding and interaction were explored using unweighted Mantel-Haenszel methods. Logistic regression was then used to calculate weighted unadjusted odds ratios with 95% confidence intervals for each category of each variable. Ease of interpretation and statistical efficiency were used to determine which category of each variable to use as the reference group for univariable and multivariable analyses; in most cases this was the largest group.

##### ***4.5.5.2 Multivariable analyses***

The factors associated with transfer in each type of MU were explored in multivariable logistic regression. Logistic regression, generating odds ratios as measures of association,

was used as the most straightforward way of adjusting for multiple confounders in these analyses even though, because of the relatively high prevalence of transfer as an outcome, the ‘rare disease assumption’ does not hold. This means that the odds ratios may overestimate the relative risk of transfer and should be interpreted carefully.

Each multivariable model was built according to the likely hierarchical relationship between the potential risk factors and transfer. The more proximal factors (parity, maternal age and the combined risk factor variable) were entered into the model first, followed by the remaining clinical factors (gestation and body mass index), then the individual socio-demographic variables (ethnicity, language fluency and marital status) and finally the area level deprivation index. At each stage in the model building process the contribution of each factor to the fit of the data to the model was tested for significance using the Wald test. Factors where  $p \geq 0.05$  were not retained in the model.

The possibility that parity modified the association between maternal age and transfer, as observed in exploratory Mantel Haenszel analyses, was tested by including an interaction term in the final multivariable model. All other possible interactions between variables in the final multivariable model were tested in the same way, combining levels of variables where necessary because of small numbers in some combinations of levels of variables. Statistical significance of interactions was tested using the Wald test with  $p < 0.01$  as the level of significance for retaining the interaction term in the model.

Finally, the possibility that the association between maternal age and transfer was non-linear was tested in two ways. First, quadratic and cubic terms for maternal age were added to the final multivariable model. Second, in order to test whether the non-linearity of age was modified by parity, an interaction term for parity and quadratic age was added to the final multivariable model. In both cases, statistical significance of non-linearity was tested using the Wald test with  $p < 0.01$  as the level of significance.

Given the large size of the dataset, further model diagnostics, including investigating potential points of leverage and influence, were not carried out.

#### 4.6 Participating centres and women

The number of centres taking part in data collection for the Birthplace cohort study, the number of women about whom data were collected and the period of data collection in each centre are summarised in Table 22. Participation was good for each setting for birth, varying from 97% of trusts providing home birth services to 84% of AMUs. While the duration of data collection was shortest for OUs and AMUs, the numbers of women about whom data were collected in these settings was higher, reflecting the typical size (in terms of births per year) of these units compared with FMUs and with the numbers of women planning birth at home in most NHS trusts.

**Table 22: Centres participating in Birthplace prospective cohort study**

		Obstetric unit		Home <sup>1</sup>		Freestanding midwifery unit		Alongside midwifery unit		
Units in England <sup>2</sup>	n	180		147		56		51		
Selected to participate <sup>3</sup>	n	37+5		147		56		51		
<b>Included in analyses</b>										
Units	n %	36	86	142	97	53	95	43	84	
Women per unit	median (range)	873	347-1749	96	7-707	175	1-848	361	20-1290	
Period of data collection (days)	median (range)	151	47-281	529	93-1034	364	34-758	181	31-468	

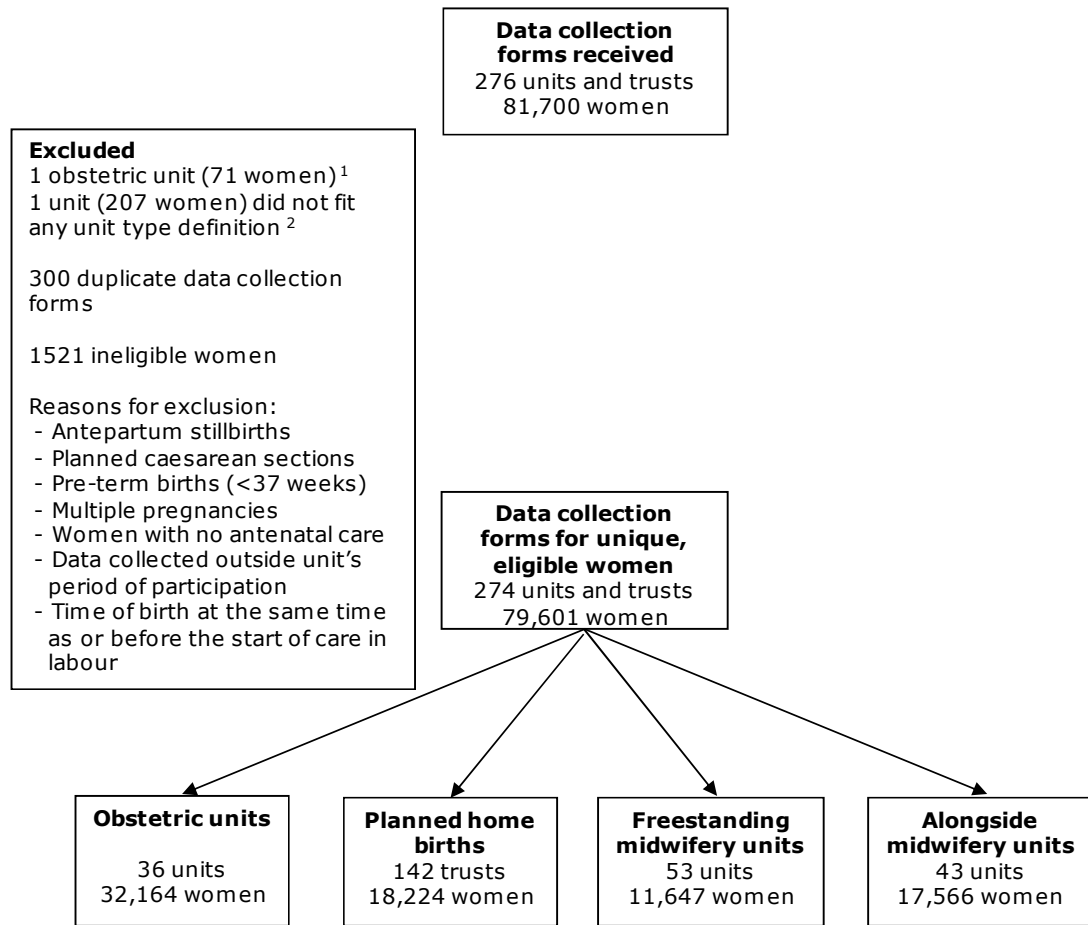
<sup>1</sup> For births planned at home the 'unit' is the NHS trust responsible for providing intrapartum care

<sup>2</sup> Units open at the start of the study or known to have opened during the study period

<sup>3</sup> Thirty seven OUs were initially sampled. Five units had to be replaced by re-sampling: one closed soon after the sampling was done, one was converted to an FMU, and three declined or failed to participate. One additional OU started but failed to establish data collection was excluded from the analyses

Source: Birthplace in England research programme. Final Report Part 4 (Hollowell et al., in press)

Figure 5 shows the total number of units and NHS trusts in which data were collected, the total number of women for whom data collection forms were received and the number of and reasons for exclusions. In total, data were collected about 79,601 eligible women.



<sup>1</sup> One OU started data collection, but failed to establish data collection and was excluded from analyses

<sup>2</sup> One unit which shared features of an FMU and an OU participated in data collection but was excluded from analyses because the unit did not fit the definition of any of the four planned places of birth

Source: Based on figure in Birthplace in England research programme, Final Report Part 4 (Hollowell et al., in press)

**Figure 5: Data collection and exclusions in Birthplace prospective cohort study**

## 4.7 Summary

This chapter has described the methods used in the Birthplace prospective cohort study and those used by the author for analyses relating to transfer. The results of these analyses are presented in the next chapter.

# Chapter 5

## Prospective Cohort Study Results

### 5.1 Chapter overview

This chapter presents the results of analyses of data collected in the Birthplace prospective cohort study. The characteristics of all women about whom data were collected are summarized, prior to closer examination of the clinical risk characteristics of women planning birth in the two types of MU. The number and proportion of women transferred from each type of MU, the primary reason for transfer, information about how women were transferred and aspects of the duration and timing of transfer are presented. Finally, the clinical and socio-demographic factors associated with transfer from each type of MU are explored in univariable and multivariable analyses.

### 5.2 Characteristics of women

In terms of socio-demographics, women planning birth in AMUs were similar to those planning birth in OUs (Table 23). In comparison with these two groups, women planning birth at home or in FMUs were less diverse, with lower proportions of women in ethnic minority groups, more women speaking fluent English, fewer single or unsupported women and fewer living in areas of deprivation. Women planning birth at home were the most homogeneous group with more than 9 out of 10 from a White ethnic background, 99% speaking fluent English and 95% being married or living with a partner. Similar in many respects to the home birth group, although less extreme, women planning birth in FMUs showed markedly different socio-demographic characteristics from those planning birth in AMUs.

**Table 23: Socio-demographic characteristics of women in the Birthplace prospective cohort study by planned place of birth**

	<b>Obstetric unit</b>		<b>Alongside midwifery unit</b>		<b>Freestanding midwifery unit</b>		<b>Home</b>	
	N = 32,164		N = 17,566		N = 11,647		N = 18,224	
	Weighted N = 394,293		Weighted N = 29,940		Weighted N = 11,112		Weighted N = 12,340	
	<b>Unweighted n weighted %</b>		<b>Unweighted n weighted %</b>		<b>Unweighted n weighted %</b>		<b>Unweighted n weighted %</b>	
<b>Ethnicity</b>								
White	26,325	80.4	14,139	78.2	10,642	91.7	17,238	94.5
Indian	733	2.4	528	3.2	90	0.8	74	0.4
Pakistani	1,049	3.2	575	3.4	181	1.4	43	0.2
Bangladeshi	471	1.4	135	1.0	152	1.1	15	0.1
Black Caribbean	444	1.7	214	1.5	51	0.4	149	0.8
Black African	1,169	4.1	576	3.8	101	0.8	122	0.7
Mixed	513	1.7	309	1.9	132	1.0	301	1.7
Other	1,416	4.9	1,046	6.6	292	2.5	260	1.5
Missing	44	0.1	44	0.3	6	0.1	22	0.1
<b>Understanding of English</b>								
Fluent	29,528	91.2	15,978	90.2	11,278	96.8	18,100	99.3
Some	1,783	5.9	1,226	7.4	283	2.4	83	0.5
None	589	1.9	291	1.8	56	0.5	15	0.1
Missing	264	1.0	71	0.6	30	0.3	26	0.2
<b>Marital/partner status</b>								
Married / Living together	27,790	86.1	15,770	89.2	10,784	91.9	17,362	95.0
Single / Unsupported	3,873	12.4	1,537	9.2	741	7.0	737	4.2
Missing	501	1.5	259	1.6	122	1.1	125	0.7
<b>Index of Multiple Deprivation</b>								
1st, least deprived	4,924	14.8	2,658	12.9	2,551	20.1	3,707	20.8
2nd	5,714	17.4	2,760	14.7	2,641	23.4	3,603	19.9
3rd	5,985	18.3	3,403	19.4	2,348	21.2	3,773	21.0
4th	6,693	21.0	4,011	24.2	2,138	19.3	3,469	19.1
5th, most deprived	8,591	27.8	4,665	28.2	1,848	14.3	2,746	14.9
Missing	257	0.7	69	0.6	121	1.6	926	4.3

Clinical and risk characteristics showed a slightly different pattern (Table 24). Compared with women planning birth in the three other settings, women planning birth at home were older, with a much higher proportion of women aged over 30, and were also much less likely to be having their first baby. Women planning birth in the two types of MU were similar in these respects, although slightly fewer women planning birth in an FMU were having their first baby compared with women planning birth in an AMU. All four groups of women were similar with respect to body mass index, about which approaching 20% of women did not have any record in their notes.

**Table 24: Clinical characteristics of women (and their babies) in the Birthplace prospective cohort study by planned place of birth**

	<b>Obstetric unit</b>		<b>Alongside midwifery unit</b>		<b>Freestanding midwifery unit</b>		<b>Home</b>	
	N = 32,164		N = 17,566		N = 11,647		N = 18,224	
	Weighted N = 394,293		Weighted N = 29,940		Weighted N = 11,112		Weighted N = 12,340	
	<b>Unweighted n weighted %</b>		<b>Unweighted n weighted %</b>		<b>Unweighted n weighted %</b>		<b>Unweighted n weighted %</b>	
<b>Maternal age years</b>								
Weighted mean [sd]	28.6	[4.1]	28.6	[10.3]	28.7	[13.9]	31.1	[15.0]
11-19	2,261	6.8	1,112	6.0	685	5.8	231	1.4
20-24	6,738	20.3	3,638	19.8	2,190	19.0	1,837	10.2
25-29	9,127	28.2	5,228	29.5	3,373	29.6	4,678	25.7
30-34	8,332	26.4	4,846	28.2	3,368	28.5	6,287	34.6
35-39	4,656	14.9	2,378	14.1	1,753	14.8	4,382	23.7
40-60	1,004	3.2	323	2.1	263	2.2	769	4.2
Missing	46	0.2	41	0.3	15	0.2	40	0.3
<b>Parity</b>								
Multiparous	15,733	48.7	8,861	49.8	6,329	54.7	13,390	73.4
<b>Previous pregnancies ≥24 wks</b>								
0	16,378	51.2	8,660	49.9	5,298	45.1	4,811	26.4
1	9,500	29.4	5,938	33.4	4,056	35.3	7,045	38.5
2	3,729	11.4	2,064	11.6	1,577	13.4	3,992	22.1
≥3	2,504	7.8	859	4.9	696	5.9	2,353	12.9
Missing	53	0.2	45	0.3	20	0.2	23	0.1
<b>Body mass index</b>								
Median [IQR <sup>1</sup> ]	24.5 [22.0-28.4]		23.5 [21.0-26.4]		23.5 [21.1-26.2]		23.7 [21.2-26.5]	
Not recorded <sup>2</sup>	5,246	16.9	3,045	17.0	1,910	14.1	3,456	18.9
10-18.4	820	2.5	463	2.7	240	2.2	348	1.9
18.5-24.9	13,115	40.9	8,523	49.2	5,730	50.5	8,575	47.1
25.0-29.9	7,534	23.2	3,954	22.1	2,737	24.1	4,034	22.0
30.0-35.0	3,469	10.5	1,336	7.3	935	8.2	1,323	7.4
35.1-70	1,898	5.7	174	1.0	75	0.6	381	2.1
Missing	82	0.3	71	0.7	20	0.3	107	0.8
<b>Gestation weeks</b>								
Weighted mean [sd]	39.7	[0.8]	39.7	[1.9]	39.8	[2.5]	39.8	[3.0]
37	1,542	4.8	505	3.0	332	3.0	422	2.2
38	3,823	11.9	1,647	9.7	1,012	8.6	1,716	9.3
39	6,999	21.8	4,335	25.1	2,762	23.5	4,405	24.0
40	10,128	31.5	6,807	38.3	4,484	38.4	7,133	39.3
41	8,340	25.8	3,996	22.4	2,911	25.2	4,148	22.9
42-44	1,232	3.9	207	1.1	116	1.0	348	1.8
Missing	100	0.3	69	0.4	30	0.3	52	0.4
<b>Birthweight grams</b>								
Weighted mean [sd]	3,449.9	[328.4]	3,451.6	[795.5]	3,480.7	[1064.9]	3,551.0	[1292.1]
1,000-2,499g	681	2.2	171	1.1	106	1.0	102	0.6
2,500-2,999g	4,776	14.9	2,247	13.3	1,376	12.0	1,687	9.5
3,000-3,499g	12,072	37.6	7,088	40.7	4,572	39.5	6,458	35.4
3,500-3,999g	10,443	32.5	5,999	33.5	4,146	35.2	6,901	37.8
4,000-4,499g	3,517	10.8	1,779	9.8	1,281	11.0	2,610	14.0
4,500-7,500g	627	1.9	227	1.2	156	1.2	404	2.2
Missing	48	0.1	55	0.4	10	0.2	62	0.6

<sup>1</sup> Interquartile range

<sup>2</sup> Indicates that body mass index was not recorded in women's notes

Women planning birth in FMUs showed the lowest level of pre-existing risk, while compared with the other non-OU settings, the home birth group had the highest proportion of pre-existing risk factors and these were more likely to be obstetric rather than medical (Table 25). Risk factors identified at the start of care in labour were similar in all non-OU groups, with much lower proportions than in the OU group.

**Table 25: Risk characteristics of women in the Birthplace prospective cohort study by planned place of birth**

	<b>Obstetric unit</b>		<b>Alongside midwifery unit</b>		<b>Freestanding midwifery unit</b>		<b>Home</b>	
	N = 32,164		N = 17,566		N = 11,647		N = 18,224	
	Weighted N = 394,293		Weighted N = 29,940		Weighted N = 11,112		Weighted N = 12,340	
	<b>Unweighted n weighted %</b>		<b>Unweighted n weighted %</b>		<b>Unweighted n weighted %</b>		<b>Unweighted n weighted %</b>	
<b>Pre-existing risk factors</b>								
0	19,663	61.3	16,698	94.5	11,265	96.6	16,806	92.2
1	8,679	27.0	740	4.6	270	2.3	1,218	6.6
2+	3,645	11.2	34	0.2	16	0.1	116	0.6
Missing	177	0.5	97	0.7	96	1.0	84	0.6
<b>Type of pre-existing risk factor</b>								
Low risk	19,663	61.3	16,695	94.5	11,265	96.6	16,806	92.2
Medical condition	1,914	5.8	341	2.3	90	0.8	365	1.9
Obstetric history	9,147	28.6	423	2.5	188	1.6	924	5.1
Both medical and obstetric	1,263	3.8	10	0.1	8	0.1	45	0.2
Missing	177	0.5	97	0.7	96	1.0	84	0.6
<b>Risk at start of labour care</b>								
0	24,252	75.4	16,255	92.3	10,968	93.6	16,980	93.3
1	6,416	20.0	1,162	6.7	601	5.4	966	5.3
2+	1,349	4.2	89	0.6	55	0.6	64	0.4
Missing	147	0.4	60	0.5	23	0.4	214	1.0
<b>All risk factors</b>								
Low risk	15,756	49.1	15,498	87.5	10,626	90.6	15,724	86.4
Pre-existing risk only	8,396	26.0	683	4.3	258	2.2	1,186	6.4
Risk at start of care only	3,828	12.0	1,155	6.6	622	5.7	897	5.0
Combined risk	3,884	12.0	89	0.5	27	0.2	129	0.7
Missing	300	0.9	141	1.0	114	1.3	288	1.5

### 5.2.1 Risk profile of women planning birth in midwifery units

Table 26 and Table 27 present more detailed information about the kinds of risk factor identified in women planning birth in MUs and show the different ‘risk profile’ of these two groups. Compared with women planning birth in an AMU, women planning birth in an FMU were more likely to have no pre-existing risk factor identified. Although numbers for each type of risk factor were small, Table 26 shows that the excess in the AMU group

was largely made up of women with “infective” medical conditions and “current pregnancy problems”. Further examination of these cases showed that the infective conditions identified were almost all risk factors associated with Group B Streptococcus indicating antibiotics in labour and that most of the current pregnancy problems were related to high body mass index.

**Table 26: Type of pre-existing risk factor<sup>1</sup> identified in women planning birth in midwifery units by type of midwifery unit**

	Alongside midwifery unit N = 17,469 <sup>2</sup> Weighted N = 29,735		Freestanding midwifery unit N = 11,551 <sup>2</sup> Weighted N = 11,007	
	Unweighted n	weighted %	Unweighted n	weighted %
Low risk no risk factors identified	16,698	95.2	11,265	97.5
Cardiovascular	24	**	8	*
Respiratory	15	*	9	*
Haematological	32	**	15	**
Infective	176	1.2	18	**
Immune	2	*	0	
Endocrine	37	**	18	**
Renal	8	*	2	*
Neurological	13	*	5	*
Gastrointestinal	0		2	*
Psychiatric	4	*	1	*
Other medical	30	**	12	**
Previous obstetric history	106	0.6	58	0.5
Current pregnancy problems	259	1.5	105	0.9
Fetal indications	28	**	12	**
Previous gynaecological history	0		0	
Other obstetric	37	**	21	**
Missing	97		96	

<sup>1</sup> Using categories of conditions listed as indications for OU birth in NICE Intrapartum Care Guideline (National Collaborating Centre for Women's and Children's Health, 2007)

<sup>2</sup> Weighted and unweighted N exclude those with missing data

\*≤0.1%

\*\*<0.5%

Women planning birth in FMUs were also slightly less likely to have conditions or complications identified at the start of care in labour (Table 27), most of the difference being accounted for by a slightly higher proportion of women with proteinuria in AMUs.

**Table 27: Risk at start of labour care<sup>1</sup>: conditions and complications identified in women planning birth in midwifery units by type of midwifery unit**

	Alongside midwifery unit N = 17,506 <sup>2</sup> Weighted N = 29,797		Freestanding midwifery unit N = 11,624 <sup>2</sup> Weighted N = 11,007	
	Unweighted n	weighted %	Unweighted n	weighted %
No complications identified	16,255	92.7	10,968	94.0
Prolonged rupture of membranes >18 hours	407	2.4	243	2.2
Meconium stained liquor if membranes ruptured	250	1.5	147	1.3
Proteinuria ≥1+	400	2.2	115	1.3
Hypertension <sup>3</sup>	129	0.8	89	0.9
Abnormal vaginal bleeding	41	0.2	24	0.2
Non-cephalic presentation	36	0.2	25	0.2
Abnormal fetal heart rate	73	0.5	54	0.4
Other	17	0.1	17	0.2
Missing	60		23	

<sup>1</sup> Listed as indications for transfer in NICE Intrapartum Care Guideline (National Collaborating Centre for Women's and Children's Health, 2007)

<sup>2</sup> Weighted and unweighted N exclude those with missing data

<sup>3</sup> With either: diastolic blood pressure of ≥90mm Hg on more than one occasion 20 minutes apart or ≥100mm Hg on one occasion or systolic blood pressure ≥160mm Hg on at least one occasion.

### 5.3 Transfers from midwifery units

Overall, 25% (95% CI 23.5-27.2) of women who planned to have their baby in an MU were transferred during labour or immediately after the birth. Just over 1 in 4 women were transferred from AMUs compared with just over 1 in 5 from FMUs (Table 28). Figure 6 and Figure 7 show the variation in transfer rates in different units of the same type.

Excluding units with very imprecise transfer rate estimates due to very small numbers of births, transfer rates in FMUs ranged from 2.7% (95% CI 0-6.6) to 33.1% (95% CI 28.5-37.7), while those in AMUs ranged from 9.7% (95% CI 6.6-12.8) to 41.1% (95% CI 35.6-46.6).

In FMUs, three-quarters of transfers took place before the birth of the baby; around 15% of women planning to have their baby in an FMU gave birth in an OU and 5% were transferred after having had their baby. In AMUs more transfers (83%) took place during labour, before birth; around 22% of women planning to have their baby in an AMU gave birth in an OU and 4% were transferred in the immediate postnatal period.

**Table 28: Proportion of women transferred, timing of transfer and primary reason for transfer of women from their planned place of birth, by type of midwifery unit**

	Alongside midwifery unit N = 17,566 Weighted N = 29,940		Freestanding midwifery unit N = 11,647 Weighted N = 11,112	
	Unweighted n	weighted % (95% CI)	Unweighted n	weighted % (95% CI)
<b>Women transferred</b>	4,636	26.8 (24.5-29.1)	2,575	21.2 (19.2-23.2)
<b>Timing of transfer<sup>1</sup></b>				
During labour (before birth)	3,721	83.3	1,941 <sup>2</sup>	75.4
Immediately after birth <sup>3</sup>	752	16.7	569	24.6
Missing	163		65	
<b>Primary reason for transfer<sup>1</sup></b>				
Malposition	33	0.6	11	0.3
Malpresentation	76	1.7	42	1.6
Failure to progress 1 <sup>st</sup> stage	892	19.4	569	21.9
Fetal distress 1 <sup>st</sup> stage	320	7.1	210	8.6
Meconium staining	552	11.6	308	11.9
Epidural request	602	14.7	167	6.0
Hypertension	111	2.6	71	3.0
Intrapartum haemorrhage	86	2.0	49	1.9
Failure to progress 2 <sup>nd</sup> stage	720	15.5	380	13.8
Fetal distress 2 <sup>nd</sup> stage	159	3.5	36	1.3
Postpartum haemorrhage	134	3.4	93	4.0
Retained placenta	212	4.2	183	7.8
Repair of perineal trauma	385	8.3	190	8.3
Other before birth <sup>4</sup>	224	4.9	137	5.9
Other after birth, maternal reasons	11	0.2	22	0.9
Other after birth, neonatal reasons	5	0.1	70	3.0
Missing	114		37	

<sup>1</sup> As a proportion of women transferred, excluding missing values

<sup>2</sup> Includes 9 women for whom transfer began before the birth, but who gave birth in an ambulance during transfer

<sup>3</sup> Within 24 hours of birth

<sup>4</sup> Including: prolonged rupture of membranes; failure to progress with no stage of labour specified; fetal distress with no stage specified or other concerns about the baby during labour; concerns about the mother during labour; pain relief other than epidural; maternal request, other than for epidural; non-medical reasons, including NHS resource issues such as staffing; clear breach of MU criteria or other factors that might indicate unsuitability for out of hospital birth.

The most common reason for transfer from both types of unit was ‘failure to progress’. In both types of unit, failure to progress (combining 1<sup>st</sup> and 2<sup>nd</sup> stage and where no stage was specified) accounted for 35% of transfers. Meconium stained liquor and fetal distress (combining 1<sup>st</sup> and 2<sup>nd</sup> stage and where no stage was specified) were also common reasons for transfer, accounting for around 11% of transfers each in both types of unit. For both failure to progress and fetal distress, while overall proportions were very similar for the two types of unit, there was an indication that transfers for these reasons were more likely to take place in the 2<sup>nd</sup> stage in AMUs.

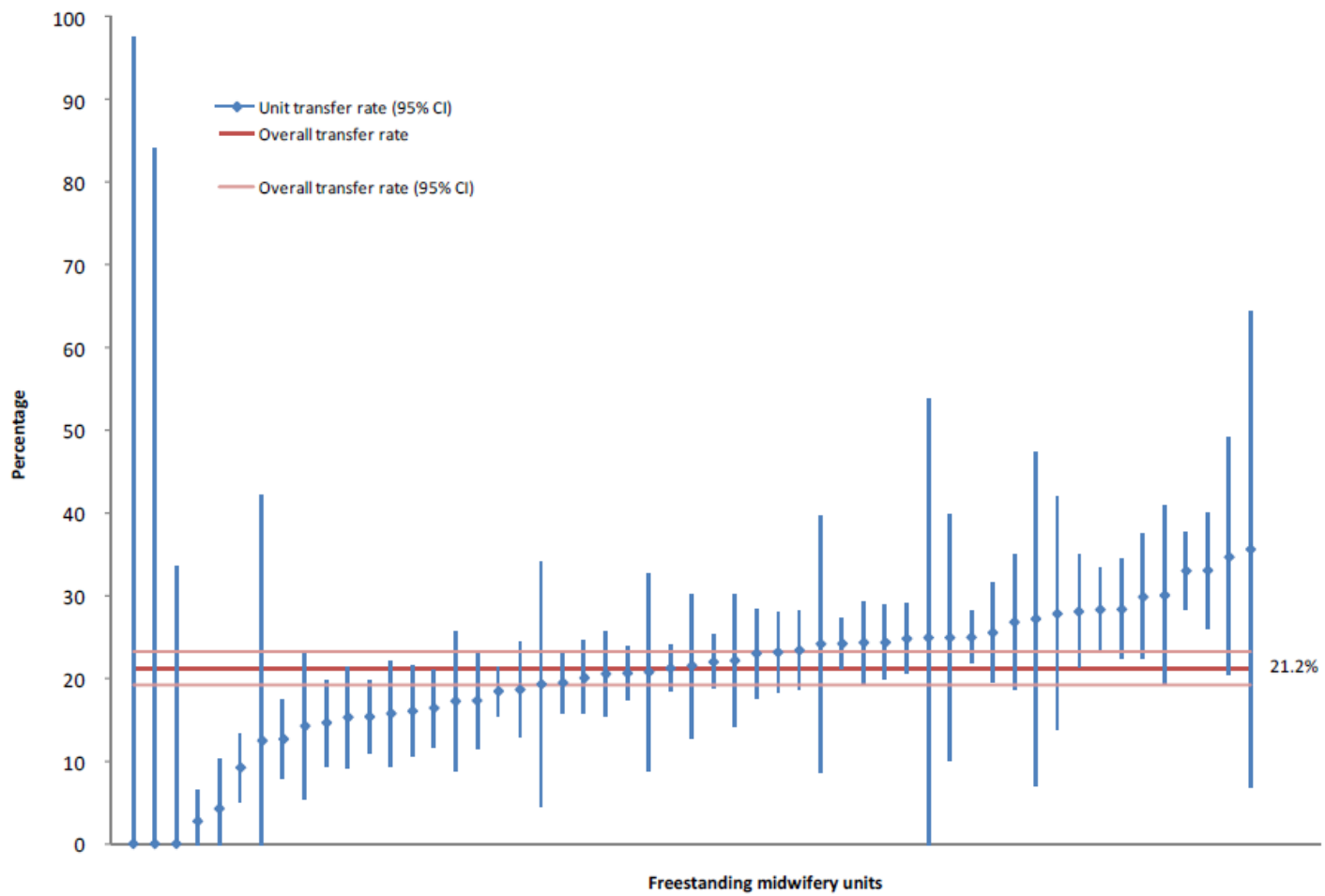


Figure 6: Overall transfer rate and within each freestanding midwifery unit

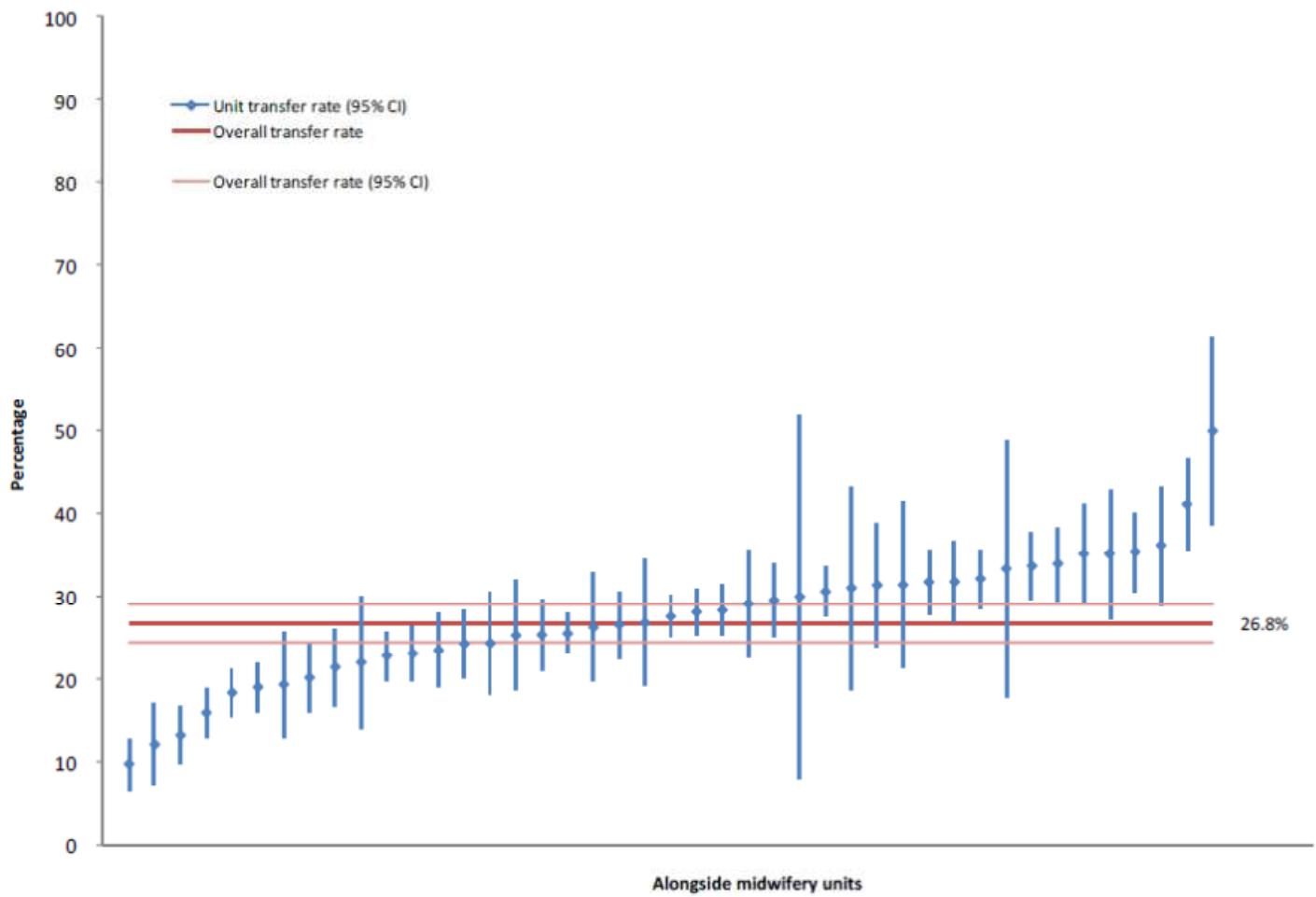


Figure 7: Overall transfer rate and within each alongside midwifery unit

There were two clear differences between the reasons for transfer from the two types of unit. First, in AMUs epidural request was the second most common reason for transfer, with more than twice as many women transferred for this reason compared with the FMU group (14.7% vs. 6%). Second, in FMUs neonatal reasons accounted for a higher proportion of transfers (3% vs. 0.1%), probably because in an AMU if the baby needed additional care or support the mother did not need to be transferred, but this cannot be confirmed with available data. A higher proportion of women transferred because of a retained placenta from FMUs, but this did not represent a much higher incidence of retained placenta in that group; 1.6% of all women in FMUs were transferred because of a retained placenta compared with 1.1% of all women in AMUs.

### 5.3.1 The process of transfer

Table 29 and Table 30 highlight some differences in the process of transfer with the potential to impact on the experience of transfer for women. Almost all women who transferred from FMUs travelled in an ambulance, with less than 3% travelling by car (Table 29). Most women transferring from an AMU did so in a wheelchair or on a trolley, with around 1 in 5 walking and less than 10% on a bed. Less than 1% of women transferred to OU care, but did not move from the MU; half of these ‘transfers’ took place after the birth.

**Table 29: Mode of transfer by type of midwifery unit**

Mode of transfer <sup>1</sup>	Alongside midwifery unit N(transferred) = 4,636		Freestanding midwifery unit N(transferred) = 2,575	
	Unweighted n	weighted %	Unweighted n	weighted %
Ambulance	0		2,439	97.7
Private car / taxi	0		58	2.3
Walking	723	18.0	0	
Wheelchair/trolley	3,298	74.3	0	
Bed	362	7.3	0	
Remained on unit <sup>2</sup>	19	0.4	0	
Missing	234		78	

<sup>1</sup> As a proportion of women transferred, excluding missing values

<sup>2</sup> Women who were transferred to OU care, but who did not move to the OU

The timing of the decision to transfer relative to the start of labour care was similar in both types of unit, with a median duration of just over 5 hours (Table 30). The slightly longer median duration between the decision to transfer and the start of transfer in FMUs compared with AMUs may reflect the added complexity of arranging an ambulance transfer, but also hides some variation. In AMUs for almost 20% of transfers the decision to transfer and the start of transfer were recorded as the same time, compared with 7% in FMUs. Similar proportions of transfers began within one hour of the decision to transfer in each type of unit (94% in FMUs compared with 93% in AMUs), but this also varied depending on whether the transfer was before or after birth, with longer delays for transfers after birth.

**Table 30: Duration of transfer and timing relative to start of care in midwifery unit and obstetric unit**

	Freestanding midwifery unit N(transferred) = 2,575			Alongside midwifery unit N(transferred) = 4,636		
	Hours:minutes			Hours:minutes		
	Median	IQR <sup>1</sup>	Range	Median	IQR <sup>1</sup>	Range
Start of labour care to decision to transfer	5:25	2:52-8:40	0-16:45	5:19	2:45-8:34	0-24:00
Decision to transfer to start of transfer	0:22	0:15-0:34	0-6:07	0:10	0:04-0:23	0-13:00
Start of transfer to start of care in obstetric unit	0:31	0:25-0:42	0:01-12:00	0:04	0-0:10	0-6:30

<sup>1</sup> Interquartile range

The duration of transfer, from the start of transfer to the start of care in the OU, showed the most marked variation between the two types of MU. In almost 30% of transfers from AMUs the time of the start of transfer and start of care in the OU were recorded as the same, reflecting the very short transfer time involved. Almost all (97%) transfers from AMUs were complete within 30 minutes compared with 50% from FMUs. In 1% of transfers from AMUs and 6% from FMUs, the duration of transfer was more than one hour. Again, in both types of unit, slightly higher proportions of transfers before birth were completed within one hour compared with transfers after birth. Some extreme values, particularly for the time from the decision to transfer to the start of transfer and for

the duration of transfer seem implausible, but given available data could not be ruled out as impossible and were therefore included in the analysis.

### **5.3.2 Factors associated with transfer**

#### ***5.3.2.1 Freestanding midwifery units***

In unadjusted analyses there was a strong association between parity and transfer, with nulliparity and having had only one previous pregnancy associated with higher odds of transfer (Table 31). Pre-existing risk and risk identified at the start of care in labour were both associated with higher odds of transfer, with the small group of women having both types of risk factor having the highest odds of transfer. A body mass index of over 30 was associated with lower odds of transfer compared with those whose BMI was in the normal range, while women for whom BMI was not recorded in their notes had higher odds of transfer. Women giving birth at 41 to 44 weeks' gestation had higher odds of transfer and those giving birth at 38 or 39 weeks' gestation had lower odds of transfer compared with women giving birth at 40 weeks. Women aged 35 years or older had lower odds of transfer compared with women aged 25-29 years. Socio-demographic factors were generally less strongly associated with transfer, but women of Indian origin were more likely to be transferred and women of Pakistani or Bangladeshi origin were less likely to be transferred compared with White women. There was an indication that having less fluent understanding of English was associated with higher odds of transfer, although the confidence interval overlapped one. Marital status and index of multiple deprivation showed no significant association with transfer.

**Table 31: Association between socio-demographic and clinical characteristics and transfer in women planning birth in freestanding midwifery units**

	Women <sup>1</sup> N = 11,577 Weighted N = 11,043				Unadjusted analysis		
	Transferred		Not transferred		OR	95% CI	p value
	n	weighted %	n	weighted %			
<b>Ethnicity</b>							
White	2303	20.8	8277	79.2	1		
Indian	27	32.0	63	68.0	1.80	1.30-2.50	0.001
Pakistani / Bangladeshi	48	14.5	280	85.5	0.65	0.51-0.83	0.001
Black Caribbean / African	32	21.7	120	78.3	1.06	0.53-2.09	0.9
Mixed	24	17.8	107	82.2	0.83	0.41-1.67	0.6
Other	69	22.6	221	77.4	1.12	0.85-1.47	0.4
<b>Understanding of English</b>							
Fluent	2413	20.6	8802	79.4	1		
Some or no understanding	85	24.8	248	75.2	1.27	0.99-1.63	0.06
<b>Marital / partner status</b>							
Married / Living together	2322	20.8	8395	79.2	1		
Single / Unsupported	160	19.7	578	80.3	0.93	0.65-1.33	0.7
<b>IMD quintiles</b>							
1st, least deprived	550	20.0	1984	80.0	1		
2nd	570	20.7	2058	79.3	1.04	0.86-1.25	0.7
3rd	522	21.0	1811	79.0	1.06	0.88-1.28	0.5
4th	450	20.0	1675	80.0	1.00	0.78-1.29	1.0
5th, most deprived	369	20.2	1468	79.8	1.01	0.83-1.22	0.9
<b>Maternal age (years)</b>							
<20	161	24.6	521	75.4	1.21	0.96-1.53	0.1
20-24	497	22.0	1678	78.0	1.04	0.91-1.21	0.5
25-29	745	21.2	2611	78.8	1		
30-34	727	20.6	2618	79.4	0.96	0.84-1.10	0.6
≥35	371	17.5	1633	82.5	0.78	0.65-0.94	0.01
<b>Parity</b>							
Nulliparous	1911	34.6	3350	65.4	5.32	4.74-5.97	<0.0001
Multiparous	580	9.1	5716	90.9	1		
<b>Previous pregnancies ≥ 24 wks</b>							
0	1911	34.6	3350	65.4	6.87	5.65-8.35	<0.0001
1	420	10.1	3619	89.9	1.46	1.18-1.80	0.002
≥2	160	7.2	2097	92.8	1		
<b>Body Mass Index</b>							
Not recorded	535	27.6	1355	72.4	1.54	1.17-2.04	0.003
<18.5	47	19.8	191	80.2	1.00	0.68-1.46	1.0
18.5-24.9	1195	19.8	4513	80.2	1		
25.0-29.9	565	20.6	2159	79.4	1.05	0.92-1.19	0.4
≥30	155	15.1	842	84.9	0.72	0.60-0.86	0.001
<b>Gestation (weeks)</b>							
37	59	18.4	269	81.6	0.87	0.63-1.20	0.4
38	183	17.3	823	82.7	0.80	0.65-0.99	0.04
39	477	16.3	2268	83.7	0.75	0.63-0.88	0.001
40	960	20.7	3496	79.3	1		
41-44	811	25.9	2201	74.1	1.34	1.16-1.54	<0.0001
<b>Pre-existing risk</b>							
Low risk	2402	20.5	8799	79.5	1		
Higher risk	78	29.2	203	70.8	1.60	1.20-2.13	0.002
<b>Risk at start of care</b>							
No risk factors	2196	19.4	8710	80.6	1		
≥1 risk factor	301	42.5	347	57.5	3.08	2.16-4.37	<0.0001

Table continued overleaf

Table 31 continued:

	Women <sup>1</sup>				Unadjusted analysis		
	N =11,577		Weighted N = 11,043		OR	95% CI	p value
	Transferred n	weighted %	Not transferred n	weighted %			
<b>Combined risk</b>							
Low risk	2114	19.1	8455	80.9	1		
Pre-existing risk only	64	27.7	190	72.3	1.62	1.18-2.23	0.004
Risk at start of care only	284	42.2	331	57.8	3.09	2.16-4.40	<0.0001
Combined risk	14	51.4	12	48.6	4.47	2.06-9.67	<0.0001

<sup>1</sup> In order to enable appropriate comparison between analyses for FMUs and AMUs, women transferred for neonatal reasons were excluded from all univariable and multivariable analyses

Multivariable analysis, mutually adjusting for other variables, made very little change to the overall pattern of association and estimated odds ratios seen in the univariable analyses, but revealed a significant interaction between parity and age ( $p < 0.0001$ ), indicating that the association between age and transfer varied by parity. Stratified results presented in Table 32 show that for women having their first baby increasing age was associated with increasing odds of transfer ( $p < 0.0001$ ), while for women having a second or subsequent baby there was no association between age and transfer ( $p = 0.3$ ). Compared with the reference group of multiparous women aged 25-29 years, nulliparous women aged less than 20 years had more than four times the odds of transfer (adjusted OR 4.54, 95% CI 3.12-6.61), but the odds of transfer increased with increasing age so that nulliparous women in the oldest age group (35 years or over) had more than seven times the odds of being transferred (adjusted OR 7.38, 95% CI 5.42-10.05).

