

FIRST BIRTH AT HOME OR IN HOSPITAL IN AOTEAROA/NEW ZEALAND:
INTRAPARTUM MIDWIFERY CARE AND RELATED OUTCOMES

by

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Abstract

A woman's first birth experience can be a powerfully transformative event in her life, or can be so traumatic it affects her sense of 'self' for years. It can influence her maternity future, her physical and emotional health, and her ability to mother her baby. It matters greatly how her first birth unfolds. Women in Aotearoa/New Zealand enjoy a range of options for provision of maternity care, including, for most, their choice of birth setting. Midwives who practice in a range of settings perceive that birth outcomes for first-time mothers appear to be 'better' at home. An exploration of this perception seems warranted in light of the mainstream view that hospital is the optimal birth setting. The research question was: "Do midwives offer the same intrapartum care at home and in hospital, and if differences exist, how might they be made manifest in the labour and birth events of first-time mothers?" This mixed-methods study compared labour and birth events for two groups of first-time mothers who were cared for by the same midwives in a continuity of care context. One group of mothers planned to give birth at home and the other group planned to give birth in a hospital where anaesthetic and surgical services were available. Labour and birth event data were collected by a survey which was generated following a focus group discussion with a small group of midwives. This discussion centred around whether these midwives believed their practice differed in each setting, and what influenced care provision in each place. Content analysis of the focus group data saw the emergence of four themes relating to differences in practice: midwives' use of space, their use of time, the 'being' and 'doing' of midwifery and aspects relating to safety. Survey data were analysed using SPSS. Despite being cared for by the same midwives, women in the hospital-birth group were more likely to use pharmacological methods of pain management, experienced more interventions (ARM, vaginal examinations, IV hydration, active third stage management and electronic foetal monitoring) and achieved spontaneous vaginal birth less often than the women in the homebirth group. These findings strengthen the evidence that for low risk first-time mothers a choice to give birth at home can result in a greater likelihood of achieving a normal birth. The study offers some insights into how the woman's choice of birth place affects the care provided by midwives, and how differences in care provision can relate to differences in labour and birth event outcomes.

Keywords – birth place, intrapartum care, home childbirth, midwifery, primiparas, mixed methods.

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INTRODUCTION: A WHOLE IN ONE

Women who are pregnant for the first time face a number of decisions in relation to their care. Their choice of caregiver and their decision about where their baby will be born are two important early pregnancy considerations. As a midwife working in a continuity-of-care context, I have frequently assisted women and their families to explore their choices in relation to place of birth. Because I support first-time mothers to give birth at home and in hospital, I have been able to share with them both the research evidence and my experiential understandings about the benefits and limitations of giving birth in each setting. Reflecting on the labour and birth experiences of the women in my own care has given me cause to wonder about how and why these experiences have differed.

All midwives in Aotearoa/ New Zealand regularly reflect on their practice as part of their ongoing professional development (NZCOM, 2008). In the Midwifery Standards Review process (NZCOM, 2007) each midwife shares her practice reflections with a panel consisting of a midwife and a consumer of maternity services. The midwife applies the midwifery Standards for Practice to her year's work using story exemplars and case studies, and also presents her statistics. She reflects on the feedback she has received from the women she has cared for. This holistic process enables midwives to celebrate aspects of their care where they themselves, and their clients, have been satisfied. It also allows them to identify elements of practice where further development and education could enhance their care provision in the future (Waller, 2004).

Being reviewed annually has provided an opportunity for me to really focus on practice, and I value participating in this process. My ongoing reflections became the spark which ignited in me a sense of wondering about the differences in outcome for first-time mothers I began to perceive within my own practice, in relation to where the women chose to give birth. Each year as I collated my statistics I grew towards an awareness that the women who gave birth at home seemed to 'do better' than the women who gave birth in hospital, especially in terms of

the levels of intervention which occurred in their labours. I thought to myself, “how can this be, I am the same midwife whether I am supporting women at home or in hospital, so how is it that there are less normal births among the women birthing in hospital?”

This led me to another question... “*am* I the same midwife in both places?”. Am I more likely to ask someone else’s opinion in hospital, because they are there? Do I roll out the Entonox bottle more readily, because it is there? Do I strap on a monitor, because it is there? Discussion with colleagues revealed that other midwives who work in both settings also felt that outcomes for first birth (in relation to intervention rates) were poorer for their ‘hospital’ women, and despite that we share a strong philosophical stance as being non-interventionist midwives, we were unsure whether this was true in practice. It occurred to me that it might be possible to discover whether midwives do, in fact, provide the same care in different birth settings. If they do, it would seem reasonable to expect that labour and birth events, such as rates for normal birth, and common labour interventions, would unfold in much the same way for groups of women who are similar. Perhaps the differences in outcomes that seemed to occur happened because care provision was different.

In my capacity as a midwife-member of a review panel, I began to take notice of the practice statistics of my colleagues in relation to labour and birth events in different settings, and found a similar trend existed within the wider midwifery community. What struck me most about this, was that when I explored these ideas with the midwives undertaking their review, they would consult their statistics sheet to see whose birth the statistics related to. They would proceed to tell me the whole story about what had happened for that woman. Anecdotes flowed about how a woman had had a really long latent phase, but was so excited to finally be in labour that she had stayed up all night, and then ‘ran out of puff’. Or about how another woman’s husband, uneasy about the unusual sounds his wife was making, put pressure on the midwife to administer some pain relief. Or about how the registrar kept knocking on the door, asking “is everything ok in there?” In the minds of the midwives there was always a link between the statistical outcomes and the context of the woman’s birth experience.

The questions I wanted to investigate began to crystallise; *was* there actually a difference in what happened for women giving birth at home when compared to those giving birth in hospital? Did this difference relate to how the midwives cared for these women in each

setting? What things might influence midwifery practice in each place, and how might the practice differences of the midwives be translated into labour and birth event outcomes?

The research question thus became:

“Do midwives offer the same intrapartum care at home and in hospital, and if differences exist, how might they be made manifest in the labour and birth events of first-time mothers?”

The aims of the study were:

- To explore midwives ideas and attitudes about how they provide intrapartum care at home and in hospital, and what influences their decision-making in each setting
- To describe labour and birth events for two groups of first-time mothers, one group who plan to give birth at home and another group who plan to give birth in hospital
- To seek out any links between the two, i.e. to uncover how differences in the way care is provided might lead to differences in the experiences women had giving birth in each setting.

Both my own and my colleagues’ experiences led me to conclude that the numbers (statistics) only ever tell part of the story. Just as the ubiquitous “other” in the ethnicity column homogenises the experiences of women from an incredible spectrum of cultural diversity, so too the complexity surrounding decision-making and use of intervention in labour cannot be captured using a purely numbers-based perspective. It seemed to me that there might be limited value in describing whether outcomes at home were better than in hospital without attempting to understand why this might be. Description without exploration might lead me to a false conclusion. Thus a mixed-methods study was conceived.

Midwifery care is, by nature, holistic (Edwards, 2000). It is concerned with focussing on the physical, social, emotional and cultural context of the birthing woman. Multiple-perspective decision-making underpins all of midwifery practice because of the unique partnership midwives and women share as the basis of their relationship (Guilliland & Pairman, 1994). Using mixed-methods as the tool for the study of midwifery care seems both natural and logical, as it also actively seeks multiple perspectives (Donovan, 2006).

I conducted a focus group where midwives discussed ideas about whether they perceived they practiced differently in each birth setting. These midwives also assisted me to refine a survey tool which I later used to capture labour and birth event data from a larger group of midwives. It was important to have it be the *same* midwives who provided care both at home and in hospital, because otherwise differences in outcome could be attributed to a difference in practice ‘style’ or philosophy.

The mothers themselves needed to be as similar as possible to make any comparison between home and hospital groups meaningful. It was not possible to take a large group of ‘same’ women and assign half to each group, because women must be able to exercise autonomy and freedom of choice in relation to their care. Conducting a retrospective survey meant that the two groups were well matched on a number of parameters. The fact that the same midwives cared for each group of women mitigates against the differences in the women. In general women who choose to give birth at home are older, lighter and have higher educational backgrounds than women who choose to give birth in hospital (Ackermann-Liebrich et al., 1996; Cunningham, 1993; Johnson & Daviss, 2005). Given the limited demographic data sought in this study, the women were as similar as it was possible to determine. They were all first-time mothers with singleton pregnancies, who went into spontaneous labour at term. The home group mothers were slightly older, and more likely to be pakeha than the hospital group mothers. Because each midwife contributed data for roughly the same number of women in each group, the women were also geographically matched according to where the midwife practiced. Differences in attitudes and beliefs of the women in each group were not able to be determined in this study. However, all the women chose to book with a midwife who offered both home and hospital birth services. It is unlikely that women who preferred a techno-medical approach to care would have chosen these particular midwives as their caregivers. It could be argued that some women chose their midwife without reference to her particular philosophy of care because of midwifery workforce shortages. Because the survey responses could have included women who gave birth within the last ten years it is impossible to know whether care would have pre-dated current workforce issues.

Mixing the data sets occurred at the interpretation stage of the study. By blending both the focus group-derived data and the survey results, my interpretations have been framed up around how the experiences of the women differed according to their chosen birth place.



METAPHOR AND THE CONTENT OF THE THESIS

I have chosen to present this work in four sections: EARTH, WATER, FIRE and AIR. The research process has been grounded in science and all the elements typically found in any research study can be found within these sections. I have undergone a transformation from being a midwife seeking answers to practice-based questions to being a researcher, reading critically, designing a project which will address my research questions adequately and generating knowledge within the culture that is research. EARTH, WATER, FIRE and AIR represent for me the best way to present the study because together they are culturally reflective of my understandings about holism, which midwifery and mixed-methodology both encompass, and individually they symbolise the concepts contained within each section.



EARTH



In relation to our knowledge, EARTH represents what is already known; it is what we stand upon. It is the foundation upon which layers build up to partially obscure what there once was. In this section I cover the background to the study question, taking in wider aspects of the choices women make about their place of birth, what constitutes a birth environment, and how aspects of 'place' can assist or hinder the achievement of normal birth. EARTH uncovers the research in relation to the question. Specifically I address qualitative studies that have compared midwifery practice in different settings, and quantitative studies comparing birth outcomes in relation to place of birth, parity and caregiver.



WATER



Water is yielding enough to assume the shape of whatever contains it, and yet strong enough to forge a channel through rock. WATER therefore describes the design / methodology process I undertook to complete this study. My thoughts at the outset were modified over time and by circumstance to the final form the study took, in the same way that a body of water changes shape to acquiesce to where it is held. WATER imagery is used to describe the various separate parts of the study, the qualitative focus group and the quantitative survey, and confluence is expressed as the way in which the two data sets are mixed at the interpretation stage.



FIRE



FIRE is all about heat and light. This section reveals the results of both the focus group and the survey. The focus group conversation mapped out a discursive landscape of how it is to practice midwifery at home and in hospital. The fire and lava ‘spewed forth’ from a volcano is a landscape-creator, and its heat is resonant of the internal debates I had with myself over the interpretations of the midwives’ words and ideas. FIRE sheds light on the results of the survey, illuminating the differences found in the birth outcomes of the two groups of women, and also the differences between what the midwives said they did and what they actually did.



AIR



The element of AIR is traditionally associated with intellectual thought, so is the element linked to that part of the research in which I make sense of all the information I have gathered. Thinking about the results and finding ways to blend them to reveal how practice affects outcomes is the focus of this section. Being ‘up in the air’ relates to the uncertainty of the meanings ascribed to my musings and the questions which remain unanswered and therefore could be identified as areas for further study. Being up in the air also has connotations of having a bird’s eye view, that sense of broader perspective to be gained when one gains altitude. A broader perspective is what mixed-methods can bring. And, finally, throwing it ‘out there’ to the ether, my work as a small offering to the research community to add one more layer to our understanding about birth in different places.

The thumbnail images may at first appear frivolous and distracting. I am a visual person, and my intention in their usage is just the opposite; each image has been carefully considered and chosen to most accurately portray the concept under discussion. Their purpose is to focus the reader’s mind on the concept as well as to provide some visual relief from the stark necessity of black text on a white page. The images presented are sourced from among those which are freely available on the World Wide Web.

EARTH



The EARTH represents what we stand upon – what we already know. EARTH builds up over time, layer upon layer, adding to what is already there. Occasionally what was there before is revealed for new inspection. This unearthing of extant knowledge invites re-evaluation, and lays the groundwork for this study.

Grounding the Study

In this section, using a combination of the literature and experiential knowledge I have gained over eighteen years of midwifery practice, I discuss why it matters how a woman's first birth experience unfolds, in terms of her ongoing psychological and physical well-being. I describe why some women choose home as their preferred birth place, and why others choose hospital. I explore how the physiology of birth can be affected by this choice, as a number of factors interplay in each setting which can enhance or hinder the process of labour. One contributor to women's choice to give birth in hospital is the availability of pharmacological pain management techniques, and I describe how the choice to use these techniques can also alter the physiology of birth.

The purpose of this section is to provide some background for the study. In seeking to investigate differences in care provision and birth outcomes in different settings, I believe it is important to first consider some wider aspects of place of birth. The birth setting, per se, is the physical place where the woman gives birth. The birth environment, on the other hand, encompasses much more than just the place (Walsh, 2007). It includes the attitudes and beliefs of the woman, her family and her caregiver. It includes the physical aspects of the place in which birth occurs, the resources available and the socio-political context which may dictate the practice of the care provider. All of these things may have an impact on the

unfolding of the physiological process of giving birth, and are thus relevant in relation to the research question.

Giving Birth for the First Time: Why it Matters to get it Right

A woman's first experience of giving birth can be a powerfully transformative event in her life, during which she taps the depths of her being and emerges as mother feeling a strong sense of achievement and connectedness to her world (Halldorsdottir & Karlsdottir, 1996). Some women can experience giving birth for the first time as a very frightening and disempowering event, with emotional and physical consequences remaining with them for many years (Creedy, Shochet & Horsfall, 2000; Fisher, Astbury & Smith, 1997; Jolly, Walker & Bhabra, 1999; Niven, 1992). It is therefore important that we try to establish what it is that can make each woman's experience both psychologically and physically safe, so that every woman has the opportunity to enter new parenthood feeling whole, receptive and optimistic about her ability to mother her new baby.

The last fifty years have borne witness to a number of technological and attitudinal changes which have shifted the focus of maternity care from being solely about measures of physical safety (maternal and neonatal morbidity and mortality) to more of an emphasis on the quality of the childbirth experience (Zander & Chamberlain, 1999). Hodnett's (2002) systematic review explored the literature about women's satisfaction with their care. Sixty-nine reports were included, relating outcomes for over 45 000 women in nine countries. Studies included assessments of satisfaction related to caregiver support, interventions in labour, pain relief interventions and women's emotional well-being related to all these things. What seems clear is that although satisfaction is a multi-faceted construct, the results of trying to measure it are remarkably consistent. Four factors in particular were identified as the most important; personal expectations, the amount of support from caregivers, the quality of the caregiver/woman relationship and involvement in decision-making. Women retain detailed memories of events surrounding their childbearing for a number of years (Simkin, 1992; Zander et al., 1999), and so the achievement of a positive birth experience can really matter to their ongoing psychological well-being.

Contributors to a positive birth experience have been identified by several scholars (Fowles, 1998; Green, Coupland & Kitzinger, 1990; Lavendar, Walkenshaw & Walton, 1999; Parratt,

2002). Fowles' study of the labour concerns of seventy-seven first-time mothers two months after their birth identified that their feelings of satisfaction with labour events were related to how well supported by caregivers they had felt. This included such behaviours as "making [them] feel confident and cared for, giving praise and treating [them] with respect" (p. 239). Lavender et al. (1999) similarly reported that in their cohort of 412 first-time mothers, the women felt more positively about their experience when they were encouraged to participate in decision-making, were well supported emotionally, well informed about their progress and reasons for intervention if required and felt 'in control', both of themselves and of events external to themselves. These findings were consistent with those of Parratt (2002), who undertook a literature review to inform her research about women's 'sense of self' relating to childbirth. She described how having control over one's environment, receiving positive affirmations, having effective communication with caregivers and experiencing mutually trusting relationships strongly influenced how women felt about themselves.

Viewed over time, women's opinions about their satisfaction have been shown to change. Waldenstrom (2003) in her Swedish study which included the views of 2428 women, found that when questioned in two time frames following birth (in this case two months, and one year) the global birth experience became more negative over time. She suggested that "relief and euphoric reactions to the birth of a healthy baby may colour the first assessment of the global experience, whereas the second assessment may express a more balanced view when the woman has had the opportunity to think through the experience over time" (p. 252). An older study by Bennett (1985) also studied women's memories of their births at both three weeks and two years postpartum. She found that women were more likely to perceive their experience as being more negative with the benefit of hindsight, and in particular notes that women who had a second child viewed their first labour more negatively. She attributes this to women's wish to "produce acceptable answers" (p. 158) if they are interviewed while still in hospital, along with the 'halo effect', which can occur when women are basking in the afterglow of a safely-delivered baby.

Satisfaction is a complex concept. It involves both a positive attitude or affective response to an experience, as well as a cognitive evaluation of the emotional response. Distancing oneself from the event is intrinsic to this process. (Hodnett, 2002, p. 160)

It seems probable in fact that no woman has a wholly positive *or* negative perception of her birth experience. Rather, she is likely to feel both satisfied with some aspects while being dissatisfied with others. Green et al. (1990) argue that most studies which attempt to measure so-called ‘satisfaction’ focus on only one or two particular outcomes, for example postnatal depression, intervention rates, the role of childbirth preparation classes, responses to labour pain or perceptions of the attitudes of caregivers. Study populations may be from one geographical area, or one social stratum, or one ethnicity and thus it is difficult to reach conclusions which could apply across the spectrum of birthing women. They attempted to circumvent some of these problems by designing a prospective study which looked at multiple indicators of psychological outcome in a study population that was reasonably diverse. Their analysis of the views of 825 women challenged the stereotype that women who had high expectations were bound to be disappointed with their birthing experiences. Indeed, the women in their study with low levels of expectation had the lowest satisfaction levels. Green et al. surmised that postnatal emotional well-being was not related to the experience of labour interventions. They felt that what matters to the woman is less the experience of the intervention *per se*, and more the belief that the “right thing” was done. Consistent with the other studies was the finding that caregiver support, being well-informed and feeling in control of one’s self and one’s environment, leads to improved perception of the birth as being a positive experience.

Contributors to a perception of a negative first birth experience have been described also, and the psychological and physical sequelae of this perception have been well documented (Creedy et al., 2000; Fisher et al., 1997; Gottvall et al., 2002). Behaviours such as withholding information, being rude or uncaring, and performing actions unwanted by the woman can contribute to feelings of frustration, disappointment and unhappiness (Fowles, 1998). ‘Lack of control’ was another common thread in the recollections of women in her study; this could be lack of control over bodily function (e.g. following epidural) or lack of control over other events such as who was present during the birth or around clinical decision-making. Lack of control was seen as a powerful contributor to women’s negative perceptions of their experience.

Gottvall et al.’s (2002) Swedish study described how women who found their birth experience to be ‘very negative’ had fewer subsequent children and a longer time interval to the birth of the second child than women who felt positive about their birth. Of 122 women

who felt negatively, 38% did not go on to have a further baby, at least during the eight-year period of the follow-up study. In an English study of 750 first-time mothers (Jolly et al., 1999) it was concluded that instrumental birth and caesarean section left many women feeling frightened about subsequent birth, and said this could lead to an increased risk of voluntary and involuntary infertility. Bahl, Strachan and Murphy (2004) similarly reported that in women who had experienced assisted and surgical births, fear of childbirth was a frequently reported reason for avoiding a further pregnancy.

The existence of childbirth-related post traumatic stress disorder is increasingly recognised (Crompton, 2002; Fisher et al., 1997; Olde et al., 2005; Wijma, Sonderquist & Wijma, 1997). In their Australian study of 272 first-time mothers Fisher et al. (1997) found that significant adverse psychological effects were associated with operative intervention in childbirth, which lead some women to be vulnerable to grief reactions or post-traumatic distress and depression. The symptoms of this disorder can include nightmares, flashbacks, constant and repeated recall of events and a host of physical complaints including insomnia, gastrointestinal disturbances or sexual dysfunction (Niven, 1992).

A traumatic birth experience has also been linked to an increased risk of antenatal depression in a subsequent pregnancy (Rubertsson, Waldenstrom & Wickberg, 2003), increased rates of postnatal depression (Righetti-Veltema, Conne-Perreard, Bousquet & Manzano, 1998) and an increase in maternal request for elective Caesarean section (Hildingsson, Radestad, Rubertsson & Waldenstrom, 2002). Disturbances in mother-child interaction have also been explored in relation to traumatic birth (Rowe-Murray & Fisher, 2001). Their study of 203 first-time mothers found that instrumental and surgical birth could produce persistent disturbed maternal/infant attachment because of the negative impact on first postnatal contact. Other negative mother/child effects have been described in qualitative studies where women's harrowing descriptions reflected their lack of feeling for their babies following traumatic birth. For some women this lead to ongoing feelings of guilt and distress, as in the case of this woman whose birth had taken place fourteen years prior to this interview:

I didn't get to hold him until 8:00 that night. Then when they brought him in to me, he was asleep and I didn't know what to do, so I gave him back to the nurse by 8:10. I felt very bad about not having a

mothering instinct... It was terrible, ugly to feel that way. (Simkin, 1992, p. 73)

Births which involve high levels of intervention, particularly assisted and surgical births, can also have a number of ongoing physical consequences for the woman. Following Caesarean section, women are more likely to suffer depression, or to have placenta praevia or retained placenta with their next pregnancy (Banks, 2000). They are more likely to suffer placental abruption in a subsequent pregnancy (Lyndon-Rochelle, Holt & Easterling, 2001) and their next baby may have an increased risk of being stillborn (Smith, Pell & Dobbie, 2003).