**Table 32: Factors associated with transfer from freestanding midwifery units**

			N=11,275; weighted N=10,695		
	Unadjusted OR	95% CI	Adjusted OR <sup>1</sup>	95% CI	p-value
<b>Parity &amp; maternal age (years)</b>					
<b>Nulliparous</b>					
<20	3.81	2.79-5.20	4.54	3.12-6.61	
20-24	4.39	3.56-5.43	4.59	3.62-5.83	
25-29	5.72	4.60-7.10	5.90	4.66-7.47	
30-34	6.63	5.74-7.66	6.63	5.63-7.81	
≥35	7.62	5.75-10.11	7.38	5.42-10.05	
					<0.0001
<b>Multiparous</b>					
<20	1.11	0.51-2.45	1.16	0.50-2.66	
20-24	1.34	0.94-1.91	1.45	0.99-2.13	
25-29	1		1		
30-34	0.92	0.71-1.18	0.90	0.70-1.16	
≥35	1.04	0.76-1.41	1.01	0.73-1.38	
					0.3
<b>Risk status</b>					
Low risk	1		1		
Pre-existing risk only	1.62	1.18-2.23	2.58	1.77-3.75	
Risk at start of care only	3.09	2.16-4.40	2.97	2.04-4.30	
Combined risk	4.47	2.06-9.67	6.11	2.86-13.05	
					<0.0001
<b>Gestation (weeks)</b>					
37	0.87	0.63-1.20	0.73	0.53-1.00	
38	0.80	0.65-0.99	0.76	0.61-0.95	
39	0.75	0.63-0.88	0.73	0.62-0.87	
40	1		1		
41-44	1.34	1.16-1.54	1.34	1.17-1.53	
					<0.0001
<b>Body Mass Index (BMI)</b>					
Not recorded	1.54	1.17-2.04	1.61	1.20-2.16	
<18.5	1.00	0.68-1.46	1.08	0.74-1.55	
18.5-24.9	1		1		
25.0-29.9	1.05	0.92-1.19	1.16	1.00-1.36	
≥30	0.72	0.60-0.86	0.74	0.61-0.90	
					0.0005
<b>Ethnicity</b>					
White	1		1		
Indian	1.80	1.30-2.50	1.92	1.27-2.92	
Pakistani / Bangladeshi	0.65	0.51-0.83	0.87	0.70-1.08	
Black Caribbean / African	1.06	0.53-2.09	1.13	0.55-2.36	
Mixed	0.83	0.41-1.67	0.77	0.37-1.63	
Other	1.12	0.85-1.47	1.15	0.88-1.49	
					0.01
<b>Marital / partner status</b>					
Married / Living together	1		1		
Single / Unsupported	0.93	0.65-1.33	0.69	0.49-0.97	
					0.04

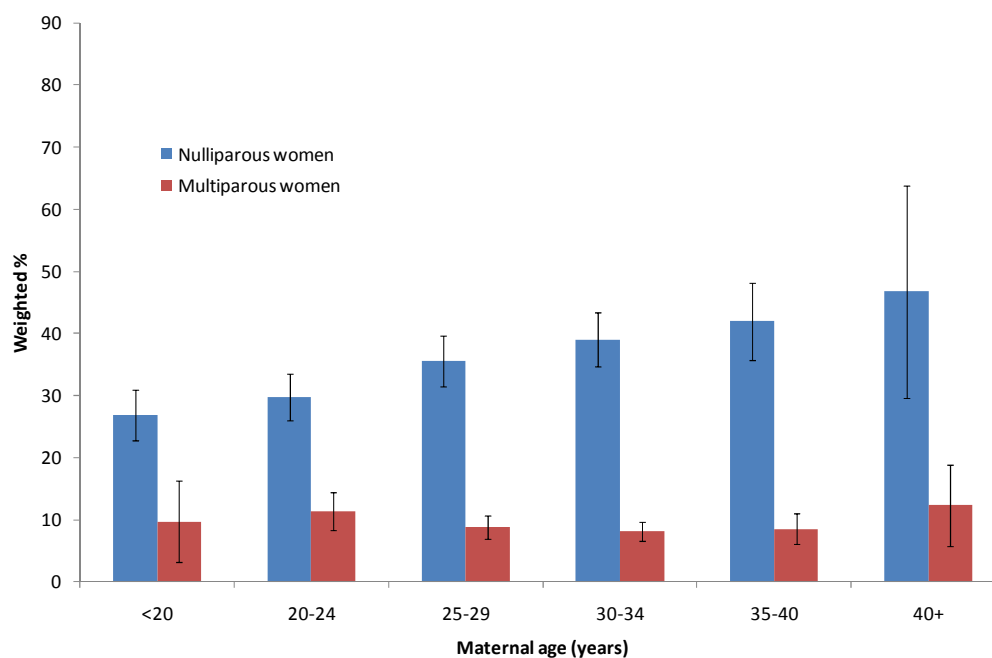
<sup>1</sup> Mutually adjusted for all other variables listed in the table

The proportions of nulliparous and multiparous women transferred in each age group are presented in Table 33 and in Figure 8. These show that in women having a second or subsequent baby and aged 25-29 years the transfer rate was 8.8% (95% CI 6.9-10.7); rates

for multiparous women in other age groups were not significantly different from this. In contrast, for women having a first baby the transfer rate showed a clear relationship with age, increasing from 26.9% (95% CI 22.7-31.0) in women aged less than 20 years to 46.8% (95% CI 29.7-63.8) in women aged over 40 years.

**Table 33: Association between parity and transfer stratified by age in women planning birth in freestanding midwifery units**

Maternal age (years)	Nulliparous women				Multiparous women			
	n		weighted %		n		weighted %	
	Transferred	Not transferred	Transferred	Not transferred	Transferred	Not transferred	Transferred	Not transferred
<20	150	26.9	430	73.1	10	9.7	91	90.3
20-24	398	29.8	852	70.2	97	11.4	825	88.6
25-29	576	35.5	988	64.5	165	8.8	1,618	91.2
30-34	547	39.0	789	61.0	174	8.1	1,829	91.9
35-39	213	41.9	263	58.1	110	8.6	1,155	91.4
≥40	25	46.8	23	53.2	23	12.4	192	87.6
<b>Overall</b>	1,911	34.6	3,350	65.4	580	9.1	5,716	90.9



**Figure 8: Percentage (with 95% confidence intervals) of women transferred from freestanding midwifery units by age and parity**

In the adjusted analysis the relationship between both types of risk factor and transfer remained strong. Women with a previously identified risk factor had over 2.5 times the odds of transfer compared with 'low risk' women (adjusted OR 2.58, 95% CI 1.77-3.75). The odds of transfer were almost three times higher for women who had a complication identified at the start of labour care, but did not have a previously identified risk factor, compared with 'low risk women (adjusted OR 2.97, 95% CI 2.04-4.30). For the small group of women who had both a previously identified risk factor and a further complication identified at the start of labour care, the odds of transfer were greatly increased, but confidence intervals were wide and compatible with a range of effects (adjusted OR 6.11, 95% CI 2.86-13.05).

After adjustment for other factors, women going into labour between 41 and 44 weeks' gestation were more likely to be transferred than women whose pregnancy lasted 40 weeks; this longer gestation was associated with a 34% increase in the odds of transfer (adjusted OR 1.34, 95% CI 1.17-1.53). Women for whom there was no record of body mass index in their maternity notes were more likely to be transferred compared with the reference group of women with BMI in the 'normal' range (adjusted OR 1.61, 95% CI 1.20-2.16). Further exploration of the percentage of women with unrecorded BMI in each unit showed considerable variation, ranging from 0 to more than 50%. Unrecorded BMI was also 'clustered' in particular units; almost 70% of the women with unrecorded BMI were from eight FMUs. In only three of these units was the overall transfer rate higher than average, but in six of these units women with unrecorded BMI were significantly more likely to be transferred than those with BMI recorded in their notes. Transfer rates for women with unrecorded BMI in these eight units ranged from 20% to 53%.

The increased risk of transfer seen in the univariable analysis for the small group of Indian women remained after adjustment for other factors; this group had almost twice the odds

of transfer compared with White women (adjusted OR 1.92, 95% CI 1.27-2.92). Exploring the distribution of ethnicity within units revealed that only three FMUs collected data on significant proportions of women from ethnic minority backgrounds and over 70% of the Indian women in this study were from these three and one other FMU. In three of these units, the transfer rate was higher than the overall transfer rate in FMUs, but in only one was this difference statistically significant.

Finally, a small, but statistically significant, association between marital / partner status and transfer also emerged with single, unsupported women being less likely to be transferred compared with women who were married or living with a partner (adjusted OR 0.69, 95% CI 0.49-0.97).

#### ***5.3.2.2 Alongside midwifery units***

In unadjusted analyses there was a strong association between parity and transfer in women planning birth in AMUs (Table 34), similar to that seen in the FMU group. While risk identified at the start of care in labour was associated with higher odds of transfer, pre-existing risk showed no association with transfer. As in the FMU group, a body mass index of over 30 was associated with lower odds of transfer compared with those whose BMI was in the normal range, but in the AMU group there was no association between the recording of BMI and transfer. The association between gestation and transfer was similar to that seen in the FMU group; women giving birth at 41 to 44 weeks' gestation had higher odds of transfer and those giving birth at 37-39 weeks' gestation had lower odds of transfer compared with women giving birth at 40 weeks. The relationship between maternal age and transfer showed no clear association. As in the FMU group, ethnicity showed no clear association with transfer although women of Pakistani or Bangladeshi origin and Black women were less likely to be transferred compared with White women. English language fluency and marital status showed no significant association with transfer. In contrast with

the FMU group, in women planning birth in an AMU, there was a strong association between index of multiple deprivation quintile and transfer, with women in all four less deprived quintiles being more likely to be transferred compared with the most deprived group.

**Table 34: Association between socio-demographic and clinical characteristics and transfer in women planning birth in alongside midwifery units**

	Women <sup>1</sup> N = 17,561 Weighted N = 29,931				Unadjusted analysis		
	Transferred		Not transferred		OR	95% CI	p value
	n	weighted %	n	weighted %			
<b>Ethnicity</b>							
White	3,847	27.7	10,287	72.3	1		
Indian	164	30.8	364	69.2	1.16	0.93-1.44	0.2
Pakistani / Bangladeshi	126	18.9	584	81.1	0.61	0.42-0.88	0.01
Black Caribbean / African	151	18.7	639	81.3	0.60	0.46-0.78	<0.0001
Mixed	66	26.7	243	73.3	0.95	0.52-1.75	0.9
Other	262	25.6	784	74.4	0.90	0.71-1.13	0.3
<b>Understanding of English</b>							
Fluent	4,238	27.2	11,735	72.8	1		
Some or no understanding	377	24.0	1,140	76	0.85	0.68-1.06	0.1
<b>Marital / partner status</b>							
Married / Living together	4,136	26.6	11,630	73.4	1		
Single / Unsupported	429	28.6	1,107	71.4	1.11	0.88-1.39	0.4
<b>IMD quintiles</b>							
1st, least deprived	757	28.6	1,900	71.4	1.36	1.09-1.71	0.009
2nd	796	29.6	1,964	70.4	1.43	1.14-1.79	0.003
3rd	936	28.7	2,465	71.3	1.37	1.17-1.61	<0.0001
4th	1,069	26.9	2,941	73.1	1.25	1.08-1.44	0.003
5th, most deprived	1,046	22.7	3,618	77.3	1		
<b>Maternal age (years)</b>							
<20	295	27.4	816	72.6	0.96	0.83-1.12	0.6
20-24	864	24.5	2,773	75.5	0.83	0.73-0.94	0.005
25-29	1,445	28.1	3,782	71.9	1		
30-34	1,327	27.6	3,518	72.4	0.97	0.90-1.05	0.5
≥35	687	25.8	2,013	74.2	0.89	0.78-1.02	0.09
<b>Parity</b>							
Nulliparous	3,496	40.5	5,162	59.5	4.50	4.03-5.02	<0.0001
Multiparous	1,123	13.1	7,735	86.9	1		
<b>Previous pregnancies ≥ 24 wks</b>							
0	3,496	40.5	5,162	59.5	5.72	4.95-6.61	<0.0001
1	829	14.4	5,107	85.6	1.41	1.23-1.62	<0.0001
≥2	294	10.6	2,628	89.4	1		
<b>Body Mass Index</b>							
Not recorded	772	25.5	2,271	74.5	0.88	0.65-1.19	0.4
<18.5	123	27.4	340	72.6	0.97	0.69-1.36	0.8
18.5-24.9	2,339	28.1	6,183	71.9	1		
25.0-29.9	1,018	26.4	2,934	73.6	0.92	0.82-1.03	0.1
≥30	357	23.3	1,153	76.7	0.78	0.63-0.96	0.02

Table continued overleaf

Table 34 continued:

	Women <sup>1</sup>				Unadjusted analysis		
	N = 17,561				OR	95% CI	p value
	Weighted N = 29,931						
	Transferred n	weighted %	Not transferred n	weighted %			
<b>Gestation (weeks)</b>							
37	103	21.2	401	78.8	0.73	0.54-0.99	0.04
38	309	19.1	1,337	80.9	0.64	0.55-0.74	<0.0001
39	950	22.8	3,383	77.2	0.80	0.71-0.90	0.001
40	1,834	27.0	4,972	73.0	1		
41-44	1,409	34.4	2,794	65.6	1.42	1.26-1.60	<0.0001
<b>Pre-existing risk</b>							
Low risk	4,401	26.8	12,289	73.2	1		
Higher risk	206	28.0	568	72	1.06	0.82-1.38	0.6
<b>Risk at start of care</b>							
No risk factors	4,018	25.1	12,232	74.9	1		
≥1 risk factor	596	48.1	655	51.9	2.76	2.28-3.35	<0.0001
<b>Combined risk</b>							
Low risk	3,839	25.1	11,654	74.9	1		
Pre-existing risk only	162	25.1	521	74.9	1.00	0.81-1.24	1.0
Risk at start of care only	549	48.1	606	51.9	2.76	2.25-3.37	<0.0001
Combined risk	44	51.0	45	49.0	3.10	1.80-5.34	<0.0001

<sup>1</sup> In order to enable appropriate comparison between analyses for FMUs and AMUs, women transferred for neonatal reasons were excluded from all univariable and multivariable analyses

In the multivariable analysis (Table 35) fewer factors were found to make a significant contribution to the model than in the FMU group and the estimated odds ratios changed little from those seen in the univariable analyses. A similar significant interaction between parity and age ( $p < 0.0001$ ) was seen in this group, showing the same modification of the association between age and transfer by parity. Nulliparous women aged less than 20 years had over two and a half times the odds of transfer (adjusted OR 2.58, 95% CI 2.18-3.05), compared with the reference group of multiparous women aged 25-29 years, and the odds of transfer for nulliparous women increased with increasing age so that those in the oldest age group (35 years or over) had six times the odds of being transferred (adjusted OR 6.02, 95% CI 4.86-7.45).

**Table 35: Factors associated with transfer from alongside midwifery units**

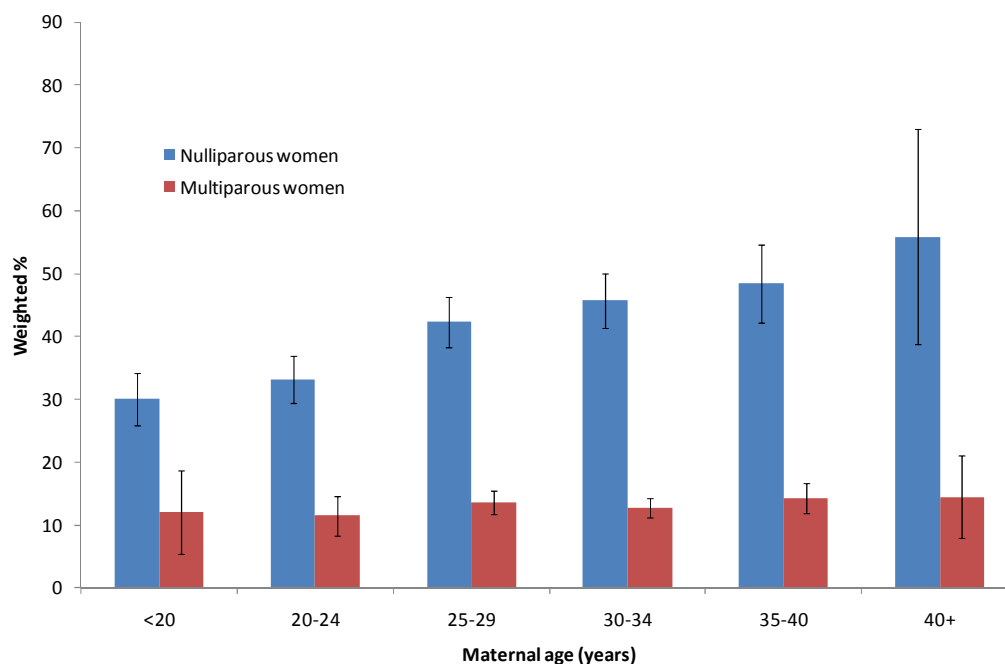
	Unadjusted OR	95% CI	N=17,298; weighted N=29,387		
			Adjusted OR <sup>1</sup>	95% CI	p-value
<b>Parity &amp; maternal age (years)</b>					
<b>Nulliparous</b>					
<20	2.74	2.33-3.23	2.58	2.18-3.05	
20-24	3.17	2.71-3.70	3.12	2.64-3.69	
25-29	4.68	3.80-5.75	4.54	3.66-5.64	
30-34	5.37	4.37-6.59	5.27	4.22-6.57	
≥35	6.14	5.00-7.53	6.02	4.86-7.45	
					<0.0001
<b>Multiparous</b>					
<20	0.88	0.50-1.54	0.87	0.48-1.55	
20-24	0.83	0.69-1.00	0.82	0.68-0.99	
25-29	1		1		
30-34	0.93	0.79-1.10	0.91	0.76-1.08	
≥35	1.07	0.89-1.29	1.02	0.85-1.24	
					0.15
<b>Risk status</b>					
Low risk	1		1		
Pre-existing risk only	1.00	0.81-1.24	1.18	0.93-1.50	
Risk at start of care only	2.76	2.25-3.37	2.58	2.08-3.21	
Combined risk	3.10	1.80-5.34	3.98	2.30-6.88	
					<0.0001
<b>Gestation (weeks)</b>					
37	0.73	0.54-0.99	0.66	0.46-0.94	
38	0.64	0.55-0.74	0.58	0.50-0.67	
39	0.80	0.71-0.90	0.77	0.69-0.86	
40	1		1		
41-44	1.42	1.26-1.60	1.38	1.23-1.55	
					<0.0001

<sup>1</sup> Mutually adjusted for all other variables listed

The proportions of nulliparous and multiparous women transferred in each age group are shown in Table 36 and in Figure 9. In women having a second or subsequent baby transfer rates ranged from 11.1% to 14.5%, but were not significantly different from that of the reference multiparous 25-29 year old group. For women having a first baby the transfer rate showed a clear relationship with age, increasing from 30.0% (95% CI 26.5-33.6) in those aged less than 20 years to 55.8% (95% CI 31.9-79.7) in women aged 40 years or over.

**Table 36: Association between parity and transfer stratified by age in women planning birth in alongside midwifery units**

Maternal age (years)	Nulliparous women				Multiparous women			
	n		weighted %		n		weighted %	
	Transferred	Not transferred	Transferred	Not transferred	Transferred	Not transferred	Transferred	Not transferred
<20	275	30.0	663	70.0	19	12.1	149	87.9
20-24	701	33.2	1,434	66.8	161	11.5	1,330	88.5
25-29	1,114	42.3	1,516	57.7	328	13.5	2,261	86.5
30-34	972	45.7	1,122	54.3	352	12.7	2,389	87.3
35-39	397	48.4	388	51.6	221	14.3	1,364	85.7
≥40	30	55.8	30	44.2	37	14.5	224	85.5
<b>Overall</b>	<b>3,496</b>	<b>40.5</b>	<b>5,162</b>	<b>59.5</b>	<b>1,123</b>	<b>13.1</b>	<b>7,735</b>	<b>86.9</b>



**Figure 9: Percentage (with 95% confidence intervals) of women transferred from alongside midwifery units by age and parity**

As in the univariable analysis, after adjustment for other factors there was no significant association between having a previously identified risk factor and transfer. The odds of transfer were more than twice as high for women who had a complication identified at the

start of labour care, but did not have a previously identified risk factor, compared with 'low risk women (adjusted OR 2.58, 95% CI 2.08-3.21). For the small group of women who had both a previously identified risk factor and a further complication identified at the start of labour care, the odds of transfer were four times higher compared with 'low risk' women (adjusted OR 3.98, 95% CI 2.30-6.88). Women going into labour between 41 and 44 weeks' gestation were more likely to be transferred than women whose pregnancy lasted 40 weeks; this longer gestation was associated with a 38% increase in the odds of transfer (adjusted OR 1.38, 95% CI 1.23-1.55). There were also indications that gestation of less than 40 weeks was associated with lower odds of transfer.

#### **5.4 Discussion**

Overall, 25% (95% CI 24-27) of women who planned to have their baby in an MU were transferred during labour or immediately after the birth. The transfer rate in FMUs was lower, at 21% (95% CI 19-23), compared with in AMUs (27%; 95% CI 25-29). These rates are at the higher end of the range of transfer rates reported in other published UK studies (Andres and Rankin, 2005; Campbell et al., 1999; Gould et al., 2004; Gowers, 2001; Hogg et al., 2007; Hundley et al., 1994; MacVicar et al., 1993; Mahmood, 2003; Mansfield, 2005; Rogers et al., 2010; Saunders et al., 2000; Smethurst, 1998). Transfer rates varied widely between different units. Estimates of transfer rates for some units, particularly FMUs, were imprecise, with wide confidence intervals, reflecting the small number of births in some FMUs, but overall the extent of variation in transfer rates between units of the same type was striking. Differences in admission and transfer criteria and perceptions, or the reality, of the ease of transfer between MU and obstetric care may be factors behind some of the differences revealed around transfer rates and the transfer process, although there are likely to be other factors that also have an impact.

Reasons for transfer were also in line with the findings of research reviewed in Chapter 2, showing failure to progress as the most common reason explaining a third of transfers from both types of MU. The suggestion seen in the literature review that transfer because of maternal request for an epidural was more common from AMUs was borne out by these results; women were more than twice as likely to be transferred from an AMU for an epidural than from an FMU (15% vs 6%). It is likely that a number of factors are at work here. It is possible that women planning birth in an FMU do so in part because they would prefer to give birth without the use of invasive analgesia or at least, given the likely transfer time to an OU, are aware that it will be less readily available. Women planning birth in an AMU may be more readily accepting of medical pain relief. It has also been suggested that midwives working in FMUs may be more skilled and experienced in supporting women through 'normal' birth without additional pain relief, while AMU midwives may be more accepting of the 'medical model' and therefore more inclined to offer or suggest an epidural (Walsh, 2007). It is also worth noting that transfers after birth for concerns about the baby only featured in significant numbers in women planning birth in FMUs. This is almost certainly because women whose babies have problems following birth in an AMU are unlikely to need to be transferred themselves.

These analyses also provide an important insight into the factors that are associated with an increased risk of transfer. Transfer affects a significant proportion of women; where risk characteristics are known before the woman goes into labour, this information can be used to develop more appropriate selection criteria for MU birth and to inform women's decisions about where to plan to have their baby. In terms of socio-demographic and clinical characteristics, the women planning birth in the two types of MU were different from each other, and from women planning birth in other settings, so separate multivariable analyses were carried out for the different types of MU.

The literature review indicated that almost all previous studies have found an association between parity and the risk of transfer, with women having their first baby having an increased risk of being transferred. The analyses of data from the Birthplace cohort study reported in this thesis support, and importantly quantify, this finding for both settings. The analyses clearly identified that, for women having their first baby, increasing age was associated with an increased risk of transfer, after adjusting for other relevant socio-demographic and clinical factors. In both types of MU, transfer rates for multiparous showed no significant variation in women in different age groups.

Increasing or older maternal age is associated with a range of pregnancy complications and adverse outcomes (RCOG 56th Study Group, 2009) and there is some evidence that adverse outcomes may also be more likely in women who become pregnant for the first time at a later age (Delpisheh et al., 2008). This is borne out in the results reported here; for first time mothers, but not for women having a second or subsequent baby, increasing age appears to be associated with an increasing prevalence of complications arising during labour and requiring medical supervision or treatment. Women having a second or subsequent pregnancy are likely to have fewer complications and shorter labours than women having a first baby, but also because these women have an obstetric 'history' enabling more accurate and reliable risk assessment during pregnancy, women at 'higher risk' of complications have the opportunity to plan birth in an OU. Another possible contribution is midwives' 'threshold' for transfer, which may vary for different groups of women.

In both MU settings, longer gestation was associated with an increased risk of transfer compared with women whose pregnancy lasted 40 weeks. After adjustment for all other relevant factors, the odds of transfer for women with a gestation of between 41 and 44 weeks were 34% higher in FMUs and 38% higher in AMUs than for women whose

pregnancy lasted 40 weeks. This is in line with epidemiological evidence of an increasing risk of complications and adverse outcome with increasing gestational age beyond 40 weeks (National Collaborating Centre for Women's and Children's Health, 2008b). In both settings there was an indication that shorter gestation (38 and 39 weeks) was associated with lower odds of transfer, although this effect appeared stronger in women planning birth in AMUs.

Having a pre-existing medical or obstetric condition associated with being at 'higher risk' was also significantly associated with transfer from FMUs, but not from AMUs where the transfer rate in low risk and 'higher risk' women was the same at 25%. Finally and perhaps reassuringly, risk factors identified at the start of care in labour were positively associated with transfer from both settings, with approximately double the risk of transfer for women with one or more risk factor compared with those with none. Indeed, since these risk factors are those listed in the NICE Intrapartum Care Guidelines as factors to be considered as indications for intrapartum transfer, higher transfer rates than those seen (43% in FMUs and 48% in AMUs) might have been expected (National Collaborating Centre for Women's and Children's Health, 2007).

The finding that women for whom body mass index was not recorded in maternity notes had a higher risk of transfer from FMUs compared with women whose BMI was in the 'normal' range was unexpected and is difficult to explain. Unrecorded BMI was included as a category in the analysis because of the high proportion of women in this group. It was assumed that lack of measurement, or lack of recording of measurement, of BMI might be more likely in women judged to be of normal BMI by the midwife at booking, but unrecorded BMI may also be associated with other factors. In a study of women planning birth in a UK OU, unrecorded BMI occurred where either height or weight measurements were not recorded or where women had antenatal care at more than one institution, so it is

possible that women with unrecorded BMI have less continuity in their antenatal care, although this seems unlikely in this group of women planning FMU birth (Chereshneva et al., 2008). Further exploratory analyses of the Birthplace data revealed that unrecorded BMI was 'clustered' in a small number of units. Given this clustering, it is possible that some unmeasured unit level factor, perhaps related to policy or guidelines, unit 'culture' or lack of equipment is driving this association. It is also possible that unrecorded BMI is a marker of some other risk factor that was not measured or appears as a risk factor for transfer because of residual confounding by another unmeasured risk factor.

Similarly, the finding that Indian women had a higher risk of transfer from FMUs, after adjustment for other factors, was also unexpected. Although English language fluency was not included in the final model, adjustment for language fluency made no difference to this effect. Indian women made up the smallest ethnic group in this analysis. Women from ethnic minority backgrounds make up only a very small proportion of the population of women planning birth in FMUs and few FMUs are located in areas where ethnic minorities are a significant proportion of the local population. It is therefore possible that this finding is related to these women being clustered in a small number of units, although this is not clear.

Differences in the process of transfer from the two MU settings are unsurprising, but speak of the potential impact of this process on women's experience. For women transferring from an FMU, transfer typically occurred after several hours of labour and the median time from the decision to transfer to the start of care in the OU was nearly one hour. Three quarters of women experienced transfer journey times, typically in an ambulance, of up to three quarters of an hour. A very small minority of women experienced transfer times of over two hours, although some very extreme values seemed implausible and could not be verified. Not surprisingly transfer journey times from AMUs

were much shorter, typically up to ten minutes. For most women this involved being transported in a wheelchair or on a hospital trolley or bed. Just under one fifth of women walked from the AMU to the OU. The extent to which women had a choice about how they moved from one place to another is not clear.

## **5.5 Summary**

Transfer affects a significant proportion of women planning birth in MUs, around one quarter overall, although there is significant variation between rates of transfer in different units. Some groups of women have a higher risk of transfer than others. In both types of unit, increasing maternal age is associated with an increasing risk of transfer in women having their first baby, but not for women having a second or subsequent baby. Advanced gestation (41-44 weeks) is also associated with an increased risk of transfer in both settings, while in FMUs, pre-existing risk factors also increase the chances of being transferred.

The reasons for transfer are similar in both types of MU, with failure to progress and fetal distress accounting for a large proportion of transfers. In AMUs, epidural request accounts for more than 1 in 10 transfers.

# Chapter 6

## Qualitative Study Methods

### 6.1 Chapter overview

This chapter describes the methods used in the qualitative study of women's experience of transfer, and the characteristics of the women taking part in the study. The study used audio-recorded in-depth interviews to explore and describe the experiences, information and support needs of women transferred from an MU to an OU during labour or immediately after giving birth. Purposive maximum variation sampling was used to ensure a study sample including women with a wide range of backgrounds and experiences.

### 6.2 Aim

The aim of this study was to explore and describe the experiences, information and support needs of women transferred from an MU to an OU during labour or immediately after giving birth.

### 6.3 Methods

#### 6.3.1 Sampling

Participants were recruited purposively using maximum variation sampling, with the aim of achieving a sample with a wide variation in women's experience and in the factors that may impact on experience, including socio-demographic background (ethnicity, age, socio-economic status, geography and marital status), clinical factors (parity and reason for transfer), type of MU (FMU and AMU) and time since transfer (Coyne, 1997). Women were eligible to take part in the study if they were aged over 18 and had been transferred to

an OU during labour or immediately after birth from an FMU or AMU in England up to one year prior to interview. Recruitment continued with the aim of achieving theoretical data saturation, that is, when no new themes were emerging from the data. Given the scope and nature of the topic and the likely variation in experience it was predicted that a sample of around 30 to 40 women would be required (Morse, 2000).

### **6.3.2 Recruitment**

In order to help achieve the variation in experience required, a number of different recruitment strategies were used: through midwives working in three NHS trusts, users' groups working with pregnant women and recent mothers, internet forums for parents, an advertisement in a metropolitan daily newspaper and 'word of mouth'.

#### ***6.3.2.1 NHS midwives***

Five NHS trusts were chosen to try to achieve variation in geographical location, rural and urban environments and participants transferred from both types of MU. Following local NHS Research and & Development (R&D) approval, recruitment began in three NHS trusts. These trusts were located in the North West, South Central and South East Coast Strategic Health Authorities and comprised two trusts with AMUs only and one trust with both kinds of MU.

Midwives working on postnatal wards were asked to identify women who were transferred from an MU during labour and give them a brief information leaflet about the study which included a reply slip and a freepost envelope to enable women to express an interest in taking part and give their contact details to the author (Appendix 5). Posters advertising the study were provided to be placed in postnatal areas. As it became apparent that some women who transferred during labour were transferring back to an MU soon after the birth of their baby for postnatal care or returning home only a few hours after giving birth, the recruitment process was amended in August 2009 to also enable midwives working in

MUs and/or in the community in to identify and inform eligible women in the same way. When it became evident that few multiparous women had taken part in interviews, a further change was made in October 2009 to enable one trust to identify eligible multiparous women retrospectively and send them a letter of invitation to take part in the study. A detailed information leaflet (Appendix 6), a reply slip and freepost envelope were enclosed with this letter.

#### 6.3.2.1.1 Clinical approval and set-up

The Head of Midwifery in each NHS trust where it was anticipated that recruitment would take place was contacted in order to obtain clinical approval for the study to take place and to identify a midwife who would act as the primary contact or 'local collaborator' for the study within the trust. In all five trusts the Head of Midwifery responded positively and a 'local collaborator' was identified. In the trusts where R&D approval was obtained emails, phone calls and visits to hospitals were used to communicate information about the study to the midwives who would be identifying, and giving information to, women who were eligible to take part. Packs of laminated posters for postnatal areas (Appendix 7) and leaflets for women were sent to 'local collaborators' at regular intervals with phone calls, emails and visits used to maintain awareness about the study and get feedback on recruitment.

#### ***6.3.2.2 Users' groups***

Messages giving information about the study and inviting women to contact the author with a view to taking part were disseminated through National Childbirth Trust (NCT) networks. The NCT is the largest charity working with parents in the UK, with over 100,000 members, and has an extensive network of local branches, teachers and support workers who offer support to NCT members and other parents (National Childbirth Trust, 2011). Emails were sent to these networks from NCT Head Office in May,

September and November 2009 and in February 2010. The first two emails were general invitations to all women eligible to take part in the study. Later messages sought to achieve more variation in the study sample by seeking, in particular, women from the North of England, those having second or subsequent babies and women who had a particularly traumatic experience.

In January 2010, information about the study was posted in the 'Latest News' section of the website of the Birth Trauma Association and on the charity's Facebook page (Birth Trauma Association, 2011). The Birth Trauma Association is a charity which aims to support women who have had a traumatic birth experience; through this link it was hoped to increase variation in the study sample by recruiting women who had a more traumatic experience.

### ***6.3.2.3 Other recruitment strategies***

A message about the study was posted in the 'Media Requests' section of the online parent forum [www.mumsnet.com](http://www.mumsnet.com) in October 2009 (Appendix 7). The same message was used for an advertisement placed in the 'Volunteers' section of the London Evening Standard newspaper on one day in November 2009. Women who requested further information about the study or who took part in an interview were also encouraged to pass on information about the study to others who might be eligible.

### **6.3.3 Contact with respondents**

Women who responded with expressions of interest in taking part in the study were contacted by the author by letter, email or telephone, depending on the contact information they provided, and were sent a detailed information leaflet about the study (Appendix 6). For women who agreed to take part in the study, a mutually convenient time and place for the interview to take place was arranged. This was typically in the woman's own home, but women were also offered the option of choosing another suitable

location if preferred. Interview arrangements were confirmed in writing by letter or email. Formal consent to take part in the study was sought at the time of the interview and women were asked to sign a form recording their consent to take part in the study and for interviews to be audio-recorded.

#### **6.3.4 Reference group**

A reference group was assembled to advise on the design and conduct of the study. This group was made up of two practicing midwives, one working in an FMU and the other in an AMU and in the community; the Research Midwife working on the Birthplace in England Research Programme; a Professor of Women's Health, Nursing and Midwifery in Australia with an interest in place of birth; the Head of Policy Research at NCT and two women who had recently experienced transfer from an FMU during labour. Members of the group were asked specifically to comment and advise on the wording, design and layout of study materials, including the participant information leaflets, posters about the study and consent forms, and on the proposed strategies for identifying and recruiting women to take part in the study. Members responded by email and phone, but did not meet face-to-face.

#### **6.3.5 Study materials**

##### ***6.3.5.1 Participant information leaflets***

Two participant information leaflets about the study were designed. The first of these was used in NHS trusts and was given by midwives to women who were eligible to take part in the study (Appendix 5). Following advice given by members of the Reference Group that a detailed participant information leaflet was not likely to be read by women in the first few days after having had a baby, this leaflet gave very basic information about the study. The leaflet indicated that the woman had been given it because she had been transferred during

labour and included a reply slip and an attached freepost envelope to enable the woman to express an interest in taking part in the study.

The second, more detailed, participant information leaflet (Appendix 6) was given to all women who expressed an interest in taking part in the study before they agreed to take part and an interview was arranged. Following national guidance it introduced the study and its rationale, explained why the woman had been invited to take part and what taking part would involve (National Research Ethics Service, 2007). Confidentiality, opting out of the study and who to contact in case of concerns were also covered.

#### ***6.3.5.2 Consent form***

In accord with national guidance (National Research Ethics Service, 2007) a consent form was designed which covered consent to take part in the study, for the interview to be audio-recorded and for anonymised quotations to be used in publications or presentations arising from the study (Appendix 8). Participants were asked to give formal consent to take part in the study at the time of interview.

#### ***6.3.5.3 Socio-demographic details form***

A form was designed (Appendix 9) to collect women's socio-demographic and other information including date of transfer, age, parity, marital status, ethnicity and socio-economic status, using the National Statistics Socio-economic Classification (NS-SEC) (Office for National Statistics, 2005). This information was used to describe and assess variation in the sample and to enable analysis of any patterns across themes. This form was completed by participants immediately after the interview.

#### ***6.3.5.4 Interview topic guide***

An interview topic guide was devised which allowed women to tell their 'story' in an unstructured way, while giving prompts to the author for more structured questioning

(Appendix 10). The guide included complete questions, but these were not read verbatim during interviews nor were they necessarily covered in the same order as in the guide. Rather they provided a guide to structure and topics of interest that may or may not be covered by participants in their accounts and ensured that, as far as possible, the same issues were covered with each participant.

### **6.3.6 Pilot interview**

The topic guide and other aspects of the interview process were piloted in one interview carried out with one of the members of the Reference Group. Following that interview the participant was asked for feedback on the interview. The transcript of the pilot interview was read in full by the author's DPhil supervisors who gave constructive criticism and advice on interview technique and issues to explore in more depth in future interviews. With the consent of the participant the pilot interview was included in the main study sample.

### **6.3.7 Data collection and data handling**

In-depth interviews were conducted by the author in participants' own homes. Formal consent to take part in the interview was taken and participants were reminded that they could take a break from the interview at any point (many had a baby or other small children to attend to during the interview) and were free to stop the interview altogether if they wished (none did so). The interview followed a two stage process. The first stage used a narrative approach whereby participants were told that the author was interested in their experience of transfer and were invited to tell their story in their own words without interruption from the author. Following this, the second stage of the interview was semi-structured with questions and prompts on specific topics, used to elicit more detail on topics that the participant had already covered and to raise other issues of interest. Topics covered included: reasons for planning birth in an MU; hopes and expectations for birth;

expectations, if any, of transfer; feelings at the time and looking back; information and support needs; explanation and communication by midwives and doctors; perceptions of care; longer term impact of experience and reflections on MUs as an option for care. The interview topic guide was revised and amended as the interviews proceeded so that new issues emerging could be raised in the later interviews. For example, more prompts were added to explore women's hopes and expectations for birth as this emerged as an important factor in women's choices around place of birth. As it became apparent that feelings such as disappointment and guilt were commonly reported by women it was felt important to ensure that the meanings of these words for individual women were captured so prompts were added to ensure that these issues were also covered.

After the interview, participants completed the socio-demographic details form and were offered the opportunity to be sent a summary of the results of the study. Where a participant had raised serious concerns about her care during the interview which did not appear to have been resolved, or appeared to be experiencing ongoing problems as a result of her experience, the author asked the participant if she had sought help about these issues and offered general advice about possible sources of support or assistance, e.g. her family doctor.

Within an hour of the end of each interview the author made field notes of first impressions and reflections on the interview and any issues to explore in future interviews. As soon as possible after interview and always within two to three days, participants were sent a letter to thank them for taking part in the study and a copy of their consent form.

Interviews were audio recorded using a digital voice recorder and were transcribed verbatim by a professional transcriber within two weeks of the interview. Verbatim transcription, including notes of the length of pauses, 'ums and ers', non-verbal utterances such as laughing and sighing, and repetition, was preferred to other more 'tidy' forms of

transcription in order to retain as much information and ‘meaning’ in the transcript as possible. Transcripts were checked against the audio recording by the author, any mistakes or omissions were corrected, and final corrected versions were imported into the qualitative data analysis software package NVivo 8 (QSR International Pty Ltd., 2008) along with socio-demographic information about each participant.

### **6.3.8 Analysis**

Each transcript was read and re-read several times by the author to ensure thorough familiarity with each participant’s account. A coding framework was developed which incorporated both themes anticipated from existing research and emergent themes arising as the author listened to recordings and read interview transcripts. As women’s accounts were typically chronological, following the ‘story’ of their pathway through care and identifying key passages of time along this pathway, codes were used to identify sections of text that related to those key passages. These focussed on chronology, but also on location, so codes were applied to text relating to the antenatal period, labour and birth, during transfer and the postnatal period, but also to setting, for example, MU, ambulance, OU and home. Using the ‘query’ function in NVivo these could later be combined, for example to retrieve all sections of text relating to labour in the MU. Codes were also assigned for themes such as expectations, communication and feelings, which cut across these. This coding framework was applied to transcripts while data collection was still ongoing and was developed as further interviewing and analysis progressed using the method of “constant comparison”, a technique drawn from grounded theory, where themes arising are compared within and between participants and with ideas and theories arising during analysis (Pope et al., 2006).

Once all the data had been coded, sections of data were subjected to an “OSOP” (“one sheet of paper”) analysis (Ziebland and McPherson, 2006). For each section of data in

turn all coded extracts were read and all issues raised by those extracts were noted on a large single sheet of paper along with the relevant numbers identifying the participants. As these issues emerged, grouping on the page was used to show where these could be brought together in a broader theme. Highlighting was used to show “deviant cases” or exceptions and also where individuals grouped around certain codes had characteristics or experiences in common, for example whether they were transferred from the same kind of unit, for the same reason or had a similar kind of experience. This provided a clear visual clue to any emerging patterns in women’s experiences, indicating for example where there were similarities or differences in women’s experience according to the type of MU from which they were transferred. Highlighting on the “OSOP” and within extracts in NVivo was also used at this stage to identify quotations illustrating themes or ‘deviance’.

Concurrently with this process a large matrix or table was produced where each line represented a summary for each participant indicating the broader themes emerging from the “OSOP” analysis. Similar to the “charting” stage of the “framework approach” to qualitative analysis (Ritchie and Lewis, 2003), this was used to enable comparison between participants and to explore possible explanations for similarities or differences. These matrices were also used to explore any patterns in the data, for example, where similar or contrasting experiences were described by women transferred from the same type of MU or in similar circumstances e.g. in the context of prolonged labour.

### **6.3.9 Validation**

In qualitative studies of this kind where data collection and analysis are carried out by a single researcher there can be a concern about the ‘reliability’ of the findings. The idea of ‘inter-rater reliability’, used in some quantitative studies, has been contested as an appropriate means of validation in the context of qualitative studies (e.g. Morse, 1997), but it has also been argued that the quality of qualitative studies can be enhanced if it can be

shown that the interpretation of data is consistent across different researchers (Mays and Pope, 2006). Full independent review of transcripts and coding decisions is highly resource intensive and was therefore beyond the scope of this study. In order to validate analyses and evolving explanations of the data, the author's supervisory team read a sample of ten transcripts and discussed coding decisions, analysis and interpretations of the data with the author throughout.