These descriptions of the psychological and physical sequelae of childbirth interventions do not wholly square with Green et al.'s (1990) assertions that a negative perception of the birth is not so much about the interventions which occurred. These more recent studies suggest, in fact, that the experience of interventions can play a large part in women's ongoing assessments of birth satisfaction. Part of the midwife's role in assisting a woman through her first birth experience could then be seen as providing care which enhances the woman's 'sense of self' by providing relational care which is supportive, participatory and woman-focused. This may increase the woman's likelihood of remaining 'low-risk' in her maternity future, by the avoidance of stressful unnecessary interventions. This involves keeping the woman both psychologically and physically safe through the use of supportive behaviours (being caring, informative, inclusive) and appropriate use of technology. 'Getting it right' for first birth may have important implications for every woman's future emotional and physical well-being. It may be that part of 'getting it right' could be related to assisting the woman to choose a setting for birth in which she can optimise her chances of this happening.

Settings for Birth

Recent years have seen the tide begin to turn away from an expectation that all births, and in particular first births, need to be experienced within a hospital setting. It is beyond the scope of this study to present a history of the move over the last fifty years towards increasing hospitalisation of women giving birth and back again. Instead I present some ideas from the literature about what it means for women to choose to birth at home, and also why it is that women choose hospital for their birthplace.

Anecdotally, women of my mother's generation who chose hospital births commonly referred to their period of confinement as time spent 'in the home'. 'Confinement' was indeed the perfect word for this period. As Donley describes, women were unable to leave their beds for several days, and were subjected to four hourly 'perineal toilets'. In addition to this they were separated from their babies who were sequestered in mass nurseries and returned to their mothers as the clock, rather than their needs, dictated (Donley, 1986). This environment was anything but home!

In the Netherlands the term used to describe a short stay hospital birth is 'verplaatste thuisbevalling', literally translating as 'a home birth away from home' (deVries, Salvesen, Wiegers, and Williams, 2001, p. 252). Much of the literature around the use of birth centres refers to them as 'home-like' environments (Hodnett, 2002). So if 'home' is the default which confers ideas about a place of felt value, to the extent that even institutions co-opt its use, then what is it about 'home' that is so enticing?

Giving birth at home

Social geographers have much to contribute to our understanding about what it means to us to be 'at home'. Far from a being only a physical space, 'home' connotes a range of associated psychological and spiritual elements which, when wrapped around a physiological experience can provide an important contributory sense of emotional and physical safety (Carolan, Andrews & Hodnett, 2006). The experience could be giving birth, but this idea equally applies to other physiological experiences like illness/convalescence or dying. Tuan (1977) described a house as a simple building that is significant because it provides shelter, answers social needs, is a field of care and acts as a repository of memories and dreams. A house with all the overlay of emotional attachment, physical as well as psychic comfort is what we call 'home'.

Reasons commonly offered by women for their choice of home as a birth setting include the sense of freedom, peace and privacy that home confers (Lock & Gibb, 2003). Women feel that they will have increased control over their experience and will be more involved in decision-making (Abel & Kearns, 1991). They value the continuity of caregiver, and the opportunity to "allow nature to take its course", resulting in minimal intervention, including invasive methods of pain relief (Longworth, Ratcliffe & Boulton, 2001). Women say they

feel safe to give birth at home because they know they can always transfer to hospital if a complication develops (Manshandan 1997, cited in translation in De Vries et al., 2001). Families value the fact that 'domestic' life can continue in a less disrupted way, and see homebirth as a way of linking a family thread through time, "...significant occasions in the home build unity among family members. Past, present and future are linked through memories...the birth moment becomes a landmark in the history of the home" (Bortin, Alzugaray, Dowd & Kalman, 1994, p. 147).

Pratt's (1990) research into influences on New Zealand women's choice of birth place reported that women who chose home as a birth setting focussed on the idea that home was the safest place to give birth if their pregnancies were uncomplicated. These women expressed risk in terms of psychological harm and anxiety about exposure to obstetric interventions if they chose hospital as an option. This was in contrast to women who chose hospital birth, whose anxiety was centred around perceived medical risk, believing that available technology could reduce these risks.

This notion of a discrepancy between women's perception of risk has been further explored with respect to caregiver's assessment of what constitutes risk. Edward's (2005) interviews with homebirth women in Scotland revealed that when they are making assessments about risk, women may weigh up risk and safety in ways which differ from health professionals. She argues that women may believe that hospital birth itself poses physical and emotional risks because of the greater likelihood of invasive and damaging interventions and that their attempts to decrease risk, by avoiding technology, unfamiliar surroundings and strangers, could be interpreted from the standpoint of medical ideology as increasing risk.

Home is a site of low technology where the tools of birth tend to be whatever is to hand; the kitchen bench is the perfect height for leaning, the rolling pin gives a soothing back massage, the staircase assists in the turn and descent of a posterior baby. The artefacts of birth are familiar to the woman, and she is the expert about her body's needs and progress (Morison, Percival, Hauck & McMurray, 1999). Jordan (1987) asserts that in this setting the distribution of knowledge is shared by the woman and those attending her, and the objects she utilises to facilitate her birth contain no mystery. She writes that as one moves into higher technology settings, the objects of birth become machines which, as well as being unfamiliar and a mystery to the woman, also define what knowledge is derived and how it is communicated:

It is one thing to appreciate the speed of the midwife's ticking finger as she assesses the heartrate; it is quite another to try to explain to a woman in labour why a set of squiggles on a piece of graph paper requires that she now undergo a caesarean section. (Jordan, 1987, p. 39)

The creation of holistically safe spaces for giving birth encourages women to lose the need to be vigilant and enables them to be uninhibited and intuitive, responding to their bodies' cues spontaneously (Parrat & Fahey, 2003). Whilst it is theoretically possible to create safe spaces in any setting, the management of all the variables which contribute to the creation of a holistically safe environment may be facilitated with greater ease at home.

Giving birth in hospital

Interestingly, women's preferences for giving birth in hospital contain many of the same elements as for women who choose home as a birth setting. Concepts around safety feature prominently in women's opinions about both settings for birth. Homebirth women put strong emphasis on their need to feel emotionally, culturally, spiritually and physically safe. Their ability to transfer if the need arises enables them to feel safe. For women who choose hospital as a birth setting, safety for themselves and their babies is also a dominant theme (Kleiverda et al., 1990; Weigers & Berghes, 1994). The availability of on-site specialist staff, accessibility of pain relief, clean physical environment, and perception that healthcare professionals know what is best and make decisions in the interests of mother and baby are other reasons given for a preference for hospital birth (Longworth et al., 2001, p. 406). The idea that birth is messy and that in hospital someone else cleans it all up is another reason women choose hospital birth (Kleiverda et al., 1990) along with a belief that the mother will be more easily able to rest and recover from the birth.

Perhaps, though, the most powerful contributor to women's choice of hospital as a birth setting is that it is totally sanctioned as the cultural norm. In New Zealand currently about 96% of women give birth in a hospital setting (Ministry of Health, 2007). To choose to give birth at home is seen as a counter-cultural activity, and thus as stepping outside the bounds of what is 'normal'. De Vries et al. (2001) conclude that the "design of birth is the result of the

desires of women”, but hasten to add that these desires are the product of larger social currents and medical ideas (p. 244).

The legislation which governs the terms and conditions under which maternity care providers can claim for services provided specifically states that all options for place of birth must be offered to pregnant women (Section 88 of the New Zealand Public Health and Disability Act 2000, p. 40). Not all maternity providers in Aotearoa/New Zealand offer all options to all women. For example private obstetricians do not support women to give birth at home. Thus women are encouraged to make a choice, but are only able to choose from the options offered by their chosen Lead Maternity Carer. As Bennett (1993) points out, information about choices is filtered by the birth philosophy of the care provider.

A recently reported round table discussion by a group of childbirth advocates and maternity care providers addressed the question of why women ‘go along with’ medicalised childbirth, often a feature of the hospital birth choice, despite clear evidence that ‘routine’ interventions such as electronic foetal monitoring, induction of labour and ultrasound scanning have not been shown to improve outcomes in most situations (Klein et al., 2006). They variously described socio-cultural norms relating to society’s love of technology and a media-defined birthing ethos in which technology-intensive birth is normal. Each contributor wrote of fear: fear of risk (physical or medico-legal), fear of pain, and fear of imperfection. All this fear, they contend, leads to testing, screening, monitoring and managing. Expectant parents are often older, better educated, and more likely to be the recipients of expensive assisted-reproductive technologies. They suggest that “...as a result of these trends, more...parents see their pregnancy as high risk, a lucky achievement” (p. 248). The media is seen to drive and reflect a culture that worships technology, convincing young women today that drugs and devices eliminate risk, guarantee safety, provide “real” choice and “real” control.

Pratt (1990), in her previously described study about the influences on choice of birth place, asserts that the most powerful predictor for hospital as the chosen birthplace was women’s perception of risk. Not surprisingly, although the women in her study did not score higher in ‘birth anxiety’ scales compared with women who chose homebirth, the hospital cohort of women were more likely to have intervention. She surmises that their increased focus on medical risk made them more desirous of technological and pharmaceutical intervention, and more accepting of it when it occurred.

In an age where we are uncomfortable with notions of uncertainty, and in a culture which values mechanism over humanism, the ‘reassurance’ of the hospital safety net is compellingly alluring, especially to first time mothers who have no previous experience on which to base their choice. Pratt (1990) also found that amongst her sample of home and hospital birthing women who had already given birth, women who had given birth in hospital were less likely to repeat their choice of birth place for a subsequent baby than women who had given birth at home. This same phenomena was described by Borquez and Wieggers (2006) in their Dutch study of 193 women giving birth in different settings.

The choices women make about where to give birth can shape their experience significantly. By examining how labour and birth events unfold for first-time mothers at home and in hospital, this study can uncover information which may be relevant and useful to families making this decision.

Physiology and Giving Birth

The ebb and flow of labour is in part related to a complex hormonal dance which takes place (Buckley, 2005). In order for a woman to labour effectively, a finely-tuned orchestration of hormones flows through her body. The process, though largely outside her conscious control, is extremely sensitive to external stimuli which can inhibit or enhance the production and efficacy of these hormones. Anecdotally, midwives are very familiar with the experience of accompanying a woman in well-established labour into hospital, only to find that her previously strong and regular contractions begin to weaken in both intensity and frequency. A ‘settling in’ period is often required, to enable the woman and her family to adjust to their new environment.

Early work in the field of birth physiology concentrated on how disturbances to the environment of labouring mice resulted in longer labours and increases in the number of offspring who died soon after birth. Newton, Foshee and Newton (1966) questioned whether the fear induced by the environmental change disturbed oxytocin production and thus interfered with uterine blood flow. Later animal studies conducted on monkeys demonstrated that increases in catecholamines (‘stress hormones’) were also implicated in oxytocin reduction and a reduction in uterine blood flow (Adamsons, Mueller-Heubach & Myers, 1971). A more recent study, this time conducted on humans, was able to demonstrate similar

findings in relation to stress and reduced uterine blood flow (Teixeira, Fisk & Glover, 1999). Further work in this area has shed much light on how the hormonal cascade of labour unfolds, though aspects of the process remain undiscovered (Buckley, 2005). In addition to animal studies, researchers have studied labouring women, measuring in particular blood concentrations of various hormones (Mendelson & Condon, 2005; Steer, 1990; Weiss, 2000).

Oestrogen and progesterone are responsible for a number of processes related to labour. Oestriol production relies on an interaction with the baby's adrenal hormone DHEAS (dehydroepiandrosterone) and oestriol levels increase towards the onset of labour (Baddock & Dixon, 2006). It seems likely that these hormones play a crucial role in the initiation of labour, perhaps working at a local level in the uterus, but also through changes in their levels and/or ratios. Oestrogen and progesterone also work together at brain and spinal cord level to activate opiate pain-killing pathways (Buckley, 2005). The term 'the hormone of love' has been applied to oxytocin because it is present in significant amounts during lovemaking, labouring, birthing and breastfeeding. Oxytocin is produced in the posterior pituitary gland and is released in a pulsatile rhythm during labour to stimulate uterine contractions. Odent (2001) describes how blood concentrations rise throughout labour, but more especially so during late labour where it produces powerful expulsive contractions to assist the baby's descent and birth. Ongoing high levels protect the mother from excessive blood loss, and mediate the milk-ejection reflex to assist lactation.

Beta-endorphin is an endogenous opiate, secreted by the pituitary gland, which acts as an analgesic and can promote feelings of pleasure and euphoria. It is released under conditions of stress and pain where it can assist in reducing their impact on the birthing woman. If the levels become very high, beta-endorphin can inhibit the release of oxytocin, thus slowing contractions and perhaps enabling the woman to 'pace herself' more effectively through labour (Buckley, 2005). Buckley also describes the role of catecholamines, the so-called 'fight and flight' hormones which are secreted in response to fear, cold and stress. They divert blood flow to muscle groups, enhance visual acuity and mental alertness in preparation for flight to safer ground. Levels of catecholamines rise during normal labour, as a healthy response to a mother's anxiety. However, if levels continue to rise they can have a powerful negative effect on labour by inhibiting oxytocin release and therefore decreasing the strength of contractions (Foureur & Hunter, 2006). Uterine blood flow is restricted and therefore availability of oxygen to the baby is compromised. High catecholamine levels have been

associated with abnormal baby heart-rate patterns and longer labours (Lowe, 1996). This combination of decreased oxytocin and its resultant loss of uterine contractility, and decreased uterine blood flow leading to placental and baby compromise have been referred to as the ‘fear cascade’ (Foureur et al., 2006).

This model proposes that when a labouring woman is in an environment which disturbs her birthing rhythm, her body will produce high levels of catecholamines which will disrupt the flow of her labour. Disturbances may include bright lights, loud or annoying noises, the presence of emotional discomfort or spiritual distress, or the threat or actuality of invasive obstetrical procedures. Two very common patterns of ‘dystocic’ labour are those of ineffective contractions and/or foetal distress. Perhaps a woman’s fear contributes to these patterns by catecholamine release and its resultant negative effects on labour. Thus, it is crucial that the environment in which a woman gives birth is one which decreases rather than increases her feelings of stress and fear. Perhaps the findings of this study will illuminate some ways in which the setting for birth can be made salutary for undisturbed birthing, whether it be at home or in hospital.

Working With the Sensations of Labour

The following section discussing how the management of labour sensations can impact on the labour and birth outcomes of mothers is sourced from both my observations of working with labouring women over many years, and research evidence where this is available. Acknowledging that there are multiple ‘ways of knowing’ within midwifery does not diminish the ‘truth’ of practice-based understanding (Edwards, 2005). Practical, firsthand knowledge has been referred to as ‘wisdom’ and is considered a distillate of contemplated experience (Friedson, 1988). Women’s experiences of the sensations of labour, and their responses to them, are as unique as their birth stories. One contributor to women’s choice of birth setting is their sense of relationship to these sensations of labour (Lavendar & Chapple, 2005; Longworth et al., 2001). The choice to give birth in hospital, especially for first time mothers, is sometimes made in response to ‘not knowing’ whether they will be able to cope with powerful labour sensations. The ability to avail themselves of the pharmacological support on offer “just in case” is what drives some women to labour for the first time in hospital.

Women who choose home as a birth setting know that there is an expectation of coping with labour sensations without the use of pharmacology. The need or desire for pain-relieving medications necessitates a transfer to hospital, so an added layer of complexity exists in this situation. These women understand that an additional set of skills may be useful, and some women will take time during their pregnancies to learn (and teach their partners) acupressure, massage, or hypnobirthing techniques. Some may seek out midwives with skills in acupuncture or the use of homeopathy.

Midwives' embodied knowledge allows us to know that in a normally progressing labour, with a well-positioned baby, most women will be capable of giving birth without the need for pain-relieving medications. We know the beneficial effects of continuous labour support, therapeutic touch, intuitive emotional 'presence' and skilled assessment of when to be still, and when to act (Foureur, 2008). We bring this care-full attention with us irrespective of where the woman chooses to give birth. Part of our task in the antenatal period is to acknowledge and honour the woman's confidence in her ability to give birth. We can educate her about how the choices she makes in respect to 'pain management' may affect the unfolding of her birthing journey, and assist her to explore physically challenging events she has already encountered in order that she may identify strategies that were useful to her, and may be of use to her for birth.

My reflections about how the women I care for relate to, and respond to the sensations of labour have lead me to think that a continuum of sorts exists, with one end representing women who give birth entirely 'under their own steam', strong in their own belief that they can 'do it' (and with minimal engagement with me as her midwife), and the other end representing women who have availed themselves of epidural/spinal anaesthesia (and who have engaged with not only me, but a number of other health professionals in the process).

Studies reporting women's own voices about what was important to them when being cared for in labour discuss aspects which can collectively be grouped as "supportive care" (Halldorsdottir et al., 1996; Lavendar et al. 1999; Parratt, 2002). This includes being reassured, praised, and encouraged; maintaining an atmosphere of respect, calm and quiet; and enabling self-agency by making sure women are involved in decision-making and having their needs for physical, emotional and spiritual support met. I call this the 'heart and hands' dimension of midwifery care and see it as the start point of the continuum just described. It is

centred on decreasing fear and stress, thus promoting endorphin release and minimising the potentially harmful effects of increased catecholamine release. These are the conditions under which physiological birth can flourish (Foureur, 2008). On the continuum of labour pain interventions, for the most part soothing touch, voice and the creation and ‘holding’ of a safe space for birthing are welcome. Moving along the continuum, water immersion is often the first pain management technique used.

Water immersion in labour has been shown to have a number of positive effects both physiologically and psychologically. Cluett et al. (2004) reported benefits of immersion on duration of labour for assisting dystocic labour, when compared with standard management. Water immersion is also known to lower blood pressure (Church, 1989; Nightingale, 1994), and reduce the use of other forms of analgesia and anaesthesia (Aird et al., 1997; Cluett et al., 2004). Maude (2003) further asserts that the benefits of water immersion go beyond measurable outcomes in terms of labour length, use of analgesia and so on. She proposes that it is “a shared philosophy and a belief in birth as a normal life event that supports women to use water. It is also the planning, preparation, education and anticipation of using water for labour and birth, supported by safe and judicious use, that creates the environment that promotes relaxation, privacy and a release that enables and empowers women to maintain control” (p. 433), all of which we know contribute to both the achievement of physiological birth and the enhancement of women’s satisfaction with their birth experiences.

Further along the continuum, modalities such as homeopathy and acupuncture, though working at an energetic level in the body (Dewey, 2002; Junying & Zhihong, 1991), involve a layer of further engagement physically and perhaps psychically for the woman and the midwife. My experience has been that both homeopathy and acupuncture may assist the progress of labour by correcting a baby’s ‘awkward’ position, or strengthening contractions, or by altering a woman’s perception of the sensations of labour (Idarius, 1999; Low, 1992). They may also be involved in orchestrating the hormonal dance by balancing energy, or releasing fear and tension. These interventions are particularly welcomed by women who plan to avoid the use of drugs in labour in situations where the alternative course of action to strengthen contractions or correct an awkward position would involve the use of syntocinon or forceps.

As we move further along the continuum, and into the realm of pharmacological relief of labour sensations, it takes increasingly more people, and more physical engagement with the woman's birthing body to provide the support the woman requires. Ironically, at the endpoint of this spectrum, the woman often finds herself alone; her midwife having become a technician monitoring an array of machines, and perhaps less emotionally 'present', and her family and birth support people often taking an opportunity for rest once she is 'comfortable' with her epidural.

The introduction of medicine into women's labours can have profound effects on the course of labour, on the woman herself and on her baby. Nitrous oxide can make the woman nauseous and lead to administration of anti-emetic medications (Rosen, 2002). Opiate analgesics can cause nausea, vomiting, sedation, itching, lowered blood pressure and respiratory depression (Buckley, 2005). She identifies that opiates may interfere with the release of oxytocin, and also the production of endorphins, resulting in further disruption to the hormonal flow of normal birth (Buckley, 2005). Because opiates readily cross the placenta, the baby is also exposed to the risks of respiratory depression after birth (Buckley, 2005). Opiates affect breastfeeding, temperature regulation and crying behaviours in newborns by altering neurobehavioural function (Ransjo-Arvidson et al., 2001). Other research suggests that hormonal imprinting can be affected by the toxic effects of drug exposure during birth, and two studies have demonstrated an increased likelihood of adult opiate addiction in the children of women who received opiates in labour (Jacobsen et al. 1990; Nyberg, 2000).