### **6.3.10 Ethics Committee and NHS R&D approvals**

#### ***6.3.10.1 Ethics approval***

Approval for the study was sought from the Berkshire Research Ethics Committee (REC) in November 2008. While the REC was generally positive about the study, some ethical concerns were raised in its provisional opinion on the study. The most notable of these related to confidentiality, and specifically how the author would address any disclosures relating to professional misconduct or criminal activity made during the interviews. Following correspondence between the author and the REC over several months, the study finally received a favourable ethical opinion in March 2009. Two 'substantial amendments' to the study, each of which made a small change to the ways in which women received information about the study in NHS trusts, were approved in August and October 2009. The ethical issues raised by the REC's initial opinion of the study are worth considering in more detail.

##### **6.3.10.1.1 The researcher's duty of confidentiality to the participant**

The REC suggested that in certain circumstances it would be necessary for the author to breach the confidentiality of the interview to report disclosures of professional misconduct or criminal activity and that it would be necessary to inform participants of this possibility in the information sheet. In response, it was argued that to suggest to participants that there might be circumstances in which the confidentiality of the interview would be

breached had the potential to compromise the participant's confidence that she could speak freely in the interview and could therefore undermine the value of the study. Furthermore, it was not considered appropriate for the author, who in this case was not clinically trained, to judge that a particular incident constituted professional misconduct or criminal activity and to decide to report such an incident when the participant herself had so far chosen not to do so.

It was the opinion of the REC that if "the participant reveals any information of any criminal nature or information which must be reported, the researcher must warn the participant that such information may have to be given to the appropriate authority. In this event, confidentiality may be broken as it will be incumbent on the researcher to reveal such information. It is not a question of judgement; the researcher has a duty to reveal such information." National guidance on the conduct of research, including the Department of Health's Research Governance Framework for Health and Social Care (2005), National Guidance for Researchers and Reviewers on Information Sheets and Consent Forms (National Research Ethics Service, 2007), the NHS Confidentiality Code of Practice (Department of Health, 2003a), the Medical Research Council (MRC) guidance on Personal Information in Medical Research (2000) and the British Sociological Association Statement of Ethical Practice (2002) did not appear to support this position. Indeed, MRC guidance stated that "...members of a research team must always be aware that they share a similar duty of confidence to doctors..." (2000, para. 3.1.5).

The view of the author was that the most appropriate and ethical response to disclosures of professional misconduct made during a research interview, would be to raise the issue with the participant at the end of the interview, to ask whether the participant had thought about passing this information on to the appropriate authorities and to offer assistance in doing so, if required. This approach is used and advocated by researchers in the Health

Experiences Research Group at the University of Oxford. Given that this approach was expressly not acceptable to the REC, and because to appeal against an ‘unfavourable ethical opinion’ would have significantly delayed the study, a pragmatic decision was made to include the following general statement in the participant information sheet:

*Everything you tell me will be kept confidential unless doing so would put you or others at risk of serious harm.*

While this was sufficient to obtain a favourable ethical opinion in this instance, concerns remained that the REC’s position was one that threatens to seriously compromise participants’ confidence that they can speak freely in a research interview and therefore has the potential to undermine the value of this kind of research.

#### **6.3.10.2 NHS R&D approval**

Since the primary method of recruitment to the study was to be through postnatal wards in five NHS trusts in England, NHS R&D approval was also required in these trusts. Initial applications were submitted to these trusts at the end of 2008. Because in this study the NHS trusts were deemed to be Participant Identification Centres, it was not possible at the time to apply for R&D approval centrally through the NIHR Coordinated System for gaining NHS Permission (NIHR CSP). Full applications were therefore made to each of the five R&D departments separately in March 2009 as soon as ethics approval was received.

The documentation and additional checks required by each R&D department varied considerably. In two trusts a Criminal Records Bureau check was required before the study could start. This was applied for in the middle of July 2009 and was finally received in mid September 2009. In one of these trusts the author was also required to apply for an honorary contract. Given national guidance on the use of honorary contracts for research (National Institute for Health Research, 2009) it was argued that this was not appropriate, a

point that was conceded by the trust in October 2009. Overall, the length of time taken to secure R&D approval varied dramatically. In one trust, approval was given within three weeks, while in others this process took up to three months. In one trust the R&D approval process was only finally resolved seven months after the original application. In this and in one other trust, the delays experienced were such that the decision was taken not to proceed with recruitment in those trusts.

## 6.4 Participants

### 6.4.1 Response to recruitment

Recruitment to the study began in May 2009 with an email to NCT networks. Recruitment through NHS trusts began in August 2009 and continued until the end of March 2010. In total, from all recruitment strategies, 95 expressions of interest in taking part in the study were received. These resulted in 30 interviews being carried out. The first, pilot, interview was carried out in March 2009, with all other interviews taking place between the beginning of June 2009 and the end of March 2010. The response and number of interviews arranged arising from different recruitment strategies are shown in Table 37 below.

**Table 37: Response and number of interviews arising from different recruitment strategies**

Recruitment strategy	Responses received	Interviews conducted
NHS trust 1	7	*2
NHS trust 2	37	*3
NHS trust 3	2	1
<b>Sub-total</b>	<b>46</b>	<b>6</b>
NCT (May 2009)	11	6
NCT (Sept 2009)	5	3
NCT (Nov 2009)	3	3
NCT (Feb 2010)	21	7
Mumsnet.com forum (Oct 2009)	3	1
Newspaper advert (Nov 2009)	0	0
BTA website (Jan 2010)	4	2
Other	1	1
Pilot interview	1	1
<b>Sub-total</b>	<b>49</b>	<b>24</b>
<b>Total</b>	<b>95</b>	<b>30</b>

\* In each of these trusts one further interview was arranged but then cancelled by the respondent  
 NCT: National Childbirth Trust  
 BTA: Birth Trauma Association

Responses received from NHS trusts were in the form of reply slips returned to the author by post. Respondents were given the option to include their telephone number, email address or postal address (or any combination of these) on the reply slip. When the postal address was the only contact information provided, the author replied with a letter and a detailed information sheet, followed by a second reminder letter a few weeks later. Other respondents were emailed or telephoned. The large number of responses from NHS trust 2 resulted in only four interviews being arranged and three being conducted. This was partly because a large proportion of respondents gave only postal address information on the reply slip and did not reply to letters, could not be reached by telephone or did not respond to telephone messages or emails. Furthermore half of the respondents from this trust were first time mothers who replied during the final phase of recruitment when one aim was to increase the number of participants having second or subsequent babies. As a consequence, responses from 20 women expressing an interest in taking part in the study were not followed up.

Responses from other strategies came in the form of emails or telephone calls. Overall, only five women who were spoken to on the telephone about taking part in the study declined to take part in an interview.

#### **6.4.2 Interviews**

All participants were interviewed in their own homes. The length of time between giving birth and taking part in the interview varied (Table 38). Four women were interviewed just over one month after having given birth; one woman had given birth 12 months prior to interview.

**Table 38: Duration of time between giving birth and interview**

Months between birth and interview	No. of participants (n=30)
1-3	10
4-6	4
7-10	10
11-12	6

Interviews ranged in length from 45 minutes to just over three hours; the average length was around one and a half hours (median 1h 28m). Shorter interviews generally reflected a more ‘straightforward’ story; women were typically forthcoming, engaged with the interview process and interested in the research project and its wider context. During the course of the interviews a number of women asked if the author was a midwife and a small number asked about the author’s personal experiences, including whether the author had children and where these children had been born, or about the author’s own views. It is important to acknowledge and be aware that the author does not have a clinical background and is the mother of three children, two of whom were born in an OU and one at home, but it is also important that women felt able to talk freely about their experiences and express their own opinions. When these questions arose, therefore, the author responded simply and factually, but did not elaborate or express opinions, and turned the focus of the interview back to the woman’s experience. Questions about the research itself and the wider research context, including the Birthplace programme, were often asked by women after the interview. All women were offered and requested a summary of the results of the study.

### **6.4.3 Characteristics of participants**

The sampling strategy aimed to achieve as much variation as possible in women’s experience and in a number of different characteristics that could be related to experience. The characteristics of the study sample are presented in Table 39 and show considerable variation in some areas. Women taking part in the study were transferred from 21

different MUs, both FMUs and AMUs, in many different parts of the country and in both predominantly rural and urban areas. Transfers took place for a variety of different reasons. Reasons for emergency transfer included intrapartum haemorrhage, hypertension, a concealed placental abruption and postpartum haemorrhage. Reasons for transfer in less urgent situations included failure to progress, both in the first and second stage of labour, meconium staining and fetal distress. Five women requested transfer for epidural anaesthesia. Transfer times varied from a few minutes to one hour. One third of the sample gave birth without instrumental assistance, just less than one third with the assistance of ventouse or forceps and just over one third had a caesarean section.

For some factors there was less variation in the sample. Despite efforts to increase the number of women transferred while having a second or subsequent baby, only four multiparous women took part in interviews. In terms of socio-demographic factors, the study sample was also less varied than hoped and was predominantly White British, married or cohabiting and relatively well-off.

**Table 39: Characteristics of the study sample**

Characteristic	No. of participants (n=30)
<b>Location (SHA)</b>	
North West	4
Yorkshire and the Humber	1
West Midlands	3
East of England	1
London	4
South East Coast	3
South Central	10
South West	4
<b>Type of midwifery unit</b>	
AMU	12
FMU	18
<b>Ethnicity</b>	
White British	26
White other	2
Asian	2
<b>Country of birth</b>	
UK	27
Non-UK	3
<b>NS-SEC*</b>	
1 Higher managerial & professional	8
2 Lower managerial & professional	19
3 Intermediate	1
4 Small employers and own account workers	1
5 Lower supervisory and technical	0
6 Semi-routine	0
7 Routine	1
8 Never worked and long-term unemployed	0
<b>Marital status</b>	
Married	19
Single (living with partner)	10
Single (living without partner)	1
<b>Age (years)</b>	
20-24	1
25-29	12
30-34	7
≥35	10
<b>Parity</b>	
Primiparous	26
Multiparous	4
<b>'Type' of transfer</b>	
Intrapartum emergency	5
Intrapartum non-emergency	18
Epidural request	5
Postpartum	2
<b>Type of birth</b>	
Non-instrumental vaginal	10
Ventouse	2
Forceps	6
Caesarean section	12

\*National Statistics Socio-economic Classification

#### **6.4.4 Presentation of results and anonymity**

Selected quotations from women taking part in this study are used to illustrate themes in the two chapters of results that follow. It is common in qualitative research of this kind to give some information about the participant alongside each quotation and participants are often assigned pseudonyms; by doing so it is hoped that each individual's story becomes clearer, more rounded and more real to the reader. This approach was considered by the author. Providing information alongside each quotation, including for example, parity, the woman's age, the reason for transfer, type of MU and type of birth, would give an interesting and potentially illuminating context to the quotation. However, there was also a concern that, while transfer is not uncommon, for some of the women who took part in this study the circumstances of their transfer were comparatively unusual. Providing additional contextual information with each quotation, along with the capacity to piece together an individual woman's story from several quotations, might lead to some women becoming identifiable. In order to ensure that women's anonymity was not compromised in this way the decision was taken not to follow this approach. Contextual information has therefore been kept to a minimum and added in the text where it is illuminating and does not adversely affect a woman's anonymity. Participants are identified by a code number and the type of MU only.

# Chapter 7

## Qualitative Study Results I:

### Midwifery Unit Care and Transfer

#### 7.1 Chapter overview

Results from the qualitative interview study covering the topics of MU care and transfer are presented in this chapter. In three sections women's reports of planning birth in an MU, their experience of MU care and the transfer process are explored. Findings covering women's experience of care after arrival in the OU and their reflections on coming to terms with their experience are presented in Chapter 8.

#### 7.2 Understanding women's decision-making around place of birth

Women's hopes and expectations for birth, the options available to them for where to have their baby and their decision-making around place of birth were discussed with all the women in this study. This section discusses the extent to which women made an active choice to plan birth in an MU and the influences on their decision-making including thoughts about safety and expectations of transfer.

##### 7.2.1 Choice?

Many women described making an active choice to plan to have their baby in an MU. For some this was a relatively straightforward decision based on the proximity of the unit or the experience of friends or relations. For other women this involved researching the options available to them locally, making visits to different units, weighing up the pros and

cons with their partner and discussing options with midwives, antenatal teachers and other pregnant women or recent mothers.

*Then through [um] a lot of reading and research and speaking to people and [um] also the NCT classes we went to, the lady who ran the class was also quite pro home births [um] and we wanted to see as many places as possible before we decided, so we went, we went on a tour of the [local hospital], we went, [hospital in a neighbouring county] do the online tour, but you can't actually go there, and we went to see [um] the [...]birth centre [FMU]. W29, FMU*

In contrast, a substantial group of women planned at the start of labour to have their baby in an MU having made no real 'choice' to do so. These women were cared for in hospitals where the policy is for women with apparently 'straightforward' pregnancies and early labour to be admitted to the AMU.

*Respondent (R) ... when I went in they didn't really kind of ask me, they kind of just said to me ... "that's fine, so you know, you should be okay for a natural, relatively easy [um] labour, so in that case we, we're going to transfer you to the midwifery led unit." They just kind of checked me, said that I was fine and just kind of decided for me.*

*Interviewer (I) Mm, yeah. And how did that feel?*

*R [Pause 5 seconds] It's fine. [Laugh] I guess [um] I just kind of... I just kind of relied on them to kind of put me in the right place for me, if you, if that makes sense. W22, AMU*

While some of these women had chosen the hospital they attended in labour, by and large they were not actively choosing to have their baby in an MU. Indeed some in doing so had chosen not to have their baby in an FMU, largely because of concerns about safety and the potential for transfer to hospital in an ambulance. One woman who began labour in an AMU was unaware that she was in an MU until after she had been transferred to the OU.

### **7.2.2 Women's hopes and expectations for a natural birth**

Almost unanimously the women in this study expressed the hope or expectation that they would have a "natural birth" with minimal pain relief, but came to this position from different starting points and showed different degrees of 'attachment' to this ideal. Some women expressed the view that labour and birth are inherently unpredictable so you "can't plan" birth and to do so would risk disappointment. For some, a natural birth was simply

the natural end point of a “normal” pregnancy. Others said that to “try” for a natural birth was a sensible starting point; they wanted to avoid “unnecessary” medical intervention but would be “open” to intervention if required.

*I was quite happy for it to be as natural as possible to, to start with and then to, to see how it went. W12, AMU*

This variation was also evident in women’s talk about pain relief. Concerns about the potential impact of pain relieving drugs on the baby were a motivating factor for some women. A number of women also talked about their thoughts and concerns about epidural anaesthesia. Most women talked about wanting to avoid having an epidural if at all possible, but a small number of women, almost all of whom planned an AMU birth, described themselves as open to the idea of having an epidural. One woman said “I always thought I’d end up having an epidural,” and talked of being worried when she was admitted to the AMU in early labour that she might not be able to be transferred back to the OU if she later wanted an epidural. Many women had concerns that an epidural might lead to a longer labour and increase the risk of having an assisted birth or a caesarean. A small number had particular concerns or fears about needles and others were worried about possible side-effects or longer term problems. For one woman who knew someone who had been permanently disabled after epidural anaesthesia, avoidance of an epidural was an important motivating factor in her decision to plan birth in an MU where she knew it would not be available.

*... and so... part of me thought I’ll go to [FMU] so I’m not tempted to have an epidural [laugh] ’cause I would know that I wouldn’t, you know, wouldn’t [er] be able to have one. W30, FMU*

Beyond pain relief, for the majority of women a natural birth was their “ideal” birth. Fundamentally, for many women a natural birth represented a more positive birth experience and they talked of their hopes for a “calm”, “stress-free”, “relaxed” and “enjoyable” birth. For women having a second or subsequent baby their first birth

experience was influential. One woman who had a water birth in an MU with her first baby described this as the “right experience” and wanted to repeat that with her second birth. Others who had experienced varying degrees of medical intervention in their first births talked of wanting to have a more natural birth. One woman described her hopes for her second birth after planning to have her first baby in an MU and ending up being induced and having a long and very painful labour followed by a ventouse-assisted birth.

*Although the staff were fantastic, I just didn't want to have... that kind of birth where I came away not feeling that I'd achieved... sounds strange, but I wanted to do it naturally. W24, FMU*

The idea of achievement and empowerment through natural birth expressed here was echoed by some other women. Some women talked simply of friends, family and earlier generations giving birth naturally.

*... 'cause my mum's had five kids and she all, had hers all natural. And my partner, his mum had five kids and she had all hers natural... W20, AMU*

The idea that giving birth is something that women do and is a natural instinctive process was more strongly expressed by other women.

*... lots of women have been doing it for centuries without medical intervention, it's what our bodies are designed for... W25, FMU*

Others took this further and made an explicit link between natural birth and achievement and empowerment. One woman described her thoughts and feelings when she realised that the midwives at the FMU where she planned to have her baby were supportive of her thoughts about natural birth.

*... it was a kind of a “yes I can do it and I'll be able to do it on my own,” and [er]... it just felt more like I was in control. W18, FMU*

For some women a natural birth represented a different kind of achievement. For two women with particular fears, one who described herself as “absolutely petrified” of labour and birth and another who had a phobia of hospitals, planning a natural birth appeared to

be a way of reframing birth as a potentially manageable experience and perhaps one from which they could take a sense of accomplishment and self-worth.

### **7.2.3 Perceptions of the physical and social environment**

MUs clearly vary in their location, setting, layout, facilities and style of décor and furnishing, but descriptions of the physical and social environment were important in most women's stories. Women's comments revealed the pragmatic, personal and sometimes idiosyncratic nature of their decision making. For a number of women who planned birth in an FMU the fact that it was simply closer to home than the OU was a key factor. For some this was about familiarity; the geographical location of the unit and the organisation of maternity care locally meant that some women had their antenatal care in the MU so got to know the place and the midwives working there. For others, being closer to home meant that they would be able to get to the unit quickly and easily, avoiding a potentially worrying and uncomfortable journey to hospital in labour.

*... and the [FMU] is only up the road, I thought I'd be having a very quick labour, 'cause my sister did, and I thought, you know, I didn't want to be having contractions and having to drive a long way. W28, FMU*

Related to this concern about ease of access during labour a few women also mentioned that car parking was easier and cheaper at the MU than at the hospital.

The facilities provided in the MU were also positively described by many women. The availability of a birthing pool, for pain relief in labour but also for a water birth, was mentioned by a number of women. 'Bedrooms' and en-suite bathrooms helped to create a sense of privacy, which was particularly important for some women. One woman who had spent periods of time in hospital as a young person and had experience of living with chronic pain felt that the privacy afforded by the MU would help her manage the pain of labour in the quiet and comfort which helped her manage pain at home. The availability of double beds or sofa-beds for partners and common or shared areas for preparing food,

eating and relaxing were other features described by women that helped to foster a sense of homeliness and welcoming for the woman and her husband or partner.

Words used by women to describe the MU included “like a hotel”, “homely”, “a bedsit”, “an oasis of calm” and “like a kind of a day spa”. While these comments speak partly about women’s perceptions of the physical environment they also indicate the importance of the social and personal in women’s decision-making. Other words commonly used were “calm”, “relaxed” and “friendly”. Women spoke about how important it was that husbands, partners and other family members were welcomed. The physical space contributed to this, but the policy of the unit towards partners and family members was also influential. Some women said how important it was that during labour there was no limit on the number of birth partners they could have and that their husband or partner could stay with them after the birth. Policies were reinforced by the attitude and behaviour of midwives. One woman described a second antenatal visit to the MU with her husband:

*So he came down with me and then they gave him a, a tour completely separately and they sat with me and did all my notes and, you know, the second time, if I wasn't sure the first time that I really wanted to go there, the second time I thought “Oh this is great,” because, you know, they made [husband] a cup of tea and they took him round and showed him all the rooms and I sat there and I thought “This is fantastic, you know, the staff are so friendly”. W18, FMU*

In the accounts of many women the social and the physical were linked and seen as producing an environment that was more likely to enable or support natural birth.

*And I also thought that maybe being in a more relaxed, happy environment that there'd be less risk of these things happening because I'd be more relaxed and more capable of just sort of getting on with it, and that was one of the reasons for choosing to go there and that I thought in myself that I'd have less need for pain relief or less need for intervention if I was feeling good about myself in the first place. W05, FMU*

Facilities, such as pools, mats on the floor, birthing chairs, balls and stools were indications for women that natural birth would be supported in the MU. Some women’s

conversations with midwives helped reinforce the view that midwives working in MUs were less likely to “intervene” in birth than doctors, and would let women “get on with it”.

*All the midwives had nothing but supportive comments, [um] they were very open and flexible, they were very pro sort of helping and [um] helping bring on natural labour which is what we wanted [um]... you know, allowing you to do whatever you wanted to do. If you wanted to use the birth pool, if you changed your mind you didn't have to sort of have a detailed plan in place beforehand and know exactly what you wanted, they understood that things change and whatever, whatever, you know, happens during labour they'll just support. [Um]... and that, that seemed quite good. W29, FMU*

The use of words such as “hotel” and “homely” suggest a contrast with hospital. One woman commented that the AMU where she planned to have her baby “didn’t even smell like a hospital”. Many women also made an explicit contrast between the experience that they expected in the MU and their perceptions of hospital. The issues of “normality” and support for natural birth were important areas of contrast here.

*I think a birthing centre is just a nicer, more friendly, less... less medical, less to do with illness and infection and all of that, and much more to do with the sort of the amazing aspects of new life and new baby and... yeah and sort of excitement and... and all of those kind of things. W11, FMU*

Whereas the relaxing homely environment in an MU was seen as facilitating natural birth, some women felt that it would be more difficult to feel comfortable and relaxed in a hospital environment and therefore they would be less likely to be able to have a natural birth if they were in hospital. For some women the experience they expected of birth in a hospital was a stark contrast with the more positive birth experience that they associated with having a natural birth in an MU. For one woman the hospital was...

*bright glary surgical lights, it was clinical, it was... it was just everything the birthing centre wasn't, and everything that made you feel that it was going to be a really surgical procedure and... just not, not really what you would want it to be, and... a tough clinical experience. W17, AMU*

For a few women planning to have their baby in an MU was about avoiding hospital, often because of particular fears or associations as a result of previous experiences.

For some women simply the fact that interventions such as an epidural for pain relief and an instrumental or caesarean birth were more readily available in an OU meant that the women themselves or midwives working there would be more likely to turn to those options if labour didn't progress as expected. Some women talked about perceptions that doctors and hospital midwives have a tendency to "rush in and interfere" and might "force" or put pressure on a woman to consider intervention earlier than she wanted to.

For some, these differences between the MU and hospital experiences could partly be explained by the different pressures on midwives. Some women commented that, compared with midwives working in OUs, midwives in MUs had fewer women to look after and consequently had more time to spend with each woman. One woman described her experience of waiting half an hour for a previously arranged antenatal appointment at her local GP surgery only to be told by the receptionist that she had forgotten to say that the midwife was not in that day. She contrasted this with her appointments once her care had been transferred to the MU where she planned to have her baby.

*I'd left work early and I was just fuming, and it always... the appointments always seemed to stress me out when I went for checkups there, whereas when I went to [FMU] it was just so relaxing... they were never rushed, they were never... they were always on time, when you got there there was always someone there waiting to see you... W03, FMU*

Other pressures on hospital midwives were also referred to. One woman described stories she had heard from other women at an antenatal group:

*... you don't always get [um] the time and the support in a hospital compared to a birth centre, purely because they have so many people to deal with and so little staff that they [um] they don't have that much time to invest in, you know, in trying to get all your needs met 'cause they have, they have statistics and they have measures that they need to achieve... W29, FMU*

These fears were echoed by another woman who planned to have her baby in an AMU and talked about a friend's experience of being "left for hours" during labour in the OU.

*You know, I didn't, bub, I didn't want to just feel like I'd been abandoned, you know, if someone says "Oh we'll be back in sort of half an hour to check on you," and then they don't but [um]...*

*yeah I just think downstairs obviously they've got more... they... more time to spend with you rather than, up there it can seem like a bit of a factory, 'cause they're trying to get you in and out as quick as possible, you know, which is through no fault of their own, you know, that's just the pressures they have to work under. W16, AMU*

Another woman initially planned to have her baby in the local AMU, but recalled an antenatal class teacher telling her that midwives working on the AMU could often be called away to work on the labour ward due to staff shortages there; the woman decided to have her baby at an FMU instead.

#### **7.2.4 The influence of others on women's decision-making**

Just as women's perceptions of the social environment of the MU were an important influence on their decision-making, other social factors were also influential. Most notably, information, opinions and recommendations from significant people in women's lives, including husbands and partners, antenatal teachers, friends and family featured prominently in the women's accounts, particularly for women having their first baby. While some women encountered resistance to their choices, most often the influence of others served to encourage women towards planning an MU birth.

A number of women who had previously only considered having their baby in the local hospital described being first introduced to the idea of natural birth and birth in an MU by antenatal class teachers. Other pregnant women or women who had recently had a baby were also particularly influential in this regard. One woman who had spent much of her pregnancy considering the options for where to have her baby described frequent changes of mind up until a couple of weeks before her due date when she heard about the MU from other mothers-to-be at an antenatal class. Visiting the unit a few days later she met two other friends who had recently had their babies there. These women both "sung praises" for the unit and she made her decision there and then. Other women talked about

having family members who had their babies in the same MU; one woman was particularly influenced by her sister's recent experience:

*Well what I did was, my sister had a baby and [um] she recommended [FMU] because she said they were really good, the midwives were brilliant and [um] the recovery, the recovery area's like you're in a hotel, it's so nice, you know, the food's really good and... So she recommended that to me, and then... So I didn't even think about the hospital, I didn't even look at the hospitals... I just thought well, you know, I'll go on her advice. W13, FMU*

Some other women described hearing negative stories from friends about birth in hospital.

One woman recounted friends' experiences of being turned away from the local hospital during labour because the hospital was full.

*R Friends of mine have, you know, their experiences and what they've told me, I decided that I'd prefer [FMU].*

*I So friends who've actually turned up there in, in labour and been turned away or, or...*

*R [Um] people at [local OU] have phoned, phoned up and they've said that they'd been full so that they needed to go either [FMU] or [OU in another town], so I decided to choose [FMU] so I didn't have to go through that. W30, FMU*

Some women were aware that some friends or family members might not be supportive of their choice of where to have their baby. One woman described discussing her plan to give birth in an FMU with a friend who was a GP. When this friend advised her against this plan because of concerns about the transfer time, she sought out further advice from her antenatal teacher and friends who encouraged her in her decision. Another woman who planned birth in an FMU 15 miles from the nearest hospital was aware that her parents and grandparents might have concerns about her having her baby in an out of hospital setting. She described deliberately avoiding talking to her family about her plans and then "towards the end" telling them that she was planning to have her baby in a birth centre:

*... and they didn't know what that was, and we said "it's fine, they've got everything you'd need, and if we need to go to hospital there's, there's just, it's nearly next door, so that's fine, it's all nearby". W29, FMU*

### 7.2.5 Risk and safety

A number of women talked about their thoughts about safety when deciding where to have their baby. For some women planning to have their baby in an FMU this represented a 'safer' option than a home birth.

*... purely for that reason that if anything goes wrong then, although they can't do much at [FMU], it's better than me having it here. W15, FMU*

This woman hints at the apparent inconsistency in her decision-making, that although the MU may not have any more facilities or equipment than would be available at a planned home birth and an ambulance transfer to hospital would still be necessary in the event of complications, nevertheless the MU might still 'feel safer'. Another woman echoed this thought when reflecting on her comparison between home and the MU:

*Like I'm telling you that a home birth is exactly the same as being there [FMU], but you just feel safer being there, even though it's not a hospital. I mean it's madness isn't it? But [um] [pause 3 seconds] yeah. Mm... I think I just felt a bit more secure and comfortable there. Yeah. W13, FMU*

For another, concerns about the safety of home birth were raised by her husband.

*At the time it would probably have been fine but definitely my husband, wouldn't have gone for it, and it had to be a... agreed decision, what we were going to do so, [um] 'cause he was there. [Um] but he, yeah he's much more of a "if anything went wrong," for the safety of the baby he wanted, or for me, just to be somewhere where there's the experience. ... So that was more of our reason. W24, FMU*

Almost exclusively the women in this study described their husbands and partners as more risk averse and having more concerns about the safety of birth in an out of hospital environment than them. This meant that in a number of cases the decision to plan birth in an MU was a compromise position between birth at home and in an OU and was therefore something that both partners in the relationship could feel comfortable about.

*I would have wanted to give birth at home but my husband was completely against it, sensibly so because it was a first baby and everything, but because I know what to do once the baby arrived I kind of was like "Oh it'll be fine," and, "It's not a problem". [laugh] [Um] so I really wanted*

*it at home and my husband wanted us to have it in a hospital, so the compromise, I found [FMU]. W03, FMU*

Some women described their husbands as having concerns about the safety of any birth setting that was not an OU. Some women chose to plan birth in an FMU aware that their husband or partner, while supportive, had reservations about this decision.

*R Actually it was more my husband that was sort of, had his reservations about it because he did like the idea of me giving birth somewhere where there was the sort of full medical facility on hand should it be needed [um]... but I kind of said, "No, I know where I want to go and that's where I'm going".*

*I Did he... do you think he... carried on, and he had those reservations anyway but he went with what you wanted?*

*R Yeah, I mean he said if he'd been making the decision himself he would have chosen the hospital purely because... you have any difficulties in the midwife unit there you just go down one floor and you're in the labour ward and everything's fine. ... [Um]... So although it's not necessarily what he would have chosen, he... was happy to let me make the decision in terms of what we did. W05, FMU*

Safety concerns were not solely confined to husbands however. For some women, planning birth in an AMU felt like a safer option than birth at home or in an FMU.

*Yeah. Yeah, I think... I probably... I like... the idea of the birth centre because it's got almost all the comforts of home but with... you know, the, the fallback of the doctor being just.... a door away... if needed, whereas if you have a home birth you haven't got a doctor there, you'd have to wait for an ambulance and... the ambulance has to take you all the way to the hospital so... yeah, it's, it's nice to know that there's that there if it's needed. W19, AMU*

For some others the AMU was almost incidental; they wanted to have their baby in a hospital, because they felt it was safer.

*I think for me it was always kind of just like, "Yeah well it will definitely be in the hospital, whether or not I bother with something like the birthing pool or, you know, like these homely rooms," I wasn't really that fussed. [Um] and the reason for just going for the hospital is just because it was my first baby and if anything was to go wrong or anything like that I wanted to be in the hospital where I had people who'd be able to [um] help me. W22, AMU*

### **7.2.5.1 Thoughts and expectations about transfer**

Concerns about transfer did not figure prominently in women's accounts, but many women interviewed said they had thought about the possibility of transfer beforehand.

As already noted, some women planned birth in an AMU to avoid the possibility of transfer in an ambulance from home or from an FMU. The potential risks of an ambulance transfer, including worries about giving birth in an ambulance, as well as the simple inconvenience of having to move somewhere else, were important for these women.

Some other women, particularly those who planned birth in an FMU, but also some who planned an AMU birth, described having concerns about transfer and can be seen to have sought reassurance about this in different ways. This included seeking out information. Two women said that there were areas where they would prefer not to have information beforehand. One said that she was glad that she hadn't been told how uncomfortable the ambulance journey would be because that might have put her off planning an FMU birth, while the other said that information about the circumstances that might lead to transfer would have made her "jittery". Most women said that they did want information, however, and several described looking for information about transfer rates online or seeking information from midwives.

*We asked... we asked about the percentage of women who were transferred out of the [FMU] and were told that, and also asked sort of how long will it take the ambulance to arrive, how long will the journey be? Because we needed to weigh up obviously the evidence, so that, that conversation we had right at the beginning when we made the decision to [um]... have the baby there. W11, FMU*

The information provided could sometimes be vague or imprecise, however.

*R ... but then when we went on this tour of the [FMU], you know everybody asked the same questions about what are the statistics of people getting transferred to hospital and they said "Oh we've only had four people transfer".*

*I Since?*

*R Well exactly, and they'd opened last September or something, I think, and they said they'd had like a hundred births there, so we were like, "Oh four out of a hundred, that's not very many". It's only later we kind of discovered they might have meant like that month or something, I'm not entirely sure, in the end we couldn't quite work out what statistics they were referring to. W05, FMU*

Two women appeared completely uninformed about transfer. One woman was unaware that she was in an AMU until she requested an epidural and was told that she would have to go to another part of the hospital. The second was planning to have her baby in an FMU located in a small hospital and appeared to have been given no information about the implications of this. As a consequence she was particularly distressed to be told that she had to transfer after the birth of her baby.

R *Yeah I mean I, I kind of had, had it in my mind that [FMU] would be able to handle any kind of emergency because it, it's, it's right next door to a casualty, like an, not an A&E but a minor injury unit where I've, where I had to go for... other reasons, you know, medical reasons where there's doctors there. So I couldn't, so I thought if anything went wrong I'm sure they could just get, call, call out a doctor or, or something. You know, I didn't imagine like for the slightest thing going wrong "Well there's an ambulance waiting for you, you have to go now". You know, I didn't imagine that it'd be anything like that.*

I *Did, did they talk to you about what would happen?*

R *No, no. W28, FMU*

One woman talked about the reassurance she found in midwives' explanations about the likely circumstances leading up to transfer and how the transfer process would work, but very few women described being given information about the process of transfer.

*... the midwives were quite clear about the fact that if you did have to be transferred, it wasn't like it was a sort of... life or death emergency decision... where if say somebody's having a heart attack and you call an ambulance, obviously five minutes, six minutes makes a difference, sort of thing. There they were saying, you know, they'd get an ambulance out early enough, it's a ten minute journey to the hospital and they said with midwives they're practiced enough in this that they would actually call the ambulance before things went wrong. It'd be just when they saw that things weren't progressing possibly in the way they wanted them to... [um] that they would then call... call an ambulance and get you transferred to hospital, and [um]... So that was all quite reassuring, the fact that you felt [um]... well I felt that any transfer, if I were, ever needed to transfer, it would be... I won't say early enough in the labour but, you know, it wouldn't be a dire emergency and it wouldn't be a sort of life or death situation with me giving birth in the ambulance on the way, sort of thing. W05, FMU*

Some women described hearing stories about transfers from AMUs that had taken a long time so reassured themselves that planning birth in an FMU did not involve any additional risk. One woman who had been worried about the twenty minute transfer time from the

FMU where she planned to have her baby was reassured by advice from her antenatal teacher based on “research”. She continued:

*... I'd heard about somebody at [hospital] who was in the, in the midwife led unit and had an issue and had to be moved to the consultant led, which was literally six floors up, and it took two hours for her to get from there to, up six floors because of finding some gas and air that they could take up with them, and I thought, "Well if it takes two hours and you're in the same hospital, what difference does it make if I'm twenty minutes up the road?" So I just decided that I was going to go to [FMU]. W18, FMU*

One woman who planned to have her baby in an FMU close to her home had done so largely to avoid a long drive in labour to the nearest OU and reassured herself about a possible ambulance transfer by giving specific instructions to her midwives in her birth plan.

*And I thought that would be a... I think, I thought that would be a worry in itself, and I was always aware that there's, there was the possibility that I would be transferred but always thought, in my mind's eye, well it would be easier to be transferred in an ambulance and have the medical staff with me than sitting in a car with my husband trying to get in to a hospital because he... um, which is why, when I had discussed with the midwife, I said to her um, "Should anything not be going as it should, I want to be transferred earlier rather than later. I don't want it to be a lastminute.com, arrive, have a C-section." I said "You know, if anything starts looking like it isn't going as it should be, please transfer me." W01, FMU*

At the same time as talking about wanting or seeking out information, a common theme was that women did not ‘take information in’. By far the most common comment from women on their thoughts about transfer when planning where to have their baby was that they just didn’t think about it. Women described themselves and their thinking as “blasé”, “idealistic”, “naïve” and “in denial”. For some women this was partly about believing that having positive thoughts about their birth would mean that they would be more likely to have a natural birth and therefore a positive birth experience. Others reflected that they were “hoping” they would be “lucky”, were just “bloody-minded” or that perhaps they “chose to blank out” the possibility of something happening during labour that would lead to transfer away from their chosen setting for birth.

*And... so I didn't really give it any serious... serious thought. I suppose also I didn't really want to. [Laugh] ... I suppose I possibly didn't want to entertain that possibility, that it, it might not all, all go to plan. W17, AMU*

For this woman, who was very frightened of the pain of childbirth and felt that the environment of the MU might help her manage the pain and her fears, thinking about the possibility of transfer meant facing her worst fears. Other women also described being scared of the possibility of various kinds of medical intervention including epidural anaesthesia, forceps and caesarean section. For these and other women the 'head in the sand' approach to transfer may have been a way of dealing with those fears and maintaining a positive outlook.

#### **7.2.6 Summary**

Almost without exception the women in this study went into labour with a clear view of the kind of birth experience they wanted to have: a "natural" birth with the use of pain relieving drugs and medical intervention kept to a minimum. The degree of attachment to this ideal varied, however. A small number of women who did not subscribe to this view expressed the opinion that it is not possible to "plan" something as inherently unpredictable and uncontrollable as birth and to do so would risk disappointment if things did not go according to plan. Others described being "open-minded" about their plans. Women's hopes and expectations for a natural birth were shaped by their own experiences and beliefs and by the experience and advice of other respected and influential people in their lives. For many women a "natural" birth was a positive and fulfilling birth, a self-affirming event that was an important part of being a woman. These kinds of views were more apparent in women planning birth in FMUs.

For many women in this study, the MU was simply a "comfortable" place to have a baby. The physical and social environment provided by the MU, which played a significant part in women's accounts, was clearly important in creating this sense of comfort. The

location, layout, furnishings and décor and the calm, welcoming and relaxed atmosphere described by women helped women to feel “comfortable” and “at home”. Women’s stories also show, however, that their decision-making went beyond this straightforward level of ‘home comforts’. For a number of women a key factor was that the environment enabled and supported a natural and positive birth experience. The MU, often in explicit contrast to other settings for birth, was in this and other ways, a “good fit” with many women’s beliefs and with their hopes and expectations for birth, and was therefore a choice that they felt comfortable making. In many cases it was a choice that influential friends and family had also made or supported. When some women encountered resistance to their choice or views that ran counter to their own they described seeking out ‘affirming’ evidence from others or, as one woman did, simply not talking about their choice with some family members, approaches that could be seen as maintaining a sense of congruity between their immediate social context and their choice.

Feeling “comfortable” also meant accommodating women’s own and others’ concerns about safety, including those about transfer. For many women planning birth in an AMU, safety meant having ready access to medical assistance. Some women prioritised birth in a hospital setting, with the option for MU care being a secondary, and in some cases minor, consideration. FMUs were seen by some women as “safer” than birth at home, but for others the possibility of a potentially risky and at best inconvenient ambulance transfer meant that an AMU was a better “halfway-house” or “compromise” solution. For other women, normal birth was seen as a natural process with few risks. These women felt safer in the hands of experienced midwives who provided reassurance against any concerns about transfer and protection against the risk of unnecessary medical intervention which they felt was more likely in a hospital setting.

Concerns about transfer did not feature heavily in women's accounts, but women talked about seeking out information about transfer and reassurance in a number of ways. Most women wanted information about transfer rates and what transfer would be like, but women often had to seek this out and the information they received was not always clear and unambiguous. At the same time, however, women talked about not thinking that transfer would happen to them and being "blasé", "naïve" or "idealistic" in relation to their expectations.

### **7.3 Women's experience of midwifery unit care and the decision to transfer**

All of the women who took part in this study spent some time, from a few minutes to more than twelve hours, in the care of an MU before being transferred to an OU. This section explores the themes arising from their accounts of MU care up to and including the decision to transfer.

Communication and interaction with the midwives looking after them featured heavily in women's accounts. The nature and quality of this interaction and women's perceptions of the care given by midwives were crucial to their overall experience. The three inter-related themes that emerged; feeling cared for, trusting the midwife and feeling in control, help describe women's experience and may also be seen as factors influencing women's feelings around the time of the decision to transfer.

#### **7.3.1 Feeling cared for**

Women's need to feel cared for or looked after by their midwives was evident in the ways in which women described their midwives as being encouraging and supportive in labour, listening to them and being aware of and understanding their needs.

Women valued being given simple straightforward information about procedures, such as internal examinations, and about the progress of labour. This kind of information around

the time of decision-making about transfer was particularly important. For example, one woman who experienced persistent vomiting throughout her labour and was transferred when her labour slowed during a long first stage described her midwives leading her up to the decision to transfer by giving clear explanations about her progress, the results of urine tests and the possibility of needing to transfer.

*R ... And they were kind of, throughout the latter stages saying, you know, "And if there is no urine sample then", you know, "this is a problem, there'll be, there'll be [um] possible ketones in your urine and that means that we'll need to transfer you." They were leading me up to that decision... [um] which felt important, and was fine. [um] So yeah, I mean I would probably say the last couple of hours that was happening. W02, FMU*

She appreciated their simple, factual information which explained the potential consequences of vomiting and dehydration and helped her to feel more comfortable with the decision to transfer and less anxious.

*And as I say they did lead me up to it, it wasn't a kind of complete shock, they gave me enough time to prepare myself to be, you know, and it to be a calm experience as opposed to a panic. ... So that, you know, so that my decision wasn't needing to be [fingers snapping] made on the spot, it was a decision that was, was a progression and a process... W02, FMU*

Many women had written birth plans outlining their preferences for support and pain relief in labour. When midwives talked with the woman about her birth plan, talked with other midwives about her preferences at shift changes and followed these preferences in their care this helped the woman feel that her views were being heard and understood. Women talked positively about their midwives understanding their needs in labour.

*... that's what I found, that they were very sensitive to [um]... to, to where I was in my labour and what I was feeling and, as I say, I was very calm and self contained. I didn't actually need to chat to anyone, I didn't really need, at that stage, at that first five and a half hours that I did there, I didn't need anyone reassuring me, I just needed to, to focus and to sort of be... obviously be [um] feel safe but, but not to have someone constantly talking to me and [um] that kind of thing. So I think she, and then subsequently her colleague, 'cause there was a shift change, were very sensitive to that and I think the first woman actually said "Look, your husband's in the room, I'm just going to go away, if you need me, call me, but I don't see, you know, you're doing very well, I don't see why you need me here." And that was perfect for me, knowing that someone was sort of milling around outside the door. W11, FMU*

Some women talked of the value of easy inconsequential chat or “banter” with the midwife in creating a calm and reassuring atmosphere. Others commented on the importance of the midwife acknowledging and involving husbands, even by small gestures such as offering them tea and biscuits. Verbal and non-verbal encouragement through the pain of labour was also appreciated and helped women feel cared for at a time when they could feel vulnerable.

*So... it... they just seemed personable and nice and had an easy smile and were quite happy to sort of touch your shoulder or give your hand a squeeze and some encouragement, and just that sort of confidence that everything's going, you know, as it should, and it just helps you to relax, not worry that there's something wrong... W04, FMU*

Women's vulnerability in labour was perhaps more evident in the reports of those women who did not always feel cared for during labour. When women described feeling anxious and even frightened during labour, this was most commonly when they did not know what was happening or where they no longer felt that their midwife was listening to them or understood how they were feeling.