The use of epidural anaesthesia is increasingly common in New Zealand as an intervention in 'normal' labour, with up to 60% of first time mothers utilising this service in some centres (Ministry of Health, 2007). A request for an epidural requires that the woman have a consultation with an obstetrician, and the presence of an anaesthetist to insert the epidural catheter and administer at least the first dose of anaesthetic. Observations from my own practice are that more and more people become involved in the woman's birthing journey, with the result that the woman sometimes says she feels less and less 'in control' of her experience. These additional people are very unlikely to be known to the woman, and her sense of privacy, peace and achievement may be eroding steadily. In addition to this, the boundaries of the woman's physical self are being breached in usually invasive and painful ways, which could create disturbances to her psychological well-being.

A vast array of flow-on effects from epidural use are well documented, including increased length of first and second stage of labour, increased need for instrumental assistance for birth, increased Caesarean section rate, use of intravenous infusion, catheterisation, immobilisation and its resultant labour dystocia, effects of maternal hypotension on the baby's heart rate in labour, and increased need for continuous electronic monitoring (Walsh, 2007). In addition to these a number of more subtle effects are possible. Buckley (2005) argues that for normal labour to progress a woman needs to shift her state of consciousness. Beta-endorphin produced within the woman's own body creates this sensation of being 'out-of-body', of being able to 'let go' on a psychological level in order that the physical body can take control (Anderson, 2000). Anderson suggests that this state is almost that of being in a hypnotic trance, characterised by a perceptual shift of awareness in an atmosphere of trust and security.

Epidural anaesthesia inhibits beta-endorphin production (Brinsmead et al., 1985), and therefore the woman's ability to achieve this trance-like state in labour. Indeed, I have observed women with epidurals sitting up quite perkily in bed, doing crosswords or engaging in other intellectual activity (working on laptops!) at the very time their body might otherwise be in this deeply 'other' place. Suddenly, it is 'time to push', but the stretch receptors in the woman's lower vagina are anaesthetised. These receptors are thought to trigger the oxytocin peak that occurs at birth, so the oxytocin release is also inhibited (Odent, 2001). The signal for the so-called 'foetal ejection reflex' is thus not sent, which may account for the increased need for assisted birth in women with epidurals (Buckley, 2005).

Some women choose to give birth in hospital because of the availability of pain-relieving medications (Longworth et al., 2001). Women who are keen to avoid these medications tell me that they choose to give birth at home, lest they are 'tempted' by circumstance into using them. These women believe that the only way to avoid the cascade of intervention is to not be present in the place where this cascade hurtles. For women giving birth for the first time, in my experience, the 'unknownness' of what labour sensations might be like can produce enormous anticipatory anxiety (Niven, 1992). Some women respond to this anxiety by learning ways to help themselves to manage pain; using breathing, massage, heat/cold applications, visualisations, affirmations, and choosing birth companions who believe in the value of the experience. Yet others educate themselves about the risks and benefits of the menu of drugs on offer, and negotiate their course through labour often by moving right through this menu. This is all part of what constitutes the birth environment, and the beliefs

of women and their caregivers can have a powerful influence on what occurs for the woman in labour, regardless of the place the woman chooses to give birth. This study may identify how the choices women make around pain management, and their experiences of working with pain in labour, can contribute to, or hinder, the achievement of physiological birth. It will surface whether there are differences in how women and midwives work together in this respect in each birth setting.

Summary

This section has contextualised the study by exploring some aspects of the first birth experience; why it matters to women's well-being to 'get it right' first time, why women choose to give birth at home or in hospital and how the physiological process of giving birth can be affected by the birth setting, the availability of medications and the socio-cultural milieu the woman finds herself in. In the next section I will review the research relating specifically to how midwives' care is affected by the birth setting, and whether differences in birth outcomes have been reported in relation to the place the woman chooses to give birth.

Unearthing the Research

Having studied the background material concerning the importance of assisting the woman to choose the birth setting which best suits her, and guiding her understanding of how the setting and what it presents can help or hinder the achievement of physiological birth, I now return to the research question: Do midwives offer the same intrapartum care at home and in hospital, and if differences exist, how might they be made manifest in the labour and birth events of first-time mothers? In this section I will uncover the research which has explored these ideas. Studies which have focussed on midwifery practice in different settings will be described first, followed by those that have explored birth outcomes at home and in hospital. Where possible I have included studies which look at first birth experiences, though much of the research includes both nulliparous and multiparous women. Because my study specifically describes outcomes for two groups of women being cared for by the same midwives, I have also reviewed the literature concerning outcomes in relation to caregiver, as well as in relation to setting for birth, and parity.

I began my literature review by searching both the CINAHL and Medline databases using the established MESH term “Home Childbirth”. This yielded a staggering 1047 titles, but by refining the search term to “homebirth”, it became a more manageable 80. Because the nature of my research question required that I search for literature around two distinct topics, I was pleased to discover from this initial search that many of the articles in fact encompassed information relating to both. For studies relating to midwives’ practice in different birth settings, I searched “midwifery practice” (4202 titles), but soon added a Boolean ‘AND birth setting’ (178 titles) to reduce the number of studies to review. For studies about home and hospital birth outcomes, many of those yielded from the initial ‘homebirth’ term provided the data I was looking for. I also tried “home versus hospital AND birth” (106 titles) which came up with studies already identified by using the other terms. The other strategy I used was to hand-search my collection of the last decade’s New Zealand College of Midwives Journal. I did this because at the time this journal was not indexed for inclusion in the international databases, and I was eager to include as much local literature as was relevant to my topic. Four unpublished theses provided valuable local research also. These came to light either in the reference lists of other articles, or because their authors were known to me personally and thus I was aware of their work in this field.

Once I had identified the studies of interest by reading their abstracts, I retrieved them and used their reference lists for clues to further relevant research not uncovered by my original search. I tried as much as possible to use studies conducted within the last ten years. However in some areas the relevant works are older than this and have been included where more recent data is not available. From the eighteen articles which seemed directly relevant to my enquiry I selected nine main studies which I have discussed in detail in the section which follows. The remaining works informed my thinking, and have on occasion also been referred to. I have found roughly equal numbers of both qualitative and quantitative research, so I believe I have managed to unearth enough to provide a thorough picture of midwifery practice in different settings and labour and birth outcomes relative to this.

Midwifery Care in Different Settings

Five main studies have informed my understanding of how midwives' practice is influenced by the birth setting (Davis, 2006; Freeman, Adair, Timperley & West, 2006; Griffith, 1996; Hunter, 2000; van der Hulst, 1999). Some midwives who have been asked to describe aspects of their practice in different settings have suggested that they feel more relaxed and are able to establish an "easier interaction" with women when providing intrapartum care at home (van der Hulst, 1999). Others have said that they prefer providing care in a hospital setting because they feel safer because they're used to being there (Davis, 2006), suggesting that familiarity with the birth setting is as important for the midwife as it is for the woman.

It seems that most midwives are able to describe ways in which their practice differs according to the birth setting. In van der Hulst's (1999) Dutch study, which surveyed midwives about behaviours which shaped relational care in labour, each of the 99 midwives who participated felt that their care was influenced by the birth setting, though the extent to which this influence was present was different amongst midwives. Relational care (aspects of care which facilitate the natural birth process such as communication and other activities which establish a relationship of trust between the woman and her midwife) was focussed on separately from obstetric-technical care (activities such as performing examinations and procedures). She found that there were no differences with respect to obstetric-technical care apart from that midwives adopted a stricter selection process for women planning to give birth at home.

In contrast to this, several differences were found with respect to how midwives provided relational care. When attending homebirths, midwives reported spending more time with women in labour, and visiting more often during the dilation phase. They felt more sense of commitment to the woman, and involved the woman and her partner more in tasks which needed to be done, which van der Hulst (1999) believed reflects as much the fact that the woman is in her own territory, as the philosophy that the birth process is a normal human experience. She notes that both these things empower the woman's sense of control in the birth experience.

When providing care in the hospital, the midwives were more likely to sleep, be less patient and carry out more of their own tasks. They felt their approach was more efficient, they spent less time with the labouring woman, and they adopted a more formal attitude toward their clients. van der Hulst (1999) suggests that when practicing in hospital, midwives are often confronted with organisational structures and rules which are absent at home and therefore may feel more like they are guests in the hospital, just like their clients.

Different ideas about how the birth setting influences the behaviour of midwives were uncovered by Hunter (2000) in her exploration of how New Zealand midwives perceived differences in their care provision between a small primary maternity unit and a large obstetric hospital. She found that midwives felt more autonomous practicing within the small maternity unit, and that they believed they were freer to practice what they called "real midwifery" along with having a greater acceptance of "carrying the can" (p. 121). This coupling of autonomy and accountability was seen as one of the key differences between providing intrapartum care between these two settings. While not suggesting that when practicing in the large hospital midwives were not accountable for their practice, it seems that the notion of being solely responsible in the small unit carried with it a "sense of being alone and carrying the burden of responsibility" (p. 123) not experienced so much when practicing in the large hospital.

The midwives in Hunter's (2000) study unanimously preferred providing care in the small unit, despite having experienced emergency situations there. This arose out of their belief that in most cases the outcome would be good, and their belief in their ability to foresee problems and anticipate their effective management. Linked to the notion of foresight is that time in itself may play an important role in women's intrapartum experiences. The need to transfer

out of the small unit if problems arose meant that judgements needed to be made about when the appropriate time to do that was. Time seemed to have different meanings within different contexts, with midwives feeling constrained by the clock and by obstetric definitions of what constitutes acceptable progress at work within the larger hospital.

In a conference paper based on her Ph.D. research examining the culture of midwifery practice in different birth environments, Griffith (1996) suggested that midwives experience a “degree of dissonance as they try to establish congruence between their espoused beliefs and the reality of practice imposed by their work environment” (p. 357). She described her findings not in relation to the birth setting *per se* (i.e. home or hospital) but around a spectrum based on the degree of medicalisation evident within different care contexts. She found that as the degree of medicalisation decreased, so too did the pervasive nature of the medico-technical focus on care provision. Midwives were more and more able to negotiate defined parameters of safety, and departures from medical protocols were more likely to be tolerated in less-medicalised settings. At the midwifery model end of the spectrum, the medical discourse provided a background reference only and there was a recognition that the “ideology of technology was occasionally appropriate and useful” (p. 361) rather than that it defined and determined how care was provided.

Griffith (1996) described how in highly medicalised environments, medical texts and written protocols were considered the ultimate authority, and departures from the protocols were seen as a serious breach of the rules. In the least medicalised environments, however, midwives believed that “much of the knowledge that is required for a ‘successful’ birth experience is located in the woman at both conscious and unconscious levels” (p. 364). Thus if women are supported in their choices, these midwives felt that women were more likely to achieve a successful outcome (on the woman’s own terms) and were less likely to experience medical intervention as a result.

The birth environment was also an important determinant of the visibility of midwifery practice in Griffith’s (1996) study. She noted that in a highly medicalised environment, what was visible, valued and admired in relation to midwifery practice was the ability to use and interpret obstetric technology, inform the doctor and assist competently with the ensuing obstetric tasks. Midwives’ experiential knowledge was invisible in this context and midwives felt deskilled. As medicalisation decreased, midwives’ experiential knowledge became more

visible and valued and midwives focused more and more on the centrality of the woman, and less and less on their own active birth skills and knowledge, seeing them as tools only, occasionally useful as an adjunct to their “way of being” as a midwife (p. 365), which was mostly framed around presence and holistic support of the woman.

One of the ways that midwives find themselves seeking to decrease the influence of the medical discourse when caring for women in labour is to be creative with the level of disclosure of what is occurring for the woman. Griffith (1996) calls this “cheating” (p. 365), and others have applied different terms to it, “obstructing the obstetric gaze” (Davis, 2006) and “misrepresentation” (Stewart, 2004) are but a couple. What these words and phrases are describing are ways in which midwives seek to protect women in labour from medical interventions by obscuring the reality of what is happening. They may do this by action or omission. For example, they may understate the findings of a vaginal examination in order that medically-defined time constraints on labour progress can be achieved. They may decide not to document a particular finding such as full dilatation. They might drop the episiotomy scissors rendering them unsterile and therefore buying the woman time to birth her baby without being cut, or phone the doctor too late so that the baby is already born when s/he arrives. An interesting finding in Griffith’s study was that midwives practicing in home settings were much less likely to engage in these tactics, even in transfer situations where they might be assumed to want to protect themselves from judgement or censure for departing from medical definitions of normalcy. This provides a good fit with Hunter’s (2000) discovery of practicing ‘real midwifery’ entailing a greater sense of ‘carrying the can’, but also describes the evolution of midwifery practice away from notions of being seen to be good, and towards honouring midwifery knowledge and telling it like it is, as Stewart exhorts us to do.

The provision of a humanistic approach to care was described by Freeman et al. (2006), whereby technology was used alongside relationship-centred care. Their study of 104 New Zealand midwives found that the labour care setting did influence practice, identifying that practice was dominated by the medical model of care in an obstetric hospital. Despite this, they concluded that the midwives’ decisions were influenced by the needs of the women rather than the obstetric protocols.

Hunter's (2000) assertion that midwives' use of the self is a powerful tool in keeping birth normal by letting labour 'be', is echoed in Harris' (2000) exploration of why midwives practicing in homebirth settings pursue their practice even in the face of political and sometimes social opposition. She also discusses how midwives feel that assisting women at home is an easier way to practice their role satisfactorily, because of the belief in continuity of care and enjoyment of the partnership achieved with women. She suggests that it is easier for midwives to incorporate alternative therapies into practice at home, and that this may be a positive contributory factor in the achievement of normal birth. Bortin (1994) concludes that midwives who practice at home are doing more than just offering an alternative to hospitalised birth. She claims that they are "assisting women to meet their self-defined needs in a basic life experience" (p. 143).

Midwives' use of birthing spaces is another area where differences in practice can be identified (Davis, 2006). As she describes, at home the birthing space is often already prepared by the time the midwife arrives, although she may add some furniture in the bringing of a birthing stool, or pool. The woman is usually free to roam at will, utilising a number of spaces within her home to be with others, or alone as her need dictates. The midwife will often set up her equipment as unobtrusively as possible, to have at hand as necessary, but not to convey a message about risk or safety. In a hospital birthing space it is much more usual to find the bed as the focal point in the room. Because the woman has only one room, she is constantly scrutinised by those who are with her, which she may or may not want, but over which she has little control. Davis (2006) sees the obstetric hospital as a "...technology of biomedicine, as the design, furniture, equipment and culture presumes ... a passive maternal body that is inscribed as a site of risk. Midwives and women are disciplined in this place, as the technologies of biomedicine attempt to bring their behaviour, choices and midwifery practices in line with obstetric norms" (p. 10).

Midwives will sometimes attempt to mitigate these effects by manipulating the physical environment on arrival at the hospital. The bed may be pushed aside to enable the woman to adopt alternative positions on a mattress on the floor. Lighting may be dimmed, and some equipment removed or hidden. But for the woman and her family there is still a clear message that technology is ready and waiting to be deployed. More recently a type of 'hybrid' birthing space has emerged in response to women's requests for more 'homely' environments within institutions (Hodnett, Downe, Edwards & Walsh, 2006). While some attention is paid to

aesthetics in the form of soothing colours, mood lighting and soft furnishings, it is interesting to note as Davis (2006) does, that it is the bedroom which is determined to be the appropriate room to replicate within the hospital, rather than the living room or bathroom which are the rooms where, at home, more babies are born. Indeed in my own practice I can recall only once instance in eighteen years of a baby actually being born on the bed when it was born at home.

Davis (2006) argues that the obstetric gaze is all-pervasive and follows midwives wherever they are practicing, expressed as midwives' fear of litigation and their need to be seen to be good. This can give rise to other ways in which practice is modified according to the setting. It can be seen in the way midwives document a woman's labour journey, the idea that if it isn't written, it didn't happen. So women's birthing stories, as told in hospital, unfold in fifteen minute intervals, and despite that this may interfere with a midwife's ability to 'be with' the woman, it is seen as an important protective activity.

So the ways in which midwives have identified differences in practice between home and hospital settings tend to be related more to aspects to do with environment, than to do with assessment and monitoring of the labouring woman. Midwives do not appear to do more or less vaginal examinations, or listen more or less frequently to the baby's heartbeat in labour (van der Hulst, 1999). They say they are more able to allow time, and yet paradoxically are very mindful of time when foresight is required in out-of-hospital birth settings (Hunter, 2000). They say that hospital protocols are influential in determining their practice, yet are able to stand in their space as midwives and be accountable for stepping outside the protocols when they are satisfied that both the woman and baby are safe (Freeman et al., 2006). A complexity exists which makes it difficult to talk in absolutes about how the birth setting alters midwifery practice, but it would seem that when providing care within the hospital, midwives feel more need to manipulate both the physical environment and the sociopolitical context in which they find themselves.

These studies have proved useful to aid my understanding about midwifery care provision in different care contexts, but are sufficiently diverse to leave some remaining issues unanswered. Hunter's (2000) study compared midwives' practice in a small maternity unit with a large obstetric hospital, rather than at home and in hospital. Griffith's (1996) work was very useful about the sociopolitical culture of birth settings, but did not describe differences

in relation to *actual* birth settings, rather she described practice in relation to various degrees of medicalisation within birth settings. Freeman et al.'s (2006) study did not contain sufficient detail to enable me to find out how many women in the study gave birth at home, stating only that the majority of women had given birth in the tertiary hospital, so it is open to question whether a more even spread of care provision might have resulted in a different set of results. van der Hulst's (1999) study was highly resonant of the information I was seeking because the same midwives provided care in both settings, though this was in a Dutch context where midwives universally provide both home and hospital labour support. Davis (2006) addressed aspects of midwifery practice in relation to place, and her study was also within the Aotearoa/New Zealand context, so in a sense was closest to my question.

These studies informed my research by shaping my thinking about how best to elicit the midwives' experiences of providing care at home and in hospital. They also gave me some insights about which aspects of practice I could shape into questions on the survey.

Comparing Birth Outcomes in Relation to Place of Birth

The results of my search into comparisons of labour and birth outcomes at home and in hospital yielded four main studies (Ackermann-Leibrich et al., 1996; Janssen et al., 2002; Johnson et al., 2005; van der Hulst et al., 2004), and some other studies which have added to my understanding, but which are not very recent (Boland, 1989; Bradley, Tashevskaya & Selby, 1990; Feldman & Hurst, 1987). Others were excluded from consideration because they were older studies reporting homebirth outcomes only, rather than comparing outcomes between home and hospital.

There is little congruence between these studies with respect to a number of aspects. For example often the group of women giving birth at home have been cared for by midwives and the group of women giving birth in hospital have been cared for by physicians (Ackermann-Leibrich et al., 1996, Janssen et al., 2002, Johnson et al., 2005). Sometimes the comparison has been made between women in hospital and women in birth centres, or other low-technology environments (Feldman et al., 1987, Bradley et al., 1990). Yet others have compared home and hospital birth outcomes within the practice of midwives (Wiegers, Kierse, van der Zee & Berghs, 1996). Reporting outcomes by parity was not evident in some

studies, though two have specifically done so (Feldman et al., 1987; Bradley et al., 1990) and others have partially done so.

Despite their methodological inconsistencies, these studies have consistently reported that women in low-technology birth settings have much lower rates of obstetric interventions in their labours when compared to women who give birth in hospital, along with similar rates of maternal and neonatal mortality (Walsh, 2007). This is partly related to the fact that in order to demonstrate significant differences in perinatal mortality, very large numbers of births would need to be compared and this is rarely practicable, except in systematic reviews or meta-analyses. In terms of differences in intervention rates, studies often do not report the same kinds of interventions, or the comparison groups may not be matched for risk status, and so to an extent apples are not being compared with apples. I will thus focus on the first four studies identified because they most closely relate to my research question, which seeks to find out if labour and birth outcomes are different for first time mothers in different settings.

The most recent prospective study in this field reported outcomes for 5418 women who planned homebirths in the United States and Canada in 2000, and who were cared for by midwives with a common certification. These outcomes were compared with 3 360 868 singleton, vertex births in hospitals recorded in the United States in the same year (Johnson et al., 2005). In essence both groups of women were 'low-risk', and 'place of birth' was adjudged to be the planned birth setting when labour began, so of interest were the intrapartum experiences of these cohorts of women. The perinatal mortality rate for homebirths in this study was 1.7 deaths per 1000, which was stated to be a similar rate as found in other low risk home and hospital birth studies. Obstetric intervention rates were substantially lower in the homebirth group; electronic foetal monitoring 9.6%, episiotomy 2.1%, caesarean section 3.7% and ventouse extraction 0.6% compared with, respectively, 84.3%, 33%, 19% and 5.5% in the hospital birth group. In this study homebirth women were cared for by midwives, and hospital birth women by either midwives and/or physicians.

Although 31.2% of the homebirth sample in Johnson et al.'s study were first time mothers, there has been no attempt to report outcomes by parity, save for caesarean section (8.3% nulliparous women compared with 1.6% multiparous women in the homebirth group) This compares to 19% caesarean section rate in the hospital birth group (all women). The transfer

rate to hospital in labour was 25.1% for first time mothers compared with 6.3% for subsequent-birth mothers.

Ackermann-Liebrich et al. (1996) reported on a prospective cohort study of matched pairs of Swiss women who gave birth over a two-year time frame. They reported 41.1% first time mothers among their planned homebirth sample, but again little sub-group analysis was described which could have identified differences in outcomes by parity in this group. This study did not clearly identify whether caregivers were midwives or physicians in either the home or hospital birth sample, simply that care professionals were “mostly known to the women before delivery” (p. 1316). It similarly reported a 25% transfer rate for first time mothers. Among the total sample, lower rates of caesarean section, assisted delivery, episiotomy, and use of analgesics were observed in the homebirth group, with no differences in the perinatal mortality rate, in this case 2.3 deaths per 1000.

A later study by Janssen et al. (2002) compared outcomes of three groups of Canadian women. The first group comprised 862 homebirths attended by midwives. The second, 571 births in hospital attended by midwives and the third group 743 births in hospital attended by physicians. They concluded that there was no increased maternal or neonatal risk associated with planned homebirth under the care of a regulated midwife. They too demonstrated significantly less frequent use of analgesia, electronic foetal monitoring, augmentation of labour, episiotomy and caesarean section in the homebirth cohort of women. As with the previous studies, both first time and subsequently-birthing women were included in the analysis. 46.6% of women in the homebirth group were expecting their first babies, 48.2% of the physician-attended hospital group, and 58.1% of the midwife-attended hospital birth. The only outcome reported specifically for first time mothers was for caesarean section, which 11.2% of first time mothers experienced in the homebirth group, compared with 21.5% of the physician-attended hospital births, and 11.9% of the midwife-attended hospital births.

Table 1 represents a synopsis of results of the aforementioned studies, reporting intervention rates for home and hospital births, and where possible also reporting intervention rates for first-time mothers at home and in hospital. A more detailed discussion of the findings of the van der Hulst et al. (2004) study occurs later in the section about outcomes in relation to caregiver. Numbers represented in each study have already been reported.

Table1. Comparative table of labour interventions, home vs hospital

Study	Intervention	Planned home births	Planned hospital births	First births-planned at home	First births-planned in hospital
Ack.-Liebrich et al.	Induction of labour	4.6%	16.0%	NR	NR
Van der Hulst et al.		10.2%	23.0%	12.1%	18.2%
Johnson et al.		9.6%	21.0%	NR	NR
Janssen et al.		4.3%	22.3%	NR	NR
Ack.-Liebrich et al.	Pain relieving medication	17.1%	48.7%	NR	NR
Van der Hulst et al.		15.6%	24.3%	24.3%	31.3%
Janssen et al.		14.0%	74.5%	NR	NR
Ack.-Liebrich et al.	Transfer to hospital	15.9%		25.0%	
Johnson et al.		12.1%		25.0%	
Janssen et al.		21.7%		NR	
Ack.-Liebrich et al.	Caesarean section	5.2%	13.6%	NR	NR
Van der Hulst et al.		7.8%	11.0%	12.6%	14.1%
Johnson et al.		3.7%	19.0%	8.3%	NR
Janssen et al.		6.4%	18.2%	11.2%	21.5%
Ack.-Liebrich et al.	Instrumental birth	4.4%	13.0%	NR	NR
Van der Hulst et al.		14.4%	14.9%	23.9%	21.2%
Janssen et al.		3.2%	13.5%	NR	NR
Ack.-Liebrich et al.	Episiotomy	26.0%	76.0%	NR	NR
Van der Hulst et al.		18.4%	22.6%	25.6%	26.8%
Janssen et al.		3.8%	15.3%	NR	NR
Ack.-Liebrich et al.	Intact Perineum	36.4%	9.2%	NR	NR
Johnson et al.	Electronic foetal monitoring	9.6%	84.3%	NR	NR
Janssen et al.		14.7%	82.6%	NR	NR

Comparing Outcomes in Relation to Parity

I have been able to identify only three studies which have observed the intrapartum experiences of first time mothers only, where place of birth has also been identified as a variable. Bradley et al. (1990) observed birth experiences for two sets of first time mothers in Australia, one in a low technology 'family birth centre', and the other in a conventional delivery suite. 30 women in each group were interviewed nine months after giving birth. The birth centre mothers received fewer vaginal examinations, fewer episiotomies, fewer pethidine injections and were attended by fewer medical staff unknown to them. Women who had experienced interventions such as augmentation, assisted birth and caesarean were specifically excluded, because the authors wished the two groups to have experienced births of a "similar range of difficulty" (p. 229). This compromises the ability to compare overall birth intervention rates. The birth centre mothers reported greater levels of satisfaction with their birth experience, felt more in control of what happened to them and were more likely to still be breastfeeding their babies nine months after the birth.

A slightly older and very small (the homebirth sample consisted of 26 women, and the hospital sample 267) study by Boland (1989) found a significant increase in morbidity and mortality in the sample of first time mothers who gave birth in hospital. The perinatal mortality rate in the sample of homebirth women was 0 per 1000, compared with 3.7 per 1000 within the hospital sample. The study found that homebirth women experienced normal birth 76.9% of the time, compared with 48.2% normal births in the level 3 hospital sample.

Though not specifically addressing first-time mothers only, Wiegers et al. (1996) did analyse their results separately according to parity, and showed that when social and medical background effects (e.g. single-parenting women, ethnicity, lifestyle factors like smoking and so on) were not controlled for, first time mothers giving birth at home fared significantly better in relation to intervention rates. Once these 'unfavourable' (their words) factors were controlled for there were no statistically significant differences between the home and hospital groups. (It is therefore interesting to note that when women considered more 'at risk' because of 'unfavourable' lifestyle factors are cared for at home, improved outcomes are observed, which might be contrary to expectation.) Despite that both groups of women were cared for by midwives, 52% of women in each group had episiotomies, slightly more hospital birth women had augmentations, assisted births and caesarean sections than homebirth

women. It is unclear whether or not care was provided by the same midwives at home and in hospital in this study, or whether ‘hospital-based’ midwives cared for hospital women and ‘community-based’ midwives cared for the homebirth women. I suggest that there can be important differences in practitioner ‘style’ which may account for some of the differences found. Congruent with all other studies was their overall finding (nulliparous and multiparous women together) that homebirth women had significantly reduced intervention rates.

It has been demonstrated that women who choose to give birth at home are less likely to experience obstetric interventions in their labours. One explanation for this could be that women giving birth at home are more likely to be cared for by midwives, who may value the ability to facilitate physiological birthing as an expression of their midwifery scope of practice. This is in contrast to the biomedical, technocratic approach to birthing which is often prevalent in hospitals, with anaesthetic and surgical services readily available to ‘manage’ birth. To date it has not been easy to identify whether first time mothers giving birth at home experience less intervention than their counterparts who give birth in hospital. One could postulate that midwives who care for women birthing at home possess a high level of skill at assisting women to achieve normal births, and a deep understanding of the breadth of what constitutes normal labour. When these same midwives care for women in hospital, I believe they bring this experience, knowledge and practice wisdom with them and may thus be less likely to offer labour interventions. For this reason, I have sought to compare birth outcomes not only within the practice of midwives, but with the *same midwives* providing care in each setting, as a way of eliminating the potential bias of community-based and hospital-based midwives’ differing philosophies of care.

Comparing Outcomes in Relation to Practitioner

There is evidence to support the idea that women who are cared for within a midwifery framework achieve more favourable birth outcomes than women cared for within a medical-model context (Guilliland, 1998; Sutton, McLauchlan & Virtue, 2002). In this section I explore some of the research relating to ‘caregiver’ outcomes. I wonder whether ‘outcomes’ are inextricably bound up with ‘inputs’, and that it is these inputs, which are not always measurable, which help to account for differences in measurable outcomes such as use of analgesia, assisted-birth and caesarean section rates. My experience suggests that these ‘inputs’ may be seen or unseen, ranging through mere presence, soothing voice, touch,

suggestion, encouragement, praise, affirmation, acupuncture, homeopathy, skilled manoeuvres to influence baby's positions, life-saving manoeuvres to give breath or stem the flow. Perhaps the absence of these inputs contributes to high levels of obstetrical interventions thus jeopardising women's ability to achieve physiological birth. Firstly I will describe the findings of some studies which have sought to compare outcomes between midwife-led and doctor-led care, and will follow this by describing studies where the comparison is between two groups of women experiencing midwifery care, within home and hospital settings. I have chosen these particular studies because they report the findings of research carried out in Aotearoa/New Zealand, and thus are relevant to the context of my own study.

In terms of demonstrable differences in birth outcomes related to practitioner, Guilliland's (1998) figures tell a very compelling story about midwifery versus medical models of care delivery. Her research describes maternity outcomes for a sample of women giving birth in 1996, for women cared for by midwives alone, and for shared-care arrangements between either midwives and general practitioners, or midwives and obstetric specialists. For midwife-only clients, 88% had normal births, compared with 82% for midwife/GP shared-care and 60.4% for midwife/obstetrician shared-care. Caesarean section rates were, respectively, 6.2%, 8.8% and 20.9%. Perinatal mortality figures for each group were 3.6 per 1000 (midwife only), 11.5 per 1000 (midwife/GP) and 14.9 per 1000 (midwife/obstetrician). The limitation of this study is that the groups do not have matched risk status. While it is likely that the midwife group, and the midwife/GP group would be similar in this regard, the midwife/obstetrician cohort would have contained more women at increased risk for adverse perinatal outcomes, and the overall PNMR for the study was 5.8 per 1000, which was similar to the national PNMR at the time (6 per 1000).

A later New Zealand study (Sutton et al., 2002) compared birth outcomes for a cohort of women cared for by the Wellington Domino Midwives Group with a cohort of women cared for by general practitioners accessing the same tertiary hospital. The first group comprised midwives in self-employed practice, and their sample included outcomes for women birthing at home and at a local primary birthing centre as well as the tertiary hospital. There were no significant differences between the groups in relation to adverse outcomes (measured as stillbirths and 5min Apgar scores <7). Intervention rates were much lower in the midwife-led care group. There was less induction of labour (7.1% cf 22.1%), use of epidural (19.3% cf

50.1%), instrumental birth (5.5% cf 15.1%), caesarean section (10.4% cf 15.6%) and postpartum haemorrhage (5.2% cf 8.4%).

Within both the New Zealand and international context, women choosing midwife-led care receive fewer childbirth interventions, without compromising either their own or their babies' safety (see for example Blanchette, 1995; Harvey, Jarrel, Brant, Stainton & Rach, 1996; Rowley, Hensely & Brinsmead, 1995; Turnbull, Holmes & Shields, 1996). The latest available figures for New Zealand (for all women, in 2004), show a 68.5% normal birth rate for women cared for by a midwife, compared with a 66% normal birth rate for women receiving maternity care from a GP, whose caseload would be comparable in terms of 'risk' status. Women cared for by an obstetrician are less likely to achieve a normal birth (44.7%) though again it must be acknowledged that women with high risk pregnancies are more likely to be represented within this cohort (Ministry of Health, 2007).

These findings have implications for the design of my study. The key design element for the quantitative phase of my study is that the two groups of women are first-time mothers only who are cared for by the same midwives, *and* are matched for risk status. When viewed *in toto*, not one of the studies identified and discussed has exhibited these features and I contend that they represent both the greatest point of departure from the existing literature and the greatest strength of my study design.

The only study from which it has been possible to compare outcomes of first births both in relation to place of birth, and within the practice of 'same' practitioners is that of van der Hulst et al. (2004), though the general conclusions relating to significant differences in intervention rates takes into account all births, not first time mothers alone. From data reported in this study, it is possible to discern some birth outcomes for first time mothers. The only difference which reached statistical significance for nulliparous women was the finding that more homebirth women had sweeping of the membranes and amniotomy performed than women in hospital. The authors proposed that this may be explained as midwives using these interventions as a last resort, to start or accelerate labour in order to enable the woman to realise her plan of having a homebirth. Comparisons for other interventions (e.g. augmentation, pain relief, assisted birth and caesarean section) failed to reach statistical significance in first time mothers.

The importance of caregiver's attitudes and philosophy of birth are also influential in terms of what occurs for women in labour. Though not comparing labour interventions, other psychosocial birth outcomes were observed by Janssen, Carty and Reime (2006). These have made an important contribution to our understanding of some differences that occur between home and hospital-birthing women, within the practice of midwives. They demonstrated that overall satisfaction with the birth experience was higher in the planned homebirth group of women, particularly when the actual place of birth was congruent with the planned place of birth. More women who planned homebirth felt "competent, responsible, secure, adequate, relaxed, victorious and ...receptive to the experience" compared with women planning hospital birth who were more likely to feel "powerless, awkward, incapable, fearful, confined and anxious" (p. 93).

An overview of this grounding of the study leads me to understand that differences in birth outcomes arise out of a complex matrix which includes birth setting, 'styles' or philosophies of care, and a number of other things which are contextually situated for both women and midwives. Overall it would appear that women who are cared for at home, by midwives, achieve the most favourable outcomes. It is not clear whether this is true when outcomes for first time mothers only are observed. By describing what occurs for women having their first babies either at home or in hospital within the context of care by the same midwife, it may be possible to identify which aspects of the birth setting could contribute to better or poorer experiences for women. Being able to describe how first birth 'looks' in each setting, could be valuable in terms of informed decision-making for women and their families when it comes to deciding place of birth.

As the stratifications of the earth unlock the secrets of the history of the planet, so too our understanding of the ways in which midwifery care provision in different settings and birth outcomes in relation to this have been built up layer on layer. EARTH has yielded the background to the research question and has grounded the study in the existing literature. A gap has been identified which this study can help to fill. A small plot in the ground awaits the seed of new knowledge. Needed now is the next step, WATER, a design methodology for acquiring this.

WATER



The Study Design

Water is yielding enough to assume the shape of whatever contains it, and yet strong enough to forge a channel through rock. Thus the shape the study took flowed from an initial wondering, which underwent transformation to a research question. Subsequent decisions about the most appropriate methodology, design and methods flowed from the question. The resultant pool of derived knowledge lends itself to reflection.

Introduction: Two Streams of Thought

The introductory section of this research has traced the development of my wondering about how and why the events of labour and birth appeared to be different for women choosing to give birth at home when compared to those choosing to give birth in hospital. The research question which I have posed is:

“Do midwives offer the same intrapartum care at home and in hospital, and if differences exist, how might they be made manifest in the labour and birth events of first-time mothers?”

The aims of the research meant that it would not be possible to use one method alone to adequately explore this question. For me it would never be enough to simply let the numbers stand for themselves. The numbers only ever tell part of the story. I wonder whether description without explanation runs the risk of missing important elements that contribute to our understanding of the whole picture. This section reviews how I arrived at my choice of mixed methods as the tool, and how I went about designing and implementing the study. I will begin by briefly revising the early wonderings that arose from the literature and from my practice observations, and trace their development into the design phase of the study. I will

go on to describe the process of data collection and analysis of each phase of the study, and end by discussing the mixing of the results at the interpretation phase.

Why Mixed Methods?

From my own practice I was able to discern that women having first babies who chose to give birth at home appeared to experience less medical intervention in their labours than women who chose to give birth in hospital. In my capacity as a Midwifery Standards Reviewer I noted that this seemed to be the case in the practice of other midwives also. My observations of midwives' practice over many years have led me to think that those who provide labour care at home articulate a philosophy of non-intervention in normal birth and judicious use of intervention if indicated where labour becomes complex. These midwives seem to have a broad understanding of what constitutes 'normal' labour progress and possess a wide range of skills to facilitate normal birth. Why then did outcomes seem to be better for first-time mothers birthing at home? And how might I go about finding out?

In order to be able to ask meaningful questions about labour and birth events, it seemed necessary to first have a conversation with midwives about whether or not they perceived that their care was the same in each place. This would not only expand my understanding of the topic, but also ensure that outcomes that were of interest to the midwives were explored, that is, they would assist with the identification of an appropriate domain of content (Fowler, 1993) for an ongoing description of labour and birth event outcomes.

Designing a study which utilised both a qualitative, and a quantitative component seemed like an appropriate choice to best explore the phenomenon. Describing the events of the women's labours and births could shed light on differences in intervention rates, but alone would not aid my understanding of why those differences were present in the first place. The midwives' ideas about how practice was influenced by setting informed the interpretation of the labour and birth event data.

The Mixed Methods Approach

Mixed methods research has been increasingly used in the social sciences to guide us to more complete understandings of research questions, so much so that current thinking is leaning

towards calling it the “third paradigm” alongside qualitative and quantitative methods of enquiry (Johnson, Onwuegbuzie & Turner, 2007). Studies utilising both qualitative and quantitative methods have become accepted as valid and robust ways to expand the understanding of a particular topic. However the use of mixed methods has not been without some controversy (Donovan, 2006). Purists argue that the philosophical underpinnings of both qualitative and quantitative methods are such that they are diametrically opposed, and rather than clarifying or aiding completeness of understanding, mixing methods only serves to ‘muddy the waters’ and confuse the issue further. Hekman (1990) claims that the goal of natural science (explanation) and the goal of social science (understanding) do not lend themselves to merging as a way of expanding either understanding or explanation. Johnson et al. (2007) counter-argue for a version of pragmatism as a philosophical springboard for mixed methods research on the basis that it offers epistemological justification and logic for mixing approaches and methods.

Historically the discussions about mixed methods research have centred on its use for validation purposes (Campbell & Fisk, 1959), methods of triangulation (Denzin, 1978), sequencing of methods (Morse, 1991), reasons for mixing methods (Rossman & Wilson, 1985) and rationales (Collins, Onwuegbuzie & Sutton, 2006). Advantages of mixing methods are said to include overcoming the perceived deficiencies of single methods used in isolation, enhancing the validity of the study, maximising the richness of findings, and aiding completeness of understanding (Seaton, 2005). A literature review by Greene, Caracelli and Graham (1989) identified the five main purposes of mixing methods as

- (i) triangulation – seeking convergence of results, (ii) complementarity – examining overlapping or different facets of a phenomenon, (iii) initiation – discovering paradoxes, contradictions, fresh perspectives, (iv) development – using methods sequentially so that results from the first method inform the use of the second method and (v) expansion – mixed-methods adding breadth or scope to a project. (Greene et al., 1989, p. 71)

These five elements all related to my research question. It was necessary to begin the project with a qualitative exploration in order to inform the quantitative survey (development). The topic was explored through more than one lens (complementarity). This yielded much in the

way of convergent results (triangulation) but also surfaced some divergent data to further explore (initiation). The mixing of the data at the interpretation stage led to valuable insights which could not have been gleaned by use of a single method (expansion).

A recent roundtable online discussion, which included the views of twenty leading academics on the subject of mixed methods research, resulted in a proposed working definition as follows:

Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purpose of breadth and depth of understanding and corroboration. (Johnson et al., 2007, p. 123)

Overview (breadth) and insight (depth) can provide different kinds of knowledge, according to Foss and Ellefson (2002). They suggest that quantitative approaches can offer a broad, general overview of the surface whereas qualitative approaches can add a deeper, more multi-faceted insight to the phenomena being observed. This idea of combining elements to enable breadth and depth of understanding and corroboration is best represented visually in the icon of the t'ai-chi t'u: this symbolizes the “dynamic balance between apparently opposing forces, in this case qualitative and quantitative” (Dey, 1993, p. 183).

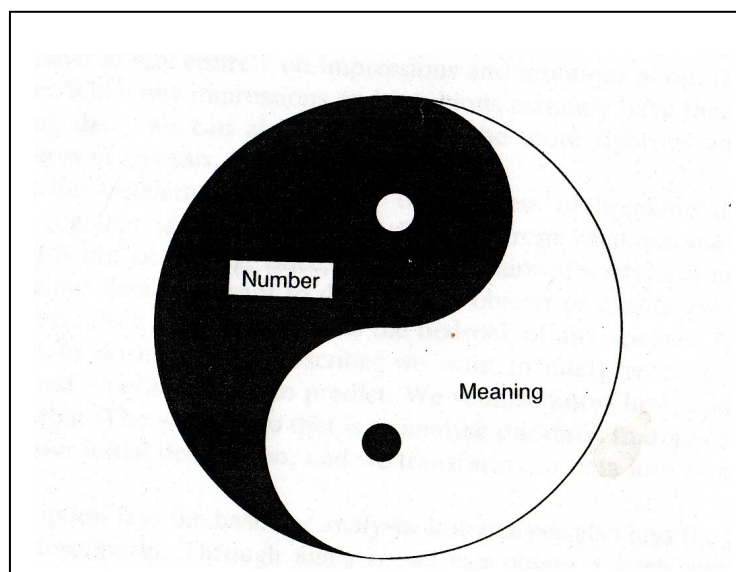


Figure 1. The T'ai-chi T'u

In Figure 1 the mutual dependence of both the qualitative and quantitative data is expressed. The 'pivot' point need not be in the exact centre, which would intimate an exact weighting or balance between the data sets. This is referred to as 'pure' mixed methods by Johnson et al. (2007). Rather it can be seen that each data set is complementary, so that meaning cannot be ignored when dealing with numbers, and numbers cannot be ignored when dealing with meanings. At lower levels of measurement questions of meaning are uppermost, while at higher levels of measurement, questions of number loom largest (Dey, 1993).