Emergency situations were particularly frightening. One woman who experienced a sudden haemorrhage during labour in an AMU knew that something serious had happened because of the behaviour of the midwives and doctors who attended her, but felt isolated and frightened by being given ‘reassurance’ from midwives in the absence of information about what was happening. Other, less immediately life-threatening, situations could also be worrying or frightening. One woman who had twins in her first pregnancy described her reaction to the ‘hands-off’ approach of the midwives in the FMU.

*Well just that I didn't know what... no that was it, I didn't know the plan. Nothing had, had been explained to me, like “If you go into labour we'll put you into the birth pool,” I mean there was nothing, it was just “Here you are, here's, here's a cup of tea, we'll see how things go.” W28, FMU*

Being left alone without much information in early labour was an anxiety provoking contrast with her previous experience. As her labour progressed quickly she felt increasingly unable to cope with the intensity of the contractions and unsupported.

*Yeah, so I kind of... yeah. I mean it, it isn't until you've just asked these questions I thought "Yes, I just felt completely, completely on my own." And that I couldn't do it and I couldn't say to them I couldn't do it 'cause they weren't, they weren't in the room. W28, FMU*

Perhaps most difficult for women to deal with was when they felt that their midwife was not listening to them or did not understand how they were feeling. One woman who was very anxious about labour and giving birth described the first midwife she saw when she first went to the MU in the early stages of labour.

*She was lovely, she was such a lovely midwife and she could see that I was bit... a bit anxious and she gave me a huge hug when I came in and she was like, "Don't worry," and made me a cup of tea... You know, so she kind of really made the situation much more comfortable for both of us. W21, FMU*

After agreeing with the midwife that she would go home until her labour had progressed further she returned to the unit to be met by another midwife...

*I remember bursting into tears 'cause I felt quite uncomfortable and nervous and incredibly anxious, and [um]... yeah and she just, she wasn't at all reassuring at all, she was sarcastic, she was quite rude, she was unhelpful, she didn't answer questions that we were asking her. [um] [cough] She kept telling [husband] off [um] saying, 'cause he was talking to me during the contractions and she was sort of telling him that he wasn't helping, that he should keep quiet. W21, FMU*

She went on to say...

*I just feel very much on my own there, both of us, we were on our own, unsupported, completely unsupported. As I said, you know, there was no... there was no feeling like she wanted to help us, it was just a case of it was her job to be there, she was coming in, writing down her notes... W21, FMU*

Feeling unsupported and not cared for was particularly frightening during a long and painful labour. In this context a number of women described a breakdown in their relationship with their midwife so that when they felt most vulnerable and in need of care

there was an apparent mismatch between their feelings and needs and the 'care' provided by their midwife. One woman described feeling "distressed, frustrated and tired" as a midwife 'encouraged' her to try different positions in a long second stage, referring to other women in more primitive cultures who "don't have any other choice about doing anything". Having already discussed her preference to be transferred "earlier rather than later," she felt that her midwives were no longer listening to her and not supporting her in the way she wanted. She expressed the vulnerability of her situation.

*...um, and, and I was very much in second stage then so you're not really in a... you're sort of concentrating on pushing... preparing for the next contraction, you're not in a... in a, "Actually no, sod off, we're doing it my way." And also I, you know, it's my first baby, I had nothing to compare it to, and as much as you've done antenatal classes um, they don't necessarily prepare you for that kind of situation. W01, FMU*

Another woman who had a long labour in an AMU described feeling "distressed", "desperate" and that she was "going to die", unable to make her midwife understand how much pain she was in and that she needed help.

*... [um] and it just... nothing was happening and it wasn't working and [um]... throughout the... those two or three hours, well about three hours, [um] I kept saying that [um] "I can't do it anymore and I need an epidural, that it's too much, it's too painful, and it's too..." [um]... [um] and really it was just horrendous and [um] the midwife kept saying, "Oh no, yes you can, yes you can, you can do it, you can do it," but [um]... and I didn't really know how to, how to tell them that I can't do it, how to... how to... tell them that it is really, really, really terrible. W23, AMU*

These experiences, and those of a number of other women who also felt that they never had or lost the support and care of their midwife, demonstrate women's need to feel cared for during labour and some of the consequences if they did not feel cared for. Further illustration of this is provided by the second emerging theme: trusting the midwife.

### **7.3.2 Trusting the midwife**

Women who described feeling cared for by their midwife most usually also expressed trust or faith in their midwife, which enabled women and their partners to feel relaxed and secure.

*And the encouragement I got... and just the general care from them... I trusted them, and I think that was one of the big things in, both [husband] and I felt very comfortable with what we were being told at whatever stage, and we had sort of built up that level of trust that we didn't have a problem with what they were saying. W05, FMU*

For some women this trust arose because they had met and come to know their midwifery team during their pregnancy. One woman who had met some of her midwives antenatally found this a source of anxiety however. Problems with conflicting information from different midwives and missing test results lead to a loss of trust in her midwives' professional competence and worry about which midwives she might encounter during labour.

Most women had not met any of the midwives who looked after them in the MU however, so the behaviour of the midwife and the relationship that developed during the course of labour was crucial in determining the level of trust they felt. Clear, open communication and a calm response on the part of the midwife to developments during labour were seen to foster trust. For many women trust in the professional midwife was a default position; as one woman said, "they know what they are doing," but trust could easily ebb away. Sometimes this could be simply as a consequence of a brusque manner or a "cold" tone of voice. When women came to feel that their midwives were "anxious", "panicking" or no longer "in control" this also damaged trust and left women feeling unsafe and frightened. For some women, again often in the context of prolonged labour, trust was lost as they began to feel that their midwives no longer understood how they were feeling or were pursuing a course of action that they themselves no longer wanted.

One woman who had experienced twelve hours in the first stage of labour with little 'progress', talked about a midwife urging her to trust her to help her have a natural birth or she could be transferred to hospital.

*I didn't trust her. [Um] [pause 4 seconds] It's, it's hard to describe because... I'd been up all night, I'm exhausted, I'm in so much pain, all I can really... all I'm capable of doing is trying to*

*deal with the next contraction. Actually having a conversation or trying to make a decision or anything like that was... really... was impossible for me, which is why I... [er] I think that I, I, I relied heavily on the midwives [um] for, and, and I was relying on them to make the right decisions for me, I think, because I wasn't capable. ... And so we were like, we were quite reliant on the midwives to say, "This is how it should be." So we kind of went along with that, so when she said, she gave this whole speech about, "Trust me, I'll make this happen for you,"... even though deep down I didn't trust her and I didn't like her at the time... and, you know, I, I was, you know, I, I was, I was going to do what she said because that was all I could do. She was, you know, I had to do what the expert said at that point 'cause I wasn't capable of thinking for myself or making a decision for myself what was best for me, just wasn't capable. W25, FMU*

The experience of this woman and others who described a similar loss of trust in their carers highlights the vulnerability of their position. This vulnerability also finds resonance in the final emerging theme in this section: feeling in control.

### **7.3.3 Feeling in control**

Women described creating and feeling different kinds of control during labour. For some women feeling cared for and supported by a trusted midwife was a source of empowerment. In this vein, one woman described her experience in the MU as “liberating”; while for parts of her labour she felt “in the lap of the gods, you actually have no control”, overall she felt enabled to achieve something important through the care that she received. For some, feeling in control was explicitly important and something that they hoped would be enabled by choosing to have their baby in an MU.

For others the importance of feeling in control was evident in other ways such as having their own space and managing their labour in their own way.

*I don't like being fussed around and don't like being bothered so I think that might have been part of it, that it was so nice at [FMU] because it was just literally, "Get on, we're watching you, we're monitoring you," but kind of left to your own devices... I'm a lot better just being left to kind of get on with it, and if I need help I'll ask for it. W03, FMU*

Some women maintained a sense of control by deciding to relinquish control to others. One woman described being “terrified”, during her pregnancy, of the possibility of complications arising during her labour.

*I think it was about [er] that was probably about losing control. It was about suddenly having... something that I expected to be quite kind of emotional suddenly become quite medical... [um] and something that I'd imagined as quite private becoming, involving a lot of people, [um] and I think... I think it was that transition. W08, AMU*

When she needed to be transferred quickly because of rapidly rising blood pressure and in the hours that followed she described feeling “scared” at feeling “out of control”, but in the end maintained a sense of control by allowing those caring for her to take control.

*I think at that point I just [er] put myself in the hand of the medical team and just... you know realised we needed to do that. W08, AMU*

Women who requested to be transferred often did so in the context of long or increasingly painful labour, usually in order to have epidural pain relief, but may also have been seeking to retain or take control of their care. One woman asked to be transferred from an AMU because she was concerned that her labour wasn't “progressing”, wanted her waters broken in order to “keep things going”, but was also concerned about an apparent shortage of midwives in the MU and that she might, later on, want an epidural. In her report, as in some others who requested transfer, a feeling that nothing was “happening”, “moving” or “changing” is apparent.

Another woman who also started labour in an AMU said about her decision to ask to be transferred:

*It wasn't happening naturally, and no-one was giving me any sort of solution for moving it on naturally. [Um] I mean I suppose I could have had my waters broken in the [AMU] instead of [OU] but... you know I, I actually felt that nothing was moving and I wasn't being given... [um] you know, any advice on how, how to change that. W12, AMU*

Feeling not in control, as was reported by some women, could be frightening and distressing. For some women the feeling of loss of control came as they were transferred from the MU. One woman described having an internal examination on arrival at the AMU. The midwife then said that she had concerns about the baby's heart rate and that to call assistance she would press the emergency call button.

*And before I knew where I was she's pressed the emergency button, every man and his dog in a medical uniform had come running into the room as they start to rush my bed out of the room and off the birthing centre I go ... and as they're moving me I'm there, streaming in tears, kind of thinking, "Oh my God, what the hell's going on?" You know, "Is my baby okay?" And my mum, my husband are just there grabbing my bags while they, you know, try and, as they follow me through to find where I'm going. [Um]... I wasn't given any choices or options as to what the possibilities were or what they needed to do or... anything like that it. W17, AMU*

She reflected later:

*... a lot of the advice and support that I'd been given beforehand, a lot of it was about control... and, you know, the whole idea of you being in control and managing that pain the best that you could. Well... the moment I was moved [pause 3 seconds] and I didn't really think about it like this at the time but, you know, when you kind of reflect on things afterwards, the moment that I was moved it, all that control was taken away from me. W17, AMU*

For other women, loss of control, often accompanied by increasing fear and distress, was something experienced over the course of their stay in the MU. Again this was often against a background of prolonged labour and increasing pain. This was particularly evident in one woman's narrative. When she described the first few hours of labour in the MU she talked about what **she** was doing, how **she** was managing her labour; as her story of her time in the MU progressed she began to talk about things being done to her, "they decided to break my waters," "they were making me walk up and down". Prompted to reflect on whether this change of emphasis reflected how her feelings changed during her labour she said:

*R ... yeah that's exactly how I feel about it, I was in control in the beginning, I was in control and it felt good, and in the end I just felt that there was nothing I could do, I was completely... I was so out of control, you know, I could, all I could do was like try and cope with the constant contractions and fail. I wasn't coping with them at all, the way that I felt that I should have been... and that's why I was looking towards the midwife to guide me, because I just... or she, or they'd taken over control or, however, the balance shifted and that's when I felt really... you know, that's when I started to feel really [pause 3 seconds] you know, negative about the whole experience, 'cause it was something that I was no longer in control of.*

*I Did you feel safe?*

*R No. Not at, not at the end, no. W25, FMU*

### 7.3.4 Women's feelings around the decision to transfer

Reflecting the wider population from which they were drawn, the women taking part in this study were transferred in a wide variety of circumstances. A small number spent only a few minutes in the MU and were transferred in the early stages of labour. Most were transferred after a few or more hours of labour, typically for “failure to progress”, but also for concerns about the baby’s wellbeing (e.g. fetal heart rate irregularities or meconium stained liquor) or that of the woman (e.g. hypertension) or at the woman’s request. Two women were transferred in the immediate postnatal period, after having had their baby. For some, transfer was a response to an unequivocal emergency, for most it was a ‘judgement call’ for the midwife, involving the weighing up of several factors including the woman’s and the baby’s immediate situation, clinical guidelines and, in some instances, the views of the woman herself.

While the circumstances varied, there was some commonality in women’s responses to the decision to transfer and their feelings around that time. The influence of their experience of care up until the decision to transfer may also be seen to be important.

Typically, women who had a broadly positive experience in the MU were accepting of, or at least resigned to, the need for transfer, while at the same time feeling disappointed.

*... it was a bit of disappointment but it wasn't overwhelming disappointment, it was more [um] resignation I suppose, so there, it wasn't a kind of, "Thank goodness, get me to..." you know, it was like, "Okay, that... [um] I was prepared for this to be a possibility so that's fine, I'll go with that," kind of thing. W02, FMU*

*... we'd been very satisfied with the care we'd been receiving up 'til then, we had no reason to doubt them, certainly didn't think that they were going to be transferring us just for the hell of it or... because they didn't want to see us there anymore or anything like that so... we were quite... although disappointed we were quite comfortable with the decision, with the recommendations that were made, [um]... and so, and so, you know, agreed to them and said, "Yeah that's fine, you know, we will... follow whatever course of action you think is best." W05, FMU*

While they were disappointed, understanding the reason for transfer and trusting the professional judgement of their midwives helped women feel more comfortable about the decision to transfer. Several women also commented that ensuring the safety of their baby was the most important consideration.

Disappointment was an almost universal emotion when faced with the need to transfer out of the MU. Those women who did not talk about feeling disappointed at the decision to transfer were transferred in an emergency (or in a situation that felt like an emergency), had themselves requested transfer or described an overwhelming feeling of “relief” when they were first told of the need to transfer. Disappointment was about the loss or “disruption of the vision” of an “ideal birth.”

*It felt quite... [sigh] I'd say, not scary but it was, because it wasn't what we'd planned I was very disappointed, and I was also very tired by then, hadn't slept sort of for a night and we'd been up very early the morning before and... so it was a kind of relief that we were going to go somewhere and it was going to be hurried along, but also very disappointed. I think I actually burst out crying because I was disappointed that it wasn't going to be how I wanted it... W03, FMU*

*Because you have a sort of... well I had a sort of vision that, you know, I'd go out to the [FMU] and, you know, give birth and we'd all be sitting there nicely with the baby at the end of the day and... and disappointed in just little things because... I'm quite a rational person, you know, to be told you're doing brilliantly, or to be told all the way through this is so efficient, and then to discover that actually you're not so efficient at the second stage, when you're sort of thinking, “Oh, I've just got...” you know, “For the first stage I sort of got well ten out of ten from the teacher and now I'm not getting very much,” sort of thing, it's... it is a bit of a disappointment. So yes, there was a feeling of disappointment, that it wasn't what I'd wanted, or wasn't how I... wasn't how I'd pictured it or imagined it. [Um]... but at the same time it was a case of... “I, I would quite like this to be over now... so whatever it is now that's necessary to make it over... then we'll... we'll do that.” W05, FMU*

Others also spoke of disappointment being tinged with relief. While they were losing their vision of the kind of birth they wanted they felt they were moving to a place where there might be some relief from pain, for example, or where they would finally have their baby.

For some women, disappointment was also about a sense of personal loss or even failure, of letting oneself down.

R [Um] I think I was disappointed that I wasn't having the birth that I wanted, [um] or planned. [Um]... and I think I was a bit disappointed, as I said, like sort of in myself in a way for not, huh...

I Yeah, you even said cross with yourself didn't you?

R Yeah, just for not having sort of got on with it, if you know what I mean. [Laugh] There was nothing I could have done but... [er] yeah, so I think that's sort of what I mean by disappointed.

I Yeah. Somehow your, your kind of body had let you down or, or [er]...

R Yes, that sort of thing, yeah, just... I wasn't [er] I wasn't doing it naturally, that's what I wanted... W30, FMU

For the small group of women who described a deteriorating experience in the MU and who no longer felt cared for or safe in the hands of their midwives, their accounts of the time leading up to the decision to transfer were dominated by pain, exhaustion and feeling unable to cope. The decision to transfer brought an overwhelming feeling of relief.

Um... and I actually thought, when I first bled and she said, "Right, we're going to move you", I just had a wash of relief that, "Thank God," because I couldn't, "I can't cope with that much," you know, that was... I was, it was, it was a relief to be... that I was going to be transferred.

W01, FMU

R How I felt was, "Yeah, I want to be there now," you know? I, I was like... I was literally, "Thank God."

I Right.

R "Finally, finally, get me out of here." I wanted to be out of that whole place. And really I just, you know, I just felt like it was... from going in there and feeling like, "Abb, this is everything I want," it became this... this hellhole that I couldn't stand to be around anymore... it was just... this vile, vile, awful place that I, I wanted to be away from. W25, FMU

#### **7.3.4.1 Timing**

Given that many transfer decisions are 'judgement calls' made in a grey area of decision making where the timing may not immediately appear to be crucial, women's perceptions of whether they were transferred at broadly the right time in their labour are potentially instructive.

Most women who were accepting or resigned to the need to transfer were also broadly accepting that they were transferred at the right time. Some appeared more 'reluctant' than others and talked about what might have happened if they had said they didn't want to be transferred at that time. One woman, who had a long wait for the ambulance to arrive, and was told that if the ambulance didn't arrive soon she would have progressed too far and would have to stay, reflected that she could have subverted the transfer process.

*And with hindsight I just wish at that point I would have lied and said, "Oh yes, it's changed, I really feel the need to push," because obviously then they would have left me there and not, and not put me in the ambulance but then, as luck would have it, the ambulance crew arrived and they went, "Oh look, they're here," and I thought "Yes, great, fantastic." [with heavy irony] W18, FMU*

Another woman asked to be transferred for an epidural, but when the ambulance arrived wanted to change her mind.

*And thinking back now, I do wish [um]... although they just said, "Do you really want to go?" and I was like, "Yes, definitely," I wish they had, probably actually said to me, "You don't have to go, because we think you are close," because I... I also remember feeling, "Oh I should go because it is here as well," even though I was thinking, "I'm about to push," [um] and I do think I felt... "Right, I've got to go 'cause it's here," kind of thing [um]... W24, FMU*

For some women while the decision to transfer came at the right time, their actual transfer was delayed. One woman was frustrated that her transfer for an epidural from an AMU was delayed by several hours because of staff shortages in the OU. Two other women experienced long delays because in between the decision to transfer and the transfer taking place the units to which they were transferring became full and were closed to admissions. As a result both had long and distressing ambulance journeys to unfamiliar hospitals.

Those women who felt overwhelmingly relieved to be transferring also felt that the decision to transfer came too late, but were unable to communicate this to their midwives.

*... I just, I think they left it a bit late to transfer me personally. Because they waited 'til it was a level where... you know... it, they didn't move me whilst there was still an element of control, they moved, they called time when they really just couldn't cope with it any more... and it, it was, it made it into a traumatic affair rather than a... rather than a, "Actually, right it's not, it's not*

*going to plan, it's stuck, we think that you, you might benefit from some intervention so let's get you moved." W01, FMU*

One woman in an AMU described asking her midwife if she could transfer for an epidural.

The midwife returned and said that staff in the OU were too busy.

*I, I just think she... she didn't, she didn't even go to ask, that's what I thought at the time. [Um]... I think because she just [um] she just thought that it, everything was going to be alright and I was going to deliver there. [um]... I don't think she did anything, you know... she didn't mean to do any harm or she didn't, definitely not, I don't, I don't think she did anything on purpose but [um] I just think that probably genuinely she just thought that... it was going to be alright...*

*[Um] I think her judgement was that [baby] was fine, because she was monitoring her and every time she said she was fine [um]... Probably that's why she thought that it could get a bit further along and a bit more, and a bit more. W23, AMU*

### **7.3.5 Summary**

Women's accounts of their experience of MU care show their need to feel cared for by their midwives and the ways in which feeling cared for, trusting the midwife and feeling in control were inter-linked. Clear, factual information about procedures and progress during labour, particularly with regard to the decision to transfer, was appreciated by women.

Understanding what was happening, where the midwife was and how to contact her if necessary, helped women feel calm, more relaxed and safer during labour. When women felt that their midwives understood their needs and were mindful of what they were feeling, they felt supported, cared for and enabled. Women who did not feel cared for felt alone, anxious, frightened and unable to cope. Women who experienced emergency situations understood the need for staff to act quickly, but found the level of activity coupled with bland reassurance "isolating" and frightening; "You'll be fine, your baby is fine" was less helpful than "You've lost a lot of blood, we're putting this line in because...".

Women were naturally inclined to trust their midwife; feeling cared for by the midwife facilitated trust. Inconsistency, evasiveness, a "cold" manner and apparent anxiety or panic

in midwives eroded this trust and again made women feel anxious and frightened. Being cared for by a trusted midwife helped women to feel calm, relaxed and in control. Some women took control by requesting to be transferred; for others feeling out of control was frightening and distressing.

By and large, women who had a positive experience of their care in the MU accepted or were resigned to the need for transfer. While they were disappointed at the disruption or loss of their vision of labour and birth, they understood the reason for transfer and understood why the decision had been made. Women's accounts highlight the vulnerability of women during labour and the potential for midwives to influence women's experience. Some women in this study experienced a notable deterioration in their relationship with their midwives, often against a background of prolonged labour, increasing pain and fatigue. By the time the decision to transfer was made these women felt frightened and alone, unsupported by their midwives and unable to communicate what they were feeling. The decision to transfer was greeted with overwhelming relief.

#### **7.4 Women's experience of transfer**

All of the women who took part in this study transferred from an MU to hospital during labour or in the immediate postnatal period. Just over half transferred from an FMU in an ambulance, two women in a private car, with journey times ranging from around 10 minutes to an hour. The remainder transferred from an AMU, walking, in a wheelchair or on a bed or trolley. This section explores the themes arising from their accounts of the period during transfer, from getting ready to leave the MU to arriving at the OU.

Women's accounts showed the impact of the change of environment and personnel and their need for support during this period. Linked with this, as women coped with these changes, the theme of control, with sub-themes of choice, dignity and time, featured strongly.

### 7.4.1 Needing support and security amidst change

For many women, particularly those travelling by ambulance, transfer meant a move to a temporary, “foreign” environment. Most had never been in an ambulance before and the physical discomfort was vivid, unpleasant, unexpected and something that they were not prepared for.

*The literal getting on the trolley and being pushed out into the ambulance. That bit [er] as part of the transfer, is really strange, 'cause you're having to really transition from a lovely warm birthing pool, lovely room, calm music, to sound of a rickety metal trolley with a blanket over you, going into the cold, being put in the back of an ambulance. That's quite a shock actually... W02, FMU*

*[Um]... I [um]... I just remember being strapped onto the... trolley thing, being wheeled, you know, [er] in the lift, down the, down into the ambulance [um]... I just remember just being really surprised with how rickety, it was like a real boneshake of a ride, I just... I can't believe how rickety... I, I just... are, are all ambulances like that? I just, I was, just couldn't believe it! It was the most uncomfortable ride of my life... W25, FMU*

The physical experience of transfer was generally less notable for women transferred from AMUs, but women who were transferred in situations that were managed as emergencies also talked of the change of pace and were left with strong images of the often short journey from one part of the hospital to another.

*And I remember people walking past us in the corridor on the way [um] but I had no pain relief at that point and my contractions were really close together and obviously I was really worried so it was a bit of a blur, but I remember people walking past and just looking and just getting back to the walls to get out of our way. But it was like ER because the double doors were going and we were just shooting through them all and God there were so many doors... W14, AMU*

At the same time transfer meant a change in women's social environment. The introduction of ambulance personnel to the small group of people who had been looking after them during labour brought a change of emphasis that could be difficult to adjust to.

*Yeah there was [um]... a really irritating ambulance woman who really really irritated me. She was about, she seemed to be about fourteen and she kept saying, "Oh, oh it'll be alright, nothing to giving birth," [laugh] which was really... really overly cheery, I wasn't in the mood because I was pissed off 'cause I was being transferred basically, [um] but also because I hadn't been chatting at*

*all, it hadn't been a chatty thing for me at all, being in labour. It had been a very focused, calm, quiet sort of thing, so being suddenly in the back of an ambulance with someone chatting to me and telling me that it was all normal and natural, and I knew that anyway. I didn't really know why she was saying it to me but she was perfectly nice, there was nothing wrong with her, that was just me being ratty. W11, FMU*

The attitude and behaviour of some ambulance staff could also lead to a feeling of being simply “transported” rather than being cared for. One woman described the contrast in attitude and change of pace she experienced when she was transferred for slow progress in the first stage of her labour. Her understanding that the transfer was not an ‘emergency’, that there was “no need to panic,” was shaken by the behaviour of the ambulance personnel and as a consequence she felt “stressed” and “worried”.

*It was very... as I say at [FMU] it was just so calm and relaxing and although they were saying, “Think you’re going to need a bit of help,” and it was like, “Oh okay, fine,” [um] to then suddenly kind of... It felt like, it probably wasn't, but it felt like something like doors flew open and these people came in and scooped me up and put me on a trolley and wheeled me out, and it probably wasn't like that, but it just felt like it was a lot more... they were there to do their job, to get me to the hospital, which is fine, but it did feel like it was very rushed and very [pause 3 seconds] sort of, “Quick, let's go.” [Um]... which, yeah, it wasn't... wasn't ideal for me... W03, FMU*

In contrast, for women who had a negative or deteriorating experience in the MU, the changes associated with transfer were signs of hope or a new beginning and the introduction of different people could be a positive thing. One woman described feeling “calm” and “more relaxed” in the ambulance than she had been in the MU. In contrast to the midwives, who she had found “cold” and unsupportive, the ambulance staff treated her with “care” and “compassion”. Another woman described being relieved to be leaving the MU.

*I just remember, I remember feeling reassured by the... by the ambulance staff, the, the driver or whatever. [um] I remember being called sweetheart and, you know, as they were getting me in there and it was just nice to have other people other than the midwives, and I just, it just felt like, “Oh there's all these people that are taking me to somewhere where I, I can...” you know, they were just all part of the, of getting away from the birthing unit and getting away from the pain type thing. You know? W25, FMU*

For most women, however, the changes associated with transfer were unsettling. In this context women found support in continuing care from their midwife. One woman described how she would have felt “abandoned” if her midwife had not travelled with her in the ambulance; another described that prospect as “horrible”. Physical contact, such as hand holding or stroking, was appreciated by women, as was calm factual information about progress in the journey and what would happen on arrival at the hospital. Other ‘everyday’ conversation could also be reassuring.

*R: [Er] Just talking about what they were doing at the weekend, there was some very normal kind of non-anxious making conversation happening, which was also very nice, [um] but the thing for me was the physical holding hand, encouragement, “You’re doing really well, it’s okay, we’ve only got 10 more minutes,” you know, “don’t worry, when we get there somebody...”*

*I: So you didn’t feel anxious during...?*

*R: No, I didn’t. And as I say that was because she was holding my hand, she was talking, she was repeatedly reassuring me and she was having a kind of very matter of fact conversation with the... and that all felt very normal, and that normality felt very important because had it not been normal then it would have been very terrifying to be in an ambulance and contractions and you’re not sure what’s happening. So that’s really, that was very reassuring. W02, FMU*

Women also wanted, but were not always able to have, continuing support from their husband or partner during transfer. Women’s experience in this regard varied. Some women were offered the choice of having their husband in the ambulance with them or following the ambulance by car. In these circumstances, practical factors such as how the husband would get back from hospital without a car sometimes influenced decision-making. One woman was given the option of having her husband or her midwife in the ambulance and chose to travel with her husband, while the midwife followed in her car. Those women whose husband travelled with them in the ambulance valued their husband’s presence.

*The, the attendant was nice and helpful, I had the gas and air, [partner] was with me. If they’d separated us then I would have just fell apart. ‘Cause I, I really felt I needed his support then. W04, FMU*

Women who were told that their husband could not travel with them in the ambulance found the journey particularly worrying. Their fears included having the baby in the ambulance without their husband present, their husband driving too fast while being upset or worried and not being able to find the hospital and park the car in time.

*Yeah I mean... phm... I didn't like that. I was hoping my husband could have come with me or at least my sister, one of them. [Um] I wasn't too sure why they both couldn't come, or not even one [um] [pause 3 seconds]. Yeah and my husband wasn't very happy about it obviously 'cause he, I think he had the same concerns as I had about, you know, "What if she has the baby in the ambulance or...? You know they turn round and I don't know about it because..." And he was going fairly fast, probably faster than he should have been but I don't think, he couldn't keep up with the ambulance obviously. W13, FMU*

*The pain, the pain of, of being transported [um] was... I think what probably set me up but when I got in the ambulance and I was having these contractions and they were hurting a lot more because I was laying down... and I wanted to be stood up [um] and then I just thought, "[Husband's] not here", and that's... it was just, it was just this overwhelming kind of... "[Husband's] not here, and I want him here," and, and that's when I just, it was too much. [Laugh] So yeah, that would, it would have definitely helped... 'cause I, I think, you know, it's no... wasn't under any illusion that it wasn't going to be painful, but you can't really deal with the pain when you're worried that your husband's not going to make it to the birth. It, it made it lots, lots worse. W18, FMU*

Women also described drawing on their own 'internal resources' during transfer. One woman described feeling "like I really had to just stay very calm". Others described focusing on their breathing or on signs of progress in their journey.

*[Um] [midwife] was holding my hand, I remember being told, "Oh, you know, we're almost there now, we're nearly there, we're just coming in," and, you know, getting to the hospital and... You know just every minute I was just like focused the whole time on, you know, "We're here, [er] the ambulance is stopping, oh it, you know, being, it's, I'm being taken out, I'm being wheeled into the hospital, wheeled to the left," you know, all this stuff, it was just... you know, "Yes, get me there, get me there, get me there," you know?... I really like fought to stay in control of that ambulance ride, 'cause it was like I could see a light at the end of the tunnel at that point and, you know, I just knew that I had to hold on type thing. W25, FMU*

While deriving some comfort and support where possible from husbands, midwives or other medical staff and using other strategies to "focus" or remain "calm", women also described a range of worries, fears and anxieties during transfer. These included fears

about their babies' or their own well being, and worries about what would happen when they arrived at the OU. Almost universally, women kept these worries to themselves.

*I was fine. I felt quite... sort of... with, not with... well I suppose withdrawn, I was... I didn't talk a lot on there and I sort of just [um] rolled over onto my side and had a bit of gas and air. I suppose I was [um]... contemplating things actually. [pause 3 seconds] Thinking, "What am I going to expect this end? In [OU]?" I remember not, I wasn't, I didn't say that much to anyone on there. W06, FMU*

*... with every contraction I was just losing... blood so um, I was fearing for the life of my baby and also um just fearing that a) the baby would die because there had been no fetal monitoring and his heartbeat had gone up prior to going into the ambulance, um, and also just fearful that I'd lost so much blood that actually I might have to lose my womb... because I, you know, it, it was a long time and it, you know, you just know it's definitely not right. So um, yeah, I was just sort of, just... sort of er sobbing just sort of quietly to myself, whilst lying on my side just sort of, you know, just sort of fingers crossed. W01, FMU*

Another woman who experienced an hour long journey in an ambulance after more than 24 hours in labour described "dwelling on" how she would manage labour at the hospital in her "exhausted" state and whether she would need augmentation or a caesarean:

*I should have asked somebody about that but I didn't ask, I just... so... there was loads, I was just thinking about loads of things, I think. W30, FMU*

She went on to describe further memories of the journey:

*R I remember her [midwife] being there and she was just sitting there looking at me, [laugh] and I was looking at her. I don't know why but I wasn't really...*

*I Did she talk to you at all?*

*R [Um] she kept saying "We're nearly there now." [um] She didn't really say much... much to me at all [um]... No... She just kept... taking, monitoring something, I don't know whether it was some temperature or heart, [baby's] heartbeat or anything like that. ... I just remember her sitting, I just remember looking at her, lying there just looking at her like that. W30, FMU*

These and other accounts reveal transfer as a period of 'watchful waiting' or 'anxious anticipation' for many; a "limbo" period during which women wondered or worried about what was to come, but could be passive participants in the process. Women's passivity, and the ways in which some aspects of loss of control during transfer could affect women's experience are also explored in the next theme.

## 7.4.2 Control

Not feeling in control and the ways in which women could take some element of control of the transfer process featured strongly in women's narratives of transfer. Not feeling in control was worrying and frightening.

R: *I mean obviously I would have coped, I would have had to have done, lots of women do, but [pause 3 seconds] it wasn't what, you know, it wasn't how I envisaged it.*

I: *Mm. And when you said "panicky" [um] what does that... mean?*

R: *Just that it was out of my hands, no, I mean I'm a bit of a control freak anyway [um] but... it, it wasn't up to me anymore. It was up to medical staff, I was being transported, I'd be put in a room, I wouldn't have any say over where that room was or... that's what made me feel... just nervous I, I guess. W11, FMU*

Having control over some elements of the transfer process helped women feel more comfortable and calm.

### 7.4.2.1 Information and choice

One of the most immediate and striking aspects of loss of control was the way in which women were "transported" from one setting to another. A small minority of women had the option of walking to the ambulance or were given the option or themselves asked to be able to sit upright in the ambulance. One woman described how she was given choices when the ambulance arrived:

*... when they did turn up they sort of said, you know, did I want to walk to the ambulance or... or what did I... or did I want to have a wheel chair and I was like, "Oh I'll walk, and move around a bit," you know, sort of silly little things like they were saying, you know, "Do you want to put your trousers back on again?" W05, FMU*

As with most women however, when she got in the ambulance there was no choice. The simple physical act of having to lie, strapped down, in the back of an ambulance was a stark contrast to women's experience prior to transfer and a vivid illustration that things had been "taken out of our hands".

*I don't think he [ambulance staff] understood how uncomfortable I was on the stretcher and kind of not being able to move, because I'd been so active throughout the labour. All I want, even if I could have sat up in the ambulance would have made a difference I think, but I wasn't... given an*

*option, it was just like, "Here's the bed, are you on it? Strap you on, off we go." [Um] And I think maybe if I'd thought about it more and hadn't been... in such a place in my head, I would have said, sort of said, "Look, can I sit up? Can I move around, can I do this and whatever?" So, but I think... I just felt that that was a bit taken out... of my control because I couldn't... yeah I just was uncomfortable and didn't feel like I could ask to be different. W03, FMU*

Once at the hospital all women were transported either in a wheelchair or on a gurney.

Again, some women would have appreciated the option of being able to walk.

Not feeling able to ask was a common observation in women's accounts as was 'not knowing'. Many women had given little thought to the possibility of transfer and even less to how the process would work. Thoughts and uncertainty about where they were going, what would happen when they arrived and who would be looking after them in the OU featured in several accounts. One woman who had her first baby in the OU to which she was transferred during her second labour nevertheless felt anxious about not knowing where she was going.

*R No, I had no idea. That, yeah, I had no idea, I had no idea what would happen after I got out the ambulance, and then they put me in a wheelchair, I had no idea where we were going to go and what, I suppose yeah...*

*I And that's even though you've been there, I mean you've been there before?*

*R Yeah, yes, I mean I, yes, because I was... yeah before because I had to stay a couple of nights before and then I was taken down to the delivery suite, I didn't know this time what the procedure is, if you've just arrived would we have to wait until they've booked us in, 'til they have a room available, I didn't know. Yeah I didn't know any of that. W24, FMU*

This woman was also uncertain whether her midwife would stay with her when she arrived at the OU. Another woman described the disappointment of arriving at the OU and realising that her midwife was returning with the ambulance.

*R No, that wasn't explained to me. [Um]... and the young girl who was with me [midwife], [um] she was very, very nice, very... she'd actually done some of my check ups and that so I knew her quite well and it just happened that she was on duty the night that I went into [FMU]. And [um]... she came with me in the ambulance and then what happened was when we got there, when we got there she said, "Okay [name], I'm, I'm going to be going now but this is..." whoever it was, I can't remember her name, "She's going to be taking over and looking after you here." [Um] and then she left but that wasn't explained beforehand.*

*I How did that feel, that point where she said, "Well I'm... I'm going now."?*

R [Um] it was, yeah it wasn't very nice because I'd sort of... she'd been there the whole time, you know, through the second stage and while I was trying to push and... yeah, so that, that didn't feel very nice [um]... I sort of wondered why she wasn't staying with me, whether it was maybe the end of her shift or I don't know, but, or she had to get back, I suppose, to [FMU]. W13, FMU

For many women, feeling uncertain, not in control and having questions that they did not feel able to ask was a direct contrast to their experience in the MU.

#### 7.4.2.2 Dignity

A further aspect of loss of control for some women during transfer might best be described as a loss of “dignity”.

One woman remarked, when talking about what she was wearing on her way to the ambulance:

... it was sort of round about that time I was saying to myself, “Yeah, dignity just goes completely out the window during labour,” W05, FMU

Later she talked about arriving at the hospital.

I just have this abiding memory of... I don't know how many corridors they walked down to get to the room I was in [um]... there was like the staff meeting party something in one corridor that we were going down 'cause there were sort of about twenty members of staff all just stood around and there's me getting wheeled by and... in pain and, you know... not looking particularly glorious as, you know, and they're all just sort of stood around chatting and whatever, but there was quite a long wheel to the... delivery room I was in. W05, FMU

There is some humour in this scene and other women also used humour to talk about this issue:

... strapped to an ambulance in [laugh] dodgy nightshirt and paper knickers, I was like, “No, please, I've never been out like this in my life.” [laugh] W03, FMU

Nevertheless the need to retain some sense of “decency” when moving from the warm and intimate environment of the MU was an important one. Other woman talked more explicitly about their concerns:

*I kind of remember my husband had a t-shirt there, 'cause I was completely naked, you know, I'd come out of the water and I was in front of the midwives and they were all fine [um]. Then my husband put my t-shirt, his t-shirt on me and [um]... I can't remember, I didn't put any pants or anything on, just the t-shirt and then... you know, then I still had to get on to the trolley, and they had to put the blanket over me and put it up, 'cause it was January so it was cold outside but I still, that what, that actually did make me feel a bit uncomfortable because I still felt exposed, you know, with the paramedics there, there's two chaps. But I mean I know they've seen all sorts and done all sorts but it was still... I don't know, you know you feel a little bit violated, if you know what I'm saying [um]... W13, FMU*

*I was, you know, half naked and felt very, very vulnerable. [Um] and it's a horrible drive to [OU] [um]... and the midwife was just sort of patting me and chatting... and I thought. "Oh my God." And then that, that's when the panic, that I felt the panic come through me, I felt the anxiety, I felt the adrenaline come through, and I just started being sick. I was just like, "Oh my God, oh my God," you know, "This is it, I'm just going to die in this ambulance." But I just remember being, feeling so cross that they were just chatting away in the ambulance and I just felt like I was shoved in the corner with my bum in the air, ... W26, FMU*

Something as apparently simple as being adequately covered up during transfer and not, having your “bum out” in the ambulance or on a trolley in a hospital lift or corridor was an important indication to women that they were being cared for and treated with respect and dignity.

#### **7.4.2.3 Journey time**

Perceptions of the length of the journey between MU and OU were a feature of most women's accounts. For women transferred from AMUs these journeys were short and largely uneventful, “quick and easy”. Transfer in emergency situations could be “a bit of a blur,” one woman commented that two minutes on the trolley “feels like forever at the time.” Some women had explicitly chosen to have their baby in an AMU because of concerns about transfer time.

*... I thought, "Well that's alright, I've only got to get in a wheelchair, up in the lift, and I'm there," and it was the fact that it, it is sort of twenty minutes sort of in the ambulance, you know, and if it's a serious problem to, you know, twenty minutes is a long time... before you kind of get to see a doctor so... W16, AMU*

Journey time was of more significance for women transferred from FMUs by ambulance or car. Where women had expectations of transfer these often related to journey time.

For relatively short journey times, around 10-20 minutes, women talked about the journey being uncomfortable, but manageable, because it was only for a short time. Women used language such as “fortunately it only took ten minutes” and references to the time of day and the amount of traffic also commonly featured. These factors, all beyond women’s control, and often unanticipated, could impact on women’s experience.

*... and I was actually at the [OU] probably within fifteen, twenty minutes. So the actual transfer bit, because it was a Sunday evening as well, sort of one o'clock in the morning, it was quiet on the roads so the actual bit then was very good. W10, FMU*

Another woman who had a ten minute journey said:

*Traffic wise... I suppose it was... I don't know, I was going to say, "Did I think about the traffic?" and I don't think I did actually... because... I was fairly comfortable on the... in the ambulance so it, it didn't seem to be a long journey, it just seemed to be... pretty average. I didn't think I was in there [pause 3 seconds] in the ambulance any longer than I should of and... W06, FMU*

Where journey times were longer, and particularly longer than the woman expected, this could be more difficult to cope with. Some women had anticipated that the journey in an ambulance would be at high speed and therefore faster than a car.

*What I thought was going to be like a ten, fifteen minute rush job to the [um] [OU] actually took 45 minutes because they went so slowly [um] which was absolutely horrendous at the time because the gas and air... because I wanted to push and I think I was thinking, "We'll be there in a minute, we'll be there in a minute," and it was just they were going very, very slowly and even the midwife behind me couldn't believe how slow the ambulance was going, and it was a very long journey. W24, FMU*

*I knew that it was a 50 minute car drive so I was expecting it to be shorter than that in the ambulance, which it really wasn't that much shorter, even though he had his lights on for part of, you know, part of the journey. [Um]... and I wasn't expecting it to be so bumpy either, it was very, very, very uncomfortable so... W26, FMU*

For women being “transported” in an uncomfortable, unfamiliar environment, long journeys gave maximum opportunity for fear and anxiety to set in.

### 7.4.3 Summary

For women transferred from an AMU, the “journey” from one part of the hospital to another was largely uneventful, “quick and easy”. The exceptions to this were women who were transferred in “emergency” situations, for whom the sudden change of pace and environment could be isolating and frightening.

For women transferred from FMUs an ambulance journey meant a move to a temporary, uncomfortable, “foreign” environment for which they were largely unprepared. In this context, it was important for women to feel that they continued to be “cared for” rather than being simply “transported”. Women found support in continuing care from a trusted midwife but particularly valued the option to have their husband or partner with them in the ambulance. Having other choices helped women feel cared for, more in control of the situation and less like an object being transported. Being able to walk to the ambulance and having options of different sitting or lying positions in the ambulance were important for comfort, but also because these things helped women feel more in control and more part of the process. An awareness of and consideration for respect and decency also mattered; choice about what to wear in the ambulance and making sure that women were appropriately dressed or covered were appreciated, but did not always happen.

In an uncomfortable and unfamiliar environment shorter journeys were manageable, but women were still aware of and anxious about the potential for delay. Longer journeys, and in particular those that were longer than anticipated, were more difficult and more worrying.

# Chapter 8

## Qualitative Study Results II:

### Care After Transfer and Beyond

#### 8.1 Chapter overview

Results from the qualitative interview study covering the period immediately after transfer from the MU and the weeks and months following the birth are presented in this chapter. In two sections women's experience of care in the OU and in the immediate postnatal period and their reflections on coming to terms with their birth experience are explored and described.