The questions raised about uniting two divergent research traditions have been addressed by Wolff, Knodel and Sittitrai (1993) in their paper exploring focus groups and surveys as methods of enquiry which are complementary to one another. They contend that using these two particular methods enhances the quality of the resulting analysis and the confidence that can be placed in those results. They argue that the limitations of focus groups (non-representativeness and non-generalisability) and the limitations of surveys (lack of flexibility to pursue issues in any depth, or to accommodate a wider range of explanatory categories than those pre-determined by the survey questions) can be mitigated by the presence of data from the 'other' tradition. They see that this combination "mutually enhances the respective qualities of realism and representation" to enhance validity (p. 134).

The holism apparent in this thinking is congruent with the midwifery model of care. It is difficult to separate the birthing woman and what happens to her from the context in which she finds herself. Similarly, it is difficult to separate the 'person' of the midwife, from the care that she provides. Multiple-perspective decision-making underpins all of midwifery practice because of the partnership women and midwives share as the basis of their relationship. Using mixed-methods as the tool for the study of midwifery care seems both natural and logical, as long as the integrity of the individual components of the study remains true to each method used. Designing a mixed methods study where I could use both midwives' experiences and their labour and birth events data to provide a more complete picture of the first birth experience for women in Aotearoa/ New Zealand was a logical 'best fit'.

Deciding on the Sequence

Morgan (1998) outlined a number of possible combinations to express how the two elements in a mixed method study might be described. This is known as the 'priority-sequence' model. I have utilised this model as an appropriate way to meet my objectives of exploring practice and describing labour and birth events. Here the principle method would be quantitative, with the initial qualitative method being used to guide the data collection in the quantitative part of the study. I wanted to explore the topic with a small number of participants and then expand the understanding by collecting data from a large number of people (Cresswell, 2003).

Morgan uses the device, qual \longrightarrow QUAN, to represent both the sequence and the relative weight given to each phase of the mixed-methods study. This indicates that a smaller, preliminary qualitative study provides complementary assistance in developing a larger quantitative study. This would utilise the strengths of qualitative methods for exploratory work to help ensure that the survey not only covers the important topics but also asks about them in an appropriate fashion (Morgan, 1998).



The Babbling Brook that was the Focus Group

The brook spits and bubbles, changing course at the merest touch of rock or tree root, carrying along whatever chances to land in it, absorbing the new, now rushing forward, now still to allow reflection, before rushing on again carving out a new path. The midwives' discussion was very resonant with the image of a babbling brook, with moments of animation, and pauses for quiet consideration.

Having decided on the sequence, the next decision was which qualitative method would elicit the richest information about midwives' perceptions of their practice. Individual interviews

might prove useful for this purpose, but I felt inclined to pursue some form of group discussion for the following reasons.

The objectives of the group discussion were two-fold. Firstly, I wanted to explore midwives' ideas, attitudes, feelings and perceptions (Krueger, 1994) about how their practice was the same, or different according to where the labour care was being provided. Secondly, I had had some preliminary ideas about the questions I wanted to ask in the survey, but I was interested to learn from the group whether there were other questions that might be important, whether the language used was appropriate, and whether the topics uncovered by their discussion gave rise to new lines of enquiry (Morgan, 1988). I decided a focus group was the best way to meet my objectives.

A focus group is a discussion between a small number of people purposely selected because they share knowledge about a particular topic that is common to them. Though initially used extensively in marketing (Krueger, 1994), during the 1990s the scholarship around the use of focus groups as a tool for qualitative enquiry flourished. The discussion participants focus collectively upon a topic selected by the researcher, and presented to them in the form of a particular set of questions (Wilkinson, 1998). The process uncovers insights into the values and beliefs the group members hold about the subject, examining not only what they think but how and why they think it (Carey, 1994). They explicitly use the interaction between the participants as a source of data generation (Kitzinger, 1994), and are considered well suited for the development or refinement of instruments (Asbury, 1995; Fowler, 1993).

Morgan (1988) summed up the role of the focus group technique in the following way: "the idea behind the focus group method is that group processes can help people to explore and clarify their views in ways that would be less easily accessible in a one-to-one interview" (p. 299).

Group discussion is able to capture additional dimensions in the way we communicate e.g. gestures, facial expressions, anecdotes, and teasing or joking, which can be very illuminating as meaning is co-constructed from the collective experience (Walsh & Baker, 2004). Storytelling is intrinsic to midwives' way of being when we are together, and some powerful and rich data could be produced in this atmosphere. Shared understandings are quickly uncovered by vigorous nodding, or a quizzical eyebrow can lead to clarification. Group participants themselves generate questions by their interactions with one another (Wilkinson,

1998). Another important aspect is that group norms and cultural values are able to surface, when careful purposeful sampling techniques have been used (Kitzinger, 1995).

Focus Group Planning and Implementation

Focus group work, as a method of qualitative enquiry, often uses multiple, sequential discussions, and analysis continues until the emergent themes have been ‘saturated’ (Sim, 1998). This is one of the ways that validity and rigour of the findings are ensured. I conducted only one focus group for two main reasons. Firstly, one objective of the discussion was the development of the survey tool for use in the next (quantitative) part of my study. Secondly, the size and scope of my study (a Masters thesis) precluded the use of multiple focus groups.

Recruitment of Participants

I wrote letters of invitation to seven midwives who lived within the same geographical region (Appendix 2). These midwives all practiced both at home and in secondary/tertiary hospitals, and in both urban and rural settings. Common experience can be seen as the key to the research focus (Asbury, 1995). Their educational backgrounds and levels of ‘experience’ varied. This was not in order to be seen as ‘representative’, but more to capture data that was broad-based in order to enhance completeness. Seven midwives were invited because literature suggests that between four and 12 participants is considered a reasonable number to gain meaningful insights, where each person has an opportunity to contribute and be heard, and where it is more difficult for one person to dominate the discussion (Krueger, 1994). In addition to this, knowing the vagaries of midwifery practice as I do, it seemed likely that one or two would be unable to make it on the day, due to attending a woman in labour. All the midwives sent me written consent (Appendix 3) to participate. As part of the consent the midwives were asked if they would be happy for me to recontact them as potential respondents in the second phase of the project, and those midwives who attended the focus group did in fact form a subset of the respondents in the survey phase. Arrangements were made by telephone and email to conduct the discussion at a time and location to suit everyone. As it transpired, three midwives were unable to attend the discussion, so the focus group consisted of the four remaining midwives, myself as moderator, and a sound technician who assisted with the recording of the discussion, but who did not otherwise participate.

Implementation

The discussion took place on the 16th March 2006 at the Victoria University of Wellington Audiovisual Recording Suite. I welcomed the midwives and we spent the first 20 or so minutes with refreshments and general chatting. We shared food which encouraged pre-session conversation and provided the group members with something to do (Carey, 1994). It also gave the sound technician an opportunity to test the recording equipment.

By way of introduction I reminded the midwives about the study topic in general, and then more specifically talked about my interest in uncovering ideas about the 'sameness and difference' of midwifery labour support and decision-making in the context of the home and hospital setting. I invited the midwives to begin by identifying a couple of key areas of 'sameness' and 'difference'. This was in order to establish a sense of commonality among the group, to bring all members of the group into the discussion early and to promote a feeling that all contributions would be equally valued (Asbury, 1995). From here we proceeded to cover four broad areas of enquiry:

- What do you do in the first half hour when you attend a woman in labour?
- What do you find yourself doing about pain help?
- Are you more likely to offer different interventions at home than you would in hospital?
- Who does the 'being with', and how is 'being with' expressed in each setting?

These four questions had arisen from a brainstorming session where a couple of midwives had offered ideas from their practice experiences about where they thought differences might be seen. Following our 90 minute focus group conversation, I invited the midwives to comment on a draft survey form I had formulated. This generated more animated discussion, and some useful insights for the further development of the survey. This will be discussed further in the next section.

Data Analysis

The decisions that I made in relation to the process of analysing the focus group data were largely informed by Carter (2004). There is little consensus amongst those who describe how to 'do' qualitative data analysis about a successful 'recipe' or set of procedures which will be

right in every situation, however some common elements are discernable when viewed *in toto* (Carter, 2004; Morse, 1994; Reed & Payton, 1997). These include the need for the data to be prepared for analysis (by transcription) followed by a cyclical, iterative, reflexive process during which data is reduced (broken down into smaller units) and decontextualised, displayed and recontextualised so that conclusions can be drawn (Miles & Huberman, 1994). In the context of focus group data analysis, it is important to be mindful of how the *group interaction* generates data additional to the individual contributions of the group members (Kitzinger, 1994; Morgan, 1998).

On returning home from the focus group, I looked through my field notes and wrote some impressions while they were fresh in my mind. The next weekend I listened to the entire recording in one sitting, to refamiliarise myself with the content and ‘feel’ of the discussion. Straight away I began the transcribing process; I was energised by the first listen and wanted to ‘get it all down’ as quickly as possible. Over a two-day period, I committed the sounds to screen. Transcribing the data preserves it, making it permanent, retrievable, examinable and flexible (Lapadat, 2004).

I chose to transcribe the discussion myself for several reasons. Most importantly it was to immerse myself in the data, because I knew that the process of listening again and again would ‘pickle’ me in the words and ideas expressed by the midwives. Carter (2004) refers to this immersion as getting ‘close to’ or ‘extremely familiar with’ the data, language which captures a sense of relationship which I could certainly relate to as I progressed through the process. I knew that there were parts of conversation steeped in jargon, and there was a risk of misinterpretation by using a non-midwife transcriber, and I would then need to sift through and change incorrect words and phrases. Living with their words also meant I could connect up my field notes with their words and sometimes silent actions (touching her heart, in one case, a ‘banishing-to-the-ether’ gesture in another). Because of the excellent quality of the digitally-recorded sound, I knew that what I typed was absolutely what had been said, so my task, though time-consuming, was quite easy. Seventeen thousand words later, already some common threads for me to explore had become obvious.

Close and comprehensive reading and re-reading of the transcript laid the foundation for the next step in my process: the data reduction. This saw the development of a list of categories or ideas, which on reflection further refined to four broad themes:

- * ideas about midwives' use of time
- * ideas about midwives' use of space
- * the 'being' and 'doing' of midwifery, and
- * notions of safety and danger.

Assigning each theme a colour, I proceeded to transfer data units relating to the four themes onto 'Post-It' notes, which I stuck onto a large roll of brown paper. The 'Post-Its' were moved and moved again over weeks and months as I engaged and re-engaged with them, reflecting my changing understandings of how they related to one another (Carter, 2004). Moving through this process of data reduction, data display and data complication was a much less linear process than I had anticipated. Alongside the whole process I kept field notes which reflected my 'lightbulb' moments, as well as my confusions, and the seemingly unending questions raised by making and dissolving connections.

Carter (2004) offers a “messy illustration of what you might be doing during data analysis” in the following diagram:

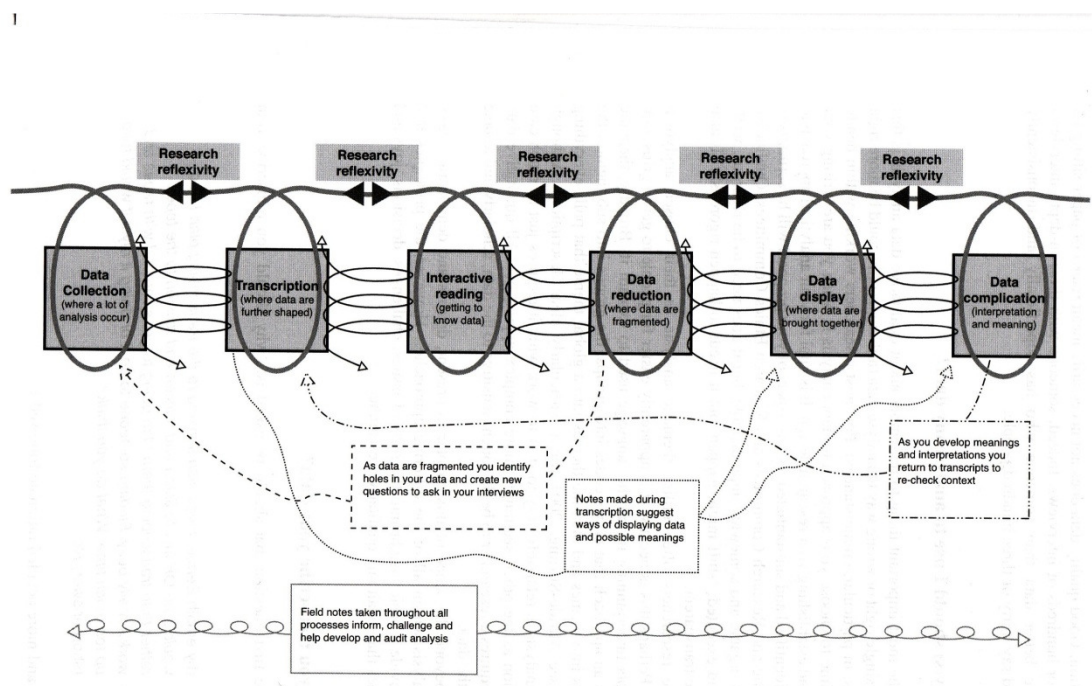


Figure 2. Carter's representation of data analysis*

* Source: *Demystifying Qualitative Research in Pregnancy and Childbirth*, Lavender, T., Edwards, G., & Alfirevic, Z. (Eds.). Copyright © 2004 by Tina Lavender, Grace Edwards & Zarko Alfirevic. Reproduced with permission of Quay Books, Salisbury.

Whilst certainly acknowledging that this representation resembles the process I undertook to analyse the qualitative data, for me it looked more like this



Figure 3. Author's symbolic representation of data analysis process

Each new idea both added to and affected the knowledge already contained. The ideas swirled about, then came together, sucked into a more manageable (but illusory) smaller channel of thinking. The thinking then emerged, more disparate, chaotic and all-encompassing, and finally understanding crystallised, becoming solid and describable, while at the same time feeling somewhat temporary. A set of understandings about this time and this group of people, which if viewed at another time, and with different people, might produce a snowflake which looks similar, but which will not be the same. This neatly mirrors my understandings about qualitative analysis; how it is reflective of time and place, not generalisable, but resonant enough to allow one to expect something similar in a different context, where the participants closely resemble those of the original work. The data derived from a focus group is thus highly context-specific (Sim, 1998), although a sense of recognisability can be achieved. Sim uses the term 'theoretical generalisability' to illustrate this idea. He proposes that insights which possess a sufficient degree of universality could allow their projection into other contexts which are comparable; the parallels may be conceptual, rather than based on statistical representativeness.

Development of the Survey: The Bridge

I based the draft survey form on the Midwifery Standards Review data sheet (NZCOM, 2007). This tool is used by midwives in Aotearoa/ New Zealand to capture statistical information about their practice, and forms part of the annual practice reflection already described in my introduction. I used this tool as a basis for the survey because midwives are

very familiar with using it. I removed questions which did not specifically relate to women's intrapartum experience. Reflecting on my own experiences of the births I attended in different settings, I included questions about whether or not the baby was born on a bed, the number of vaginal examinations performed (and the number of different people performing them), indications for intrapartum or postnatal transfer to hospital, and the number of support people present with the labouring woman. I presented this draft to the focus group participants for comment.

Generally the midwives agreed that what was asked was of interest but gave the following further suggestions:

- they wanted to differentiate between a consultation with another midwife in labour and a consultation with a member of the medical staff, because they felt that differences in operative birth rates might be reflected by whom one chose to consult with
- they wanted to ask whether suctioning occurred when meconium was present, and
- they wanted to remove a question about whether the parents were left alone with the baby for a period of time following the birth, as they felt that although they could appreciate the intention of the question (do we make space for uninterrupted family 'bonding' time) they also felt it could be misconstrued as a risk to postpartum safety.

There was also much discussion about whether or not there should be an explicit question about whether the baby was alive or stillborn. Parents making decisions about birth place may wish to know this information. We decided that because of the huge numbers needed to make any claims about maternal or neonatal mortality it would not be possible to demonstrate any difference in a study of this size. Also, though not explicitly seeking this information, it would be obvious from the Apgar scores which were requested.

Piloting the Survey: Testing the Water

Further discussion centred around the feasibility of the survey format. All the midwives said that although the completion of the survey would be time-consuming, they were interested enough in the results to put that time in. They thought other midwives would feel the same.

The final version of the survey (Appendix 4) was sent to three midwives not involved in the focus group for the purpose of piloting. They were asked to comment on how long it took them to complete, and whether the format was easy to understand and straightforward. All the pilot survey forms were returned with positive comments about the lack of ambiguity in the questions, and all felt that completion time would not deter midwives from participating.

The Canal that was the Survey



The canal is a structure of rigidity and control. Clear boundaries determine where the water flows, in which direction and, by altering the gradient, the speed of the flow. The process of quantitative enquiry felt 'boundaried' in much the same way. Assumptions must remain unviolated, the choice of which statistical tests to apply is predicated on notions of the normality of how the results fall. There are conventions around the reporting of findings and, to extend the metaphor just a little further, in a sense, power is determined by volume.

Why a Survey?

Surveys are a set of scientific procedures for collecting information and making quantitative inferences about populations (McColl et al., 2001). Wagstaff (2006) contends that they should only be used when some essential conditions are met, namely, that "the target population is clearly defined, easily identified, and that the majority of the respondents will be able to answer the questions asked" (p. 94). The aim of conducting a survey is to produce accurate quantitative descriptions of the phenomena being studied, rather than to discover the causes. By asking a sample of midwives who provide intrapartum care to first-time mothers both at home and in a secondary/tertiary birth setting to furnish me with some labour and

birth event data for the women in their care, I could provide a description of those events in each setting. Further, by integrating this data with the findings from the focus group, it was possible not only to describe the similarities and differences, but also seek some understanding about what might contribute to them and what further questions for research could be uncovered.

Recruitment of Participants

Because the data derived from the survey needed to describe labour and birth events for women in home and hospital settings *within the practice of the same midwife*, it was necessary to recruit midwife participants who provided intrapartum care in both settings. The better the sample conforms to the population from which it is drawn, the more we can be confident that the findings within the sample are generalisable to the population, according to Newell and Burnard (2006). It was not possible to obtain a mailing list of such midwives because they were not easily identified by current data capture mechanisms. I began by emailing an “Expression of Interest” message to midwives of my acquaintance who I knew assisted at both home and hospital births. This message briefly outlined my intention to compare the birth outcomes of the two groups of women, and invited midwives to contact me if they were interested in participating in the study. I requested them to forward the message to midwives (within New Zealand) who they knew also worked in both settings. In addition this email went to local and national homebirth associations, inviting them to forward it on their email loops. This snowball sampling technique proved quite ineffective. I had only two replies, and had no way of knowing where the message had gone, so I felt unable to keep sending it out, lest people be deterred by my persistence.

I placed the same advertisement in the national New Zealand College of Midwives Newsletter. I also took the opportunity of the biennial national New Zealand College of Midwives Conference to distribute copies of the advertisement on the seats of a plenary session attended by about four hundred midwives. I spoke to several midwives at the conference, some of whom gave me their addresses and said they would be happy to receive a survey form. I suspect New Zealand midwives were suffering from ‘participation fatigue’ as a burgeoning body of postgraduate researchers meant that requests for participating in studies were becoming quite frequent.

Implementation of the Survey

Survey packs (Appendix 4) were posted to the midwives who had participated in the focus group as they had all indicated their willingness to also participate in this phase of the study on their consent forms. In addition to this, I posted packs to the midwives who had contacted me via email, and those I had discussed the project with at the conference. In total, 18 packs were sent out. Packs contained a midwives' demographic data set, the homebirth and hospital birth data sheets, an information sheet, the key to completing the data sheet and a post-paid envelope for returning the survey. The survey consisted of 44 closed and one open question. Two of the closed questions gathered age and ethnicity data, and the rest of the closed questions were designed to capture information about events surrounding the labour and birth experiences of the women in each group. All the surveys were returned within a three-month time frame, and they yielded data for over 100 women in each of the two groups (i.e. the home birth group and the hospital birth group). Although these numbers are small, it has nonetheless been possible to demonstrate some significant differences in labour and birth events between the two groups of women.

Data Analysis of the Survey

Data from the completed survey forms was entered by myself into the Statistical Package for the Social Sciences (SPSS, Version 16). This software package was appropriate for the sorts of descriptive statistical tests I wished to apply to the data (Pallant, 2007). Data for three of the women in the hospital birth group were excluded because the respondent had indicated that the women had experienced induction of labour. Outcomes for women who planned to give birth at home, but who transferred in labour were analysed within the planned homebirth sample.

Once entered, a printout of the data sets was made so that I could visually check the data for accuracy. Very little data cleaning was necessary. There were seven cases where the position for birth was not reported; these women all experienced a caesarean section so their birth position was included in the 'reclining' code, as were all the other caesarean section births. One woman had a ventouse birth but a consultation with an obstetrician was not reported. This was coded as an obstetric consultation because an obstetrician performed the ventouse and therefore a consultation must have occurred. In two cases, women who had an epidural

were not reported as having IV fluids. They were coded as having IV fluids because this is standard practice where an epidural is in progress.

Data analysis was carried out in four steps. Step 1 involved undertaking descriptive statistics of each variable. For continuous variables, means, medians, standard deviations and range were calculated, and data were checked for normal distribution. Continuous data for labour variables were initially analysed in the lowest common denominator, for example days or minutes, and were then converted into weeks and days, or hours and minutes in the presentation of the findings. For nominal data proportions were assessed. Some regrouping of values was then undertaken for inferential statistical analysis. Two examples of this regrouping are the examination of patterns in the use of pain management techniques used in labour in each birth setting, and the consultation patterns of the midwives in each birth setting.

Step 2 involved looking for differences between the two groups, comparing those who planned a homebirth with those who planned a hospital birth. Independent t-tests or Mann-Whitney U tests were used depending on the data distribution. Chi square or Fisher's Exact tests were used for nominal data (Peat & Barton, 2005). Statistical advice was sought with respect to what analyses could be used for variables with missing data. For example, with respect to the demographic data (i.e. age and ethnicity of the women) provided, the number of missing values meant that no tests of significance could be applied.

Step 3 involved doing further descriptive and inferential analyses, but of data subsets. For example, some analysis was undertaken on the hospital birth group only in relation to the associated outcomes of performing an admission cardiotocography (CTG) recording. Further exploration of the relationship between the type of birth the woman had, and whether or not the baby received its first breastfeed within an hour of the birth was undertaken in this way also.

Step 4 related to the one open-ended question at the end of the survey. As these comments qualified the closed questions they were not analysed thematically, but were examined and used to provide an explanatory "voice", as an addition to the statistical data.

Putting the Two Together: Confluence



Confluence describes the meeting place of two bodies of water. In this project, two streams of thought flowed together in the interpretation phase of the study. Initially this resulted in turbulence and turbidity, but over time, while not becoming indistinguishable, the two data sets lent volume and weight to each other and settled out to produce a wider and deeper stream of thought around the phenomenon that is the first birth experience for women in Aotearoa/New Zealand.

I found little in the way of documented theory to guide my thinking about how to combine the two data sets. Indeed, scholars have lamented the dearth of advice on the ‘how to’ of integrating research strands in mixed method studies (Bryman, 2007; Maxwell & Loomis, 2003).

Grbich (2007) suggests that there are three main strategies to incorporate data from multiple sources. These are integration, triangulation and sequencing. Integration is where aspects of the usually separate approaches intermingle at either the data collection, analysis or interpretation stage. She proposes that one “allow interrogation of each [data set] through the lens of the other by going backwards and forwards over time until the data start to coalesce into meaningful findings as the key themes emerge” (p. 206). Sequencing involves using analysis of one part of the study to create hypotheses which can then be tested with e.g. a survey. Triangulation, in her view, is when one uses “multiple reference points where intact but separate data sets are collected concurrently....then [using] the synthesised results to build up a complex picture” (p. 207). This view that data sets need be collected concurrently is not shared by other scholars who describe triangulation more broadly as being the use of more than one approach (which could be more than one investigator, data collection

technique, theoretical basis, method of analysis) to produce insights not available by the use of a single technique (e.g. Tashakkori & Teddlie, 1998; Tobin & Begly, 2004).

Bryman (2007) argues that the two strands in a research project should be combined in a way that ensures each method is ‘mutually informative’ to the other. He describes how data sets will talk to each other, much like a conversation or debate, and the idea then is to construct a negotiated account of what they mean together. The written account is said to be ‘more than the sum of its parts’.

The idea that one can integrate ‘concepts’ rather than numbers and text is proposed by Foster (1997). She sees the triangulation of concepts as a common denominator for mixing qualitative and quantitative results, arguing that the results of qualitative analysis are conceptual in nature anyway, and that statistical results have meaning only to the extent that they describe the characteristics of the phenomena under study. She goes on to suggest creating a table of summaries for each method, which can be used in turn for examining the strength of support for findings within and across methods.

It seems, therefore, that in the absence of a clear body of ‘instructional’ literature, it is possible for any researcher using mixed methods to contribute to the development of this aspect of the research process. Whilst utilising some elements of the aforementioned styles of integration, my own interpretational journey was somewhat messier! I began by systematically looking at the ideas the midwives presented, and thinking about how that idea might be expressed as a labour and birth event. Next I looked at the numerical data, and where a significant difference was present, I returned my gaze to the textual data for clues about what the difference in events might mean.

I sat within each pool of data, and asked questions of the data. If the answers were not forthcoming within that data set, I would consider whether the answer could be found within the ‘other’ data set. As an example, where a midwife made the comment “I fiddle more in hospital”, but suggested she couldn’t quite pin down what she actually meant by that, the survey data revealed that in every category of things midwives ‘do’ (labour interventions), these interventive activities occurred with significantly more regularity in hospital. So while the midwife was unable to ‘quantify’ her “fiddling”, it was clear more “fiddling” occurred in hospital than at home. This confirmed the midwife’s sentiment, but used the quantitative rather than the qualitative data to source the evidence.

My thinking about how I could present these findings was shaped by a re-examination of the original aims of the research. The third aim I had identified was to seek links between the two data sets, to see if there were differences in the experiences of the women giving birth. By thinking about the data as two sets of experiences, I could describe what took place in each birth setting, and thus express difference shaped by women's birth place choice.

This of course raises the question of whether the 'answers' reflect the 'truth'. One could argue that the 'truths' which emerge, only do so because of some preconception carried by the researcher. Perhaps the 'answers' are dredged up from the well of the researcher's personal relationship to the subject. This is known as the heuristics of commonsense knowledge – that is, making additional assumptions based on personal knowledge about the norms, preferences and goals that those under study normally have (Erzberger & Kelle, 2003). It can be especially useful where research takes place within the researcher's own culture, where the researcher has easy access to stocks of everyday knowledge. By also living in the world inhabited by these midwives, there can be no doubt that some of my interpretations have been filtered through the lens of my embodied knowledge of this subject. I believe this strengthens rather than diminishes the 'truth' of the findings.

I found that when attempting to negotiate an understanding of how the qualitative data set and the quantitative data set 'spoke' to one another, the relative dominance of each ebbed and flowed. Sometimes the 'numbers' seemed to almost shout an important difference in outcome, and the calm reason and thoughtfulness of the textual 'voice' insinuated itself and led to a more considered understanding of that difference. In contrast, on occasion the stories proclaimed a staunch set of opinions, which once contextualised within the numbers, softened their vehemence. So whilst the overall feel of my project saw the quantitative aspect as the more dominant (that is, reflecting on the significance of the project in terms of having offered some information to families which can enable decision-making around place of birth) the exploration of the midwives' ideas about why those differences occur will in some contexts be the more 'important' findings. Viewing through multiple lenses allows a more inclusive conversation to be had, by more people.

Ethical Considerations

Tackling two methods of data collection necessitated gaining ethical approval from two separate ethics committees (Appendix 1). The Victoria University of Wellington Human Ethics Committee (VUWHEC) granted approval for the focus group phase of the study. The Multi-Region Health and Disability Ethics Committee (HRC) approved the survey phase of the study; this approval was also noted and recorded by (VUWHEC). I will discuss the ethical considerations for each phase of the study separately.

In relation to the focus group, my position as the researcher was an early issue to be addressed. I wanted to be sure that the midwives would feel relaxed about sharing their ideas, so chose a group who were known to one another, but where none of them held positions of 'authority' over each other (i.e. as employers, or mentors, or lecturers). Morgan (1988) advises that participants should really have something to say about the topic and they should feel comfortable saying it to each other. I chose to moderate the focus group discussion myself, because I felt that having knowledge of both the theoretical (previous literature) and real 'world' that these midwives inhabit I would be able to guide the discussion to produce meaningful data (Sim, 1998). The accuracy of the interpretive analysis is said to be enhanced if the researcher is intimately involved in the actual data collection, for example serving as the moderator (Knodel, 1993). I kept out of the discussion as much as possible (low moderator involvement), both because I did not want to 'lead' the participants by revealing what I understood from previous work in the field, but also because I wanted to be alert to new tangents of enquiry (Morgan, 1988).

The Information Sheet and Consent for Participation (Appendices 2 and 3) related to the focus group outlined for the midwives what they could expect in terms of confidentiality, and how their words would be protected and utilised. Because story-telling seemed inevitable, and because there was the possibility of sensitive issues coming up, or stories of practice that may expose the midwives medico-legally, I requested the midwives to sign a confidentiality agreement prior to beginning our discussion, as did the sound technician. In recognition of the value I placed on the time spent by the midwives and the sound technician, they each received a petrol voucher to assist with their travel expenses.

With respect to the survey, the Information Sheet for Participants (Appendix 4) outlined the use that would be made of the survey data, and the processes that would be undertaken to ensure anonymity for respondents. It was made explicit on the survey form that the completion and return of the survey constituted consent to participate. Protection of the data centred around safe storage and who would have access to it. The midwives were clear that the data relating to their clients would not enable me to identify them. The midwives were offered the opportunity to enter their names into a draw for a midwifery textbook. They could do this by filling in a small separate piece of paper which was removed from their survey upon opening the envelope, so that their survey data was not attributable to them. Prepaid envelopes were included with survey forms to facilitate ease of return.

Some Thoughts about Rigour, Validity, and Trustworthiness

Seeking to demonstrate aspects of these important considerations within mixed methods research involves being 'true' to the conventions of each method. Maintaining integrity within the whole is necessarily complex. By addressing the elements adequately within each part of the whole, I believe a sense of credibility can be obtained about the study.

Establishing rigour within the focus-group derived data was achieved through establishing a sense of trustworthiness. Nyamathi and Shuler (1990) comment that focus groups typically exhibit high face validity due to the credibility of the comments from the participants. Reed et al. (1997) argue that although this form of credibility may enhance acceptance of the findings, there are additional ways of establishing validity. These include addressing what the process is meant to reflect, in this case the midwives descriptions of practice in two birth settings. The discussion exposed a display of the cultural and moral norms of the group, and in doing so gave an insightful view of what it means to practice midwifery in different contexts. This understanding can be integrated with other forms of data to lead to a more rounded picture of the phenomenon being studied (Reed et al.).

I could not hope to demonstrate rigour within this part of the project by having another researcher confirm my findings or by returning the findings to the focus group participants for member checking, methods often chosen by qualitative researchers. By making explicit the process of data collection, reduction, display and complication, this audit trail means that another researcher could attempt to replicate this study, and could reasonably expect similar

findings to emerge. This demonstrates dependability, in the sense that a reliable process was followed (Smith, 2004). In addition to this, because these findings were firmly grounded within the data, there is a high degree of confirmability (Smith).

Reliability within the survey phase of the study was enhanced by the fact that the survey 'questions' required only that the midwives enter units of data already collected in the form of the women's clinical notes. Most responses were numerical or yes/no answers, so there was a high degree of consistency in the returned survey forms. This demonstrates internal validity, by enhancing the 'truth value' of the findings (Smith, 2004). There was little scope for responses outside the range. There were a few surveys which contained missing demographic data e.g. the age of the woman, or her ethnicity, but most other items about birth outcomes were consistently filled in. The pilot trial had ensured that survey items were appropriate and acceptable. As mentioned, statistical advice was sought where data were missing to assess which tests would be appropriate, or indeed whether it was possible to apply a statistical test at all.

While the survey participants were not randomly selected, I believe that the fact that they all selected their most recent twenty clients who fitted the criteria (i.e. ten first-time mothers in each group planning either a home or hospital birth, who went into spontaneous labour with a term, singleton baby) meant that the 'actual' sample about whom the data was collected was as representative of that population as was possible. Although the midwives who completed the survey self-selected into it, in one sense they represented a stratified purposeful sample. This kind of sample can be used where a researcher wants to ensure that "certain cases varying on pre-selected parameters" (Sandelowski, 2000, p. 249) are included. Although this is statistically non-representative, it is 'informationally representative'. Within a given time frame, each of the first-time mothers in the care of these midwives had an equal chance of having their data included in the sample. I acknowledge that the total sample of 225 women was relatively small, but I felt that I had exhausted my attempts to encourage midwives to participate in the study.

The aim of the survey was not to test the 'truth' of the focus group findings, but to explore ways in which the things that were identified might be manifested in outcomes for the birthing women.

Summary

Dreher (1994) contends that the most important element in constructing a research design is the consistency of the method with the question. This section has traced the development of my research question into the design and implementation of this mixed method project. I have justified the choice of mixed methods as the most appropriate vehicle to explore in depth the phenomenon that is the first birth experience of women in Aotearoa/New Zealand.

The sequential process undertaken in the study enabled me to surface many aspects of the midwifery experience of providing labour support to women in both home and hospital settings. Using their wisdom and their stories to inform the design of my survey I was able to more incisively describe how their experiences translate into labour and birth events for the women in their care. In the following section I describe in detail the results of both the qualitative analysis of the focus group discussion and the statistical analysis of the survey data. The design flows naturally to the results. The imagery of the next section has been linked around the element of FIRE, because of the light shed on the findings of each part of the study, and the heat of internal debate as I wrangled with the meanings of the contextualised data.

FIRE



Findings from the Focus Group and the Survey

Fire bursts forth from the volcano, creating the landscape as the lava flows across the land. In a similar way the conversation of the midwives during the focus group mapped out a discursive landscape, describing how it is to practice midwifery in two different settings. Much ground was traversed, with four broad sets of ideas being explored, though these four ‘big ideas’ often overlapped or enveloped one another. These were midwives’ use of time, aspects relating to the safety/unsafety of the birthing environment, their use of space, and the ‘being’ and ‘doing’ of midwifery.

Mapping the Discursive Landscape: The Focus Group

This section presents my analysis of the focus group discussion of the midwives, beginning with my observations of how the group process unfolded, and going on to surface the ideas that the midwives had about their practice in different birth places. The names of the midwives have been changed to protect their identity.

The evolving group process described a microcosm of how some midwives ‘operate’ in the midwifery world; in their relationships with women and with other health professionals, and in their ‘ways of being’ with one another. During this ninety-minute conversation, these midwives told fourteen stories of birthing; told to illustrate an idea, or to explain a decision-making process, or to clarify meaning. Every birth a midwife attends adds to her store of experience and expands her wisdom. The telling of stories is integral to how midwives learn from one another and make sense of their experiences (McHugh, 2004). It was therefore unsurprising to hear so much story as the midwives explored ideas about practice in different settings.

As well as telling stories, the midwives co-constructed stories of their own, for example, during a discussion about the ‘role’ of the midwife within a family over time:

...the first time they really need you there because how else can they do it because you’re kind of the anchor... (Rachel)

You’re the affirmation. (Lydia)

...yeah, you’re the affirmation, you’re the only person that affirms that this process is good and wonderful and they can do it... ,and subsequent times they know they can do it, but they like to have you there because you’re ‘the one.’ (Rachel)

...because you’ll make the toast afterwards! (Lydia)

...and you were there last time so you might as well have the familiarity.(Prue)

...and for the fourth time you’re the family midwife... (Connie)

...yeah, and you’re... you’re a great friend really and I love the fact that these relationships with women can be so intense, but then at six weeks postnatally it kind of phth! ends, in a way, but never actually ends because they’re always held here, [indicates her heart] but you know I think you’re always held here too, for her. [again, indicating her heart] (Rachel)

The midwives all contributed to a story about the development of a midwife’s relationship with a woman over time, beginning with the midwife’s role as an “anchor” (suggesting something solid to hold onto in a tumult), moving through a real sense of caring for her (as Lydia refers to a previous comment about how she might rush off and make toast for a woman in hospital after the birth), to a familiar and significant role in the woman’s family and ultimately as a friend, where your shared experience in a sense binds you to one another, though you may not have an ongoing close relationship. The contribution of each midwife built a story about the value of continuity of care, and was also reflective of midwives’ collaborative efforts to gain understanding of events by pooling knowledge and experience.

Another notable aspect of the group process was several examples where the midwives posed questions of one another, seeking clarification, acknowledging a different point of view or consensus-building. These moments mirrored for me the way midwives assist women with informed decision-making by clarifying the woman's understanding, exploring alternatives and using midwifery knowledge and research to enhance the woman's (and her family's) understanding of the issues at hand.

The midwives, clearly comfortable in each other's company, were very open to expressing alternative points of view, and would assertively restate their position, or negotiate a shared understanding where possible. Watching this unfold made me reflect on how midwives manage their relationships with other health professionals, particularly their medical colleagues. Strong midwives will advocate for their women, stating their opinions, listening to other's opinions and, on many occasions, negotiating an acceptable plan which acknowledges not only the medical and midwifery input, but also the voice of the woman herself.

Whilst being robust and assured discussing their opinions, the midwives also consistently demonstrated inclusiveness and validation of each other's experiences. Their gentle probing to gain clarity or even restatement of their own view was always respectful and individual opinions were affirmed by the others. They slipped easily into the 'etheric' realm in their discussions, and an intuitive or spiritual dimension to their practice was acknowledged by all, especially as they were discussing how 'unseen' things pervade the atmosphere around the birthing woman which can influence how they practice.

Beginnings...

Our discussion began with each of the midwives briefly outlining whether they believed their practice was the same or different in each setting, and identifying one or two aspects of sameness or difference. Prue, Rachel and Connie readily admitted that they felt their practice was heavily influenced by setting, feeling variously constrained or set free by aspects of place. Lydia, on the other hand, felt that she practiced very much the same in hospital as she did at home. Over time, each midwife modified some aspects of their responses, with Prue, Rachel and Connie able to articulate some areas of 'sameness', and Lydia areas of 'difference'. Upon reflection, Lydia was the only midwife in the focus group who had moved

directly into self-employed community midwifery practice from graduation. Prue, Rachel and Connie had all been employed for some time in secondary and tertiary hospitals prior to beginning self-employed practice. Their socialisation as employed midwives may have contributed to their sense of practising ‘outside the protocols and guidelines’ in home settings, as well as their sense of a need to conform when working in the hospital setting.

In general, areas where they perceived differences in practice related to their use of time, the way they used space and the way the ambience of the spaces they inhabited affected their own feelings of well-being, and therefore the care they offered. The midwives spoke openly about a tension between what society believes constitutes safety/danger, and what midwives believe is safe/dangerous. It should be noted that this focus group took place at a time in New Zealand when midwifery care, and in particular midwifery care provided in home settings, was under intense (and very negative) media scrutiny. The sense of vulnerability spoken of might therefore be highly contextually driven, though the politics of the birthplace are well documented in the work of other scholars (Banks, 2000; Davis, 2006; Walsh, 2004). Lastly, the ‘being’ and ‘doing’ of midwifery were areas highlighted as being affected by the birth setting, as the midwives explored who does the “being with” the woman in each setting, and the roles that midwives play both as facilitators of a woman’s process, and as “do-ers”, when they offer or don’t offer birth interventions.

Time

Ideas about time were a binding thread weaving their way through the entire discussion. Time, according to the discussion, could be bought, juggled, wasted, “put on you”, and manipulated. Time had a different meaning in each context of care, as Connie described

Time is a nebulous thing at home whereas it’s a measured thing in hospital. (Connie)

The process of giving birth was seen as a timeless activity, with women needing to be allowed to do it in their own time. Prue spoke of how being at home or in hospital influenced her timing...

...how much time women get in labour...I’m much more aware of time in a big unit. (Prue)

Lydia nodded vigorously, and added

I think when you're at home nobody knows what you're doing and time is timeless. Once you step into the facility the clock starts ticking and whether anybody notices that at the time is open to debate, but they certainly could notice it later. (Lydia)

What Lydia meant here is that at home no-one is watching over you, so you are left to support the labouring woman using your own judgement about progress. If you are in hospital, (and particularly if there is an unexpected outcome), the time you have taken might be noticed and you may have to account for that. Rachel also picked up on this notion of accountability:

... and it is timeless...if you do have to consult at some stage you actually have to front up with what you've done for the last eight or ten hours... (Rachel)

The midwives agreed that the timeframes around 'acceptable progress' tended to be different, and so were mindful about timing the move to hospital for women planning to give birth there, so that the women did not get to hospital "too early", thus exposing themselves to the risk of interventions to speed up 'slow' labours. Connie suggested that she probably spent longer with women in labour at home, which prompted Lydia to disagree;

I think I would spend more time with the ones who are planning a hospital birth because they have that sense that they need to get to 'a place', and often they want to get there before you think they need to be there and so you spend more physical hours with someone who's planning a hospital birth. (Lydia)

to which Connie conceded

That's the thing, it's that when you're in hospital you have an unspoken kind of commitment to being there. (Connie)

Time was mentioned in a number of other contexts as well. This was sometimes temporal, in relation to documenting a woman's birthing journey, where again midwives felt constrained by being in hospital, where Connie was likely to

...write to the audit rather than to the client, so yes, I'd use different language at home...I'll have something in those notes every half hour if I'm in hospital and I'm in active labour.
(Connie)

Prue described how she would be more likely to record the events of the birth story at home by describing what was happening around the woman, and that this might include marking time by mentioning the natural environment

Well, I might write that the full moon's out, the moreporks have been doing something. I might just write what the sea's like...or the sun coming up rising on the roofs, or what the family is doing, whereas at the [hospital] it's not something I would ever write in someone's notes. (Prue)

The idea that time can be manipulated came up again and again, most often with respect to women giving birth in hospital. Davis (2006) discusses how midwives 'obstruct the obstetric gaze' by actions which seek to obscure the truth about what is happening, with the intention of protecting the woman from intervention or the midwife from censure. Prue described how when she is caring for women with previous caesarean sections, she has...