#### 8.2 Women's experience of care after transfer

This section describes women's experience of OU care during labour and birth and during the immediate postnatal period, when some women had the option to return to the MU where they had planned to have their baby.

When talking about their hopes and expectations during pregnancy many women described their perceptions of a contrast between MU and OU care. A theme of contrast, and an accompanying theme of continuity, emerged strongly from their accounts of care after transfer. In the immediate postnatal period women wanted to feel cared for, but were often disappointed by the care they received.

### 8.2.1 Contrast

The dominant theme emerging from women's accounts of their OU care was one of contrast with their MU experience. The physical environment was one immediate area of contrast; rooms were "stark", "clinical", often smaller, brightly lit and women were aware of "machines" and "monitors". As many women were required to have continuous fetal monitoring, either on a bed or with some limited movement, this meant that their experience of the physical space was also different.

*All I can actually really remember is being put into a... obviously the space is very different to a birthing centre, it's much more clinical, the lights were on, [um] lots more machines, [um] and [um] the sense is, is that you're then lying on your back, there's no movement, and monitors are on you, so it's a very different [um] experience basically, much more sort of [um]... feeling of not being able to move, recognising the clinical nature of the room, being monitored, and then really going with what they suggest. W02, FMU*

Women also commonly described a change in their social environment, most typically in terms of the number of people, "pace" and "busyness", but also, for some women in the "focus" of their midwives.

*Yeah. It just... I don't know, whereas in [FMU] I felt very important and very... they were there to look after me, whereas when I was in the hospital it was like, "Well I'm here to do a job but kind of I want my tea break and I want to go off and do this, and I've just got to go and clean something or I've got to..." They, they didn't, the focus didn't seem to be me, which at that point I was quite worried and quite anxious and needed that reassurance, needed someone to be there just to sort of go, "It's fine, it's all going to work out and it's not a problem". W03, FMU*

This woman went on to describe how the midwives in the OU repeatedly offered her pain relief although she had clearly written in her birth plan that she did not want any.

*R: Nobody spoke to me about it, what was happening and I just said, "Look I don't want drugs, it's... I just... don't." [pause 3 seconds] It was just a big thing for me that I didn't want to do that, but no-one asked why or what my feelings were on it or... they just kind of kept offering it and... yeah, no-one asked to see it [birth plan]. Whereas at [FMU] every shift change we had they sat down and sort of read through my birth plan and read through sort of any notes that I had, and actually made... And asked me, a couple of them asked me questions on it, said, "Right you've written this, does that mean this, that and whatever?" Where, yeah, at [OU] not... no-one even asked about it.*

*I: And why do you think that was?*

R: *I don't really know. I think it's more businesslike at a hospital. You go in, you're sort of a number, you're not necessarily a patient and... they know your name or anything, you just are kind of more on a conveyor belt. Whereas in [FMU] it was... any midwife that came into my room knew my name, introduced themselves... [um] [pause 3 seconds] and I think that's kind of, just the environment, the difference in the environments where yeah, in a hospital you are, because they do it day in day out, they must have sometimes ten, twenty, thirty babies born a day, so to them it's just, "Go through it, there you go, get it out and then on your way home."* W03, FMU

This unwelcome change in “philosophy”, describing a more “functional” approach to care during labour and birth, was also present in other women’s accounts.

*Maybe that's the big difference is that... at the [FMU] you're made to feel that the, the whole labour is part of a very important process which is a huge life experience and should be enjoyed per se, and then at the end of it you've also got a baby, whereas at the hospital it's not at all about the process, it's about getting the baby out. It's a completely different philosophy and way of looking at birth.* W11, FMU

For some women this meant that their labour and birth was no longer an enjoyable experience, but a more ‘mechanistic’ ‘process’. One woman described discussing with her midwife in the FMU that she wanted to deliver the placenta naturally. She went on to talk about her feelings after she had given birth in the hospital.

*... and then at the end they said to me, you know, "Your, there's your baby," and [um] they said [um] "[Name], do you really want to wait for your placenta to, you know, do you want us to give you the injection," and I just said, "Yes, just give me the injection 'cause I don't care," and I think you do, it is, it is kind of a mindset, you know, you're at, if you're at that place, at [FMU], you would have thought, "Oh I'm going to wait a while because I'm in the environment where it's more natural to, to do things in that way," whereas you go to the hospital, everything's so frantic and it just seems like it's the, you know, quick and easy... it just was a completely different... different set of circumstances.* W18, FMU

Another woman compared her experience of labour in an FMU and in hospital:

*Oh there's no comparison. I just wanted to have the baby as quickly as possible and get the bell out. That's what I wanted to do. As in, you know, again going back to what I said before, it was no longer at all about a, God it sounds awful, quasi-spiritual process, that sounds absolutely horrible, but you know what I mean? It wasn't, I wasn't enjoying anymore the, the process. Now I really enjoyed being pregnant, I really enjoyed the excitement of my first contractions, I enjoyed the [FMU] experience. In the hospital I no longer enjoyed that, the only reason for doing it was to have my baby at the end of it. It wasn't an enjoyable experience being hooked up to the monitor, I wanted to be able to wander around, I wanted to be in the water, I couldn't have any of that anymore, for probably good reason [um] but I... didn't enjoy it anymore. It was no longer a... a sort of, an experience in itself, it was just a means to, to an end.* W11, FMU

The theme of contrast emerged in almost all women's narratives. Women for whom it was not a dominant theme spent very little time in either the MU or the OU, either because they were transferred very soon after admission to the MU or because they gave birth within minutes of arriving in the OU. For one woman the important contrast was between her experience in theatre and the rest of her experience; she had been unaware that she was in an MU until the point of transfer.

For many women, the contrast between the physical and social environment of the OU and that of the MU where they had expected to give birth was difficult and could leave them feeling "uncomfortable" or "anxious". Contrast was not always perceived negatively however. For women who had come to feel unsupported and unsafe in the MU, many of whom had lost trust in their midwives, and for some women who chose to transfer, the physical and social environment of the OU was experienced in a very different way.

One woman, who described herself as "distressed" and "desperate" before being transferred from an AMU in the second stage of a prolonged and painful labour, described feeling "hopeful" in the OU. While she had chosen to give birth in the MU because she felt it would be a calm and quiet place, ultimately she felt "safer" in the OU, a place she described as "heaven compared to the previous hell".

*... I was fearing the worst and... for her [baby] and for me [um]... but once I got there and all those people were there and they were... doing all these things, and the... even the machines in the room, in the theatre and everything and the [um]... even that gave me confidence and security really, just... just to see those there, even though [um] again going to a midwifery unit you don't want to see that sort of thing, you don't want to see it looking like a hospital, [um] I just want it to look as much [um] [um] as home as possible... as much like home as possible. So [um] just being there was... was really great and I just felt really secure and safe and... and I knew there was something going to be done. And they were very, very reassuring and [um] throughout the whole time they were just talking to me and explaining everything that they were doing [um]... it was just great... W23, AMU*

Another woman spoke vividly of the contrast between her FMU and OU experiences.

*[Um]... it was just, it was just a completely, completely different feeling, a completely different vibe. In [FMU] it's kind of, it was, in the end it, it was almost an eerie atmosphere 'cause there was no-one there, it was the middle of the night, there's no-one there. There was me, [husband] and two midwives, that was it, whereas you get to the [OU] and it's just this hub, this hive of activity, there's everybody, there's just... there's about six people around you like doing things to you and checking on you and monitoring you, etc, etc. And of, you know, it's just this, just this feeling of busyness and doing and... and, and things getting sorted and, you know... whereas it, I felt... it felt like at [FMU] that time, time just stood still and nothing was happening, nothing was ever going to happen. It was just this... moment frozen in time of just... you know... just this eerie... it was at night so it was dark, it was just... you know, this place where... nothing was going to happen, nothing was going to get sorted, and I got moved to this place where everything... you know, people were there to sort this and to help me. And that's how it felt. Just busyness and light, much lighter, much brighter. W25, FMU*

For these women and others the contrasting environment of the OU was seen positively as “reassuring”, representing “safety”, “security” and “help”. For women who perceived the contrast less positively, a potentially negative experience could be mitigated or ameliorated by the care they received. Central to this was the second emerging theme: continuity.

## **8.2.2 Continuity**

Interwoven with women’s accounts of contrast in their care, the theme of continuity also emerged. Continuity of care could be a positive counter-balance to the contrast of the OU experience after the “shock” or “limbo” of transfer. The ‘handover’ of care from MU care to the OU was a central element, but continuity within the OU also featured.

### **8.2.2.1 ‘Handover’ of care**

A very small number of women transferred without an MU midwife accompanying them, but for most women, care from their MU midwife ended at the doors of the OU. Most women had given little thought to the possibility of transfer and even less to the transfer process, so if women were not told in advance that they would have a change of midwife, this could be an unpleasant surprise. One woman whose husband followed the ambulance described her feelings after her midwife had explained that she needed to get back to the MU.

*I was with this [er] midwife [er] for a lot longer [um], you know, as I say, hours and hours at the, at the [FMU] [er] and as I say we talked quite a lot and got a lot about sort of social history on her and so yes she'd made that sort of connection, that bond. So yes, it was quite difficult that you got somebody, and in a strange environment as well, that you was then in this room and it's like kind of, "Where am I?" I haven't, you know, I hadn't even a clue. I knew I was at the [OU] but where? What ward? You know it was all a bit... [um]... and then as I say, and I suppose at that point I was actually on my own because my partner hadn't yet arrived so it was, you know, all those sort of factors. He was, you know, he came in a bit after but, you know, he had to find the place as well because he wasn't sure where he was going either so... You know, all that going on, I think yes, you're sort of feeling a bit, a bit strange really, in a strange environment. W10, FMU*

The way in which the handover of care from one midwife to another was managed was important to women's sense of continuity. Women appreciated being met by a midwife who was expecting them and preferred to be present when the verbal handover of care took place.

*R: I think she basically gave a handover. And said, "Okay this is what's happened, how long we'd been there, this is the stage, [um] this is the outcome [um] and [um] over to you," really. And that was what, I witnessed that...*

*I: Right.*

*R: ... which was really good, so it wasn't sort of whisper, whisper behind closed doors, it was "[Name]'s been, you know, der der der der der," and that was good, that was important, because that again kept things open, communication open and it helped me understand what's happening and didn't feel [um] as I say whisper whisper behind closed doors, what are they talking about? Which at that moment is quite key, I think, because you don't really know what's going on particularly, you know things are changing all the time and... so that was, yeah, important. W02, FMU*

For one woman, who transferred from an AMU, 'continuity' also meant expecting the same standard of care. Knowing who was going to be looking after you and knowing where they were if you wanted them was important.

*I wanted to be sort of transferred to the care of someone who... did actually care [um]... [laugh] you know, it wasn't sort of, "Oh just another one," you know? I, I think the main thing is if you are going to be transferred you want to know that... [um] if you've been receiving a good level of care, which I thought we were, to make sure that goes over so that you are not left in a room not knowing who your midwife is, not knowing who's going to come and see you or when... W07, AMU*

For a small number of women continuity between the two settings was maintained because their midwife continued to care for them after arrival in the OU. This helped them feel

safe in the care of someone with whom they had formed a trusting relationship and meant they had one fixed point of reference and an advocate in a potentially rapidly changing situation. One woman who transferred from an FMU was told by her midwife that it was standard practice for the midwife to continue to care for the woman at the OU. Most often however, it seemed that this level of continuity was only possible because the MU was not busy, so the midwife did not need to get back, or because the woman gave birth within a few minutes of arriving in the OU.

*[Um]... but yeah, I mean the constancy of care throughout there, that really helped because, you know, we were on first name terms with her and [pause 3 seconds] she'd been there and sort of helped us through quite a lot of it anyway. The medical staff that then came in at the hospital, I mean they were all very... very pleasant, very helpful, [um]... and again, you know, we got introduced, they'd say who they were, what they were doing, why they were doing it [um]... but I think maybe we would have felt a little bit more... lost or lonely if... my midwife hadn't come with us... purely because then we'd have been sort of wondering who was going to come in next or who was going to do what next, whereas because she was there the whole time we could always ask her, you know, about... "What is happening now?" or... you know, "Okay the doctor's gone away again but are they going to come back?" and... you know, just... any silly little concerns we had, there was somebody there that we knew that we could talk to about it. W05, FMU*

*I think because you've already got to know them while you're downstairs and obviously, 'cause it is quite a private thing, you know, having a baby anyway, and you... Certainly when I went into the room and the world and his wife seemed to, to, you know, come in [laugh] it was nice to have two people there that you've already sort of built up that relationship with, and that you've got to know [um] that are sort of there for you all the way through, which I think is a nice... to me that was a, that was sort of a nice thing and it, it kind of put me more at ease, the fact that I didn't then have to get to know sort of two more midwives that were sort of coming in and it was, it was just sort of... nice to know that they were there really and, you know, they were, 'cause they were both very friendly as well, which obviously is helpful [um] you know, and they sort of explained... explained everything to me. W16, AMU*

Women whose midwife left them very soon after arriving in the OU found the handover of care particularly difficult and fell back on the support and continuity provided by a partner or husband. Two women experienced hour long transfers by ambulance and on arrival both became aware that their midwife was returning in the ambulance. One of these women was 'handed over' to the OU staff in the hospital car park.

R She [midwife] said that... [um] a team would come and meet me, but she couldn't... She came, one of them came in the ambulance but she said, "I can't come into the hospital, it's not my jurisdiction," she said, "I can't..." so she stayed in... And I also remember her sort of not even really sending me off to the other team. They just came and prepped her, they just talked to her a bit about me, and she didn't even really sort of say goodbye to me or anything, it was just like, she was like "Oh can I get a lift back?" And it was very much like [um]... it was quite... yeah, it was very much like she just wanted to get back... I don't even remember her coming in the hospital. I remember her asking for, if she could get a lift back. So I don't remember her at all coming in the hospital.

I How did that feel?

R Abandonment. It was just like, the only person I wanted to see was [husband]. All I wanted to see was [husband] 'cause he made me feel, you know, the transition was there, with one person that had been with me the whole time. [Um] and I went in and I had to meet a whole new bunch of people that hadn't been aware of how I'd been labouring, and I remember trying to explain to them, you know, I'd been in labour for like three days. W26, FMU

The other was unaware of anything more than a cursory handover just inside the hospital.

R [Um] the midwife from [FMU] didn't stay around very long, she saw me into the... reception bit of the hospital... and then I don't remember seeing her after that. So she didn't stay around very long once..., she went back in the ambulance... so I suppose she probably couldn't hang around very long.

I So you weren't aware of any... handover...from her to any other midwives?

R No, I don't remember.

I And... did you feel like they were expecting you at [OU]? Were you met by anybody or...

R I know they asked me "Why, why have you come to [OU]?" and I said [er] "cause [other OU's] full," and they were like, "Oh we don't usually get people from [FMU] here." [Laugh] So I felt a bit, I remember thinking, "Well I'm here now." [Laugh] [Um]... I think, there were, I don't think there was much of a handover. I know [um] the midwife from [FMU] did say bye to me, I was still on the trolley in the corridor when she said goodbye. And I remember her doing that, so I don't think there can be much of a handover, so if [husband] hadn't been there to answer some of the questions... I know I remember at one point saying "I can't answer that, speak to my husband," huh, so it was a good job he was here. W30, FMU

Later in the interview she reflected more on this experience.

Well I don't know, it would have been better if there'd been a bit, a more... it would have been better if there had been a better transfer, because the questions that they were asking [um]... were things like "When did you go into labour? How long have you been in labour? What length are your contractions?" And these are all things that I've been through so many times at [FMU]... if I... [um]... I'd been through, through them so many times already with the midwives at [FMU] [um]... that I think that the midwives from [FMU] could have answered all those questions... 'cause I really was struggling. And they asked me what day did I, did my waters break and I couldn't, I, I remember not being able to answer that question, and I mean I'd already told the midwives all this so... Yeah, I could not tell the consultant at [OU] when my waters had broken or what, what had really happened, I was a bit... and I know my husband managed to tell him, the consultant, most of this but... if the midwife from [FMU] had stayed maybe for another half an hour [pause 3 seconds] and told, and gone through all of that with the consultant, probably

*would have been better... than, than me trying to do it and my husband trying to do it. W30, FMU*

This ‘handover’ of care was one area where continuity was important to women and where it was often lacking. Continuity was also a strong theme in women’s accounts of their care within the OU.

### ***8.2.2.2 Continuity within the obstetric unit***

Continuity was important in order for women to feel supported and cared for during labour. Those women whose MU midwife stayed with them talked of feeling comfortable asking questions about what was happening and being reassured by the presence of a familiar face in a strange environment. Others who had care from one midwife in the OU also valued this. One woman who had chosen to have her baby in an FMU in part because she expected to get “one-to-one” care, but had been very disappointed about her care there, described how the midwife who met her on arrival at the OU was “welcoming” and “hardly left the room at all”.

*And it was nice that she was there throughout, whereas the second time that I went to [FMU] when I had the really grumpy, horrible midwife, she left me for ages; ages, she kept coming in, going out, coming, coming out... W21, FMU*

Again, where women did not have the support of one midwife during labour in the OU, they could find a source of continuity and support in others. One woman whose partner was away when she went into labour was transferred from an AMU in emergency. She found that focusing on communicating with her birth companion helped make the situation less “scary”. Among women who had an instrumental or operative delivery in theatre the constant presence and clear communication from the anaesthetist could also be a positive source of support.

As well as being a contrast with women’s MU experience, having many different carers could be a source of conflicting advice which was anxiety provoking. Having to answer

the same questions from successive midwives was difficult and frustrating for women. Frequent changes of midwife was a barrier to effective communication and could leave women feeling less informed and not in control.

*When I got transferred up [um] it was fine the first midwife that I had [um] ... she was fine but I think I must have had her for about half an hour and then some other lady came on [um]... and it's like, you know, you can see them doing their handover but it's like so quick and so brief, it's like you can't really... You know like the, the lady downstairs, she'd been with me since I'd come in so she knew exactly what had happened, what she'd tried, the way I'd reacted or whatever [um] my responses were or, you know, what my views were on certain things, whereas it just felt like every time [um] when I got transferred that I got changed, you know, new midwives would come in, she'd get a handover but it wouldn't be the same, so, you know, she'd ask you the same sort of questions again or... you'd have to kind of like reclarify, whereas if you had that one person... you know, you wouldn't have to keep doing that, and it's... when you're [laugh] when you're there in like so much pain and you don't know what's going on, you're like panicking 'cause you've been there for so long and... it's... like the last thing you need, isn't it? To have to keep... [um]... repeating yourself. So that was a bit annoying. W22, AMU*

One woman, who transferred from an AMU for an epidural, went on to experience a long labour with many changes of midwife culminating in birth by caesarean section.

*... and I was just getting told all sorts of stuff, to be honest with you. So I think I just... I felt... I said to my partner, I said, "I felt like a piece of meat at the end of the day," I just felt like a slab of meat at... 'cause there was that many people coming in, doing internals in me. [Um]... and then I was just signing all stuff, and then I just got taken down there. The, the people in the theatre were lovely, but I did just feel like a piece of meat on the slab... W20, AMU*

She went on to explain what would have helped improve her experience.

*At one point I just wished there was someone there, doesn't, even if it weren't a midwife, just someone qualified and to know everything... what was going on. Yeah, just to talk me through it, just to keep coming in, just to say, "This is happening, that's happening..." [um] not like, "We're checking you there, we're doing this, we're doing that..." Yeah. I wish there was just someone in there... who... knew... my, like my case sort of thing, whatever you call it... [um] and that just come in and just, doesn't change shift. I know it's a long day for them but just... doesn't change shift. You know, have a few hours break and then just come in and check on me, and just tell me what's going on and just be there, I would have liked just one professional person who knew everything... about it, doesn't have to be a midwife, just knew about what to do... and was just there really...  
... You know? So I just wish there was just that one person who could be assigned to you, to your case, as soon as you go into labour to when you finish. I would, that would have been nice but that's just wishful thinking, isn't it? W20, AMU*

### 8.2.3 Feeling cared for after the birth

Women wanted to feel cared for after having their baby, but many were disappointed by the standard of care they received in the immediate postnatal period.

Some women were positive about their care, talking of midwives and care assistants who gave support for breastfeeding and help with crying babies, but postnatal wards were more often described as “busy”, “short-staffed”, “hurried”, “noisy”, “horrible” and “hideous”.

Women complained about a lack of privacy and midwives being overworked so that they did not have time to respond to women’s questions and needs.

*... whilst at [OU] I kind of felt... I was going to say I felt a burden but that’s not right because I was obviously in the hospital and designed to be looked after by the nurses and midwives but I didn’t feel... Sort of when I pushed my buzzer it would take ten minutes for someone to come [um] and I kind of felt I’d rather do it myself than get someone... sort of interrupt someone, but I’m... I don’t like asking for things much anyway, [um]... But I did kind of feel that it wasn’t always appropriate for me to ask... for someone, yeah they always seemed to be doing other things and you kind of think “Well...,” I thought, “I don’t need them desperately.” [um] Because it was very busy and just didn’t really... yeah they didn’t have a lot of time, which was a bit... a bit annoying... W03, FMU*

A number of women expressed surprise that they had to move from the room in which they gave birth to a postnatal ward.

*R [Um] as I say I was then sort of transferred up to the ward, which was quite daunting because I, I had no knowledge of the ward...  
I You thought this was your room?  
R Yeah, I thought this was my room and that’s where I stayed, so when I was being told I’m going up to the ward I then sort of said, “What ward?” and then they sort of explained and said what it was, but that was, “Oh gosh, where am I going?” so that was a bit of a shock. W10, FMU*

Other women also used the word “transfer” for the move from delivery room to postnatal ward. For some women it was “another move”. This, coupled with the more functional atmosphere of the OU and postnatal ward, could lead to women feeling unimportant and depersonalised. Women compared their experience, usually unfavourably, with the postnatal care they would have expected from the MU. They were aware, for instance, that

their husbands or partners would not be able to stay with them in the hospital postnatal ward, they would have fixed meal times and less “personal” care. Some expressed a sense of loss for the care that they might have had.

*And I just felt like everything was a... you felt like you were imposing and... I just wanted to leave as quickly as possible and, and I just kept thinking back to this place and thinking... you know, there was a kitchen at the [FMU] and they said, “Here is a list of meals that your husband can come in and prepare for you after your baby’s born,” and it was like beef, you know, casserole and lamb hotpot and she said, you know, “You are entitled to have any of these,” and then your husband can make himself toast and tea there. [Um] ...and I remember thinking, “Oh, you know, there’s this little kitchen and there’s a little living area and, and it’s a home from home,” and that’s what they said when we went there, and I think it is, it’s a home from home, whereas in hospital you feel... you feel, that it’s this Catch 22, you want to stay and be told how to do things, but you want to leave as quickly as possible because you just feel like... you know, nobody here is... it’s all, you’re like on a, on a, on a, a production line and it’s, you feel like one in a number of people who are just going through this ward, and you’re nothing special and... you know, everything you do is, is an imposition or you’re doing it wrong and [um]... yeah, just... I just feel as if it wouldn’t have been that way if I’d have been at... at the [FMU]. It felt completely different. W18, FMU*

Some women had the opportunity to leave the hospital postnatal ward and return to the MU for postnatal care. Those who took up the option were very positive about their subsequent care.

*Then I went back in there and stayed there for a couple of nights, and to be honest I mean... it was quite a different atmosphere, they gave me my own room, it was quite big, you know, you’ve got room... I’d got room for like my bags and things like that. ’Cause I mean at the hospital it was kind of... because it was just a little... [um], curtain round the bed there wasn’t room to put anything [um]... And it felt more sort of intimate that, you know, [husband] could come over and his mum was there for a while and I had other people come and visit and, you know, we could do that in a self-contained room, we’d got the day room where [husband] could have meals with us and... and things like sort of [er] I remember at two o’clock in the morning having two midwives sat on the bed with me sort of trying to get breastfeeding start... you know, get all that sorted out. And that’s the sort of level of attention and care I know I wouldn’t have been able to get at [hospital], ... and I did feel I was sort of a bit abandoned there more than anything, which is why the [um] [FMU] was so much better. W05, FMU*

A number of women who had this opportunity decided against returning to the MU. For some this was because they didn’t want another move and preferred to stay in hospital or go home instead. One woman said:

*... funnily enough I didn't feel I wanted to because I sort of felt like I'd been there, done that, the experience had been so intense while I'd been there that going back would have felt like I was going backwards... in a strange way, [um] and that I was kind of having to re-experience what I went through and... so I don't know. I kind of felt that I didn't want to be moved again, I think that's the point. Movement is the thing that is unsettling [um] and to move again would have been very difficult, so I decided that it was fine for me to stay there and that's what I decided to do. W02, FMU*

Some others did not feel “comfortable” returning to a place where, ultimately, they had not felt safe. One woman, looking back on her postnatal care, described wishing that she had returned to the FMU as she had not felt supported and cared for in the postnatal ward at the hospital. At the time, however she had not wanted to go back there.

*And after the birth I, I would think back to that place and almost have a panic attack about it, it was just, it's just this nightmare... scenario. This horrible, horrible, vile place that I never wanted to go back to. But then I went back a week later for, to, to try and get, get breastfeeding with him and I felt a lot better about it, but initially I was just like “I don't want to go back there,” which is probably why I didn't consider going back there for my aftercare, because I couldn't stand the thought, even though I wish desperately I'd done that now. W25, FMU*

For many women, and for almost all women who were transferred from an AMU, returning to the MU for postnatal care was not an option, although some would have liked to do so.

*... if somebody had come to me and said... or if that midwife had stayed with me and helped me through my birth and then said, “Right [name], do you want to come back to the [FMU],” I think it would have been like somebody going, you know, “You didn't get the water birth and you didn't get to stay but I've got this little present for you and you can come back with me, do you want to come?” I think I would have burst into tears and just gone, “Oh my God, take me, now.” I'd, I would have been beside myself with glee, and it wouldn't have mattered, none of the stuff would have mattered. 'Cause as I say the... staying on the ward was the worst, and if she'd have said, “Come back with me to the [FMU],” well... I probably would, I, I, I know, I know I would have been there for a few days...*

*I would have stayed because I did, I wasn't confident about breastfeeding but I was very determined to do it [um]... and I didn't feel as if I'd got really the support... there and... and I wanted to spend time with [husband] and I felt the only way I could do that was at home. I wanted to leave so I could be with my, be with my family and... I could have done all that at the [FMU]. And I thought, “Nobody, at, at no point did anyone ever explain that that was a possibility,”... and I don't know to this day whether it is. But [um]... I would have bitten their hand off. I really would. W18, FMU*

#### 8.2.4 Summary

The dominant theme emerging from women's talk about their care in the OU was one of contrast. Compared with their experience of the MU, the environment was perceived, often negatively, as more "clinical" and less comfortable with more people and a faster "pace". Some women also detected a change in "philosophy" with a less personal and more "functional" approach to care. For a small number of women who had come to feel unsupported and unsafe in the MU the perceived contrast could be a positive one, however, with the physical and social environment being described as "reassuring", prompting feelings of "safety" and "security".

Continuity of care could mitigate some of the potentially negative experience of contrast. The most positive experience was achieved when the midwife from the MU was able to continue looking after the woman after transfer, but this happened in only a small number of cases. Alternatively, a thorough 'handover' of care, preferably in the presence of the woman, helped women retain a sense of continuity. cursory 'handovers' left women feeling "abandoned". Transfer, almost inevitably, leads to some 'discontinuity'; where midwives and doctors were perceived as 'caring', with clear and sensitive communication, this helped maintain 'continuity'.

Postnatal care in the OU was often perceived unfavourably by women, some of whom compared it negatively with the care they had expected to receive in the MU. When women had the opportunity to return to the MU for postnatal care this was positively received, but not all women had this option and some women did not want to take it up, either because they did not want another move or because they did not want to return to the MU.

### **8.3 Coming to terms with transfer: looking back and moving on**

As well as telling the 'story' of their labour and birth experience, women also talked about the weeks and months after the birth of their baby and were prompted to reflect on the longer term impact of their experience. This section focuses on women's immediate postnatal and longer term thoughts and feelings, the impact of their experience and the ways in which women 'came to terms' with and made sense of that experience.

Women expressed a powerful need to understand "why" they had their particular birth experience. As part of this theme, women talked about the value of a "debrief" as a way of reaching understanding and to allay concerns about future births. Feelings of personal guilt, failure and blame also emerged. The second recurring theme in women's reflections was regret, with sub-themes relating to choices about place of birth and to women's own behaviour. The final theme emerged as women worked to "find the positive" in their experience.

#### **8.3.1 Understanding why**

The need to come to an understanding of "why" in relation to the events and circumstances leading up to and after transfer was commonly expressed in women's accounts. Most women wanted the opportunity to seek and find understanding through conversation with a midwife or doctor who had been present during their labour and/or birth as a kind of "debrief".

##### ***8.3.1.1 "Debrief"***

Only a small minority of women experienced any kind of "debrief" conversation. A small number of women said that they did not feel the need to talk about their experience. One woman said she felt "comfortable" with the circumstances surrounding her labour, transfer and the birth of her baby. Another said that as she had the same two midwives caring for her throughout her labour and birth she had felt completely informed about what had

happened and why. Of those who did have a “debrief”, some had sought this out and arranged it themselves, either through a service such as Birth Afterthoughts offered by many NHS trusts or by arranging it with a midwife or doctor. Others were offered the opportunity directly. One woman described an obstetrician visiting her in the postnatal ward to talk about the reasons why her baby had been born by caesarean section.

*I also had the surgeon who came and explained after the caesarean and why it actually had to happen and that there was no other choice in the matter [um]. And she explained it all and the reason for it, which I thought was brilliant, because you could have been left to sort of think, “Oh hang on, why’s this, sort of thing,” but she came straight in and explained. W10, FMU*

This need to resolve feelings and uncertainties emerged strongly from the accounts of women who were not offered or had not yet had the opportunity to talk about their experience with a midwife or doctor.

*I guess the only thing is, like afterwards it would have been nice... it would have been nice to know in my particular instance... if there is a way of why things happen the way they did. Like [um] I don’t know, maybe there is no reason for why I got stuck at five centimetres for so long and all the various things didn’t make a difference, or why was her... head kind of lodged to the side which meant that I couldn’t push her out? Not necessarily that there would be an explanation for it, ‘cause maybe it’s just one of those things that you can’t explain, it’s just, you know, it happens and you just kind of have to deal with it but it would be nice to kind of [pause 3 seconds] just, yeah, maybe just have talked about my particular experience to someone, and maybe someone could have given me a bit more information as to, “Well, that might have happened because of this, this and this, or maybe this is, you went through this because of these things...” W19, AMU*

Some women had a concern about a particular incident or the action of a midwife or doctor which had left them with unresolved concerns and, in some cases, lingering blame.

*I was thinking I think maybe afterwards if they’d just come and explained, or come and just said, “Have you got any questions?” I could have said, “Why didn’t she break my waters?” and they could have said “Cause there’s no problem with having the waters intact,” and then I would have said, “Oh fair enough,” you know? But they didn’t, so I still don’t know, and I think... yeah that’s it really, what, yeah, if I could have just... if they could have just told me why they made the decisions they did at the time, even if they were the wrong ones, at least I’d have a rationale to explain why they did it. W14, AMU*

Questions and worries about the implications of their experiences for future pregnancies also commonly emerged from women’s accounts.

*[Um]... I think, actually I would have liked an explanation of why things weren't moving along. What... you know, what it means to have a lip of cervix that isn't moving. I mean actually my, my neighbour's explained it to me since but nobody in the NHS has and, you know, so I, I didn't understand why it had happened and whether it's something that might happen in a future pregnancy or, you know, whether there was anything I could have done at that time to move it along without going for a medical intervention and, and, and that's what I would have liked, I think, just better explanation of why, why this had happened. W12, AMU*

As before, however, it was also clear that women tended not to actively ask questions and, in the immediate postnatal period, may not have been aware that they had any questions to ask.

*R [Um]... just to understand it a bit more really. [Um] 'cause... 'cause it all goes in such a blur, 'cause you're... you're scared and you're in pain [um]... so it's all a bit sort of jumbled in your head really, so it would be nice just to get it set straight.*

*I Mm. and did you have kind of... unanswered questions or things that you wondered about particularly or...?*

*R [Um] I don't think there was anything in particular. It just would have been nice to have sat with the people who... were there [um] and gone through it. W19, AMU*

This woman's language, getting it "set straight", was echoed by other women who talked of the need to "close that door", "square it off" and "close the circle". Women's sense that the opportunity to spend time with a midwife or doctor talking about their experience would have been helpful in 'moving on' from that experience came through strongly from their accounts.

For some women, particularly those who had traumatic labour and birth experiences, for the "debrief" conversation to be helpful, the timing, context and content was important.

One woman described an attempted conversation on the postnatal ward:

*I Mm. Did anybody talk to you about [um]... what had happened during your labour and...*

*R I think somebody did come in but I think they came in in the middle of [postnatal ward] and I don't think I took it in... I think in that whole [postnatal ward] experience I... I think somebody did come in and explain that but I didn't take it in. [er] There was a, a hearing test that went, that was inconclusive and then was fine. There was a paediatrician doing his check. There was the infant feeding team. I mean it just felt and, and as I say I don't think a single one of those people came to see me without being interrupted, without having to go away, come back, [um]... and I just don't think I took any of it in, at all. There was, there was no moment at which I was sitting in a quiet room with somebody focused on me, you know, even for twenty minutes telling me what had happened without being interrupted. There was... just cleaners, there*

*was food coming, there was... I just found it absolutely crazy. So yes, I think, I think someone did, I can't remember who it was and I can't remember what they said. So... [laugh] W08, AMU*

The content and style of the conversation could also impact on how useful women found it. One woman sought a conversation with her obstetrician on the advice of a counsellor after experiencing symptoms of post traumatic stress disorder in the months following the birth of her baby. She found, however, that her doctor's account of her labour and birth experience did not fit with her own recollection.

*R ... [um] so I went to... to see him and he went through the notes [um] and explained what went on and why, so that was quite helpful in a way. [Um]... and also the midwife's been through the, or the health visitor's been through the notes and things with me. So... I [Er] [er] has that been helpful? Are you, I can't tell if you're slightly reticent about saying whether it's...  
R The consultant was helpful. He went through the notes and told me what happened and why. I just don't... he went from the notes and I just don't think they actually... were a true representation of what went on. But I can't say 100% one way or another because I wasn't really that with it so... yeah. W30, FMU*

While her recollection was that her labour had been slow and prolonged because of her baby's posterior position, the doctor only referred to the baby being large and her pelvis being small.

*R Yeah, so... yeah, I've talked about it but I'm not sure I believe what they said. [Laugh]  
I Okay, right.  
R So that's why I'm looking a bit hesitant. W30, FMU*

Six months on, her attempt to "fill in the blanks" of her experience was only partially successful, "I'm not sure if I've quite managed it yet".

For another woman, her six-week check with her GP, while not an 'explicit' "debrief" was an important step in her recovery from a traumatic birth experience after which she also experienced flashbacks, difficulty sleeping and persistent crying. For her the importance of this conversation was in being given 'permission' to feel these emotions.

*I couldn't look at him [baby] and think... I wanted to be able to look at him and think, "Well he's here now, it doesn't really matter how he got here," [um] and I definitely feel that way more now but for a long, long time afterwards I, you know, all I could think of was just... oh, just how upsetting it all was and just how awful it was, and it didn't help. And she'd said, this doctor had said to me, "Just because you've had IVF and he's a miracle baby and he's here and everything's safe, he's safe and well and everything's okay now," she goes, "that does not mean, that does not mean that you... [um] that you have to feel happy about it all, that... and, and that's the only thing that you have to focus on." And I hadn't really talked, I hadn't really said that much to her. She must have either been very... empathetic and picked up on stuff, or maybe it was just a speech she gives to everyone, I don't know, but she was saying, "It," you know, "it doesn't matter, you can, you'll still feel all those emotions around and it can still be something really difficult to get over, just because he's like your miracle baby and your IVF baby, you know, that isn't... I mean that is what matters but in another sense it isn't all that matters," type thing. And I felt really, you know, it was really good to hear somebody say that to me actually. W25, FMU*

For many women the question of “why” they had their particular experience was linked with questions about whether they themselves could have done anything differently that might have changed the outcome. One woman who spoke to her local Birth Afterthoughts service about her experience explained why she had taken this step.

*Being again sort of... for me, you know, very logical, things happen for a reason... why did it happen? And I was sort of... I just had questions in terms of... did getting out of the pool to be examined, did that sort of calm, slow things down? Did I make a mistake in not getting back into the pool after I'd been examined? You know, should I have done all of that? It was more to talk through that sort of thing... W05, FMU*

This and similar comments by other women speak to the next sub-theme which relates to guilt, blame and failure.

### **8.3.1.2 Guilt, blame and failure**

Although not always explicit, feelings of guilt and blame were a common feature of many women's accounts. Questions or niggling doubts about whether they themselves could have done anything differently that might have resulted in a different experience or outcome were raised by several women. Others talked about being aware of the 'potential' for guilt and blame, often citing the experience of others, but said that they had not felt that way themselves and speculated that this was because they had very good support and care.

*I mean... I, I didn't feel guilty or anything like that, I mean I know [um]... some people that, you know, they have feelings of guilt after labour if it hasn't gone the way it was supposed to or... or this, that and the other, and at no stage, and I think it's partly the care that I had during... during labour in that at no stage was I ever made to feel that it was my fault or anything like that, you know, it was just... "This is what's happening, we'll go with it and we'll sort it out," sort of thing. W05, FMU*

Women also raised questions about the actions of others, including midwives, anaesthetists, and a husband, although these usually fell short of outright blame. One woman who experienced slow progress in a birthing pool in the second stage of labour described how her midwife had thought that her waters had broken, but on examination discovered that they hadn't and went on to discover meconium staining. She was transferred and gave birth with the assistance of forceps.

*Well I knew he had to be observed but he was fine, absolutely fine all the time so there was kind of no problem in that sense but... [um] [pause 3 seconds] yeah I never really... I don't, still don't know, like I don't know whether she should have, whether she made a mistake or not, or whether it's just one of those things. I do believe though that if they'd known my waters were intact, I believe she would have broken them a lot earlier to speed things up, and [er] then it might have been a different situation, you know, he might have come naturally. So... I think... in a sense that is a mistake, 'cause I just think if she'd known that she would have done things differently, so then that, sort of to me that's a mistake, you know? W14, AMU*

Women who had more traumatic experiences tended to talk more explicitly about guilt and "failure". One woman who was transferred from an FMU following a sudden haemorrhage after several hours of labour spoke about her feelings in the days following the birth of her baby.

*At the time I was very, very upset about it, and felt that I had failed. Um... um, it was sort of, "What have I, what did I do wrong that I ended up in this situation?" That, you know, "What, what hadn't I done in the, in the whole sort of labour process or what, had I done some-?" You know, "What," it was very much a, "What have I done wrong to have ended up sort of endangering my child like that?" Um, and yeah, I just sort of, I felt, I felt like a failure... W01, FMU*

She went on:

*I wanted to know if, if it's likely to happen again...you know, the getting stuck in the birth canal, whether it was something I did incorrectly, was, you know, my breathing or pushing or something, you know. What, what could I do to improve my technique...? W01, FMU*

Another woman who transferred after a long labour in an FMU went on to give birth by caesarean section under general anaesthetic after apparent delay in the arrival of the anaesthetist and failure to administer a spinal block.

*It was only right at the end when [um] the anaesthetist was screwing up the spinal that he went, he went into distress. ... And that's why I had to have the bloody general anaesthetic. .... I was so cross with him that he couldn't put a spinal in me, and that I, you know, that he took so long to arrive, that he took so long to... well he couldn't even do it, he ended up putting me under general... W25, FMU*

She went on to describe her feelings of guilt and failure.

*I did feel guilty for a long time. I felt guilty that [pause 4 seconds] you know... that he had drugs in his system, I felt guilty that ... I felt guilty that I couldn't breastfeed him, that I failed at that, that I didn't try hard enough, that I should have tried harder, that there's more I could have done. ... [er] you know I should have been healthier in my pregnancy, I should have made myself walk more even though... You know, just all these things, you know, it's just always that feeling that I didn't, I didn't do enough, you know, that I did fail. And I try to tell myself to, you know, to not think that so much, you know, and I, I have become a bit more [um]... you know, stop beating myself about it, up about it so much, but I... but I still have this nigging thing that, you know, it really was my fault because I didn't do... that I failed in some way and I, you know... And it's really hard to let go of that actually, it's really, really hard, but then that's apparently what parenthood's all about isn't it? Feeling guilty constantly about something or the other? W25, FMU*

While women talked more or less explicitly about their “guilt” and “failure” in the context of understanding “why” they had their particular birth experience, they also talked of “regrets”. This forms the second theme in their reflections on their experience.

### **8.3.2 Regrets?**

Women talked about their regrets, or not, focused around two areas: choices about where they planned to have their baby, with implications for their plans for future pregnancies, and about their own capacities or behaviour, including being “more informed”, “bolder” and “stronger”.

#### **8.3.2.1 Choices about place of birth**

Almost exclusively, women said that they had “no regrets” about planning to have their baby, or starting labour, in an MU. For some this was because they saw their time in the

MU as the ‘essential’ part of their experience; without it their whole experience would have been less positive.

*Well, it's an interesting one because I am so pleased that I did the first part at [FMU], I know that's what... I mean I had, you know, beautiful music playing, [husband] was with me in the birthing pool, we were very very... it was quite spiritual to be honest, and I know that I wouldn't have had that in hospital, and didn't have that in hospital, and it was a wonderful moment when she was born and it was actually a relief to have some of the intervention, 'cause I was on my knees. But the, the, you know, the true experience of it, I feel, was at [FMU] and so without that experience it would have been less, and for me it was just amazing, having that opportunity, and I, so I'd have no regrets going there at all [um] and I feel very pleased and, you know, thrilled that we did get there for the first part really. W02, FMU*

*Oh yeah, I don't regret at all going for the [FMU] at all, and, and even if I had the baby in the hospital it was five and a half hours of good focusing, calm time to get my head around what was happening and to be very confident that my body could do it and that I could do it and it was going to be fine, and, you know, excited that I was going to finally meet this baby. W11, FMU*

Others, while being clear that they had no regrets, were slightly more equivocal simply saying that it was “not meant to be” or “it was what it was”, things wouldn’t have been any different if they had planned to have their baby in an OU. For some women, having “no regrets” appeared to be an approach to life, “I’m not that sort of person”, or a deliberate strategy in this instance to maintain a positive outlook.

*I Do you have any regrets?*

*R [Pause 11 seconds] I don't have any regrets... because I'm almost kind of determined not to have any [pause 5 seconds] because I, I'm not prepared to allow the experience to be any more negative than it really, than it had to be. W17, AMU*

Most women who said that they had no regrets and had relatively straightforward birth experiences also said that they would plan to have any subsequent babies in an MU or at home, although some expressed concerns about the possibility of being transferred again.