...learnt to fudge that a wee bit...so you say, you will be in there early and that's what we will be telling people... but it's really unsafe for you to be saying you're in really advanced labour because you often have the time put on you. (Prue)

The midwives believed that the 'allowance' of time leads to an increased likelihood of physiological birth, and the restriction of time leads to an increased likelihood of intervention. Medical scrutiny, which occurs in hospital regardless of whether the woman is considered "primary" or "secondary/tertiary" almost by virtue of the fact that her name appears on the office board, puts a kind of silent pressure on midwives to be reporting

‘adequate’ progress or run the risk of exposing the woman to intervention. Rachel described feeling freer to “sit in a grey area” at home. She put it this way;

I think I practice intuitively alot and when I’m at home I feel a freer range to do that, cause when I’m in hospital...if it’s veering off from “normal” then I’m less likely to allow it , or to sit there and watch that happen because of the pressures of conforming.
(Rachel)

Connie agreed that she was

...certainly very aware that at home I’m very comfortable with sitting around alot longer. But I’m also very aware that when you’re at home there’s a different timeframe for if progress is not being made, you may have to make a decision earlier than you would in hospital to assist this labour and sometimes in hospital you’re waiting a bit longer and the process progresses well, and sometimes you get to hospital with a transfer and you have the baby soon after and you think bugger, why did I transfer? (Connie)

Midwives juggle time in this way, having foresight when necessary, judging when to call the second midwife for a homebirth, and, as Connie has described, sometimes erring on the side of caution and later wishing you hadn’t!

So the ways in which time is ‘managed’ were identified as representing a difference in practice between home and hospital, with midwives generally agreeing that supporting a woman to give birth “in her own time” lead to improved outcomes with respect to the amount of intervention which occurred. The ‘silent pressure’ of scrutiny in hospital was said to lead to earlier consultation, and interventions to procure acceptable progress, for example artificial rupture of membranes. Time unfolding as an element in the documentation of women’s birthing journeys also surfaced a difference in practice, as midwives sometimes used different language to record the events of a birth at home than what they used in hospital. There was particular allusion to the natural environment and the activities of those supporting the woman in midwives’ homebirth notes, often absent in hospital clinical notes.

Who's Safety, and Who's Danger?

Another thread running through the discussion was the tension between what midwives see as contributing to a 'safe' birthing space, and what they believe society perceives makes a birth place safe. These midwives were all comfortable, and preferred, supporting birthing women at home, and felt that home is a very safe place to give birth in the right circumstances, as Connie suggests

At home you have eliminated all the abnormalities, you are only there if, healthy mother, healthy baby, and a woman who is really willing to be there... (Connie)

Connie had introduced the idea that the woman's desire to be at home was part of what makes being at home safe. Both Prue and Lydia affirmed this idea, but thought this also applied in hospital:

I feel like when a woman has chosen to birth there , sure enough that's her choice, and I will support her in her choice because I want her feel...I mean them choosing the safest place for them, to be themselves. (Lydia)

The positive thing about it is that no matter where they are is to make a safe environment for them that feels like home...it's their place, their cocoon. (Prue)

Rachel thought it important to point out to women what it is that they are choosing, because

She has chosen to birth in that [hospital] environment and therefore she is subject to the protocols and guidelines that go with that environment. (Rachel)

Rachel discussed how the protocols and guidelines influenced her practice in hospital, and sometimes resulted in different outcomes for her women, because if what she does is

...not 'okay' by the hospital protocols and guidelines then you're phtht, you go up in flames, so yeah, I definitely practice

differently, but I think that maybe what we have to do is make women more aware that there are differences so that they can make a choice with a view to that. (Rachel)

In Rachel's view, then, being in hospital could at times present an unsafe environment, because of the increased possibility of intervention which resulted from complying with policy. This notion of the hospital as an 'unsafe' space was echoed in the comments of all the midwives. In relation to discussing ideas about hospital being a safe place, Connie reflects that some parents think that if things "go wrong" it is easier for them to be "fixed" in hospital...

...regardless of the information you give them about how we can cause things to need to be fixed just by being in hospitals. (Connie)

...and do they truly believe that hospital is the safest place for them, even when you wave that new research in front of their faces which says it's totally not. (Lydia)

That whole environment (at home) I don't feel that they're so unsafe there because of, just the feeling around them, and because of the bugs, you know the big tertiary institutions have a lot of, yeah, those kinds of bugs...I'm quite reluctant about baths in big places, whereas at home I feel they are quite safe there, in a physical sense. (Prue)

So for the midwives a number of different elements combine to create a safe birthing environment; the woman's own sense of what feels safest, the presence or absence of protocols and guidelines, the attitudes of those present with the woman, and the physical space the woman inhabits in terms of potential pathogens.

Society, on the other hand, was seen by the midwives as having a different set of ideas about what creates safety, and what constitutes danger, and birthing women as members of society are sometimes constrained in their choices by the influence of these ideas about safety. The midwives sometimes advised women choosing to give birth at home to tell only those people

who are supportive of that choice, because they felt that the ‘negative energy’ of unsupportive comments only served to erode women’s confidence in their choice.

... but the number of women I’ve had who are going to have a homebirth, primips, who don’t actually tell a lot of people because well it worries other people... (Rachel)

Yes, it worries the others, I just say to everyone, look, you’re booked into hospital because I will book all first-timers, I say “don’t tell them, it’s your birth”. (Connie)

...they’ll meet up with women who are totally opposed in their spectrum of how they see birth, and they’ll often get quite undermined or unsettled because of this view of what safety is. (Prue)

Prue also wondered whether there was a space in which it was considered that poor outcomes were allowed to occur:

It’s a social norm for them to be in hospital, that it’s the safest place to be...I’ve tossed up in my mind whether it’s that if something happens at home then they don’t have to cleanse it, or if something happens at home then you don’t have the whole community saying “you should have been at the [hospital],” not saying that it wouldn’t have happened but that that’s the place where those kinds of things happen, but not the home. It’s that very strong community connection that we’re still not happy with birth and death at home. (Prue)

So despite evidence to the contrary, the wider community (including the medical community) believes that hospital is the safest place to give birth for all women. These midwives, on the other hand, believe that neither home nor hospital are intrinsically safe or unsafe, and that decisions around place of birth are best made on the basis of individual preference, individual physical and emotional suitability, and the fusion of skills and knowledge brought to the labour by both the woman and the midwife. These midwives described a preference for

supporting women giving birth at home, and articulated a sense that hospital could in fact represent a place of danger to women. The ‘danger’ posed is that midwives’ practice can be influenced by the unit policies, which can lead to increased intervention. This is in direct contrast to society’s view that hospital represents the safest setting for birth.

Further to these ideas about birth settings as physical places being safe/unsafe, the midwives went on to explore their own sense of emotional safety/ vulnerability. In the same way that the midwives sought to ‘protect’ the labouring woman, they also discussed how they were mindful of ‘being seen to be good’, therefore of ‘protecting’ themselves.

...mmm, the influence of what people think you’re doing and so, if you’re portraying the “right” image, plus keeping it in mind, the woman’s need to be allowed to do something that’s timeless, and that she does in her own time. (Prue)

Prue was referring to the balancing act that midwives perform, in endeavouring to ‘keep it safe’ for the woman and her baby (i.e. by avoiding, or sometimes by procuring, intervention) and keeping oneself ‘safe’ in a professional sense. This lead me to wonder whether midwives are more likely to refer women in labour for consultation in a birth setting where they feel they are under scrutiny, as they wrestle with ‘doing the right thing’ from an obstetric point of view, and ‘doing the right thing’ from the woman’s point of view, when sometimes these two schemas do not coalesce comfortably.

Connie felt that her practice was influenced by exposure to the vulnerability of other midwives,

Purely through having read so many notes of people in front of a disciplinary investigation and our documentation is what pulls us down because she can’t validate that she did or said those things. So I write alot about the comments I’m making. So yes, I am different. (Connie)

This comment prompted Prue to reflect that although she believed that midwives need to be very responsible for their actions, it also led her to wonder whether “all this documentation” actually lead to a better outcome for women,

It looks good when you're up in front of a disciplinary council but, you know, maybe that's why you're there, too much documentation... (Prue)

to which there were great peals of laughter as the midwives imagined themselves so busy with writing the notes they neglected to be with the woman. She went on to ask

What are we doing here? Who are we working for? (Prue)

Rachel countered

I love the fact that we are accountable. I love being accountable and I don't shirk that or shrink from that at all. I am really happy to stand up and be counted. (Rachel)

This exchange reflected the interwoven strands created by balancing the expectations of the midwives (to provide woman-centred care), the women (to have a midwife who will 'be with' and provide safe care) and society (to accountability and professionalism). Perhaps the midwives' pride in their autonomy, as expressed by Rachel, allows them to feel more confident in their decision-making at home. In hospital where midwives may feel their autonomy is eroded by the scrutiny of medicine, perhaps this leads to earlier consultation and thus to increased intervention. Lydia mused about the idea that midwives in a sense 'walk the plank' in their decisions about what they are prepared to support, especially when it came to unorthodox practice such as supporting a woman to attempt a vaginal breech birth in hospital, or a vaginal birth after caesarean at home:

...is it that it's fine to go way out there if it's the woman leading the way but it's not fine to go way out there with a woman if it's you who's taking her there? (Lydia)

In some respects, then, what is 'safe' and what is 'unsafe' can be seen to be in the eye of the beholder. These midwives feel safe supporting women giving birth at home, but think that the hospital can represent a place of danger, because the protocols which can dictate their practice there can lead to increased obstetric intervention for the woman and her baby. Some

women feel safe to give birth at home, but they may feel unsafe about telling others of their plan to do so. Some women feel hospital is the safest place to give birth, and this is strongly culturally sanctioned by society as a whole.

Ideas about time and safety seem inextricably linked. These midwives endeavour to 'keep it safe' for the woman, by 'allowing' time and attempting to avoid unnecessary interventions. They feel more able to do this at home, and say that in hospital they feel pressure to conform to protocols, which can lead to more referrals, and ultimately more intervention. 'Restricting' time, by adhering to obstetric expectations about what constitutes acceptable progress in labour, can lead to increased intervention and, in the midwives' eyes, less safety for the woman and her baby.

Midwives' Use of Space

Ideas about keeping the woman at the centre of the birth experience in either setting was reflected in the comments made by the midwives in the focus group. They discussed how they made changes to the physical environment more often in hospital than at home, in order to make the hospital feel less intimidating.

I come into the birthing room, and I set it up how I want it, I make it the kind of space I would like to be in, and then the woman brings her things and makes it the kind of space she wants to be in and we're sort of in a little island there. (Lydia)

Lydia described how both she and the woman contribute to creating an environment of comfort, a place where both of them feel comfortable, as if on a "little island". This space of their own making allows each of them to do their own thing free from distraction or interference.

Whose space it is, is an uncontested thing at home. It is clearly the woman's space, and the midwife is invited into this space to support the woman and her family. In hospital it seems it is less clear cut. Lydia again, speaking about being in hospital

Well, this is my environment now, and how do I have this be as welcoming as it can be for someone coming into this strange environment. [Even if] you've shown them the space, still for them, they perceive it as coming into your space. I don't perceive it as my space, but I think that's how they see it. (Lydia)

Rachel thought there were differences in how she insinuated herself in each place, and placed value on being able to 'give the woman space'

I think it's more intense in hospital because it's one room and you're all in there...you know at home...you can wander outside, and you don't have to actually be with...you know actually be in the room with the woman. Giving them space is lovely, but in hospital it's different cause it's not their space, well it is but it's adopted. (Rachel)

Rachel's use of the word "adopted" to describe the hospital space is an interesting choice, suggesting it is a space that is 'taken on', not naturally belonging to the woman but chosen for a purpose.

For Lydia it was important to be able to set the scene, but she identified that she would do this similarly if she was at home or in hospital

A priority for me is to set the scene. If I'm going to hospital I'll put the bath on...review the notes...make sure we've got fluids, what have you...make sure I've got everything I need, but then I think, if I'm going to a homebirth I'm stirring up the water in the birthpool...I bring my equipment...review the notes, I do the same sort of preparatory things. I choose myself an unobtrusive little corner and set up all my stuff. I don't want it to be in her eyesight, I don't want her focussing on the oxygen cylinder...I want it all out of the way, but handy. Just the same as in hospital I guess. (Lydia)

One aspect of the birthing space which all the midwives agreed was different at home and in hospital was the physical and emotional effect the birth setting had on them. They all felt more able to physically relax at home, and felt that the hospital did not enable them to relax, for a number of reasons:

I was busier and tired after the one in hospital than I was after the one at home...it's the concrete floors...you skip out of a homebirth and you plod out of a hospital birth. (Connie)

It's that whole thing of being influenced by the environment like sometimes you'll leave the hospital and you're feeling knackered and drained, but I can put that down to things like the concrete floor, air conditioning...and having to work in a more subversive way...and yet sometimes I'll leave a homebirth feeling exhausted as well because I know that emotionally I've been at my limit to support someone to do something...so sometimes I leave different environments feeling exhausted for different reasons. (Lydia)

The contributors to a lack of physical comfort in hospital were to do with the built environment and the facilities and equipment contained therein, whereas the contributors to a lack of emotional comfort were to do with less tangible things, the scrutiny of others, or the ambience of the environment:

...it's a sick building, you know, my nose is often quite itchy. (Prue)

At home there's couches, and there's no computer! There's less paperwork. We are affected by attitudes and environments, feelings that pervade everywhere. I think that really just explains a lot about how we work in a hospital and how we work in a home situation and the differences because we are just affected by unseen things a lot, or just unstated things. (Rachel)

The following exchange summed it up nicely

I would have to say I think I fiddle a lot more in hospital...

(Connie)

Fiddle? (Rachel)

Do things, shuffle papers, at home I lie around alot, I lean over the birthpool, I lean against the door jamb and just watch, and go and make another cup of coffee whereas in hospital I don't allow myself that physical relaxation. Mentally I'm much the same...

(Connie)

But I don't think you can be mentally the same... (Rachel)

...well, mental alertness I'm the same but no, I'm looking for things to do because, yeah, I'm agitated by being in hospital.

(Connie)

How stressful is that! (Rachel)

Connie has suggested she has a greater need to be 'doing' things when she is practicing in a hospital setting, in part because she feels "agitated". Rachel identifies that this is a stressful situation to be in, and perhaps this begs the question, do midwives offer different care in hospital, perhaps even to the extent of offering interventions, because they find the atmosphere more stressful personally?

The midwives felt that they were cared for at home by the families of the women they attended. Since the midwife/woman relationship is one of partnership, at home these midwives identified a sense of 'reciprocity of caring' more than in hospital, with the woman's family ensuring at home that their midwife was comfortable, fed and watered. In hospital it was more likely that the family would go off to have lunch, but the midwife was usually left to fend for herself and provide her own sustenance.

At home, then, the birth space is mostly constructed by the woman and her family, with the midwife bringing some additional equipment but not really modifying the space. In hospital, the midwife is more likely to arrange the space prior to the woman's arrival, in an effort to

make it less 'alien' to the woman, and to enhance the woman's feeling of emotional safety. Midwives 'give women space', by absenting themselves from the room, but are more likely to do this at home than in hospital. At home the woman is freer to 'control' the space she inhabits because she has a whole house to wander in, whereas at hospital the woman is confined to one room. These midwives described feeling more able to relax in a home setting, where they were able to share the facilities of the home, and were cared for by the woman's family. In contrast, in hospital the midwives felt less able to relax because of the lack of facilities for relaxation, and because the atmosphere pervading the environment sometimes left them feeling physically unwell or psychologically agitated.

The 'Being' and 'Doing' of Midwifery

The last section of outcomes from the focus group discussion centres more directly on the questions posed throughout the discussion by myself, the researcher, and relate to whether or not the midwives could articulate 'sameness' and difference of their practice in some more specific areas.

Firstly, I asked the midwives about what they did in the first half hour that they were with the woman in labour, once the woman had requested their continuous attendance. I was eager to explore whether anything different occurred according to whether the woman was giving birth at home or in hospital. Three of the midwives believed that they did nothing different in either setting, and were able to describe what it was they did do.

The first half hour

The first half hour was a period variously described as "settling in" and "casing the joint". What the midwives meant by these terms was a sense that they did certain things to settle themselves in at home, or to settle both themselves, and the woman and her family into a hospital setting. Additional to settling in was the idea that midwives 'cased the joint', using all their senses to assess the situation. This assessment comprised not only trying to understand where the woman was 'at' with her labour, but also noting the tone and feel of the surroundings, which included the physical environment and also the nature of the relationships of all the people involved in the birthing woman's space.

In terms of actual physical assessment of the woman, the midwives felt that they would listen to the baby's heartbeat in that first half hour, but that other than this they did little. Pressed to consider that when they appeared to be doing nothing, what was it they were *actually* doing, they were able to articulate that they used 'sense' and their ears, eyes, noses and hands to make judgements about what was happening for the woman:

Often I'll just sit and chat, so that I can get a sense of what her contractions mean to her...I'll probably listen to the baby's heartbeat...but in that first half hour I don't want to be very invasive at all. Just sit down and watch. And listen. (Connie)

You can smell when a woman's ten centimetres. (Prue)

I do a lot of listening, I really can hear where she's at more than seeing where she's at...usually I will come in and I will say hello and I will just touch her, so that even if she's really focussed on what she's doing she knows that it's me that's there. I'll get a feel for her contractions, listen to the baby. All the textbooks say we should do the maternal baselines, that's temp, pulse, BP. You know if I'd had concerns about someone's blood pressure, or concerned about infection I would. (Lydia)

This is an important distinction Lydia has made. We attend births with an assumption of normality, and unless we had a concern we would not necessarily 'do the maternal baselines' as a first off thing. This again reflects that with continuity of care, midwives know the women and their health histories well enough to tailor their care accordingly, and to not apply interventions across the board.

I don't do terribly much at all, I'll just find out what's on the pad, and I'll take the woman's pulse, that's the touch, and often the smell around. I think you become quite sensitive...it's using all those kinds of senses, of what the woman's doing, family, what they're like, whether they're really apprehensive, doing lots of walking and pacing and in-and-out or whether they're calm and settled. It would be very much going by gut feeling. (Prue)

When you walk into somebody's home you have to do that whole kind of, being in someone else's house...that adjusting to each other, doing that dance around each other, so you don't do a lot.
(Rachel)

Prue did however concede that for her

The baseline things would be different if I took a woman directly to [the tertiary hospital], I would be palpating, I would do a vaginal examination, I would do the whole works. (Prue)

Connie spends the first half hour

Getting a baseline of where she's at, getting an intuitive feeling of how she's coping with herself, getting a feeling of what stage of labour she's at..." but went on to say "I mean if I get there and she's pushing I'm certainly setting up my equipment rather than sitting around admiring her at her work!" (Connie)

None of the midwives thought that the administrative requirements of the institution took precedence over the 'settling in' and 'casing the joint' aspects of their care in the first half hour. Prue even ventured to suggest that the woman might "get admitted" at the same time as the baby, which could be some time after her arrival at the hospital. For Rachel, Connie and Lydia, their care in the first half hour of continuous attendance of the woman in labour was the same in each birth setting. Prue felt that she would do more and different things in hospital than she would at home.

The essence of midwifery: 'Being with'

Alongside the notion of 'being with' the woman in labour, Connie, Rachel, Lydia and Prue all felt that their roles with women and their families were subtly different at home and in hospital. As I have previously mentioned, the midwife's role within a family evolves over time, but more particularly the midwives felt themselves to be more in the background at home, and more in the foreground in hospital.

At home...the women are much better for me to come and go, they don't mind me coming and going, they don't always feel like they need me there all the time...it's a family happening and the family are the ones that will support the woman in early labour...they are the ones that are going to support her and care for her, and I'll be there to support them and help them. (Prue)

Just thinking about homebirth...I'm alot less involved sometimes in a homebirth...I'll help people fulfil a role if they're looking awkward, pacify grandmother, give a partner permission to cope with a tumultuous labour or a woman making more noise than they might have anticipated, so often you're not really looking after the woman...you are looking after the family who are looking after the woman, you are the second bubble around this bubble. (Connie)

Thus Connie and Prue consider their roles as being peripheral in an almost geographical sense when they are supporting a woman to birth at home. They place themselves around the edge of the birthing family. In contrast, in a hospital setting, Lydia and Prue use a different set of ideas to portray the centrality of the midwife to the birthing process:

I think it's a different atmosphere that you have to create and I always think of myself as a movie director, really. (Prue)

I think of myself as the conductor...of the orchestra. (Lydia)

This exchange was in the context of how midwives influence the environment in hospital, directing and orchestrating the scene by manipulating the physical space or facilitating the presence of other personnel by requesting consultations for pain relief or obstetric assistance. It would seem that at home the woman and her family are more in control of the experience, and in hospital the midwife takes the role of 'controller'. Perhaps this reflects a subtle shift in the 'ownership' of the birthing space.