*I said, “If we do have another one... is it one of those things where... would I be stupid in saying that I wanted to go back to [FMU] again? Or would I be better off just starting straight off in [AMU]?” [Um] and so it was sort of more talking through about what are the possibilities of this happening again? [Um]... just purely to say I don't want to get transferred, and I don't want to go through that ambulance ride again, but I don't want to sort of go to the hospital, have a*

*completely normal birth and just go “Well I could have done that at [FMU] and sort of been... in nicer surroundings or, or happier about it so...” W05, FMU*

Women who had given birth by caesarean section talked about their future choices being constrained by their birth experience. For some this was a source of concern.

*I'd love to have another baby but I wouldn't be able to go back to [FMU] because they will only do... if you've had a... if there's no [um] history of complications. So I wouldn't be able to go back and have another baby there because I've had a caesarean. [Um] So the options are either to go straight to the hospital or to have... attempt to have a home birth with a private midwife who... 'cause there's a lot of people that specialise in [um]... normal births after a caesarean. [Um] So those would be, kind of, my options and I'm, I am put off going into hospital [um]... but I think that's going to have to be my option 'cause I don't think {husband}'s going to be up for having it at home after the [laugh] experience last time. [Um]... so yeah, it hasn't put me off by any stretch of the imagination but I would have to consider very strongly what I do, and I wouldn't want an elective caesarean. I'd want to see if I could do it naturally. W03, FMU*

Very few women talked about regretting planning to have their baby in an MU. Those that did all had particularly traumatic experiences in the MU.

*[Um]... well obviously I wish I'd gone to the, to the [OU] first but obviously you, I wasn't going to know... [um] that it was going to be like that. [Um]... I still hope... well sometimes I do wish that I, everything went fine and then everything would have been alright to, in the [AMU] so [um]... [um] Yeah, just that really, if I'd known this was going to happen obviously I would have gone straight to the... to the labour ward. W23, AMU*

The difficulty of maintaining a position in which you regret such an apparently important decision as where to have your baby while retaining a sense of being a ‘good mother’ is perhaps most apparent in the accounts of two women, both of whom expressed, at different points in their accounts, regretting and not regretting their choices. One woman who was still experiencing post-traumatic stress disorder-like symptoms months after the birth of her baby said:

*I don't think I'd have planned it any differently. [Er]... no I don't... yeah, I suppose yes I am happy in the way I planned it. W30, FMU*

The apparent uncertainty in this response was revealed more clearly later in the interview.

*I Do, do you regret that decision?*

R I do a bit now. I feel that if I'd gone to [OU] straightaway they'd have induced me quicker, I wouldn't have been so tired so I might have been able to actually have delivered [baby] naturally... but because I went to [er] [FMU] it dragged on so long before they transferred me that I was just too exhausted by the time I got transferred that I wasn't going to do it at all, I was just too past, past it by then. So that's probably the biggest regret, maybe I should have gone to... W30, FMU

Another woman acknowledged that her feelings had been and were conflicting.

I Mm. Do you have regrets about that?

R You will have different... you... depending on when you ask me that you'd have a different answer every time I think. ...

Do, do I regret going to [FMU] and trying? No I don't think so, I did, I, I tried my best, you know, I did try and, you know, I've had enough distance now to... have a bit more, you know, for the memory not to be quite so... you know, horrifying and vivid for me, that I can look back at, and be a bit more, you know, circumspect about it and say, "Yeah well, you know, I wanted to try hypnobirthing, I did try it, I tried it and I did do it drug free for, you know, it wasn't much use in the end but... you know... at least I tried, I suppose. I failed but I tried, type thing." W25, FMU

These women intended to have any future babies in an OU or in an AMU.

*And it does make me apprehensive for the next time. Um, and I will be going straight to the [OU]. There is, there is no way I will be going...*

*But yes, I... I wouldn't want to put myself in that situation again. That I have to be transferred because I wouldn't wish what I had... what happened to me, I wouldn't wish that on anyone and I, I think, if I went back to that unit it would always be in my mi- back of my mind, you know, are we going to end up going down the same route as we did last time? W01, FMU*

*Another midwife saying, "You know, we have a VBAC service." [laugh] I was thinking "If I'm ever pregnant again I'm having an elective caesarean and I'm not going through all this sht," but now I have moments where I think, you know, "Yeah, I probably... I probably would [um] have a VBAC but I would never, ever, ever... ever, ever go to a birthing unit. I would never go to a birthing unit in the middle of nowhere again. That's how I kind of view [FMU], even though it's not. I can imagine having, going to a birthing unit [um] attached to a hospital... my, that's what my friend did, [um] and I think [nearest OU]'s got one... [Um] I can imagine doing that, but it would have to be, I would have to be within... you know, shouting distance of... of medical assistance, like the right there and then type thing, to, for me to feel safe, I think. W25, FMU*

### **8.3.2.2 Women's own behaviour**

While women did not generally talk about regretting their choices about where to have their baby, they did talk about other regrets. These largely centred on other aspects of their behaviour, both before and during labour.

Several women talked about regretting that they had not been more “informed” or “prepared”. These regrets often referred back to women’s comments about being “naïve” and “idealistic” when planning where to have their baby.

*I: Do you have any regrets about planning it the way you did?*

*R: No I don't, the only thing I wished I'd have done is looked into what would have, what would happen if there were complications, because I didn't, 'cause I just blindly assumed that everything would be fine. I didn't want to think about anything going wrong so I... that's the only thing I do regret is not looking further into it. [Um]... but no I loved, [FMU] was lovely. And [OU] was fine... just not what I would have, what I wanted. W03, FMU*

*I wish I'd... I wish I'd prepared myself more mentally to the fact that things could go wrong. I wish I'd, you know, been a bit more... realistic, and not quite so idealistic about it. W25, FMU*

Women’s other regrets centred on their behaviour during labour. Not being “bolder” or “stronger” featured in some accounts. One woman who felt that she was transferred too late said:

*Um, I do regret not being bolder, and when I first began to get really really frustrated and tired, not... not taking a lead and just saying “Right, I want to be transferred”. W01, FMU*

Others regretted not being “stronger” and arguing against being transferred, “insisting” on staying in the MU or subverting the transfer by “cunning”. One woman, who had meconium in her waters, but whose labour progressed quickly while waiting for the ambulance to arrive, reflected that if she had told the midwives that she felt the urge to push they might not have transferred her. Another woman who was transferred because it had been more than 24 hours since her waters had broken also regretted being truthful.

*Oh I so didn't want to. I... I just... oh, I wish I hadn't told anyone my waters had broke. You know?... Like I try to be a responsible patient, I, I think I'm doing the right thing by the baby and everything, but oh I just wish I'd never said anything. W04, FMU*

### 8.3.3 Finding the positive

The need for women to take something “positive” away from their experience was a strong theme in almost all women’s accounts. A few women referred explicitly to focusing on the positive as a deliberate strategy.

*So... so [um]... I think we live in a funny society and I think we can harbour on some of the negative... But in, in terms of... I mean ideally I wish my partner had been here [um]... but that's not how it was. So I can either sit there sort of thinking “Oh, you know, I wish it had all been straightforward and [partner] had been holding my hand and...” you know, or I can delight in the fact I've got a lovely little boy and he just happened to have his own story. W08, AMU*

Most women were less explicit, but qualified their regrets or feelings of guilt or failure by talking about something positive that they had drawn from their experience. For some this meant taking a sense of achievement from something they had done, including labouring without pain relief, taking “control” in some way or just “coping”.

That one part of their experience, pregnancy, labour, their time in the MU, or the birth itself, had been “good” or “went to plan” was a feature of several women’s accounts.

*I was fine. I had a pretty plain sailing pregnancy, so the fact that... I had to have a caesarean wasn't really... too bad considering most people have something that goes a little bit wrong, but no, it was... it was alright. W15, FMU*

*So, and I did obviously spend the majority of the labour on the [AMU] so I did have that experience. Really the whole labour that I was doing I had that experience, it was only when they had to pull him out, you know, there, with their own force that I wasn't on that [AMU]... so really the majority of the labour I did have the birth I wanted. It was just the delivery, huh, the final delivery, slightly [er] unexpected. W14, AMU*

For some, the positive outcome of their birth experience was a “healthy baby”, which was “all that matters” and “the most important thing”. There were some indications of ambivalence about this idea however.

*I mean I got a healthy baby and she was fine and there was no harm came to any of us but... from my idea of what I wanted it was very far away... from that. W03, FMU*

One woman talked about the difficulties of looking after her baby in the first few weeks and months while she was experiencing flashbacks and other distressing symptoms and her response to people who talked about the importance of a “healthy baby”.

R *That's what everyone's says...*

I *... do you think that's right?*

R *... but... [um]... It always upsets me when people say that [laugh]... because... yes it is wonderful, a healthy baby, and there's people that aren't fortunate, but... there's still, there's still me and when I wasn't feeling well it was still a bit like, “Hang on a minute, yeah there's a healthy baby, but I'm not feeling so good.” W30, FMU*

#### **8.3.4 Summary**

Most women expressed a need to understand “why” they had their particular birth experience. Almost all would have appreciated an informal “debrief” conversation with a midwife or doctor with a view to ‘making sense’ of their experience, bringing “closure” and understanding whether there were any implications for future pregnancies. For many the question of “why” was linked with questions about whether they themselves could have done anything differently that might have changed the outcome. Feelings of guilt and blame were a common feature of many women’s accounts. For women who had more traumatic experiences these were more often explicit and were also linked with feelings of failure.

Regrets were a common theme through the accounts of many women and these centred most commonly on aspects of their own behaviour, both before and during labour.

Women regretted not being more “informed” or “prepared” and not being “bolder” and “stronger” in standing up for themselves during labour.

Most women did not, however, express regret about planning to have their baby in an MU, explaining that they saw their time in the MU as the ‘essential’ and most “positive” aspect of their overall experience, which would have been a lesser experience without it. Women who had relatively straightforward experiences were happy to plan to have subsequent

babies in an MU or at home, although some expressed concerns and sought reassurance about the possibility of being transferred again or talked about being more “informed” and less “idealistic” next time. Those women who talked about regretting planning to have their baby in an MU all had particularly traumatic experiences in the MU prior to transfer. The accounts of some were suggestive that regretting this choice was a difficult position for women to maintain while retaining a sense of themselves as a ‘good mother’. These women were not prepared to “risk” planning another MU birth.

Women’s accounts also provided evidence for women’s need to take something “positive” away from their labour and birth experience. For some this meant taking a sense of achievement from something they had done, including labouring without pain relief, taking “control” in some way or just “coping”. Others maintained that at least one part of their experience, pregnancy, labour, their time in the MU, or the birth itself, had been “good” or “went to plan”. For some, the ultimate positive outcome was a “healthy baby” although others hinted at the difficulty of balancing the desire for the “birth you want” with what was “right” for the baby. One woman talked of how meaningless it was to have a “healthy baby” when she felt so traumatised by her birth experience that she could not take care of her.

# Chapter 9

## Discussion

The overarching aim of this research was to provide evidence to contribute to the improvement of the process of transfer from MU to OU and help make transfer safer and less distressing for women, thereby improving the care and experience of women planning to give birth in MUs.

### **9.1 Midwifery units and the women planning birth there**

The research presented in this thesis focuses on transfers from MUs. In order to understand the issue of transfer, however, it is important to consider a number of contextual factors. The literature review showed considerable variation in estimates of transfer rates across different studies, countries, types of MU and over time and it is likely that this variation is influenced by a number of complex interwoven factors. These factors include the characteristics of women planning birth in MUs, women's expectations and preferences when planning where to have their baby, the admission criteria and transfer guidelines used in MUs and their 'philosophy of care' and have the potential to impact on transfer rates and on women's experience. Results of analyses of the cohort study which show differences in the characteristics of women planning birth in the two types of unit, for example, are important in order to understand transfer rates and the factors associated with transfer. Findings from the qualitative interview study, about women's expectations and preferences about place of birth, and the study of NHS guidelines may help illuminate and understand differences between units, transfer rates and women's experience.

It is also helpful to recognise that MUs fall into two broad types and that there are important differences between these types of unit, as well as variation between units of the same type. The history of FMUs and AMUs shows that they have developed in different ways. While they share some key elements in that they provide midwifery led care for women with straightforward pregnancies, with the consequent need to transfer women for medical and obstetric care, there are key differences between the two types of unit, some of which are apparent in the results of the studies presented in this thesis. These differences have implications for women's choices and for those planning and commissioning maternity services so are also important to consider.

### **9.1.1 Women's characteristics, preferences and choices**

In terms of socio-demographic and clinical characteristics, results from analyses of the cohort study data showed that women planning birth in the two types of MU are different from each other. Women planning birth in FMUs are less likely to live in deprived areas, are slightly older, more likely to be White, married or living with a partner, and to speak fluent English than women planning birth in AMUs. This may be explained in part by the fact that most FMUs are located in small towns, often in rural areas, rather than in large conurbations. The fact that women planning birth in AMUs are also more similar to women planning birth in OUs, which are typically located in large towns or cities, supports this idea. However, women planning an FMU birth are also more similar to women planning birth at home, so part of the explanation for these differences is likely to be about the characteristics of women who are more inclined to plan birth in an 'out of hospital' setting.

The Barkantine Birth Centre, an FMU that opened in 2008 in the ethnically and socially diverse London borough of Tower Hamlets, found that women planning to give birth there in the first two years after opening did not reflect the wider population of the area

and were more likely to be older and from a White ethnic background (Rocca-Ihenacho and Herron, 2011). Some studies in the United States have described FMUs serving inner-city, deprived and multi-ethnic populations (e.g. Esposito, 1999), and it has been argued that, over time, the demographics of women planning birth in FMUs change, as FMUs become embedded in the community, so that they come to more closely reflect the demographics of the population they serve (Kirkham, 2003). Exploratory analysis of the ethnic diversity of women planning birth in FMUs in the cohort study revealed three FMUs with significant numbers of women from ethnic minority backgrounds, ranging from 32% to 47%, suggesting some support for this argument. In all other FMUs at least 90% of the women were from a White ethnic background.

It is also possible that women who choose to have their baby in the different types of MU have different preferences for the kind of care they want during labour and childbirth. In a detailed evaluation of one FMU in London, the Edgware Birth Centre, women planning birth there were described as “clinically and self-selected for non-intervention”, women’s “own aspirations for natural childbirth... were supported by the midwives” (Boulton et al., 2003, p. 128). The argument that women “self-select” for non-intervention and therefore choose to have their baby in an MU seems inherently persuasive. Given the stated philosophy of care of MUs which emphasises support for ‘normal birth’, it might be expected that women planning birth there, and particularly those who had made an ‘active choice’ to do so, would be more committed to “non-intervention”. Findings from the qualitative study reported in this thesis support this to some extent, but also showed variation in the degree to which this was a motivating factor for women planning birth in different types of unit and variation in the degree of women’s attachment to the “ideal” of ‘normal birth’.

When women talked about choosing to have their baby in an MU they spoke of a range of factors that influenced them in this decision. These factors were often pragmatic and personal, relating to the proximity of the unit to their home, the ease of parking, the physical and social environment of the unit and the influence and experience of friends and family, similar to those found when Walsh interviewed women for his ethnographic study of one FMU (2007). In an apparent contrast with the women interviewed by Walsh, however, safety and concerns about transfer did feature in women's accounts in the study reported here. Almost all women talked about 'normal birth' as the "ideal birth", but the degree of attachment to that ideal varied and there was some evidence that women planning birth in an AMU were less 'committed' to that ideal than women planning an FMU birth. Furthermore, some women planning to have their baby in an AMU did not choose to do so; it was simply the policy of their local hospital that women with straightforward pregnancies were admitted as the 'default' to the AMU. For women planning birth in an AMU, safety, by which they meant the presence of medical care nearby, appeared to be more important than for those planning birth in an FMU and natural birth was presented as an ideal, 'if possible'. Some women planning birth in an AMU also had the option to have their baby in an FMU, but chose the AMU because of concerns about the safety or inconvenience of transfer or because they felt "safer" in a hospital. AMU women also tended to talk about being "open-minded" about pain relief, in particular epidural. While some women planning FMU birth did so for straightforward pragmatic reasons such as car parking or proximity to home and also talked about being "open-minded", the women interviewed who appeared more wholeheartedly committed to "natural birth" all planned to give birth in an FMU.

These findings about women's thoughts when planning where to have their baby suggest that AMUs and FMUs may be seen by women as offering complementary, but different, options to women. FMUs have a clear and longstanding commitment to supporting women through 'normal' labour and birth (Gowers, 2002; Walsh, 2007). Many women interviewed for the study presented in this thesis, while attracted by the ideal of normal birth and the qualities of the physical and social environment in many MUs, associated 'safety' with the availability of medical and obstetric care on site. Similar findings were reported by the Birthplace Case Studies component study (McCourt et al., in press) and in a small qualitative study about women's experience of choice in maternity care (Jomeen, 2010). The most notable change in service provision in recent years has been increasing numbers of AMUs, usually located in large conurbations, often in areas where women have not previously had the option of care in an MU, but also where FMU care is also available (Redshaw et al., in press). For many women who would not otherwise choose to have their baby at home or in an FMU, care in an AMU, sometimes in a 'home-like' setting, is an attractive option and this change is therefore increasing women's opportunities to access midwifery led care.

Alongside the general expansion in the number of AMUs, the policy operated in some hospitals whereby AMU care is the 'default' option for women with straightforward pregnancies is another factor likely to increase women's 'exposure' to midwifery led care at a population level. This approach means, however, that some women are not 'choosing' MU care, which in turn has implications for information and discussion with women in the antenatal period and on admission in labour. One woman interviewed about her experiences of transfer, for example, was not aware that she was in an AMU, or of the implications of that, until she requested an epidural. Another said that she expected to need an epidural and so when it was suggested that she go to the AMU she was concerned

that if the OU was busy she might not be able to transfer if and when she wanted to. A small scale unpublished study of women's experiences of transfer from an AMU suggested tensions between AMU and OU midwives and a competition for overstretched resources which had a negative impact on women's experience, including delays in transfer and repeated transfers from AMU to OU and back again (Huber and Sandall, 2008). The Birthplace Case Studies component study reported some similar findings (McCourt et al., in press). While some women transferred from AMUs and interviewed for the study reported in this thesis reported delay, these issues did not emerge strongly from the accounts of these women. AMUs are, however, a relatively new and evolving way of providing midwifery led care; recently commissioned research following on from the Birthplace research programme aims to explore these units, their management, staffing and philosophy of care (McCourt, personal communication).

### **9.1.2 Midwifery unit admission criteria and transfer guidelines**

Differences in the characteristics of women planning birth in MUs are likely to be influenced by the admission criteria used. The distribution of 'risk status' across the 'out of hospital' groups in the cohort study points to differences in the criteria used by midwives for assessing and advising on eligibility to plan birth in the two different types of unit. Women planning birth in FMUs had the lowest number of pre-existing risk factors compared with all other groups, 3% compared with 5% in the AMU group and 7% in the home birth group. National guidelines on planning place of birth make no distinction between different non-obstetric settings when setting out the conditions and complications that indicate the advisability of planning birth in an OU (National Collaborating Centre for Women's and Children's Health, 2007). However, it is possible that FMUs have stricter admission criteria than AMUs. Admission criteria for MUs reported in the studies included in the literature review revealed no clear pattern of differences between the two

different types of unit. Although local NHS guidelines on transfer were evaluated for this thesis, MU admission criteria were not collected and evaluated in the same way, so no comparable information was available to the author; in hindsight this is a limitation of this evaluation. Data collected as part of the Birthplace Mapping Survey give some indication of admission criteria in use, however, and show that in terms of factors such as maternal age, parity, gestation, BMI, multiple birth, previous caesarean section and potential need or possibility of epidural, FMUs tend to have ‘stricter’ or more restrictive criteria than AMUs (Redshaw et al., in press). It seems likely that AMUs may set more relaxed admission criteria because transfer to the OU is seen as being quick and straightforward.

#### ***9.1.2.1 Transfer guidelines***

Local NHS trust guidelines on transfer were collected and evaluated for the research presented in this thesis because they are a possible factor contributing to variation in transfer rates and because they have the potential to impact on the quality of care, safety and women’s experience of transfer. Evaluated against the stringent criteria set in an internationally developed and validated generic tool for assessing the quality of clinical practice guidelines, these guidelines were revealed to be of poor overall ‘quality’.

Shortcomings were identified particularly in the areas of guideline development and methodological rigour and in seeking and considering the views of women and users of the guideline. While this may not be unusual for local NHS guidelines, a small number of guidelines, from larger trusts, were good quality, suggesting that where resources are available it is possible to develop guidelines that meet these high quality standards.

In terms of the content of these guidelines, there were some suggestions of differences in content and style between the two types of unit, although numbers were small. Guidelines used in NHS trusts with AMUs tended to be more prescriptive and ‘medical’ in their style and content and were more likely to be based on, or explicitly refer to, available national

guidelines. Walsh has argued that the “powerful culture of obstetrically dominant labour wards will inevitably flow over to low risk areas [AMUs] unless clear demarcation lines are drawn between the two” (Walsh, 2000, p. 353). In some of the transfer guidelines used in AMUs there was evidence of these “clear demarcation lines” being drawn as they explicitly set out the circumstances in which it would be acceptable for a woman to receive care from an obstetrician without transfer to the OU. In most AMU guidelines this was less clear, but the more prescriptive ‘medical’ style of several AMU guidelines may be an indication of the influence of the ‘medical model’ on their philosophy of care. In contrast, some guidelines used in FMUs gave more leeway for clinical judgement, advising transfer, for example, when there was “deviation from normal”. This may be an indication that FMUs are more firmly located in the holistic ‘social model’ of labour and birth according to which any standard or specific criteria for transfer might fail to take account of the individual circumstances of each woman’s labour and birth. One midwife writing of the philosophy of care in Crowborough Birthing Centre (CBC), an FMU in East Sussex, described this approach whereby “childbirth is socially and culturally constructed and, as such, the midwives at CBC define ‘normal’ on a one-to-one basis with the women” (Gowers, 2002, p. 265).

The Birthplace Case Studies component study has highlighted the extent to which guidelines used in midwifery, even when “clearly written and formally agreed”, were subject to ‘grey areas’ and open to interpretation and judgement (McCourt et al., in press). While the research presented in this thesis does not tell us to what extent and how guidelines are used in everyday clinical practice, their style and content gives an insight into the philosophy of care of the setting in which they are used and may also help in the interpretation and understanding of transfer rates.

## 9.2 Transfer rates

The results of the cohort study analyses show that transfer affects a significant proportion of women planning birth in an MU. Overall, a quarter (95% CI 24-27) of women who planned to have their baby in an MU were transferred during labour or immediately after the birth. In line with evidence reviewed in Chapter 2, the rate of transfer was higher in AMUs compared with FMUs; more than 1 in 4 women planning birth in an AMU (27%; 95% CI 25-29) was transferred, compared with around 1 in 5 women planning birth in an FMU (21%; 95% CI 19-23). These estimates of transfer rates are both at the higher end of the range of results reported in previous UK studies which ranged from 19% to 31% in AMUs (Andres and Rankin, 2005; Gould et al., 2004; Hundley et al., 1994; MacVicar et al., 1993; Mahmood, 2003; Mansfield, 2005) and from 12% to 20% in FMUs (Campbell et al., 1999; Gowers, 2001; Hogg et al., 2007; Rogers et al., 2010; Saunders et al., 2000).

In FMUs, three-quarters of transfers took place before the birth of the baby; thus around 15% of women planning to have their baby in an FMU gave birth in an OU and 5% were transferred after having had their baby. A small number of women (less than 0.5%) gave birth in an ambulance during transfer from an FMU. In AMUs more transfers (83%) took place during labour, before birth; around 22% of women planning to have their baby in an AMU gave birth in an OU and 4% were transferred in the immediate postnatal period.

Overall transfer rates from each type of MU conceal significant variation between units of the same type. Six AMUs and four FMUs had transfer rates that were significantly lower than the overall rate for the type of unit. In four AMUs and two FMUs transfer rates were significantly higher than the overall rate. Estimates of transfer rates for some units, particularly FMUs, were imprecise, with wide confidence intervals. This occurred when the unit was small, with a small number of women giving birth there each year, because the data collection period was short or because of a combination of both these factors.

Notwithstanding the imprecision of some estimates, the extent of variation in transfer rates between units of the same type was striking. Transfer rates in FMUs ranged from 0% (95% CI 0-97.5) to 36% (95% CI 7-64), while those in AMUs ranged from 10% (95% CI 7-13) to 50% (95% CI 39-61).

Transfer rates are likely to be influenced by a number of factors including MU admission criteria, the socio-demographic and clinical characteristics of the women planning birth there, transfer criteria and the skills, experience and perceptions of midwives. For example, more 'relaxed' admission criteria are likely to lead to more women with complicating conditions planning birth in a unit. Coupled with a more 'medical' philosophy of care and more specific transfer guidelines, this could be one explanation for the higher transfer rates seen in AMUs. Similarly, Walsh has argued that a focus on 'normality' and the skills and experience of midwives working in some FMUs means that they are less likely to transfer 'inappropriately' which may lead to a lower overall transfer rate (Walsh, 2007, p. 97). Furthermore, in the life of any given unit transfer rates are not likely to be static, but will change over time as these factors vary. It is plausible, for instance, that over time in a given unit the development of skills and experience in assessing risk, both during pregnancy and in labour, and the consequent refining of admission and transfer criteria might lead to a declining transfer rate, but this could also be influenced by changing demographics in the population planning birth in the unit.

Transfer, while not in itself an adverse outcome, may expose women to an increased risk of adverse outcomes and does not fit with most women's plans for an 'ideal' labour and birth experience. As one woman interviewed said,

*... nobody goes into it saying "I really fancy an ambulance transfer..."*

In order to minimise the potential risk and anxiety for women it is important to keep transfer rates as low as possible, without increasing the risk of adverse outcomes or distress to women by failing to transfer women when appropriate. Results from the cohort study show that most transfers occur in circumstances where midwifery judgement is central, such as 'failure to progress'. National guidance in this area, for example, simply refers to "delay in the first or second stage" (National Collaborating Centre for Women's and Children's Health, 2007); there is no consensus or guidance on what constitutes "delay". Women's experience of midwives' judgement and decision-making around transfer is discussed below. More appropriate admission criteria and more informed decision-making by women would also help to ensure that transfer rates are kept as low as possible.

### **9.3 Factors associated with transfer**

Analyses of data from the Birthplace prospective cohort study, carried out for this thesis, have demonstrated some important similarities in the characteristics of women that are associated with transfer from the two types of unit. Evidence from the literature has shown a consistent association between parity and the risk of transfer, with women having their first baby having an increased risk of being transferred. Analyses carried out for this thesis support this finding for both MU settings, but go further by being able to quantify this increased risk and, furthermore, by clearly identifying that, for women having their first baby, increasing age is associated with an increased risk of transfer, after adjusting for other relevant socio-demographic and clinical factors. In FMUs, 9% (95% CI 7-11) of multiparous women aged 25-29 years, the reference group in the multivariable logistic regression analysis, were transferred. Transfer rates for multiparous women in other age groups were not significantly different from this. In women having their first baby, however, the percentage transferred ranged from 27% (95% CI 23-31) in those aged less than 20 years to 47% (95% CI 20-64) in the small group of women aged 40 years or over,

with odds ratios adjusted for other relevant socio-demographic and clinical factors ranging from 4.5 (95% CI 3.1-6.6) for the youngest age group to 7.4 (95% CI 5.4-10.1) for women aged 35 years or over. While transfer rates were higher overall in women planning birth in AMUs, the same effect of age and nulliparity was seen. In multiparous women aged 25-29 years 14% (95% CI 12-15) were transferred, compared with transfer rates in nulliparous women that ranged from 30% (95% CI 27-34) in those aged less than 20 years to 56% (95% CI 32-80) in women aged 40 years or over. Adjusted odds ratios for nulliparous women compared with the 25-29 year old multiparous women ranged from 2.6 (95% CI 2.2-3.1) for the youngest group to 6.0 (95% CI 4.9-7.5) for women aged 35 years or over.

There is a significant body of evidence indicating that increasing maternal age is associated with a range of pregnancy complications and adverse outcomes (RCOG 56th Study Group, 2009). There is also evidence that adverse outcomes may be more likely in women who become pregnant for the first time at a later age (Delpisheh et al., 2008). A small study of transfer from planned home births in Sweden showed that in primiparous women those younger than 25 years had a lower risk of transfer compared with those aged 25-39 years, but because the number of women in the study was relatively small broad age groups were used and the number of women aged over 39 was very small so there was no clear effect of increasing age (Lindgren et al., 2008). In contrast, due to the relatively large sample size, the study reported here shows a clear increasing risk of complications arising during labour and requiring medical supervision or treatment with increasing age in first time mothers. This trend was not seen in women having a second or subsequent baby, for whom the transfer rate was in the region of 8-15% depending on where they planned to give birth. In part this is likely to be because women having a second or subsequent pregnancy are likely to have fewer complications and shorter labours than women having a first baby, but is also likely to be because these women have an obstetric 'history' enabling

more accurate and reliable risk assessment during pregnancy, leading women at 'higher risk' to plan birth in an OU.

In both MU settings, women going into labour between 41 and 44 weeks' gestation were more likely to be transferred than women whose pregnancy lasted between 37 and 40 weeks. After adjustment for all other relevant factors, this longer gestation was associated with a 34% higher odds of transfer from FMUs and a 38% higher odds of transfer from AMUs. This is in line with existing evidence of an increasing risk of complications and adverse outcome with increasing gestational age beyond 40 weeks (National Collaborating Centre for Women's and Children's Health, 2008b). In both settings there was an indication that shorter gestation (38 and 39 weeks) was associated with a lower risk of transfer, although this effect appeared stronger in women planning birth in AMUs.

Overall the number of women with pre-existing medical or obstetric risk factors who planned birth in an MU was small; 3% in FMUs and 5% in AMUs. The higher proportion in AMUs was almost all explained by higher proportions of women with Group B Streptococcus requiring antibiotics in labour and with a high body mass index. In FMUs, women with pre-existing risk factors had a significantly increased risk of being transferred; having a risk factor identified during pregnancy was associated with 2.6 times the odds of transfer (95% CI 1.8-3.8) compared with women with no pre-existing risk factor, after adjustment for other factors. In AMUs the transfer rate in low risk and 'higher risk' women was the same at 25%. Further exploratory analyses looking at the proportion of women transferred by type of risk factor, and therefore based on small numbers of women in each group, showed that in FMUs all types of risk factor were associated with a similar or higher risk of transfer compared with low risk women. In AMUs, while most medical conditions were associated with a similar or slightly higher risk of transfer, much lower proportions of women with complications related to their obstetric history or their current

pregnancy were transferred, resulting in an overall transfer rate for 'higher risk' women that was similar to that for 'low risk' women. This may indicate a less cautious attitude on the part of AMU midwives towards pre-existing obstetric complications, because of the on-site presence of obstetric services.

Perhaps reassuringly, risk factors identified at the start of care in labour were positively associated with transfer from both settings, with approximately twice as many women with one or more risk factor being transferred compared with those with no risk factor. Indeed, since these risk factors are those listed in the NICE Intrapartum Care Guidelines as factors to be considered as indications for intrapartum transfer, higher transfer rates than those seen might have been expected. (National Collaborating Centre for Women's and Children's Health, 2007) In both settings, just over half of the women with one or more risk factor identified at the start of labour care were not transferred, indicating, perhaps, the extent to which guidelines are interpreted flexibly.

In FMUs only, three further factors were found to be significantly associated with transfer in the adjusted analysis. Fourteen percent of women had no record of body mass index in their maternity notes; 28% of these women were transferred compared with 20% in the baseline group of women with BMI in the 'normal' range (adjusted OR 1.6, 95% CI 1.2-2.2). This result was unexpected and there are a number of possible explanations.

Unrecorded BMI was included as a category in the analysis because of the high proportion of women in this group across all birth settings. It was assumed that lack of measurement, or lack of recording of measurement, of BMI might be more likely in women judged to be of normal BMI by the midwife at booking, but there are also indications that unrecorded BMI was associated with other factors.

The extent of unrecorded BMI varied dramatically between units, from 0 to more than 50%, and did not appear to be related to unit size. There was evidence that unrecorded

BMI was 'clustered' in particular units; almost 70% of the women with unrecorded BMI were from eight FMUs. All were units that contributed data about a large number of women, either because of their size or the period of data collection or a combination of the two; six were in the 'top ten' largest units in terms of the number of eligible women about whom data were collected. In only three of these units was the overall transfer rate higher than average, but in six of these units women with unrecorded BMI were significantly more likely to be transferred than those with BMI recorded in their notes. Transfer rates for women with unrecorded BMI in these eight units ranged from 20% to 53%. Given this clustering, it is possible that some unmeasured unit level factor, perhaps related to policy or guidelines, unit 'culture' or lack of equipment is driving this association.

Ongoing unpublished doctoral research on the socio-demographic factors associated with maternal morbidity has found a relationship between unrecorded BMI and adverse maternal outcomes, but the reasons for this association are not clear (Lindquist, personal communication). In a study of women planning birth in a UK OU, unrecorded BMI occurred where either height or weight measurements were not recorded or where women had antenatal care at more than one institution, so it is possible that women with unrecorded BMI have less continuity in their antenatal care, although this seems unlikely in this group of women planning FMU birth (Chereshneva et al., 2008). Given that BMI over 30 is widely used as an exclusion criterion for FMU care it is possible that midwives may selectively not measure or record BMI where it might mean that the woman would otherwise not be able to plan birth in the FMU. Finally, it is possible that unrecorded BMI is a marker of some other risk factor that was not measured or appears as a risk factor for transfer because of residual confounding by another unmeasured risk factor.

The finding that Indian women had a higher risk of transfer from FMUs, after adjustment for all other factors, was also unexpected. Although English language fluency did not

significantly contribute to the fit of the data and was therefore not included in the final model, adjustment for language fluency made no difference to this effect. Indian women made up the smallest ethnic group in this analysis. Women from ethnic minority backgrounds make up only a very small proportion of the population of women planning birth in FMUs and few FMUs are located in areas where ethnic minorities are a significant proportion of the local population. Overall, only three FMUs collected data on significant proportions of women from ethnic minority backgrounds and over 70% of the Indian women in this study were from these and one other FMU. In three of these units, the transfer rate was higher than the overall transfer rate in FMUs, but in only one was this difference statistically significant. It is therefore possible that this finding is related to these women being clustered in a small number of units, although this is not clear.

Overall, the results of these analyses are important because they identify several characteristics, known before the woman goes into labour, that are associated with an increased risk of transfer. This level of information has not been previously available and adds to the evidence base that may be used by those setting admission criteria for MUs. It will also be valuable for midwives when talking with women about where they are planning to have their baby and therefore has the clear potential to improve the experience of women planning birth in MUs by providing them with more accurate and reliable information about their chance of transfer.

#### **9.4 Women's expectations of transfer**

Expectations and the role of information were important themes emerging from the research presented in this thesis. Many of the women interviewed as part of the qualitative study said they had thought about the possibility of transfer beforehand. Some women planned to have their baby in an AMU to avoid the possibility of transfer by ambulance. Others planning birth in FMUs described asking for information about transfer, seeking

reassurance from midwives and others; one woman described talking to her midwife during pregnancy about transfer and asking to be transferred “earlier rather than later” if the need arose. At the same time, many women, including some of those who talked about seeking out information about transfer, also described giving very little or no thought to the possibility of transfer happening to them, describing themselves as “blasé”, “naïve”, “idealistic” and “bloody-minded”. This was partly about a deliberate choice to maintain a positive outlook, in the belief that this would be associated with a positive outcome, but women also talked about “hoping” and not wanting to think about things not going well. This fits with other qualitative research on women’s experience of operative delivery (Murphy et al., 2003). Murphy et al described some women’s accounts of their thoughts about instrumental birth and caesarean section during pregnancy, for example, “I didn’t even read the chapter [on caesarean], it just wasn’t going to happen” and “... in my mind I’d sort of thought it was going to be a natural delivery or a caesarean, so I hadn’t really considered forceps or ventouse” (2003, p. 1133). Women interviewed for the study reported in this thesis described their thoughts about transfer during pregnancy in very similar terms.

Murphy et al (2003) suggested that this was indicative of a gap in antenatal education and information. Most women interviewed for the study reported in this thesis said that they were given information about transfer, but this was sometimes “hazy”. For example, some women reported being given information about the number of women transferred, but without being told what time period this related to or how many women had not been transferred. Several women said they had only got information on transfer rates by looking for it themselves on the internet or by asking midwives. Very little information was available on the process of transfer, including how long the woman might have to wait, how long the ambulance journey might take, who would accompany the woman in the

ambulance and who would look after the woman following transfer. Women were often surprised, for example, that their husband or partner could not travel with them in the ambulance and were unsure about the arrangements for care after transfer. Most women wanted some information. A number of women sought out information themselves, while others said that more information would have been useful at the time or that looking back they would have liked more information, for example on the percentage of women transferred in different groups from the MU or what the process of transfer would be like. Two women said that they would not have wanted more information: one said that information about what the transfer journey would be like might have put her off planning birth in an FMU; another said that information beforehand about the kinds of things that might lead to transfer would have made her “jittery”.

A minority of women may not want any information, and many women report not ‘taking information in’ about potential complications during labour, but the research reported in this thesis shows that a substantial number of woman planning birth in MUs do want information about potential transfer. These findings indicate that more information should be available and offered to all women so they can decide if and how they use it. At a minimum this should include recent figures on the percentage of women transferred from the unit during labour and immediately after the birth and the percentage of women transferred for different reasons. Given the results of the cohort study these should be broken down by parity at the very least. Where it is not possible to give a breakdown by parity and age, the increasing risk of transfer with increasing age for first time mothers should be clearly communicated to women. While some women talked about being given this kind of information they were often unclear about key elements, including the time period to which the figures referred, and some reported being given numbers rather than percentages. None of the women reported being given information about transfer broken

down by parity. Information available to women should also include accurate information on the journey time, including likely waiting time for an ambulance if relevant and who would travel in the ambulance with the woman. Other issues raised by some women included not being prepared about what to wear during the ambulance journey and regrets that they had not been advised to look around the OU beforehand so that they had some idea of what to expect if they were transferred.

The role of expectations and antenatal preparation is important. While some women were given or sought out information, they also talked about not 'taking it in' or not wanting to listen. Irrespective of the information they sought or were given about transfer, their own transfer was unexpected for most women, although one woman talked explicitly of expecting to transfer as she anticipated that she would want an epidural. She also talked of some other women's "unrealistic expectations" in 'planning' their birth; she herself had not written a birth plan, viewing birth as inherently unpredictable. This view was unusual, however; for most women, transfer, and the complications that precipitated transfer, was unexpected.

The role of antenatal care and education in not adequately preparing women for complications arising during labour has been raised by previous research on women's experience of instrumental or operative birth (Creedy et al., 2000; Lobel and DeLuca, 2007; Murphy et al., 2003); the research reported in this thesis indicates that it remains an important issue and may have implications for other women whose birth experience did not go as 'planned'. Part of the role of antenatal care and education is to prepare women and their partners for childbirth and to "build women's confidence in their ability to give birth" (Gagnon and Sandall, 2007). Antenatal care and popular models of antenatal education focus on providing information to enable the woman to stay fit and healthy during pregnancy, help her understand the physiology of normal birth, reduce fear and

anxiety about labour and birth, with an emphasis on the benefits of informed choice and control throughout (Gagnon and Sandall, 2007; McMillan et al., 2009; National Collaborating Centre for Women's and Children's Health, 2008a). The aim is that women feel empowered, relaxed and positive about labour and birth, on the basis that normal physiological birth is facilitated by this approach. Jomeen and others have written about the danger that the agenda of choice in maternity care means that women may feel responsible for choices with potentially negative consequences for psychological wellbeing (Jomeen, 2010; Snowden et al., 2011). The research presented in this thesis suggests that complications leading to transfer are unexpected by many women; women's 'preparation' for labour and childbirth leaves them unprepared and with the potential to feel responsible for their choices and guilty about their 'failure' to have a 'normal' birth.

Walsh has written of the potentially traumatic consequences for women of a dichotomised view among professionals and women of a 'good' 'natural' birth and a 'bad' 'medical' birth (Walsh, 2010, p. 492). Research on women's experiences of prolonged and augmented labour has described women struggling to balance their expectations and desire for a normal birth with the need to accept medical intervention in order to progress their labour (Kjaergaard et al., 2007). Walsh argues that in order for women to be able to "adjust their expectations" when unexpected complications arise during labour midwives and medical staff need to be able to demonstrate that they are working as a "collaborative team" rather than intervention being framed as "medical rescue" (Walsh, 2010, p. 492). Some women interviewed for the research presented in this thesis did experience something like this. Two women recounted that their midwife from the MU continued to look after them after transfer. These women described the benefits of this in terms of continuity, having a fixed point of reference and an advocate, but this may also have been a demonstration of teamwork. Some other women experienced a positive handover of care from the MU to

the OU and described feeling that they had the same ‘standard’ of care in the OU, that they were “cared for”. A pre-requisite for collaborative teamwork when complications arise is the kind of positive and supportive relationship with their midwife in the MU that many women experienced and described. Women’s perceptions of care, particularly in the MU, emerged as a powerful influence on their ability to adjust to and make sense of the changing circumstances of their labour and birth experience. For women who had negative or deteriorating experiences of care in the MU, transfer was construed as “medical rescue” and was greeted with relief.

## **9.5 Women’s perceptions of their care**

Women’s perceptions of their care in the MU prior to transfer were linked with their feelings about transfer and their ability to adjust to their changing circumstances, both at the time and afterwards. Feeling cared for, demonstrated by sensitive two way communication, a trusting relationship with the midwife and feeling in control, emerged as linked and important aspects of women’s perceptions of ‘good quality’ care. These findings are not new; a recent review of the literature on the experience of childbirth found that relationship with the caregiver, support and control were key themes emerging from this large body of research (Larkin et al., 2009). Studies have found that these are important factors in women’s perceptions of positive or negative experiences of care (e.g. Halldorsdottir and Karlsdottir, 1996), but they may be particularly important for women whose care is potentially fragmented through transfer. In the qualitative study reported here, women who reported generally positive perceptions of their relationship with the midwife and their care in the MU experienced the decision to transfer as “disappointing”, but were accepting of or resigned to the decision to transfer. While they may not have begun labour expecting or anticipating transfer, their relationship with their midwife or

midwives meant that they understood the reason for transfer and enabled them to adjust to their changing circumstances.

A small number of women described a poor or deteriorating relationship with one or more of the midwives looking after them, in which they felt that the midwife was not attentive or sensitive to their needs and feelings and where their trust and confidence in the midwife's competence was eroded. These women came to feel anxious, frightened, not in control, not safe. They often perceived that they were transferred too late and were often relieved to be transferred. These negative experiences of care occurred often, but not always, in the context of prolonged labour and severe pain. Studies of women's experience of prolonged and complicated labour have shown similar results (Berg and Dahlberg, 1998; Kjaergaard et al., 2007; Nystedt et al., 2005; Nystedt et al., 2006). This suggests that the care of women with prolonged labour in MUs may need particular attention, with sensitive consideration by the midwife of when is the optimum time to transfer. Some women in these circumstances in AMUs took control by requesting transfer for epidural. One woman's request for an epidural at this point was refused by her midwife. She described feeling powerless to explain to her midwife that she felt like she was "going to die"; she was later transferred when her situation deteriorated further and it appeared that the midwife became concerned about fetal distress.

Studies have shown that having a caesarean section is associated with negative perceptions of quality of care (Wilde-Larsson et al., 2011) and some of the women who described particularly negative experiences of their care in the MU went on to have an instrumental or caesarean birth, some of which occurred in an 'emergency' situation. However, not all the women who reported negative experiences of care in the MU went on to have an instrumental or caesarean birth and one of these women was transferred immediately after a normal vaginal birth. Several women who described a positive experience of care in the

MU, largely without fear, anxiety and trauma, went on to have an instrumental or caesarean birth.

### **9.5.1 The transfer ‘journey’**

Results of the cohort study and the study of women’s experience highlighted obvious differences in being transferred from an AMU compared with from an FMU, but also showed where there were important themes in common. Journey times for transfers from AMUs were short with a median duration of four minutes; 97% of transfers took 30 minutes or less from the start of transfer to the start of care in the OU. Eighty percent of women transferred from AMUs did so in a wheelchair or on a trolley or bed, around 20% of women walked and less than 1% ‘transferred’ to OU care, but did not physically move from the AMU. For women transferred from an AMU, the ‘journey’ from one part of the hospital to another was largely uneventful, “quick and easy”. The exceptions to this were women who were transferred in ‘emergency’ situations, for whom the sudden change of pace and environment could be isolating and frightening, especially if they did not feel cared for and supported by their midwife. Clear communication and calm management of the situation helped these women feel safer.

Being transferred from an FMU typically meant an ambulance journey, with a median ‘journey time’ from start of transfer to start of OU care of 30 minutes. No previous research on women’s experience of the transfer journey has been identified; research on patients’ experience of ambulance journeys outside maternity care is limited, but also unlikely to be relevant to this topic. This is, therefore, an important and neglected area, where there is the potential to improve women’s experience. For women, an ambulance journey meant a move to a temporary, uncomfortable, “foreign” environment for which they were largely unprepared. In this context, it was important for women to feel that they

continued to be “cared for” rather than being simply “transported”; several women described an experience that was closer to the latter.

While for many women the transfer journey was essentially ‘uneventful’, it could also be a time of worry and anxious anticipation. Women described being “withdrawn” or “quiet” during the journey and presented this as a period in “limbo”, in silence or accompanied by everyday conversation between the midwife and the ambulance staff. While for some this ‘chat’ could have a positive, ‘normalising’, effect, others reported feeling ‘left out’ and several women talked of having questions about the journey, their babies’ and their own wellbeing and what would happen when they got to hospital, which were typically unspoken. Midwives did not, in general, make any pro-active effort to address these issues, so women’s questions were often unanswered. In an uncomfortable and unfamiliar environment, shorter journeys were manageable, but women were still aware of and anxious about the potential for delay. Longer journeys, and in particular those that were longer than anticipated, were more difficult and more worrying.

Women found support in continuing care from a trusted midwife, but particularly valued the option to have their husband or partner with them in the ambulance. Based on women’s reports, NHS trust policy on who might accompany the woman in the ambulance appeared to vary and there was no discernible pattern with regard to how many and which people were permitted. While for some women it was more practical to have their husband or partner follow the ambulance by car, most would have preferred to have the option of their husband or partner being able to travel with them and some were distressed to find that he could not. Having other choices also helped women feel cared for, more in control of the situation and less like an object being transported. Being able to walk to the ambulance and having options of different sitting or lying positions in the ambulance were important for comfort, but also because these choices helped women feel more in control,

more part of the process and more 'cared for'. An awareness of and consideration for respect and decency also mattered; choice about what to wear in the ambulance and making sure that women were appropriately dressed or covered were appreciated, but were not always attended to.

Given these findings from the qualitative study, a post-hoc analysis was carried out to explore the extent to which NHS trust guidelines on transfer addressed aspects of the transfer process that have the potential to impact on women's experience. Guidelines for transfer from FMUs were more likely to refer to the transfer process, but these usually focused on the process of arranging transfer and communication about the transfer with the woman and her family and with other professionals. Where specific guidance was given about the information that should be communicated to women and their partners this usually related to the information about the need and reasons for transfer. Midwives were often described in guidelines as being required to "accompany" or "escort" women during transfer, words that contrasted with the emphasis on "care" seen in some other sections of guidelines and which resonated with some women's perceptions of being "transported". Only a small number of guidelines referred to husbands or partners during transfer. One guideline explicitly stated that it would not be possible for the woman's partner to travel in the ambulance and advised that this should be communicated to the woman and her partner. Two guidelines referred to the need for the midwife to ensure that the woman's partner knew how to get to the OU. One guideline stated that the woman's husband or partner could travel in the front of the ambulance and that this might help reduce the stress and anxiety of the journey for the woman and her partner. None of the guidelines addressed any specific aspect of the woman's comfort or experience during the journey, although one stated that the midwife should stay close enough to the woman to enable her to observe and "give supportive care" and one referred generally to the

benefits of sympathetic touch and clear explanation for helping women to feel at ease. There was little evidence that women's experience was considered or represented in the guideline development process.

### **9.5.2 Continuing to care**

All women who experience transfer have care that is 'fractured' in some way. As a minimum this means a change of environment. Women interviewed for the qualitative study noted a contrast between the physical environment of the MU, described as "warm", "homely" and like a "hotel", and that of the OU, which was "clinical". Some women also commented on what they perceived as a different philosophy of care, so that in the OU labour and birth was viewed more as a means to an end, rather than an experience with intrinsic value. Other research has also described these contrasting perceptions of care (Pitchforth et al., 2008; Walsh, 2006a). Many women are also likely to experience a change of carer as a result of transfer. For many women these contrasts and changes were experienced negatively, but aspects of continuity in their care could mitigate the negative impact.

For a small number of women, from FMUs and AMUs, the midwife who had looked after them in the MU and during the journey continued to look after them after transfer. This was experienced very positively by these women, but, apart from in one case where the woman's midwife explained that this was the standard procedure, it was apparent that this was not the norm and was only possible where staffing and occupancy of the MU allowed it or because the woman gave birth very soon after arrival in the OU. A small number of local NHS guidelines stated that it might be possible for the midwife to continue to care for the woman in the OU, depending on circumstances, but in most this was not mentioned. National guidance on the minimum standards for the organisation and delivery of care in labour published by the four relevant Royal Colleges endorses the

recommendation in the Maternity Standard of the NSF that, “the midwife who is responsible for the transfer, continues to care for the woman after transfer when this is possible” (Royal College of Obstetricians and Gynaecologists et al., 2007, p.15), but it seems likely that this is the exception rather than the norm. Many women interviewed for this research assumed that their midwife had to return to the MU, but given that any MU midwife accompanying a woman during transfer would otherwise, if the woman had not been transferred, have continued to care for the woman in the MU it is not clear why this would be the case. Since continuing to care for the woman after transfer could be considered as ‘best practice’ and, judging by women’s accounts, appears to be achieved in some NHS trusts, sharing of information about the ways in which NHS trusts and MUs manage staffing in these instances would be beneficial.

Where continuity of carer was not possible, an essential starting point for continuity of care was a good ‘handover’ of care from MU to OU staff, in the presence of and preferably involving the woman. Most local NHS guidelines referred to the need for the MU midwife to provide a written and verbal handover to an OU midwife, but only one guideline recommended that this should take place in the presence of the woman. Where this happened it was appreciated by women, but not all women interviewed for this research were expecting to have their care ‘handed over’ to another midwife in the OU so this could come as an unpleasant surprise. Some women recalled very little formal ‘handover’; a few described it as a brief conversation between midwives or a handover of notes, one recalled the midwife saying goodbye to her in a corridor just inside the hospital and one was left by her midwife in the hospital car park. Where this happened, women found it difficult having to recall quite detailed information and explain their circumstances to a new team of midwives and doctors. Particularly where the FMU was a long distance from the OU, the practical concerns of the midwife needing to travel back to the FMU in the ambulance

were perceived by some women as overriding their need for a thorough 'handover' of care, which left women feeling uncared for and 'abandoned'. It is notable that none of the women talked about ambulance staff being involved in any 'handover' of care, reinforcing the notion that the involvement of ambulance staff in transfer is as 'transport' rather than care. In a very small number of NHS guidelines the practical issue of the return of the midwife to the FMU was addressed, with guidance that the midwife should return by hospital contract taxi rather than the ambulance.

The research reported in this thesis suggests that 'continuity of care' can also be achieved where midwives and doctors in the OU are perceived as 'caring' by women. Research evidence shows that competence and sensitivity are valued just as highly as continuity by women and that continuity of carer may be less important than these other aspects of care (Green et al., 2003). One woman, for instance, said that she didn't mind who was looking after her in the OU as long as the "standard of care" was maintained, as long as "they cared". Where staff in the OU demonstrated that they "cared" by listening to the woman, communicating clearly and sensitively and remaining calm in a 'crisis', 'continuity of care' could be maintained. Where the woman had experienced poor or deteriorating care in the MU, the effects of this negative experience could be mitigated by good care in the OU. All too often, however, women's experience of OU care was a negative contrast with their MU experience and they relied on their husband, partner or other family members for 'continuity'.

## **9.6 The impact of transfer**

Transfer affects a significant minority of women planning birth in MUs, so it is important to understand the impact of transfer on women, at the time it occurred, in the postnatal period and when they consider future pregnancies.

### 9.6.1 At the time

Most women interviewed talked about feeling “disappointed” at the decision to transfer. Disappointment was about the loss or “disruption of the vision” of an “ideal birth”; at one extreme, one woman described this loss of “memories” as

*... a tractor through your wedding day.*

Some women talked about their midwives preparing them or “leading up” to the possibility of transfer. This kind of care, where women felt that they understood what was happening and felt that their midwife was sensitive to their needs and feelings, helped women to a sense of acceptance or resignation at the point of transfer. Similar findings were reported in one small study of women transferred from planned home birth and integrated GP unit care to consultant care during pregnancy and in labour (Creasy, 1997). For most of these women in the study reported here, transfer came at about the ‘right’ time. Other women, who described feeling anxious, scared, out of control and unsupported in the hours and minutes leading up to the decision to transfer, tended to greet the decision to transfer with relief. This occurred often, but not only, in the context of prolonged labour; these women felt that they were transferred too late. One woman also described feeling anxious and unsupported in the MU, but did not feel relieved at the decision to transfer. She was transferred soon after the birth of her baby in circumstances that she did not understand, with very little explanation and felt very frightened.

Anxiety, or ‘anxious anticipation’, was a common emotion around the decision to transfer and during the transfer journey as women adjusted to the changing circumstances of their care. Again, this could be mitigated by sensitivity and clear communication, but opportunities for explanation were not always taken by midwives. In line with findings of other research (e.g. Kjaergaard et al., 2007; Nystedt et al., 2006), these results suggest that where midwives are perceived as sensitive and caring, offering clear and calm explanations

for events in labour, they have a key role to play in helping women manage the disappointment of a birth experience that is not going as expected and in minimising distress and anxiety for women at the time.

### **9.6.2 The postnatal period**

Midwives also have a role in helping women with longer term adjustment to their birth experience. For most women interviewed, their transfer and their overall labour and birth were not experienced as overwhelmingly traumatic events. Notwithstanding this, many women talked of a need to understand why they had their particular experience and what the implications were for future pregnancies. Some women described feeling guilty or talked about wanting to know if they could have done anything differently which might have prevented the need for transfer. When women talked about regrets around their birth experience, they focused on their own behaviour, regretting not being more “informed” or “prepared”, “bolder” or “stronger”. This powerful need to ‘understand why’ and “close the door” on their birth experience has also been identified in one small study of women after transfer (Creasy, 1997) as well as in other studies of women’s experience of operative delivery (e.g. Murphy et al., 2003). The authors of an internal NHS trust report on the first year of operation of the Barkantine Birth Centre in East London noted that feedback from women who had experienced transfer indicated “that women felt ‘abandoned’ by the birth centre staff [after transfer] and many women expressed a desire to be able to discuss the transfer with the birth centre midwives after the event” (Piper and McEneaney, 2009). They went on to state that a policy had been developed whereby women would be contacted by a birth centre midwife after transfer and offered a “debriefing session” (Piper and McEneaney, 2009). None of the NHS transfer guidelines reviewed here explicitly mentioned a ‘debrief’ for the woman, although one stated that “following an emergency transfer, it is important to ensure that all members of the team have had an opportunity to

discuss the transfer with others involved”. It was not clear whether this included the woman and her partner.

The evidence on formal postnatal ‘debriefing’ is mixed (Meades et al., 2011) and there is no clear definition of what it should include (Alexander, 1998). Formal postnatal debriefing is not at present recommended in national guidelines on postnatal care (National Collaborating Centre for Women's and Children's Health, 2006), but there is some evidence that it may be effective in reducing symptoms of post-traumatic stress disorder in women who request or are referred for debriefing (Meades et al., 2011). In practice, some form of postnatal debriefing service is available in many NHS trusts and women are able to self-refer to these services or may be referred by a midwife (Bailey and Price, 2008; Steele and Beadle, 2003). In some trusts, routine postnatal care may be intended to cover some aspects of debriefing, including an opportunity for the woman to talk about her birth experience and her feelings around the experience (Steele and Beadle, 2003). A distinction has been suggested between ‘debriefing’, a structured intervention delivered within a couple of days of an event, and ‘defusing’, which involves ‘active listening’ where the woman has the opportunity to talk about her experience with appropriate information, explanation and rationale for management being given (Alexander, 1998). It appears that it is this latter service that many women interviewed here wanted or would have appreciated. Some sought this out or were offered an opportunity to talk by a midwife or doctor. Others were not aware at the time that they had questions to ask, but looking back would have liked to have been offered the opportunity to sit and talk through their experience with a midwife or doctor. A number of women described particularly traumatic labour and birth experiences, and some went on to experience post-traumatic stress disorder-like symptoms, including flashbacks, difficulty sleeping and persistent crying. For these women the timing and nature of any ‘debrief’ was particularly important. One woman reported

being unable to take in or remember any aspect of a 'debrief' conversation that took place on a busy postnatal ward. Another recalled a midwife from the FMU phoning and leaving a message, but the woman reported being too upset at the time to talk and was never offered another opportunity to talk about her experience. She described a conversation with her GP at her six-week postnatal check as important in giving her 'permission' to feel the way she was feeling.

These potentially negative sequelae of a birth experience involving transfer are all the more important considering women's apparent need to take something positive from their birth experience. Some women described an active strategy to be "positive" about their experience. Others were less explicit, but their accounts revealed ways in which they worked within the 'good' natural / 'bad' medical birth dichotomy to create a sense of achievement for themselves, including 'trying', having a "good" labour if not a good birth, labouring without pain relief or "coping". Very few women talked about regretting planning to have their baby in an MU. For women who had largely positive and even 'uneventful' experiences, this position appeared to be a comfortable one and they talked about hoping to return to the MU for any future births. In the accounts of some women, however, there was some evidence that it might be difficult to maintain regrets about this choice at the same time as keeping a sense of being a 'good mother'. Research on women's 'moral work' in relation to infant feeding (Marshall et al., 2007; Ryan et al., 2010) and managing reproductive health with epilepsy (Thompson et al., 2008) has shown the ways in which women 'work' to maintain a sense of themselves as a 'good mother'. This was not a primary focus of the analysis carried out for this thesis although there is the potential for further analysis of these data with this in mind. However there were some indications in women's accounts of the ways in which women 'worked' to maintain a coherent and positive identity as a 'good mother'. These included their references to

preparation and research about the safety of different settings for birth, their guilt and worries about whether they could have done anything differently and indications from some women about regrets around their choices and uncertainty and inconsistency in their thoughts about this. Four women who explicitly described regretting their choice to have their baby in an MU all recounted traumatic labour and birth experiences, ongoing symptoms of emotional and psychological distress and were not planning to return to an MU for any future births. These women found it more difficult to take something 'positive' from their experience. They also talked about difficulties looking after and forming a relationship with their baby in the first few weeks and months after the birth, in line with findings of research with women who have experienced prolonged labour (Nystedt et al., 2008).

The results of the study carried out for this thesis suggest that the extent of some women's trauma following their transfer experience may not have been apparent to the postnatal midwifery and health visiting services or that systems for following up women after potentially traumatic birth experiences may not always work effectively and that women will not necessarily refer themselves to services that are available. The impact of women's birth experience on their ability to look after their baby, on their relationships and their approach to future pregnancies makes this an important issue.

### **9.6.3 The future**

Thoughts about any future pregnancies can be affected by women's experience of labour and birth, so it is an important area to consider in women who experience transfer (Gottvall and Waldenstrom, 2002). Many women interviewed for the study reported in this thesis said that they were happy to return to an MU for future pregnancies. For some their time in the MU was the best or essential part, the "real experience"; some commented that one positive outcome of their experience was that they would know what to expect

next time and so would be better prepared. Others, particularly those who had a caesarean birth, thought that their future choices would be constrained by their experience and some talked about finding it difficult to come to terms with that prospect. One woman who was transferred during labour with her first baby and had a spontaneous vaginal birth in an MU with her second, but was transferred shortly after the birth, was not planning to have any more children, saying that she thought to do so would be “pushing my luck”. Women who recounted particularly traumatic experiences were more concerned about the future. They all planned to have any future babies in an OU; one woman said that she was considering requesting a caesarean birth. Research on women’s subsequent birth experiences after a traumatic birth has conceptualised a positive experience of this subsequent birth as “redemptive”, resolving feelings of “distress, guilt and self-blame” (Thomson and Downe, 2010). This research also highlights, however, that these women need particularly sensitive and expert care and support through any subsequent pregnancies as well as during labour and birth.

## **9.7 Strengths and weaknesses of this research**

The research presented in this thesis has explored a wide range of issues relating to the transfer of women from MUs to OUs during labour. It aimed to address five focused objectives using a multi- methods approach in three component studies.

Local NHS trust guidelines on transfer were collected in order to describe and evaluate their quality and content and consider the ways in which guidelines might impact on transfer rates. Guidelines from 65% of trusts with MUs were included in the evaluation and all types of configuration of care were represented. A rigorous and validated methodology was used to evaluate the quality of these guidelines. To the author’s knowledge, this is the first time that the quality of local midwifery guidelines has been evaluated in this way and it highlighted some important questions about the appropriate

development of local NHS trust guidelines given limited resources and patchy evidence. In terms of the issue of transfer, the content of the guidelines was compared with national guidance and the extent to which the guidelines addressed issues likely to be of importance for women's experience was also assessed in a post-hoc analysis. This process revealed some apparent differences between the style and content of guidelines used in the two types of MU, particularly in terms of the way in which the criteria for transfer are defined and presented, which may impact on transfer rates. In hindsight, if criteria for admission to MUs had also been assessed alongside these transfer guidelines, this would have further illuminated this topic, but unfortunately these were not requested from trusts so it is only possible to hypothesise about their content. Furthermore, while guidelines can be seen as an indication of a general approach to care, it is not possible to tell from the research carried out for this thesis how practice guidelines are actually used by midwives or the extent to which the care that women receive is influenced by guidelines. Nor is it possible to explore in any quantitative way, whether guideline quality or content is related to any objective outcome, such as transfer rate.

This research has provided high quality evidence about the number and proportion of women planning birth in an MU who are likely to be transferred during labour or immediately after the birth, as well as about important factors known before the start of labour care that are associated with an increased risk of transfer. These data, and others on the process of transfer, were collected as part of the Birthplace national prospective cohort study (Hollowell et al., in press) and analysed by the author. The scientific rigour and quality of this cohort study is an important strength of this research. Data collection was anonymised and did not require the consent of the woman so it is unlikely that women whose data were collected for the study were systematically different from those whose data were not included in the study. Participation at a unit level was good, with 84% of

AMUs and 95% of FMUs collecting data for the study, and data were collected about a high proportion of eligible women in most participating units; almost three quarters of centres collected data about at least 85% of eligible women. The completeness of data collection was also good, with less than 1% missing data for most important variables and potential confounders.

The large sample size is a strength of the cohort study. However, the large number of women about whom data were collected and the fact that all data were collected by midwives while they were looking after women in labour, using only information that was routinely recorded in women's maternity notes, also meant that it was only possible to collect data on limited number of items. Data on some important potential confounders, including smoking for example, were not collected, leaving the potential for residual confounding. Furthermore, while some data on transfer were collected, because it was not the primary aim of this study to address the issue of transfer, the data items collected about transfer were also limited. For example, while the primary reason for transfer was collected, no other information on the circumstances leading up to and after transfer, including the progress and stage of labour, was available. This would have enabled a more detailed comparison of the management of different complications in different settings. Data on key time points, including the decision to transfer, the start of transfer and the start of care in the OU, were collected, but were often inconsistent or poorly recorded so were of variable quality and therefore analyses using these data are of questionable value. Notwithstanding these limitations, the analyses carried out have provided robust evidence at a national level about transfer rates and have also shown the extent of variation at a local level between units.

A qualitative interview study was carried out to explore women's experience of transfer and illuminate their support and information needs. A small number of studies have

attempted to explore women's experience of transfer in the past, often focusing on women transferred during pregnancy as well as during labour. These have all been based on small convenience samples so are unlikely to have reflected the full diversity of experience. By using maximum variation sampling and a variety of recruitment approaches, this study aimed to represent as broad a range of experience as possible. The aim of seeking variation in experience and the factors that might be associated with experience in this kind of study is not in order to obtain a statistically 'representative' sample or 'generalisable' results, but in order to represent a broad range of experience, including the 'minority' experience which can get lost in larger quantitative studies. It is also possible that it may be more important to understand 'minority', unusual or extreme experiences, because these cases may illustrate issues that do not emerge from the more common, majority experience, yet are nonetheless important.

In terms of socio-demographic characteristics, the sample interviewed for this study was less varied than was hoped, being predominantly White, older and more affluent than the national average. This may reflect the characteristics of most women planning birth in most FMUs, but it did not reflect the wider social diversity seen in many AMUs. While this is not unusual for studies of this kind, it is possible that the experience of less affluent women and those from an ethnic minority background might be different from those reflected in this study and is therefore not represented. It also proved difficult to identify and recruit women having a second or subsequent baby to take part in the study; only four of the 30 women who took part in the study were multiparous. This was in part because multiparous women are less likely to be transferred and therefore make up a minority of the population of women who have experienced transfer; less than a quarter of the women transferred from MUs in the cohort study were multiparous. It is also possible that some women with more than one child were put off because they thought it would be difficult to

find the time to take part in the study. Two multiparous women who volunteered to take part in the study were unable to find a time that was convenient for an interview because of childcare and work commitments which were more complicated than for those women who only had one baby to look after. Finally, because all but two of the women interviewed were transferred during labour, before the birth of their baby, it was not possible to explore whether women who are transferred in the immediate postnatal period have particular concerns or support needs. Notwithstanding these issues the women taking part in the study came from many different parts of England, had planned birth in both types of MU and had a wide range of different experiences and 'stories' to tell. There was no evidence that women who had more problems or who had a particular issue to raise were more motivated to come forward to take part in this study. In fact, two women who volunteered to take part said that they did so in order to say how good their experience had been and targeted recruitment strategies were needed to identify women who had particularly traumatic experiences.

Qualitative research of this kind involves the researcher in engaging closely with the research process, the participants and the analysis and it is important, therefore, to consider potential sources of influence or 'bias' as a result of the researcher's personal experience and background. Where data collection and analysis are carried out by a single researcher there can also be a concern about the 'reliability' of the findings. The idea of 'inter-rater reliability', used in some quantitative studies, has been contested as an appropriate means of validation in the context of qualitative studies (e.g. Morse, 1997), but it has also been argued that the quality of qualitative studies can be enhanced if it can be shown that the interpretation of data is consistent across different researchers (Mays and Pope, 2006). Full independent review of transcripts and coding decisions is highly resource intensive and was therefore beyond the scope of the research presented here. The analysis

approach, which involved constant comparison of evolving and emerging themes and theory with data from the interview transcripts and exploration of deviant cases, meant that emerging theories and ideas were constantly being challenged and re-examined in the light of evidence in the data. In addition, in order to validate these analyses and evolving explanations of the data, the author's supervisory team read a sample of ten transcripts and discussed coding decisions, analysis and interpretations of the data with the author throughout.

## **9.8 Conclusions and recommendations**

Transfer is a common event, affecting around a quarter of women planning birth in MUs. Around 20% of women planning to have their baby in an MU will give birth in an OU; another 5% will be transferred shortly after giving birth. Transfer rates in AMUs are higher overall than in FMUs, but there is considerable variation in transfer rates between different units. The chances of being transferred are much higher for some groups of women. For women having a second or subsequent baby the risk of being transferred is around 1 in 10, irrespective of the woman's age. For young women having their first baby the risk of transfer is higher (over 1 in 4 in an FMU and almost 1 in 3 in an AMU), but this risk increases with increasing maternal age. Women having their first baby aged 40 years or over have around a 50% chance of being transferred. Gestational age of more than 41 weeks and having a pre-existing clinical risk factor, as defined by the NICE Intrapartum Care Guideline, are also associated with an increased risk of transfer.

Despite the frequency with which transfer occurs, women interviewed after transfer report feeling unprepared for the experience. This is partly because of the inadequacy of the information provided to women. Those women who were more informed about the chances of being transferred tended to have sought out the information themselves. Women's reports of the information that they were provided with indicate that in relation

to transfer rates and risks for different groups of women it was often sketchy or imprecise and little or no attention was paid to information about the process of transfer. While not all women want detailed information of this kind, it appears that most do, which means that midwives should ensure that it is available and offered to all women considering birth in an MU.

Preparation for transfer is not simply about providing information however; in part, women were unprepared for transfer because they did not expect that it would happen to them. Most women hoped, expected and planned for a normal birth and often did not think, or did not want to think, about the possibility that things might not go to plan. This meant that when the need for transfer arose some women found it difficult to adjust to their changing circumstances and afterwards were left with feelings of guilt or anxiety about whether they could have done things differently. Antenatal care and education have a focus on 'normality' with an emphasis on women feeling empowered, relaxed and positive about labour and birth. This approach is seen as maximising women's opportunity to have a normal physiological birth and a positive birth experience. A significant minority of women, however, will experience complications during labour, which in an MU will necessitate transfer, and there is therefore a tension between the need to prepare women adequately for complications that may not occur, without 'pathologising' the pregnancy. The research presented in this thesis adds to a body of research on women's experience of complicated or prolonged labour and instrumental or operative birth which together suggests that the right balance may not have been achieved in current antenatal care and education. For women planning, or considering planning, birth in an MU, transfer, the reasons transfer might be needed and the way that transfer is managed, should be considered as much a part of the 'package' of care as a 'homely' environment and 'individualised' care. Midwives and antenatal education providers

therefore have a responsibility to enable women to appropriately engage with the possibility of complications and transfer while they are pregnant. This may necessitate a move away from the prevailing 'good' normal birth, 'bad' medical birth dichotomy and a reframing so that women internalise many different, equally valid, routes to achieving a successful outcome.

The responsibility and need for midwives to support women to adjust to changing circumstances is also apparent during labour in MUs, where sensitive care and clear and calm communication have been seen to facilitate feelings of control and understanding in women. In these circumstances, women can accept transfer as the right decision and it need not be framed as a 'negative' event. The research carried out for this thesis also highlights the vulnerability of women during labour and the responsibility that midwives also have to exercise appropriate judgement and sensitivity in deciding when to transfer a woman. In this context, transfers against a background of prolonged labour may be particularly important and midwives should carefully weigh up the potential benefits of birth in the MU against the potentially serious and long-lasting negative effects of transfer that is perceived by the woman as "too late".

When the decision to transfer is taken there are a number of ongoing opportunities for ensuring that the transfer experience minimises distress for the woman and her partner and maximises the capacity for a 'positive' outcome. Typically MU care continues during the transfer 'journey', but women did not always perceive that they were being 'cared for' during this time. The transfer journey, particularly when by ambulance, but also when by trolley or bed from AMU to OU, takes the woman out of a perceived warm, homely and caring environment to an unfamiliar 'limbo'. Longer journeys were more difficult for women to cope with and women were acutely sensitive to the potential for delay. Being offered choices about walking to the ambulance, whether to sit or lie down, having a

husband or birth partner in the ambulance and being appropriately dressed or covered, helped women feel 'cared for' rather than simply 'transported' and meant that the journey was less distressing, but these choices were not always available to women. The journey also provides midwives with an opportunity to talk to women about their care and give them information about what to expect in the OU. This opportunity was not always taken, however, leaving women with unspoken and unanswered questions about the progress of their journey, their babies' and their own wellbeing and what would happen when they got to the OU.

What typically happened at the OU was that the midwife from the MU 'handed over' the care of the woman to an OU midwife. Again, this was not always expected by the woman and if this 'handover' was not handled professionally and sensitively she could feel 'abandoned' by her midwife. The small number of women who experienced continuity of carer, with their midwife continuing to look after them after transfer, were extremely positive about their experience. This helped them feel safe in the care of someone with whom they had formed a trusting relationship and meant they had one fixed point of reference and an advocate in a potentially rapidly changing situation. Since this could be considered as 'best practice' and appears to be achieved in some NHS trusts, sharing of information about the ways in which NHS trusts manage staffing in these instances would be beneficial. A good handover, in the presence of or involving the woman and inside the hospital, rather than in the car park, is an essential 'next best' option to ensure that women whose care is already 'fractured' have continuity. Arrangements need to be in place so that midwives are not dependent on the returning ambulance for transport back to the MU and therefore have sufficient time to devote to this handover. Ambulance staff may also have a role, as they would in other admissions to hospital, in ensuring that an appropriate handover of care takes place.

Responsibility for the care of women who have been transferred should not end with the handover of care to OU staff or when the woman is discharged home. Adjusting to a labour and birth experience that has not gone as expected is a process that extends into the postnatal period and beyond, even for women whose experience was not an overwhelmingly traumatic one. Women who have experienced transfer appreciate the opportunity to talk about their experience in order to understand and make sense of what happened and to help them plan for future pregnancies, but will not necessarily seek this out if it is not offered. After particularly traumatic experiences women may need more structured support, both in the immediate postnatal period and during any subsequent pregnancies, but again women will not necessarily self-refer to specialist services so it is essential that postnatal follow-up appropriately identifies women that may need more support.

Finally, while the extent to which clinical guidelines influence practice is not clear, the research presented in this thesis has shown that local NHS trust guidelines relating to transfer paid little attention to aspects of the process that have the potential to impact on women's experience. Appropriate guidance on information, communication and the many practical ways in which women's experience of transfer could be improved can be derived from the results of the research carried out for this thesis and should be incorporated into local NHS guidelines.

## **9.8.1 Recommendations for practice and policy**

### ***9.8.1.1 The antenatal period – women planning birth in midwifery units***

Women considering planning to have their baby in an MU should be offered clear and accurate information about the percentage of women transferred during labour or immediately after the birth from that unit over the past year. The denominator for these percentages should be clear and preferably should be comprised of women receiving care

during labour in the unit, rather than those who 'booked' for care in the unit. The percentage of women transferred for different reasons should also be available to women. Transfer rates should be presented separately for nulliparous and multiparous women. Where insufficient local data are available, for example in FMUs with only a small number of births per year, national data from the study reported here should be offered to women. Nulliparous women should be informed of the increasing risk of transfer with increasing age. Information should also be available on the likely duration of any transfer journey, including waiting time, who would typically accompany the woman during the transfer, whether her husband or partner would be able to travel in the ambulance, where relevant, and who would care for the woman after transfer. Information may be conveyed verbally, but should also be available in written form for women to take away.

Midwives and antenatal class providers should consider ways in which they might better prepare women for the possibility of complications arising during labour and childbirth so that women can remain flexible and open to changing circumstances. Some reframing of labour and birth as a process with many different and equally valid ways of achieving a successful outcome appears to be necessary so that women can come to terms with their experience, both at the time and afterwards, and take away a positive sense of achievement rather than feelings of guilt, self-blame or longer-lasting birth trauma.

#### ***9.8.1.2 During labour***

Midwives caring for women in MUs should ensure that they provide sensitive, respectful care with clear communication and decision-making for all women in labour. Particular attention should be paid to women whose labour is prolonged, where midwives should be aware of the potentially long-lasting negative consequences of transferring 'too late'.

### ***9.8.1.3 When transfer is needed***

Where it is decided that transfer is required, the midwife should ensure that the woman fully understands the reason for transfer and that the process of transfer is carefully explained. This should include ongoing information about waiting time or delay, who will accompany the woman and whether the midwife will continue to look after the woman after transfer. Opportunities for choice, including walking to the ambulance or to the AMU and sitting or lying in the ambulance should be given. Where possible the woman should be given the option of her husband or partner travelling with her in the ambulance as this support is important to women at this time. The midwife should ensure that the woman is appropriately dressed or covered during the transfer journey and is treated with respect and dignity. Particularly during ambulance journeys, sensitive care and clear communication is needed to ensure that women continue to feel cared for rather than 'transported'.

### ***9.8.1.4 Continuity and handover***

For most women, the best possible experience is likely to be achieved if the midwife from the MU continues to care for the woman after transfer. Where this is not possible, the woman and her partner should be made aware of this before arrival at the OU and there should be a thorough verbal and written handover of care in the presence of or involving the woman and her partner on arrival. Arrangements should be made so that midwives are not dependent on the returning ambulance for transport back to the MU and that they have sufficient time to devote to the handover of care.

### ***9.8.1.5 After birth***

Women who have experienced transfer should be offered the opportunity to talk with a midwife from the MU about their experience and go through their maternity notes.

Attention should be paid to the timing of this offer to ensure that women are best able to take advantage of this.

#### ***9.8.1.6 Policy and guidance***

Commissioners and policy makers should be aware of the benefits of MU care, from the woman's perspective, but should ensure that appropriate arrangements and evidence-based guidance is in place to minimise the distress for women who are transferred.

Acute trusts should engage with ambulance trusts in order to ensure that ambulance trust policy with respect to the transfer of women in labour is informed by evidence on women's experience. In particular, this should address the issue of partners accompanying women in the ambulance, women's choice about sitting or lying in the ambulance and that the handover by the midwife is part of the transfer process so, if the ambulance is required to return the midwife to the MU, this should only happen once a thorough handover of care has taken place.

### **9.8.2 Recommendations for further research**

#### ***9.8.2.1 Discussing place of birth with women***

The research presented in this thesis has produced evidence, particularly in relation to factors that increase a woman's risk of transfer, which should be used by midwives in discussing place of birth with women. Research with midwives would be valuable in order to explore whether there are evidence-based aids to decision-making or ways of presenting information that would be particularly useful for midwives and antenatal class leaders to use in discussing place of birth with women and their partners.

#### ***9.8.2.2 Preparing women for complications***

This research has identified that women are not prepared for complications that may arise during labour. Further research is required to explore how best to ensure that women and

their partners are adequately prepared for transfer without ‘pathologising’ an otherwise ‘normal’ pregnancy.

### ***9.8.2.3 Midwives experience of transfer***

This research has explored and represented in depth the perspective of women transferred from MUs. It has not considered the complementary perspectives of midwives working in MUs who make decisions about transfers, or of midwives working in OUs who care for women after transfer, and did not aim to do so. This is an important topic, the study of which would illuminate a number of areas, including midwives use of guidelines, the factors influencing and constraining their decision-making and their perceptions of relationships with other professionals involved in transfers. Uncompleted and unpublished doctoral research has explored the woman-related, midwife-related and other factors that influence the decision to transfer (B. Hunter, personal communication), but further qualitative work in this area would be useful.

### ***9.8.2.4 Transfers from home***

This thesis has specifically focused on women transferred from MUs. Women planning birth at home are also affected by transfer and while some aspects of their experience may be similar to those of women planning birth in MUs there may also be some differences. One reason for thinking this is that the group of women planning birth at home appears to be substantially different, in terms of socio-demographic characteristics and risk status, from those planning birth elsewhere. Further analyses of data from the Birthplace prospective cohort study would identify whether similar risk factors for transfer are also identified for women planning birth at home. While some of the practice points relating to women’s experience of ambulance transfer are also relevant to women being transferred from home there may be issues that are specific to transfer from home that will only be illuminated by a qualitative study interviewing women about their experiences.

### ***9.8.2.5 Outcomes for women who are transferred***

Although beyond the scope and timescale of this research, outcomes for women and babies following transfer is an important topic where there is little evidence. Further analyses of data from the Birthplace prospective cohort study would provide valuable information in this area that could be used by midwives and women when discussing and considering place of birth.

## **9.9 Summary**

Transfer is a common event, affecting around a quarter of women planning birth in MUs. Primiparous women are more likely to be transferred than women having a second or subsequent baby and the risk of transfer for primiparous women increases with increasing age. Women having their first baby aged 40 years or over have around a 50% chance of being transferred.

Despite the frequency with which transfer occurs, women interviewed after transfer report feeling unprepared for the experience. This is partly because of the inadequacy of the information provided to women, but also because antenatal care and classes do not prepare women adequately for the complications that may arise during labour and childbirth.

Midwives and antenatal education providers therefore have a responsibility to enable women to appropriately engage with the possibility of complications and transfer while they are pregnant.

Midwives also have a key role in enabling women to adjust to changing circumstances during labour. Sensitive care and clear and calm communication facilitate feelings of control and understanding in women and help enable women to accept transfer as the right decision and not a 'negative' event. Midwives also have a responsibility to exercise appropriate judgement and sensitivity in deciding when to transfer a woman, particularly in

the context of prolonged labour, where the potentially serious and long-lasting negative effects of transfer that is perceived by the woman as “too late” should be considered.

There are a number of ways in which women’s experience of the transfer journey can be improved. Being offered choices about walking to the ambulance, whether to sit or lie down, having a husband or birth partner in the ambulance and being appropriately dressed or covered, help women feel ‘cared for’ rather than simply ‘transported’. The journey also provides midwives with an opportunity to talk to women about their own and their baby’s wellbeing and give them information about what to expect in the OU. Having the midwife from the MU continue to care for the woman after transfer should be considered as ‘best practice’, but where this is not possible a good handover inside the hospital, in the presence of or involving the woman and her partner, is an essential ‘next best’ option. After the birth, women who have experienced transfer should be offered at least one opportunity to talk to an MU midwife about their experience in order to understand and make sense of what happened and to help them plan for future pregnancies.

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# Appendix 1 Literature review

## databases and search terms

Medline	<ol style="list-style-type: none"><li>1. exp Delivery Rooms/</li><li>2. exp Birthing Centers/</li><li>3. exp Midwifery/</li><li>4. exp Hospitals, Maternity/</li><li>5. birth\$ center\$.tw.</li><li>6. birth\$ centre\$.tw.</li><li>7. midwife\$.tw.</li><li>8. maternity hospital\$.tw.</li><li>9. or/1-8</li><li>10. exp Patient Transfer/</li><li>11. exp "Transportation of Patients"/</li><li>12. transfer\$.tw.</li><li>13. or/10-12</li><li>14. 9 and 13</li><li>15. limit 14 to yr="1980 – 2010"</li></ol>	Cinahl (starts at 1982)	<ol style="list-style-type: none"><li>1. exp Delivery Rooms/</li><li>2. exp Alternative Birth Centers/</li><li>3. exp Midwifery/</li><li>4. birth\$ center\$.tw.</li><li>5. birth\$ centre\$.tw.</li><li>6. midwife\$.tw.</li><li>7. maternity hospital\$.tw.</li><li>8. or/1-7</li><li>9. exp Transfer, Intrahospital/</li><li>10. exp Transfer, Discharge/</li><li>11. exp "Transportation of Patients"/</li><li>12. transfer\$.tw.</li><li>13. or/9-12</li><li>14. 8 and 13</li></ol>
Embase (1980 onwards)	<ol style="list-style-type: none"><li>1. exp delivery room/</li><li>2. exp maternity ward/</li><li>3. exp midwife/</li><li>4. midwife\$.tw.</li><li>5. birth\$ center\$.tw.</li><li>6. birth\$ centre\$.tw.</li><li>7. maternity hospital\$.tw.</li><li>8. or/1-7</li><li>9. exp patient transport/</li><li>10. transfer\$.tw.</li><li>11. or/9-10</li><li>12. 8 and 11</li></ol>	PsycINFO (1980 onwards)	<ol style="list-style-type: none"><li>1. exp midwifery/</li><li>2. exp birth/</li><li>3. exp "labor (childbirth)"/</li><li>4. birth\$ center\$.tw.</li><li>5. birth\$ centre\$.tw.</li><li>6. midwife\$.tw.</li><li>7. maternity hospital\$.tw.</li><li>8. or/1-7</li><li>9. exp client transfer/</li><li>10. transfer\$.tw.</li><li>11. or/9-10</li><li>12. 8 and 11</li></ol>
British Nursing Index and Archive (starts at 1985)	<ol style="list-style-type: none"><li>1. exp maternity services/</li><li>2. exp midwifery/</li><li>3. birth\$ center\$.tw.</li><li>4. birth\$ centre\$.tw.</li><li>5. midwife\$.tw.</li><li>6. maternity hospital\$.tw.</li><li>7. midwife\$ unit\$.tw.</li><li>8. or/1-7</li><li>9. exp patients transportation/</li><li>10. transfer\$.tw.</li><li>11. or/9-10</li><li>12. 8 and 11</li></ol>		

# Appendix 2 Email to midwifery units

## requesting copies of transfer

### guidelines

Dear [name]

I am a researcher working on the Birthplace in England Research Programme (Birthplace; [www.birthplace.ox.ac.uk](http://www.birthplace.ox.ac.uk)) at the National Perinatal Epidemiology Unit in Oxford. You may be aware that we collaborated with the Healthcare Commission on their recent Maternity Services Review.

As part of Birthplace I am collecting, analysing, describing and comparing **written guidelines or protocols for transferring women during or immediately after labour** used in all midwifery units in England.

You were identified in the Maternity Services Review as the contact person for [name of unit/s]. The data entered for this/these unit/s indicate that you have a Network/Trust/Unit level written guideline or protocol for transferring women during labour. I am writing to ask if you could please send a copy of this guideline or protocol to me, either as an email attachment or by post to the address below. If there are any other local policies or guidance documents relating to the transfer of women during labour that are used in your unit, I would be grateful if you could also send me these.

The results of my analyses will be written up in reports for the funders (the National Institute for Health Research and the Department of Health), as part of my DPhil thesis and also may be submitted for publication in peer-reviewed journals. Individual midwifery units and NHS Trusts will not be identified in any way in these reports.

Please contact me if you would like any more information about this project.

I look forward to receiving your transfer guideline or protocol documents soon.

With best wishes

Yours sincerely

Rachel Rowe

NIHR Researcher Development Award Holder

Birthplace Researcher

# Appendix 3 Published paper on transfer guidelines

Original research

## Local guidelines for the transfer of women from midwifery unit to obstetric unit during labour in England: a systematic appraisal of their quality

Rachel E Rowe

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Accepted 11 May 2009

### ABSTRACT

**Background** A proportion of women planning to give birth in a midwifery unit will experience complications during labour that necessitate transfer to an obstetric unit. Local guidelines for the transfer of women in labour have the potential to impact on quality of care and the safety of the transfer process.

**Objective** To systematically appraise the quality of local NHS guidelines on the transfer of women from midwifery unit to obstetric unit during labour.

**Methods** Guidelines were requested from all 52 NHS hospital trusts in England with midwifery units. The Appraisal of Guidelines for Research and Evaluation Instrument was used to evaluate the quality of the guidelines received.

**Results** Relevant guidelines were received from 34 (65%) trusts. No guidelines scored on the 'editorial independence' domain. The mean score on 'scope and purpose' (56.2%), concerned with the aims, clinical questions and target patient population of the guideline, was higher than for other domains: 'clarity and presentation' (language and format) 45.3%, 'stakeholder involvement' (representation of users' views) 15.3%, 'rigour of development' (process used to develop guideline) 15.0%, 'applicability' (organisational, behavioural and cost implications of applying guideline) 7.1%. Only three guidelines were recommended for use in clinical practice.

**Conclusions** We believe this to be the first systematic appraisal of the quality of local NHS guidelines. Overall these local guidelines were of poor quality. It is not clear whether the quality of these midwifery guidelines is typical of local guidelines in other clinical areas, but this study raises fundamental questions about the appropriate development of high-quality local clinical guidelines.

### BACKGROUND

UK government policy since the early 1990s has been designed to give women a choice of settings for labour and birth, including care in a midwifery unit (MU).<sup>1</sup> In the UK, NHS MUs can be either 'freestanding,' that is not on the same site as any obstetric unit, or 'alongside,' that is in the same building or on the same site as an obstetric unit.<sup>2</sup> They provide midwife-led care for women who are at low risk of complications at the time of onset of labour and who want, and can safely choose, a low-tech approach to birth.<sup>3</sup> Inevitably a proportion of women with straightforward pregnancies who intend to give birth in an MU will experience complications during or immediately after labour that necessitate transfer to a consultant-led

obstetric unit. Available data indicate wide variation in estimates of intrapartum transfer rates, both within types of MU and between freestanding and alongside MUs.<sup>3</sup>

Local clinical guidelines for the transfer of women in labour are a possible factor in variation in transfer rates and have the potential to impact on quality of care and the safety of the transfer process. Guidelines have been defined as 'systematically developed statements to assist practitioner and patient decisions about appropriate healthcare for specific clinical circumstances' with the specific purpose to 'make explicit recommendations with a definite intent to influence what clinicians do.'<sup>4, 5</sup> Recently published national guidelines for the care of healthy women and babies during childbirth in England and Wales cover indications for intrapartum transfer, but do not give comprehensive guidance on the process of transfer, including, for example, decision-making and communication.<sup>6</sup> A recent report on the minimum standards for the organisation and delivery of care in labour recommended that, 'There should be written multidisciplinary evidence-based clinical guidelines, which are accessible and reviewed every three years at each birth setting... [and that these] should include... management of transfer of mother and/or baby to obstetric unit.' (p. 14).<sup>7</sup>

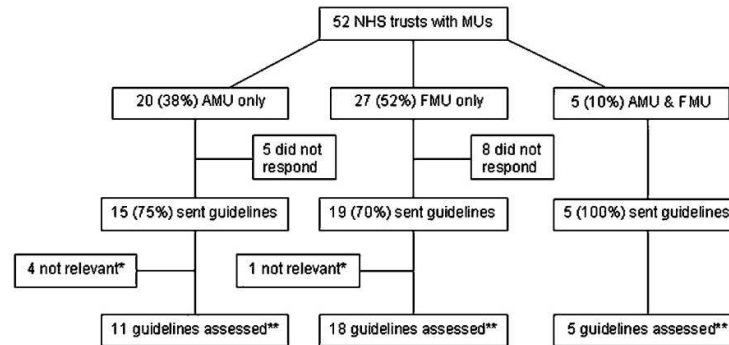
The proliferation of clinical guidelines over recent years has been accompanied by a growing recognition that the quality of guidelines varies and of the need for recognised criteria against which to judge guideline quality.<sup>8</sup> While at present there is little evidence about the safety of the transfer process, good-quality local clinical guidelines have the potential to improve the quality, safety and appropriateness of care for women experiencing complications during labour in an MU. This study aimed to systematically appraise the quality of local NHS guidelines on the transfer of women from MU to obstetric unit during labour and to consider whether the same standards that are applied to the quality of guidelines developed at national level and by professional organisations can be applied to guidelines developed locally.

### METHOD

#### Data collection

Data from the Healthcare Commission's (HCC) Maternity Services Review were used to identify all NHS hospital trusts in England with at least one MU (some trusts have more than one MU).<sup>9</sup> All these trusts indicated that they had at least one guideline relating to the transfer of women in labour

**Figure 1** Configuration of care within NHS trusts with midwifery units (MUs): number of guidelines sent and assessed.



AMU = alongside midwifery unit FMU = freestanding midwifery unit  
 \*3 "AMU only" trusts sent guidelines that did not cover maternal transfer; 1 "AMU only" trust sent a draft guideline for a planned FMU that was not relevant to the AMU; 1 "FMU only" trust sent a guideline that did not cover maternal transfer.  
 \*\*When trusts sent more than one guideline document, these were counted as one guideline

and thus formed the sampling frame for this study. In October 2007, each MU was contacted by email and asked to provide any guidelines and/or protocols used in their MU relating to the transfer of women during labour. A further email was sent in December 2007 to units in trusts that had not yet responded.

#### Quality appraisal

The Appraisal of Guidelines for Research and Evaluation (AGREE) Instrument, an internationally developed generic tool for assessing the quality of clinical practice guidelines, was used in this study.<sup>10</sup> Using this instrument, each guideline is assessed using 23 items organised into six domains. Each domain relates to a different dimension of guideline quality:

1. Scope and purpose (three items). This relates to the overall aim of the guideline, the clinical question and the target population it covers.
2. Stakeholder involvement (four items). This focuses on whether patients and target users of the guideline were involved in its development.
3. Rigour of development (seven items). This addresses the methods used to search for evidence and formulate recommendations.
4. Clarity and presentation (four items). This relates to the format and ease of understanding of the guideline.
5. Applicability (three items). This deals with the potential cost, behavioural and organisational barriers to implementing the guideline.
6. Editorial independence (two items). This is concerned with the independence of the guidelines from the funding body and acknowledgement of possible conflict of interest in the development group.

Each item is scored on a four-point Likert scale ranging from 4 'Strongly Agree' to 1 'Strongly Disagree,' with two mid points 3 'Agree' and 2 'Disagree.' Finally, an overall assessment of the quality of the guideline is made, taking each of the appraisal criteria into account, using a four-point categorical scale: 'Strongly recommend,' 'Recommend (with provisos or alterations),' 'Would not recommend,' 'Unsure.'

Each guideline was anonymised and identified with a unique number. The researcher and two colleagues (a consultant in

public health with a background in obstetrics and a research midwife) appraised each guideline independently using the AGREE Instrument as described. Following this independent appraisal, the appraisers met to discuss their scores on items where, for any given guideline, appraisers' scores differed by at least two points. Where errors or inconsistencies in interpretation of items were identified, scores were revised; these revised scores were used for all analyses. Overall assessments for each guideline were discussed and consensus reached on which guidelines could be recommended for use in practice.

#### Analysis

In order to assess the presence of response bias, data from the HCC Maternity Services Review on configuration of care within trusts in England and the number of births in the year to 31 March 2007 were used to compare trusts that returned relevant guidelines with those that did not using Fisher exact test and the t test respectively.<sup>9</sup>

Following the instructions for use of the AGREE Instrument, standardised domain scores for each guideline were calculated by summing the three appraisers' scores and standardising them as a percentage of the possible maximum score a guideline could achieve for that domain, that is ((obtained score–minimum possible score)/(maximum possible score–minimum possible score))×100. This means that the possible range for standardised

**Table 1** Characteristics of responding and non-responding trusts

	Responded n=34	Did not respond n=18	p Value
Configuration of care n (%)			0.18*
AMU only	11 (55.0)	9 (45.0)	
FMU only	18 (66.7)	9 (33.3)	
AMU and FMU	5 (100.0)	0 (0.0)	
Mean (SD) no of births†	4602 (2251)	4355 (1710)	0.69
Range	282 to 10005	2415 to 10140	

\*p Value calculated using Fisher exact test as expected cell <5.

†No of births in trust in year to 31 March 2007.<sup>9</sup>

AMU, alongside midwifery unit; FMU, freestanding midwifery unit.

**Table 2** Inter-rater reliability for each quality domain\* (n=34)

Domain	Intraclass correlation coefficient† (95% CI)
Scope and purpose	0.75 (0.59 to 0.86)
Stakeholder involvement	0.93 (0.86 to 0.96)
Rigour of development	0.84 (0.65 to 0.92)
Clarity and presentation	0.63 (0.44 to 0.78)
Applicability	0.64 (0.42 to 0.79)

\*Calculated for only five domains, because all guidelines received minimum possible score from all three raters for domain 6, editorial independence.

†Intraclass correlation coefficient calculated using absolute agreement and two-way random effects model.

domain scores is 0–100%. The instructions for the use of the AGREE Instrument state that domain scores are independent and should not be aggregated to form a single quality score.

Intraclass correlation coefficients were calculated for appraisers' total scores for each domain to assess inter-rater reliability within each domain. The mean and median domain scores with 95% CI and the proportion of guidelines scoring less than 30%, 30–60% and more than 60% were calculated. Scores for the highest scoring and lowest scoring domains were compared with scores for other domains using the Wilcoxon matched pairs signed rank sum test for non-parametric data. The number of births in the trusts producing 'recommended' guidelines was compared with the number of births in the other trusts using the t test.

## RESULTS

### Response and configuration of care

Fifty-two NHS trusts in England were identified as having at least one MU, with 82 MUs identified in all.<sup>9</sup> Guidelines were received from 39 (75%) trusts (figure 1). Trusts that had more than one unit all indicated that the same guideline was in use across all units. The guidelines received from five trusts could not be included in the appraisal, as they were not relevant to the topic (see figure 1); guidelines from 34 trusts (65%) were therefore included in the appraisal.

There was no statistically significant difference between responding and non-responding trusts in terms of configuration of care or the number of births (table 1).

### Guideline quality

Intraclass correlation coefficients for the three appraisers showed moderate to good inter-rater reliability for all domains, with best agreement for the 'stakeholder involvement' domain (table 2).

The mean and median quality scores for the six domains are shown in table 3.

'Scope and purpose' scores were statistically significantly higher than scores for the other four domains ( $p < 0.01$ ); 15 of the 34 guidelines (44%) scored more than 60% on this domain (figure 2). In contrast, for the 'stakeholder involvement' domain only five guidelines scored more than 30%, and only one scored more

than 60%. Two of the guidelines showed evidence that the views of patients had been sought in the development of the guideline, and only one gave any indication of piloting among users. None of the guidelines scored above 60% on 'rigour of development,' with all but three scoring less than 30%. For the 'clarity and presentation' domain, six of the guidelines scored above 60%, and only four scored less than 30%. 'Applicability' scores were significantly lower than for all other domains ( $p < 0.05$ ); none of the guidelines scored above 60% on this domain, and only two scored more than 30%. Only two guidelines gave any indication that the cost implications of applying the recommendations had been considered.

### Overall assessment of quality

Only three of the 34 guidelines assessed were judged by the appraisers to be of sufficient quality to be able to recommend (with provisos or alterations) for use in practice. The three trusts producing these guidelines represented all three types of configuration of care, that is in addition to an obstetric unit one trust had an alongside MU only, one had a freestanding MU only and the third had both types of MU. The trusts producing the recommended guidelines were larger, in terms of number of births per year, than the rest of the sample (mean births/year=7709 vs 4301,  $p=0.01$ ).

## DISCUSSION

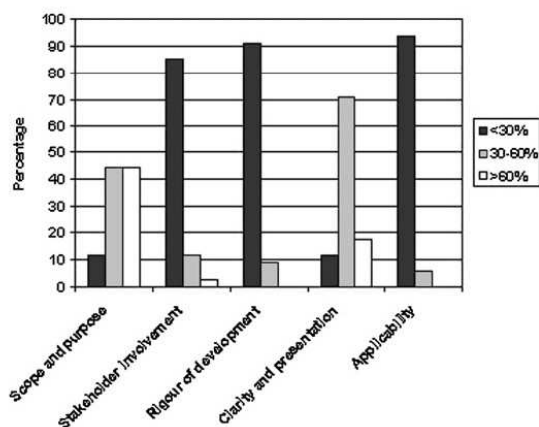
This paper reports what we believe to be the first systematic appraisal of the quality of local NHS trust guidelines and focuses on guidelines for the transfer of women from MU to obstetric unit during labour. Most previous studies using the AGREE instrument have focused on the quality of guidelines at national level (eg,<sup>11 13</sup>), and few have evaluated the quality of local guidelines using this instrument.<sup>14</sup> Others evaluating the quality of local guidelines have used methods of documentary analysis<sup>15</sup> or have used non-standard quality appraisal tools.<sup>16 17</sup>

This evaluation was based on guidelines obtained from 34 of the 52 (65%) NHS trusts in England with MUs. Although the initial response rate (75%) was high, the exclusion of some irrelevant guidelines meant that the usable response rate was lower than would be ideal. Data from the HCC Maternity Services Review indicate that all 52 trusts reported having a protocol or guideline covering intrapartum transfer, but we are unable to make any judgements about the quality of guidelines in trusts that did not respond.<sup>9</sup> In terms of configuration of care and the number of births in the trust, there was no evidence of systematic differences between trusts that sent relevant guidelines and those that did not, although with the small numbers involved it is difficult to rule out the role of chance with confidence.

Based on their judgements on the overall quality of the guidelines, the three appraisers agreed to recommend (with provisos or alterations) only three of the 34 guidelines evaluated. This is a reflection of the guidelines' overall poor scoring on four

**Table 3** Standardised domain scores of all guidelines (n=34)

Domain	Mean (95% CI)	SD	Median (95% CI)	Range	IQR
Scope and purpose	56.2 (48.4 to 64.0)	22.3	59.3 (44.4 to 74.1)	0–92.6	40.7 to 77.8
Stakeholder involvement	15.3 (9.6 to 20.9)	16.2	9.7 (2.8 to 22.2)	0–72.2	2.8 to 25.0
Rigour of development	15.0 (9.9 to 20.2)	14.7	9.5 (7.6 to 19.0)	0–57.1	6.3 to 20.6
Clarity and presentation	45.3 (40.0 to 50.6)	15.2	43.1 (38.9 to 50.0)	13.9–77.8	35.4 to 52.8
Applicability	7.1 (3.6 to 10.6)	10.1	3.7 (0.0 to 3.7)	0–37.0	0 to 7.4
Editorial independence	0.0 (0.0 to 0.0)	0.0	0.0 (0.0 to 0.0)	0.0–0.0	0.0 to 0.0



**Figure 2** Percentage of guidelines scoring low, medium and high in five domains of the Appraisal of Guidelines for Research and Evaluation instrument.

of the six domains. The pattern of scoring across domains, with guidelines scoring reasonably well for 'scope and purpose' and 'clarity and presentation,' but poorly for 'stakeholder involvement,' 'rigour of development' and 'applicability,' is very similar to that described in another quality appraisal of local guidelines.<sup>14</sup> In that study, which evaluated local hospital guidelines for the assessment of suicide attempters in The Netherlands, the 'editorial independence' domain, which scores whether conflicts of interest between guideline developers were recorded and whether the guideline was editorially independent from the funding body, was not used, as it was considered irrelevant for the subject. In our study, none of the guidelines scored more than the minimum on this domain, and it could be argued that for an appraisal of guidelines developed at a local level, this domain is not relevant.

Apart from problems with the relevance of the 'editorial independence' domain, there were few difficulties with applying the AGREE instrument to these local guidelines. It is a straightforward instrument to use, and comprehensive guidance is provided. All the appraisers were using the instrument for the first time, and while it is not standard practice to revise scores after discussion, this process helped identify and remove scoring errors and inconsistencies in the interpretation of some items, which may not have arisen with appraisers who were more familiar with the instrument. It was apparent that most of the guidelines scored poorly overall. Some guidelines scored well, however, and overall most items were straightforward to apply to the guidelines under scrutiny, suggesting that it is possible and appropriate to use this rigorous instrument on local guidelines.

Overall, the guidelines performed particularly poorly on the two domains that focus most on the methodology of guideline development: 'rigour of development' and 'stakeholder involvement.' Most contained very little, if any, description of the methodology used for guideline development. Only two of the guidelines showed evidence that the views of patients had been sought in the development of the guideline, and only one gave any indication of piloting among users. Low scores on these domains may, in part, reflect poor reporting of methodology within the guidelines themselves. We were dependent in this

appraisal on the information contained within the guidelines and did not explicitly ask for supporting documentation or background information on guideline development, so it is possible that this information was simply missing from the guidelines themselves. However, given the many other differences between low and higher scoring guidelines in terms of style and content, it seems very unlikely that the lower scoring guidelines were developed using a rigorous methodological approach.

This evaluation exposes apparently severe shortcomings in the quality of most of these guidelines evaluated against the stringent criteria set out by the AGREE instrument. It also raises broader questions, however, about the development of clinical guidelines at local level and the approach that the NHS should be taking in the context of limited resources. The better quality guidelines in this study, as judged by the appraisers' overall recommendations, were developed by larger trusts and broadly in line with the approach advocated by the AGREE collaboration.<sup>8</sup> Given their size, these trusts are likely to have more resources to commit to guideline development. In contrast with a mean of over 7000 births per year in these trusts, the smallest trust in this study recorded fewer than 300 births per year.

The development of good-quality guidelines requires specialist skills and significant resources. The perceived benefits of local clinical guidelines include the capacity to reflect local priorities, services and circumstances, and to promote increased local ownership, which may be of importance in terms of effective implementation.<sup>18</sup> Some authors have advocated the adaptation of existing guidelines to reflect the local context and circumstances, but this can also be a resource-intensive process.<sup>18-20</sup> A framework for a systematic approach for guideline adaptation has been developed by the ADAPTE Collaboration, and work is ongoing to evaluate whether this approach is effective in saving time and resources.<sup>21</sup> However, where good-quality national guidelines exist, there is a strong case on the grounds of efficiency and the avoidance of 'reinventing the wheel' for resources to be targeted at strategies for the implementation of national guidelines at local level. Within obstetrics, evidence suggests that the most effective strategies for the implementation of clinical practice guidelines involve identifying barriers to change and the use of multifaceted audit and feedback facilitated by local opinion leaders, but it is not clear how widely these strategies are being used within trusts to implement guidelines.<sup>22</sup>

A challenge remains, however, for those areas where there is little or no national guidance or where national guidelines fall short, such as maternal transfer during labour. In these cases, there may be an argument for a system that could facilitate increased collaboration and sharing of guidelines between trusts. One possible solution could be a central repository for local guidelines, perhaps coordinated by an appropriate royal college or professional body.

This study indicates that further research on the quality of local clinical guidelines is needed in order to evaluate whether the poor methodological quality identified in these midwifery guidelines is replicated in other clinical areas. Initiatives such as the AGREE Collaboration may be seen as having improved the quality of national guidelines. Where appropriate national guidelines exist, there is a strong argument for targeting resources at effective strategies for the implementation of high-quality national guidelines at a local level. In those areas where there may be a continuing need for the development of local clinical guidelines, urgent consideration needs to be given to what is required to ensure that the quality of these guidelines reaches the standards already set, and now widely achieved, for national guidelines.

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**Competing interests** None.

**Provenance and peer review** Not commissioned; externally peer reviewed.

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# Appendix 4 Birthplace cohort study

## FMU data collection form



Barcode/Number

### Freestanding Midwifery Unit Data collection form

#### Instructions

- **Please complete** this form for each woman who plans to give birth in your freestanding midwifery unit (FMU) and who receives care from a midwife during labour in a FMU, and who gives birth in the same clinical episode.
  - i. **Do not complete** this form for an unplanned birth in a FMU.
  - ii. **Do not complete** this form for women who have had no antenatal care.
  - iii. Please start this form during labour care.
  - iv. Please write clearly using a black pen.

- If this woman transfers to another midwifery unit or an obstetric unit, please complete as much of the form as you can and then transfer the form with the woman.
- If you start this form and the woman **does not** give birth in the same clinical episode, please tick this box  and return the form to the Local Co-ordinating Midwife.

- When the form is complete return it in the attached envelope to the Local Co-ordinating Midwife. Please ensure the return address on the back cover of this form is aligned with the window of the envelope.
- If you have any questions about the form or about this study please contact:

Birthplace Project Manager  
birthplace@npeu.ox.ac.uk  
Tel: 01865 289748  
Fax: 01865 289701

Thank you for your contribution to Birthplace



Royal College of  
Obstetricians and  
Gynaecologists

Setting standards to improve women's health

## Section A: Woman's identifying details

*This page will be detached from the rest of the form and kept in a secure location in your Trust by the Local Co-ordinating Midwife (LCM). This allows the LCM to deal with any inconsistencies or mistakes in the form or find missing information before sending non-identifying information (pages 2-6) to the study team in Oxford.*

Please stick woman's address label here:

OR complete the following details:

**A1. Woman's full name:** *Please print* \_\_\_\_\_

**A2. Woman's date of birth:** \_\_\_\_\_ DD / MM / YY

**A3. Woman's NHS number:** \_\_\_\_\_

**A4. Woman's home address:** *Please print*

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**A5. Woman's full postcode:** \_\_\_\_\_

**A6. Section A completed by:** *Please print full name* \_\_\_\_\_

Office use only

### After birth

*Please fill in this box once the labour episode is complete*

**A7. Date of delivery:** \_\_\_\_\_ DD / MM / YY

**A8. Baby's NHS number:** *(If known)* \_\_\_\_\_

## Section B: Woman's details

**B1. Woman's age at delivery: (Years)**

**B2. Woman's ethnic group: (As recorded in her maternity notes)**

Please write in one code from the list below

- |                                  |                               |
|----------------------------------|-------------------------------|
| 01 White British                 | 09 Pakistani                  |
| 02 White Irish                   | 10 Bangladeshi                |
| 03 Any other White background    | 11 Any other Asian background |
| 04 Mixed White & Black Caribbean | 12 Black Caribbean            |
| 05 Mixed White & Black African   | 13 Black African              |
| 06 Mixed White & Asian           | 14 Any other Black background |
| 07 Any other Mixed background    | 15 Chinese                    |
| 08 Indian                        | 16 Any other ethnic group     |

**B3. Woman's understanding of English language:**

- Fluent
- Some understanding / Able to communicate verbally
- No understanding / Not able to communicate verbally

**B4. Woman's marital / partner status:**

- Married / Living with a partner
- Single / Unsupported by partner (*this includes single woman living with family*)

**B5. Woman's BMI in pregnancy:**   .   If not recorded tick here

**For LCM use only**

**B6. IMD score:**

.

**B7. Tick this box if this form was not started around the time of birth and was filled in retrospectively by the LCM:**

## Section C: Pregnancy history

### Previous pregnancies

**C1. Number of pregnancies of  $\geq 24$  weeks, prior to this pregnancy:** *If none, write 0*

### This pregnancy

**C2. Expected date of delivery:**   /   /

**C3. Immediately prior to the onset of labour, was this woman known to have any of the medical conditions or obstetric history items listed opposite?**

Yes *Please write in code(s) below from tables opposite*

*Example: For a woman with previous pre-eclampsia requiring preterm birth, the condition is found in the 'Obstetric history' table under 'Previous complications' and coded '12 C'. For a woman with a condition that is not listed in the tables opposite, please enter the code for 'Other' and write in the condition in the space provided.*

12	C	
----	---	--

**Code** **If Other, please write name of condition clearly**

Code	Code	If Other, please write name of condition clearly

**C4. At the start of care in labour, did this woman have any of the following conditions?** *Please tick all that apply*

- Prolonged rupture of membranes greater than 18 hours
- If membranes are ruptured, any meconium stained liquor
- Proteinuria of 1+ or more
- Hypertension with either:
  - diastolic blood pressure of  $\geq 90$ mm Hg on more than one occasion 20 minutes apart or  $\geq 100$ mm Hg on one occasion
  - systolic blood pressure  $\geq 160$ mm Hg on at least one occasion
- Abnormal vaginal bleeding
- Non-cephalic presentation
- Abnormal fetal heart rate
- Other complications *Please specify* \_\_\_\_\_
- None of the above

## Medical conditions

Type of condition	Code	Additional information
Cardiovascular	01	A: Confirmed cardiac disease B: Hypertensive disorders
Respiratory	02	A: Asthma requiring an increase in treatment or hospital treatment B: Cystic fibrosis
Haematological	03	A: Haemoglobinopathies – sickle-cell disease, beta-thalassaemia major B: History of thromboembolic disorders C: Immune thrombocytopenia purpura or other platelet disorder or platelet count below 100 000/cubic mm D: Von Willebrand's disease E: Bleeding disorder in the woman or unborn baby F: Atypical antibodies which carry a risk of haemolytic disease of the newborn
Infective	04	A: Risk factors associated with group B streptococcus whereby antibiotics in labour would be recommended B: Hepatitis B/C with abnormal liver function tests C: Infected with HIV D: Toxoplasmosis – woman receiving treatment E: Current active infection of chicken pox/rubella/genital herpes in the woman or baby F: Tuberculosis under treatment
Immune	05	A: Systemic lupus erythematosus B: Scleroderma
Endocrine	06	A: Hyperthyroidism B: Diabetes
Renal	07	A: Abnormal renal function B: Renal disease requiring supervision by a renal specialist
Neurological	08	A: Epilepsy B: Myasthenia gravis C: Previous cerebrovascular accident
Gastrointestinal	09	A: Liver disease associated with current abnormal liver function tests
Psychiatric	10	A: Psychiatric disorder requiring current inpatient care
Other	11	A: Please write in condition or diagnosis

## Obstetric history

Type of condition	Code	Additional information
Previous complications	12	A: Unexplained stillbirth/neonatal death or previous death related to intrapartum difficulty B: Previous baby with neonatal encephalopathy C: Pre-eclampsia requiring preterm birth D: Placental abruption with adverse outcome E: Eclampsia F: Uterine rupture G: Primary postpartum haemorrhage requiring additional treatment or blood transfusion H: Retained placenta requiring manual removal in theatre I: Caesarean section J: Shoulder dystocia
Current pregnancy	13	A: Multiple birth B: Placenta praevia C: Pre-eclampsia or pregnancy-induced hypertension D: Preterm labour or preterm prelabour rupture of membranes E: Placental abruption F: Anaemia – haemoglobin less than 8.5 g/dl at onset of labour G: Confirmed intrauterine death H: Induction of labour I: Substance misuse J: Alcohol dependency requiring assessment or treatment K: Onset of gestational diabetes L: Malpresentation – breech or transverse lie M: Body mass index at booking of greater than 35 kg/m <sup>2</sup> N: Recurrent antepartum haemorrhage
Fetal indications	14	A: Small for gestational age in this pregnancy (less than fifth centile or reduced growth velocity on ultrasound) B: Abnormal fetal heart rate (FHR)/Doppler studies C: Ultrasound diagnosis of oligo-/polyhydramnios
Previous gynaecological history	15	A: Myomectomy B: Hysterotomy
Other	16	A: Please write in condition or diagnosis

## Section D: Labour and birth

If multiple pregnancy, please complete for the first baby only

- D1. Date and time midwife started labour care:** / /  :    
24hr
- D2. Cervical dilatation at start of labour care:**  (0-10cm)  Not assessed
- D3. Was this woman transferred to another midwifery unit or an obstetric unit at any time during labour care or immediately after the birth?**  Yes  No  
 If No, please go to question D4

### Maternal Transfer

If woman transferred more than once, please tick this box  and complete the questions below for care received during the first transfer only

- T1. Date and time of decision to transfer:** / /  :    
24hr
- T2. Primary reason for transfer: Please write in one code from list**
- |                                    |                                    |
|------------------------------------|------------------------------------|
| 01 Failure to progress (1st stage) | 09 Failure to progress (2nd stage) |
| 02 Fetal distress (1st stage)      | 10 Fetal distress (2nd stage)      |
| 03 Meconium staining               | 11 Postpartum haemorrhage          |
| 04 Epidural request                | 12 Retained placenta               |
| 05 Hypertension                    | 13 Repair of perineal trauma       |
| 06 Malposition                     | 14 Other <i>Please specify</i>     |
| 07 Malpresentation                 |                                    |
| 08 Antepartum haemorrhage          |                                    |
- 
- T3. Date and time of start of transfer:** / /  :    
24hr
- T4. Mode of transfer:**  Private car  Ambulance  Other  
 If Other, please specify \_\_\_\_\_
- T5. Full name of unit woman transferred to:** \_\_\_\_\_
- T6. Date and time of start of midwifery care in transfer unit:** / /  :    
24hr
- T7. Date and time of first clinical assessment by obstetrician:** / /  :    
24hr  
 Tick if not assessed by an obstetrician
- T8. Was labour augmented with syntocinon?**  Yes  No
- T9. Did this woman have an epidural or spinal?**  Yes  No
- T10. Did this woman have a general anaesthetic?**  Yes  No

- D4. Date and time of delivery:** / /  :    
24hr
- D5. Place of birth:**  Freestanding midwifery unit  Obstetric unit  Other  
 If Other, please specify \_\_\_\_\_
- D6. Mode of birth: Please tick one box only**  
 If caesarean section after failed forceps/ventouse, tick caesarean section
- |   |   |
|---|---|
| <input type="checkbox"/> Spontaneous vertex birth | <input type="checkbox"/> Vaginal breech |
| <input type="checkbox"/> Ventouse                 | <input type="checkbox"/> Forceps        |
| <input type="checkbox"/> Caesarean section        |   |
- Primary reason for instrumental or caesarean delivery \_\_\_\_\_
- D7. At any time during labour did this woman use immersion in water for pain relief?**  Yes  No
- D8. Did this woman have active management of the 3<sup>rd</sup> stage?**  Yes  No

- D9. Did this woman have an episiotomy?  Yes  No
- D10. Was there any perineal trauma involving the anal sphincter? (3<sup>rd</sup>/4<sup>th</sup> degree tear)  Yes  No
- D11. Birth outcome:  Live birth  Stillbirth
- D12. Sex of baby:  Male  Female  Unknown
- D13. Birthweight:     g
- D14. Apgar at 5 minutes:
- D15. When was the episode of labour care completed?   /   /   :    
24hr  
 See back cover for guidance

Please place this form in the woman's postnatal notes.

## Section E: After birth

To be completed by the **midwife** on or after the 5<sup>th</sup> postnatal day and before transfer to the health visitor

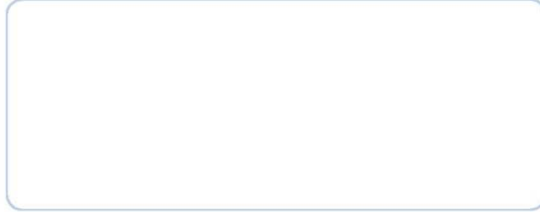
- E1. Within the first 48 hours after birth was this woman admitted to: Please tick all that apply  
 Do not include recovery ward for operative delivery  
 High Dependency Area  ICU  Specialist unit e.g. dialysis unit  
 Primary reason for admission \_\_\_\_\_  
 If Specialist unit, please specify \_\_\_\_\_
- E2. Did this woman receive a blood transfusion within 48 hours of birth?  Yes  No
- E3. Date and time woman discharged home:   /   /   :    
24hr  
 Not yet discharged
- E4. Did this woman breastfeed her baby at least once?  Yes  No
- E5. Was the baby admitted to a neonatal unit within 48 hours of birth?  Yes  No  
 If Yes, to where was the baby admitted? Please tick one box only  
 Special Care Baby Unit  High Dependency Unit  Neonatal Intensive Care  
 Date baby was discharged from neonatal unit:   /   /    
 Not yet discharged
- E6. Were any of the following identified in the baby within 48 hours after birth? Please tick all that apply
- |   |  |
|---|--|
| <input type="checkbox"/> Meconium aspiration syndrome   | <input type="checkbox"/> Cephalohaematoma  |
| <input type="checkbox"/> Neonatal encephalopathy        | <input type="checkbox"/> Cerebral haemorrhage  |
| <input type="checkbox"/> Brachial plexus injury         | <input type="checkbox"/> Kernicterus   |
| <input type="checkbox"/> Fractured humerus              | <input type="checkbox"/> Seizures  |
| <input type="checkbox"/> Fractured clavicle             | <input type="checkbox"/> Admission to neonatal unit within 48 hrs<br>of birth for at least 48 hrs with evidence of<br>feeding difficulties or respiratory distress |
| <input type="checkbox"/> Fractured skull                | <input type="checkbox"/> Other morbidity<br>Please specify _____   |
| <input type="checkbox"/> Neonatal sepsis                |  |
| <input type="checkbox"/> <b>No morbidity identified</b> |  |
- E7. Was the baby known to have died at the time this form was completed?  Yes  No
- E8. Section E completed by: Please print full name \_\_\_\_\_  
  /   /   :    
24hr

Please fill in the After birth section on page 1

Barcode/Number

**Thank you for completing this form.**

**Please return this form to the Local Co-ordinating Midwife in the envelope provided using the internal post.**



## **Guidance**

### **D15.**

The episode of labour care is completed when the woman is discharged from the delivery room or when the midwife begins the postnatal notes, whichever occurs first.

MREC reference number: 07/H0505/151  
Version 1  
14 February 2008

# Appendix 5 Qualitative study: brief information leaflet



## Birthplace Transfer Study

### Women's experience of transfer during labour

Were you transferred during labour from

**NAME(S) OF BIRTH CENTRE / MU**

to

**NAME OF HOSPITAL / DELIVERY SUITE?**

Would you like to talk about your experiences as part of a national research study?

I am particularly interested in finding out what women think and feel about this experience so that the process of transfer can be improved for women in the future.

I would come to your home (or another location of your choice) to interview you.

If you think you may be interested in taking part in the study or would just like more information, please call me, Rachel Rowe, on 01865 289713 or complete the reply slip below and return it to me in the FREEPOST envelope.

---

### Reply Slip

I am interested in finding out more information about the Birthplace Transfer Study.

Name \_\_\_\_\_

I am happy for you to contact me by:

Post (please give address)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone (please give phone number)

\_\_\_\_\_

Email (please give email address)

\_\_\_\_\_

**Please tick all that apply**

# Appendix 6 Qualitative study:

## participant information leaflet

**Who is organising and funding this research?**

I am a researcher working in the National Perinatal Epidemiology Unit, University of Oxford. This research study is funded by a Researcher Development Award from the National Institute for Health Research.

**Who has reviewed this study?**

All research in the NHS is looked at by an independent group of people, called a Research Ethics Committee, to protect your safety, rights, wellbeing and dignity. This study has been reviewed and given favourable opinion by Berkshire Research Ethics Committee (Ref. 08/H0505/208).

**Where can I get more information?**

If you would like more information about this research or have any questions about taking part please contact me, Rachel Rowe, on 01865 289713 or rachel.rowe@npeu.ox.ac.uk.

**What if there is a problem?**

Given the nature of this study, it is highly unlikely that you will suffer harm by taking part, however if you are harmed by participation in this study, you may have grounds for legal action for compensation against the University of Oxford. If you wish to complain about any aspect of the way in which you have been approached or treated during the course of this study, please contact Dr Jenny Kurinczuk, Deputy Director of the National Perinatal Epidemiology Unit, on 01865 289717 or the University of Oxford Clinical Trials and Research Governance office on 01865 743005.



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**Information about a research study**

**A study of women's experience of transfer during labour**

Hello, my name is Rachel Rowe. I am a researcher from the University of Oxford. I am inviting you to take part in a research study which is also part of my PhD. Before you decide whether you want to take part, I would like to tell you why the research is being done and what you can expect if you take part. Please read this leaflet carefully. Talk about it with your husband or partner, friends, relatives and your midwife or GP if you wish. Please ask me if you have any other questions. My contact details are at the end of this leaflet. Please take as much time as you like to decide.

Thank you for reading this.

**What is the purpose of this study?**

Like you, many women plan to have their baby in a midwifery unit or birth centre, but because of circumstances that arise during labour have to transfer to a hospital obstetric unit for the birth of their baby. I am working with other researchers to find out what happens to women who are transferred like this during labour. I am particularly interested in finding out what women think and feel about this experience so that the process of transfer can be improved for women in the future.

**Why have I been invited?**

You have been given this leaflet because I would like to interview women who have had experience of being transferred from a midwifery unit or birth centre to a hospital obstetric unit during labour. I will be interviewing around 40 women who have had this experience.

**Do I have to take part?**

No. It is entirely up to you to decide whether or not you want to take part. You will be able to keep this information sheet. If you decide to take part, you will be asked to sign a consent form to show you have agreed to take part. If you decide to take part, you are still free to stop at any time without giving a reason. No questions will be asked if you stop. If you do not take part, or stop taking part, the care you get from your midwife, doctor or health visitor will not be affected.

**What will happen to me if I take part?**

I will contact you to arrange an interview at a time and place that suits you. If this place is not your home, you will be paid for the cost of your travel. I will try to answer any questions you may have about the interview or the study.

**What would the interview be like?**

I will ask you if you are willing to have the interview audio recorded. You will be given the consent form. You only sign this form if you agree to take part in the interview. You will be given a copy of the consent form to keep.

The interview will be a little like a conversation, but I will help you talk about yourself and your experiences of being transferred during labour by asking some questions. I will ask questions about what happened to you, what your thoughts and feelings were when you were planning your birth, during your labour and birth and afterwards, about how you got information, what choices you made, and what were the good and bad parts of your experience.

While people sometimes find it helpful to talk about their story to researchers this research is not the same thing as counselling. Some people may find the process of talking about their experiences upsetting. However, I will give everyone a list of contacts which can be used to get more help if you want. If the interview raises any concerns for you about your care we could talk about these after the interview if you would like.

**How long would the interview take?**

The time it takes for an interview varies, depending on how much you have to say, but most interviews last at least an hour. If you would prefer, I can interview you on two different occasions. Remember, if you want to stop the interview at any time, you can do so without giving any reason at all.

**What if I decide to withdraw after the interview has taken place?**

You are free to leave the study at any time. If you decide to leave after an interview has taken place I will ask you if you are happy for me to use the information you have given me or if you would prefer me to destroy the audio files and any printouts of the computer file (transcripts) of your interview.

**How will the interview transcripts be used?**

I will analyse the interview transcripts using a computer package. At the end of the study I will write a report which will form part of my PhD thesis. The results may also be published in peer reviewed journals and reported in conference presentations. You may ask for a summary of the results if you wish. The reports, publications and presentations will include summaries and anonymised quotations from some interviews.

**Will my taking part in the study be kept confidential?**

Women taking part in the study will not be identified in any paper, publication or presentation arising from the study. Everything you tell me will be kept confidential unless doing so would put you or others at risk of serious harm. I will label the interview audio file with a code number; your name will not be on the file. I will give the file to a transcriber who will transfer everything you said onto a computer. The transcriber signs an agreement to keep everything you say in the interview confidential. I will be the only person who will know which code number relates to you. The audio file and any printout of it, identified only by the code number, will be kept in a secure place at the National Perinatal Epidemiology Unit (NPEU) at the University of Oxford. The computer file will be stored in a secure area of the computer network at the NPEU to which only I will have access.





# Appendix 9 Qualitative study: socio-demographic details form



## Birthplace Transfer Study

### Women's experience of transfer during labour

#### Participant details

Participant identification number: \_\_\_\_\_

Date of transfer: / /

Date of interview: / /

Location of interview (e.g. home, office): \_\_\_\_\_

Where did you first hear about this study? \_\_\_\_\_

What is your age (in years)?

What is your marital status (please tick one):

Single (never married)

Married

Separated (but still legally married)

Divorced

Widowed

How many children do you have?

How many people live in your household?

To which of these ethnic groups would you say you belong? (please tick one)

#### WHITE

1 British

2 Irish

3 Any other White background, (please specify): \_\_\_\_\_

#### MIXED

4 White and Black Caribbean

5 White and Black African

6 White and Asian

7 Any other Mixed background (please specify): \_\_\_\_\_

#### ASIAN OR ASIAN BRITISH

8 Indian

9 Pakistani

10 Bangladeshi

11 Any other Asian background (please specify): \_\_\_\_\_

**BLACK OR BLACK BRITISH**

- 12 Caribbean
- 13 African
- 14 Any other Black background (*please specify*): \_\_\_\_\_

**CHINESE OR OTHER ETHNIC GROUP**

- 15 Chinese
- 16 Any other ethnic group (*please specify*): \_\_\_\_\_

**In what country were you born?** \_\_\_\_\_

**Have you ever worked?** Yes  No

If Yes:

What is or was the full title of your main job?

\_\_\_\_\_  
Please describe what you do or did in your main job.

\_\_\_\_\_  
What is the main business of your employer at the place where you work or worked?  
*For example: primary education, food retail, doctor's surgery.*

**Do / did you work as an employee or are / were you self-employed?**

Employee  1

Self-employed  2

Self-employed / freelance without employees  3

**How many people work for your employer at the place where you work or worked? If you are or were self-employed please show how many people you employ(ed).**

1 to 9  1

10-24  2

More than 24  3

Not applicable (self-employed / freelance without employees)  4

**Do or did you supervise any other employees? A supervisor or foreman is responsible for overseeing the work of other employees on a day-to-day basis.**

Yes  No

**Thank you for completing this form.**

# Appendix 10 Qualitative study:

## interview topic guide

### Birthplace Transfer Study

#### Interview guide – women’s experience of transfer during labour

CHECK uninterrupted time – how much?

#### **Preamble:**

I’m interested in your experience of transfer during labour from the birth centre/midwifery unit where you planned to give birth to the hospital unit where you had your baby. I’d like you to tell me your story / what happened in your case in as much detail as possible. Then I’ll have some extra questions to follow up on some of the things you’ve said. I will take a few notes ...

#### **Prompts:**

##### *Antenatal:*

Reasons for deciding to have your baby in the midwifery unit / birth centre?  
Information given about the possibility / risk of transfer? Written/verbal? Was it what you needed?  
Knowledge beforehand about why might be transferred and process?  
Anything you wish you’d known beforehand? Risk of transfer?

##### *During labour (before transfer):*

First inklings of complications / need for transfer: when, why, midwife communication, feelings?  
Understanding about reasons for transfer? Risks/benefits? Choice? Feelings? Disappointment?  
Transfer process? Knowledge, MW explanations, MW accompany?  
Expectations of hosp / OU?  
Anything you would have liked but didn’t have?  
Waiting? Ambulance staff? Husband / partner accompanying? Feelings for both?

##### *During transfer (partic if by ambulance):*

What was the journey like? Midwife? Ambulance staff? Husband?

##### *When you got to hospital / delivery suite:*

Communication / handover? MW continue to look after you?  
Hospital vs MU? How did it feel?  
Husband / birth partner?

##### *After the birth:*

How did you feel?  
Explanation afterwards (debrief?) Feelings then and now? Information and support you needed?

##### *Now:*

How do you feel about the whole experience now? Feelings? Disappointment? Guilt / failure?  
Ongoing problems, worries or concerns?  
Thinking about choice of place of birth? Feelings? Regrets?  
Advice to others? Plans for next baby?  
Anything that could have been done to make whole experience better?  
Anything to say to MWs? Suggestions for improvements?  
Are midwifery units a “good idea” / what are they for?