Who does the 'being with' is possibly different in each setting. Connie suggested that in hospital people tend to bring less support people with them, and so the midwife assumes more of the physically supportive aspects of the woman's care, for example doing more

acupressure and massage than she might at home. Rachel described a hospital scene obviously familiar to the others where...

They're all sitting around, waiting, watching this poor person...

(Rachel)

...going "hurry up and get on with it, we're all bored"...

(Connie)

...sitting in chairs, waiting for something to happen. (Prue)

Lydia suggested that she often lead by example, as a subtle way of directing the behaviour of support people, by speaking softly, not speaking during contractions, 'bringing down' the tension in the room. The midwives felt that support people in hospital may feel constrained in their efforts to support the woman, perhaps because the environment is unfamiliar to them also and they are unsure of what is expected of them, whereas at home they feel freer to support the woman in their own way.

The midwives used a number of expressions to describe the roles they played in their women's birthing journeys. These included being a facilitator, an advocate, a movie director or orchestra conductor, an educator, a journaller or narrator of the story, an anchor, 'family' member, and friend. The "second bubble around the bubble" around the birthing woman. All these ideas are implicitly about 'being with' the woman, and are the essence of midwifery care.

Assisting women with pain in labour

I asked the midwives about whether they felt they offered the same care and advice to women about the management of labour pain at home and in hospital. They generally felt that they didn't do or say anything different, and none of them actually offered their women pharmacological pain relief, but would comply with a request made by the woman.

I offer similar support mechanisms for coping with labour at home and in hospital. I never offer anything other than hot water, baths. The client must initiate that conversation, her partner and her mother are not allowed to initiate it, and we'd

have a long discussion about this at thirty-seven weeks when we consolidate the birth plan. (Connie)

Lydia and Rachel both also said they didn't do anything different with respect to pain help in either setting. Rachel surmised that her expectation of assisting a woman to birth medication-free was the same, but thought that maybe

...the expectation of the woman is different. Those women have chosen to birth in hospital. They have chosen to birth there because they suspect, or because they want pain relief. (Rachel)

Lydia thought that the women choosing to give birth in hospital could fall into two groups; those who articulate clearly antenatally that they don't know how they will cope and think they may need pain relief, and those who say that they want to give birth there because of other things on offer (endless hot water, towels, pads, someone else cleaning up). She wondered whether those in the second group may on some subconscious level be thinking

...maybe I can't do this, and maybe I will need some pain relief in which case maybe I'm better off there... (Lydia)

even though their stated reason for choosing hospital is for the use of the facilities. The midwives agreed that offering medication for pain management sent a message to the woman that in some way she was not coping, and for this reason avoided doing so. The midwives prided themselves on assisting women to drug-free, normal birth, but also articulated that upon a clear request from the woman, they would not decline to give the woman pain-relieving medications.

It's not my birth...I don't own the experience and I want her to love her child and love herself afterwards so if having an epidural will enhance her feeling towards that birth and towards that baby, then I think I'm a little bit morally wrong to say no. (Connie)

Prue felt that she had developed her practice over the last couple of years to shift away from focussing on the actual contractions, instead focussing on the time between the contractions

as a pain management technique, encouraging resting and sleeping, and providing really solid emotional support. She found she had very good outcomes with this approach.

One thing was clear; the midwives believed that easy access to pain relief can jeopardise the achievement of normal birth:

The unfortunate thing is that it's on tap...to me it's the availability of resources in hospital that you don't have at home which interfere with the normality of a physiological birth. (Connie)

It is obvious to state that at home women have no pain management options other than massage, acupressure, acupuncture and water immersion. These are also available to women in hospital, in addition to pharmacological options such as Entonox, Pethidine and epidural anaesthesia. The midwives felt that women in hospital tend to use the latter options because they are there, and that at home, because drugs aren't an option, women just 'get on with it' more. In both settings, then, the women are using what's around them, but what is around them is different in each place.

What midwives 'do' : A look at interventions

Lastly, I invited the midwives to explore whether they believed they provided the same care to women in labour with respect to the interventions they offered. As previously described, Connie felt she did more "fiddling" in hospital, and she compared the experiences of two first-time mothers who had given birth in the preceding week, one at home and one in hospital:

They both had two internal examinations, one had gas cause she was in hospital and she had Pethidine cause she was in hospital, the other one had a lovely waterbirth, the (first) one had all the water but then she changed, I did alot more acupressure on the one in hospital. I was busier and tireder after the one in hospital than I was after the one at home. (Connie)

Discussion ensued about the scenario of a prolonged first stage of labour. Connie talked about where progress isn't being made and there is a history of a long slow labour, she might advise against using Entonox in favour of an epidural at that stage. Asked whether if she was at home, she would suggest a transfer for epidural, she thought not:

No, I would suggest that she goes and has a good sleep, or has a snooze in the bath, or goes for a walk around the (local park) and come back. I often try and suss out why labour is slow... (Connie)

This illustrates how a different set of decisions might be taken according to the context. There are a number of reasons why a sleep or a bath might not be offered in hospital; a lack of facilities, or a lack of bedspace, or a need to conform to a management protocol. It might be that the midwife feels pressure to 'do' something to expedite the birth, for example perform an ARM or begin syntocinon augmentation, because of the ever-present ticking of the clock on the wall.

Rachel similarly described a situation where she was with a woman in hospital who came in "too early" (i.e. she was not in established labour). Because it was two in the morning, and the woman was reluctant to return home, Rachel performed an ARM, and found herself hours later having to augment the woman's labour which had failed to establish despite her earlier intervention. At home Rachel would have suggested the woman rest, and call her back later when labour was more established.

Lydia felt that if she is supporting a woman at home, because she feels "invested in being there" and is "really wanting it to pan out" she thinks she's a little more alert to progress...

...because the buck stops with me, there's nobody outside the door that's going to help me. So I think I would pull all the tricks out of my bag at home, homeopathics or stick in some acupuncture needles if I felt we'd hit a hiccup. (Lydia)

It seems midwives may utilise a wider range of skills ("tricks") when supporting women at home, in an effort to ensure that the planned and actual place of birth are congruent.

Memories of birth appear to be easily conjured from homebirths, at least for Prue and Connie.

I was sitting in the computer lab and I looked at this person and thought gosh, your face is familiar and she said “You’re Connie” and I said “Yes, and you’re...don’t tell me, [suburb name], kneeling by the bed, homebirth, pink bedspread...”
(Connie)

...mmm...I think there are far more stories out there in the community from my homebirths, especially driving around [street name]...the burning birthpool and water flowing everywhere, and the smell of yeast. (Prue)

For Lydia hospital births were just as memorable

No, every time I walk into the birthing unit [at the tertiary hospital] I remember all the babies that have been born in that bath, I do, I remember the last time I was there, and who was born in that bath, and you know, if someone is choosing to come back there again we’ll go into the same room where so-and-so was born... (Lydia)

Memories for the midwife seem to be about the ‘being with’ rather than the ‘doing to’ which may explain why the midwives had relatively little to say about the interventions they offered in each birth setting. Connie was clear that she might offer different interventions in hospital because of the availability of medications. Rachel might intervene to ‘produce’ progress. Lydia might intervene to keep a homebirth ‘on track’ so as to avoid an unnecessary transfer. Prue might “do the works” on admission to hospital to “be seen as an on-to-it practitioner”. This all suggests that there is a layer of complexity around supporting women to give birth in hospital, which does not feature in the midwives’ accounts of supporting women giving birth at home.

Summary

In this section I have presented the findings from the focus group phase of the study. The focus group was chosen as the method of data gathering because I wanted to investigate the ideas and attitudes of the midwives in relation to the research question. Specifically, they discussed how they perceived their midwifery practice was influenced by the birth setting the woman chose, and they assisted me to refine the proposed survey to better reflect the subject matter of their discussion and some different outcomes they wanted to explore which I had not previously identified.

Analysis of the data revealed that all the midwives participating in the focus group were able to identify areas of their practice in different birth settings which were the same and different. The areas of 'sameness' were not consistent across all four midwives, and neither were areas of difference. This lack of consistency is not problematic; it merely illustrates that individual midwives are influenced by different things in different settings.

Areas of difference identified included the ways in which time is managed in each setting, with a general sense that women giving birth at home are "allowed" more time, and that this ultimately results in less obstetric intervention, and therefore more physiological birth. The "restriction" of time which tends to be a feature of hospital birth was thought to lead to more intervention and therefore less physiological birth. The midwives felt they spent more time physically present in labour with women who chose to give birth in hospital, and that women who chose to give birth at home may have more support people present with them which may account for this. The documentation of the woman's labour, which is also all about time, was another area identified where differences could be found with respect to the language used, and the potential 'audience' in mind (the woman and her family, other health professionals, disciplinary bodies).

The practice of these midwives was modified by the presence of protocols and guidelines in the hospital setting. This was seen as contributing to differences in outcomes for women, with a feeling that medical scrutiny could lead to more consultation and more intervention as a result. Access to pharmacological methods of pain management was thought to contribute to an increase in obstetric interventions as women in hospital availed themselves of their use,

though in fact the midwives' practice in relation to the use of pain relief did not differ according to the birth setting.

The midwives engage in 'protective' behaviours in both birth settings. They do not suggest that women planning hospital births keep their plans to themselves, but may do so for women planning home births. In hospital they may "fudge" their explanations of progress in order to keep it safe for the woman by 'buying' time for the labour process to unfold without interference. The midwives were more influential in the creation of the birthing space in hospital than at home, modifying the hospital room to make it more comfortable for both the woman and the midwife. At home the space is of the woman's making and needs no modification.

These midwife participants sometimes used different interventions to manage similar situations at home and in hospital. In each case described, the management in hospital included the 'doing' of things (e.g. artificial rupture of membranes, augmentation of labour, administration of epidural) as opposed to the 'not doing' of things at home; settling the woman down for a sleep or putting her in the bath to rest. Different interventions at home might also include more use of homeopathy or acupuncture to obviate the need for obstetric interventions which necessitate a transfer to hospital.

At home the midwives felt more peripheral to the woman's process than in hospital, they saw themselves more as assisting the woman's family to care for her, than caring for her so directly themselves. In hospital the midwives felt more central to the process, partly because the unfamiliar place could be unsettling for the woman's support people, but also partly because of the need to manage the hospital interface. Paradoxically, the midwives felt less able to leave the woman in hospital, although they might more often be required to in order to facilitate consultation and referral processes.

"Sameness" of practice related to how the midwives spent the first half hour once continuously present with the labouring woman, with most of the midwives agreeing that they did little beyond "getting a feel" for the woman's labour, and listening to the baby's heartbeat, regardless of the birth setting. In relation to assisting women with pain management in labour, the midwives were all proud of their ability to 'get them through' without medication. None routinely offered pain medications in labour, but all would comply with a request from the woman.

The conversations of these four midwives reflected snapshot views of how they perceived their practice was influenced by the birth setting. Analysis revealed a rich source of contextualised data. The group interaction produced tangents of very relevant enquiry I had not anticipated, which vindicated my choice of conducting a focus group over individual interviews. The discussion enabled me to surface some examples where practice is different, and the same, and thus to pose questions of the labour and birth event data that was to follow in the form of the survey in the second phase of the research project. In particular it would be possible to see if midwives really did ‘allow’ time, if they did make different use of the birth space, if more or less interventions occurred in either setting, or if different interventions occurred in either setting. I could discover if midwives spent longer with women in hospital, if more support people were present at home, if ‘safety’ was compromised by birth setting. Phase two could provide an important corroborative picture, to add depth to the focus group findings, or indeed to refute them. Having looked at some of the ‘meanings’ the midwives attached to the exploration of their practice when providing intrapartum care to women at home and in hospital, in the next section I will use the survey data to shed some light on the ‘numbers’ part of the story.



Findings from the Survey

This section sheds light on the maternity outcomes of the midwives who completed the survey. It represents quite a change of pace from the textual voice of the previous sections, to the sharp lines of numbers and tables. The image of the prism expresses how the light becomes more narrowly focussed – a rainbow condensed into a ray of white light, as the meandering of the qualitative voice focuses to illuminate the quantitative outcomes.

The results in this section are reported fairly ‘purely’. On some occasions, however, in another departure from orthodoxy, I have included some comment to highlight a point of difference. The reason I have chosen to do this is to draw attention to some aspects of outcomes which I do not intend to return to in the discussion (AIR) section of the work. These outcomes are important to note, but do not in themselves contribute to the conceptual triangulation which occurs in the interpretative stage of the thesis.

Survey forms were completed and returned from 13 of the 18 survey packs I had distributed. This represents a return rate of 72.2 per cent. One of the returned surveys had not been completed. A note was included to say that the respondent had no first-time mothers among her homebirth clients and so had decided not to complete the survey. There appears to be no clear consensus of what an acceptable response rate for surveys is (Wagstaff, 2006). Ashworth (2001) suggests that for a postal survey a return rate of 70% is traditionally considered good. The return rate for this survey is thus acceptable.

The Sample of Midwives

The 12 midwives who contributed data represent a range of educational backgrounds, and are an experienced group of midwives, with length of practice ranging from six to over 26 years (Table 2). Three midwives had extensive hospital-based experience prior to beginning caseloading practice, but five had no hospital-based practice at all. The percentages for

caseloads do not add up to 100% because some of the midwives indicated that they worked in a primary care facility as well as at home, and in secondary/tertiary settings. Because this study compared only home and secondary/tertiary settings the midwives did not include their primary care facility statistics.

Table 2. The demographic and practice characteristics of the midwives

Variable	Value	No (%) n=12	
Type of midwifery registration	RGON/RM	4	(33.0)
	RCompN/RM	2	(17.0)
	BMid/RM	4	(33.0)
	ADN/RM	2	(17.0)
Number of years registered as a midwife	0-5	0	(0.0)
	6-10	2	(17.0)
	11-15	1	(8.0)
	16-20	5	(42.0)
	21-25	0	(0.0)
	Over 25	4	(33.0)
Practice Area	Rural	2	(17.0)
	Urban	2	(17.0)
	Mixed rural/urban	8	(66.0)
	Mean (SD)	Median	Range
Years of hospital-based midwifery practice	4.42 (6.39)	1.5	0 - 20 years
Years of community-based practice	11.75 (4.67)	12.0	5 - 17 years
Percentage of caseload homebirth	34.17 (23.23)	32.5	1% - 66%
Percentage of caseload hospital birth	50.00 (22.30)	50.0	13% - 90%

The Sample of Women Attended by the Midwives

Midwives provided outcome data for 228 women in total, 109 in the planned homebirth group, and 119 in the planned hospital birth group. Each midwife's sample contained roughly equal numbers of home and hospital women. Three cases in the hospital sample were excluded because the midwife had indicated they were inductions of labour. This left a total sample of 225 women. All the women were expecting their first baby, and all went into spontaneous labour after 36 weeks. The women (with one exception) all expected a singleton, cephalic baby. This woman was awaiting elective caesarean section for a breech-presenting baby, but she laboured spontaneously and rapidly whilst the anaesthetist was busy, and had a spontaneous breech birth. Outcomes are reported mostly in the form of comparative tables: where a statistically significant difference has been found, this has been noted in the significance column. In the presentation of tables, unless otherwise stated only the numbers for Yes responses are reported.

Age

The age range of the women was only available in 186 (82.7%) of the cases. The homebirth group had 19 cases of missing age data and the hospital group had 20 cases missing. The age range within the home birth sample (n=90) was from 18 years to 40 years, with the mean age at first birth being $29.70 \pm \text{SD } 5.37$ years. In the hospital group (n=96) the range was from 16 years to 38 years, with the mean age being $27.04 \pm \text{SD } 6.29$ years. Because of the level of missing data, no tests of significance have been applied.

Ethnicity

Most of the women in each group were pakeha. Although there appears to be a difference between the groups in the number of women identified as being pakeha or Maori, it was not possible to apply any statistical tests to establish whether this was significant, given that there were 10 cases missing in the hospital group (Table 3).

Table 3. Ethnicity of home and hospital groups

Ethnicity	Home n=109 (100%)	Hospital n=116 (100%)
Pakeha	85 (77.9)	71 (61.2)
Maori	9 (8.3)	18 (15.5)
Pacific Islander	4 (3.7)	5 (4.3)
Other	11 (10.1)	12 (10.3)
Missing	0 (0.0)	10 (8.6)

Before Labour Begins

Prior to the onset of established labour, a number of women in each group chose to use complementary therapies, or other labour-promoting activities (Table 4). While significantly more women in the home group made use of acupuncture treatments and homeopathic remedies, the numbers experiencing a membrane sweep were much the same in both groups. Significantly more women in the hospital group used no complementary therapies prior to the onset of labour. In the total sample, 52% (n=118) used no therapies, 32% (n=72) used one therapy, 15% (n=34) used a combination of two therapies and one person used all three therapies.

Table 4. Pre-labour activities, home and hospital groups

	Home n=109 (100%)	Hospital n=116 (100%)	Significance
No complementary therapy	48 (44.0)	70 (60.3)	$\chi^2=5.356$, df=1, p = 0.021
Acupuncture	52 (47.7)	37 (31.9)	$\chi^2=5.232$, df=1, p = 0.022
Homeopathy	18 (16.5)	0 (0.0)	$\chi^2=18.638$, df=1, p =0.0001
Membrane sweep	15 (13.8)	19 (16.5)	$\chi^2=0.151$, df=1, p =0.697

The gestation at the onset of labour was similar in both groups. At home, the range was 36 weeks to 42 weeks 1 day, mean 280 days (40 weeks \pm SD 8.8 days), and in hospital the range was 36 weeks to 42 weeks 3 days, the mean being 281 days (40 weeks 1 day \pm SD 9.2 days).

The mean gestation period was found to differ whether women had or had not used complementary therapies. T-test revealed a significant difference ($t = -5.934$, $p = 0.0001$) in the mean gestation at the onset of labour in the women who did not use prelabour complementary therapies (278 \pm SD 9.05 days) compared to those who did use complementary therapies (284 \pm SD 7.64 days). Despite the statistical significance of this finding, it is clinically of no concern, because women commonly only begin to engage in the use of labour-promoting activities once they have gone beyond their calculated due date. It is thus unsurprising that the mean gestation when therapies are being used is later than for when they are not.

Visits at home in early labour

About half the women in each group requested and received one or more visits to their home, prior to the need for continuous presence of their midwife once labour was well established. Overall, the number of early labour visits between groups was not significantly different ($z = -1.337$, $p = 0.181$). The home group had a median of 0 and the hospital group had a median of 1. However, as Table 5 shows, there were some differences observed in the number of visits, with more women in the home group receiving no visits, or three visits, and more in the hospital group receiving one visit.

Table 5. Early labour visits, home and hospital groups

Early labour visits		Home n=109 (100%)	Hospital n=116 (100%)	Significance
Early labour visit	Yes	52 (47.7)	70 (60.3)	$\chi^2=3.616$, df=1, $p=0.062$
Number of visits	0	57 (52.3)	46 (39.7)	
	1	37 (33.9)	57 (49.1)	
	2	10 (9.2)	11 (9.5)	
	3	5 (4.6)	2 (1.7)	

Once Labour is Established

The mean length of first stage of labour for the home group (n=108) was 7 hours 57 minutes \pm SD 4.82 hours (range 1 hr 25 minutes to 24 hrs 40 minutes), compared with 9 hours 5 minutes \pm SD 5.72 hours (range 1 hr 20 minutes to 28 hours) for the hospital group (n=111). This difference was not statistically significant (t=-1.74, p=0.083). Missing data is accounted for by the six women who did not reach full dilatation and thus their total length of first stage could not be calculated. In relation to some common labour interventions, other significant differences were also observed (Table 6).

Women giving birth in hospital were more likely to receive intravenous fluids, and to have their membranes ruptured artificially. For many these interventions were related to their choice of pain management techniques, which will be discussed presently. Table 6 also shows that on average (i.e. the mean difference) hospital women experienced one more vaginal examination in labour than home women. Information was also requested about how many different people performed the vaginal examinations of any individual woman. Although twice as many women in the hospital group had two or three different people performing vaginal examinations, the differences were not statistically significant.

Table 6. Common labour interventions, first stage, home and hospital groups

Labour interventions	Home n = 109 (100%)	Hospital n = 116 (100%)	Significance
Intravenous fluids Yes	15 (13.7)	46 (39.6)	$\chi^2=19.07$, df=1, p=0.0001
Syntocinon augmentation Yes	11 (10.1)	23 (19.8)	$\chi^2=4.039$, df=1, p=0.068
Artificial rupture of membranes Yes	14 (12.8)	31 (27.0)	$\chi^2=6.77$, df=1, p=0.015
No. vaginal examinations Mean (SD)	1.89 (1.77)	2.61 (1.70)	z=-3.752, p=0.0001
Median	1.00	2.00	
Range	0 - 9	0 - 8	
No of people performing VE Mean	0.98 (0.61)	1.23 (0.59)	z=-1.709, p=0.087
Median	1.00	1.00	
Range	0 - 3	0 - 3	

Of note, three times as many women at home received no vaginal examinations when compared to the hospital group. Three times as many hospital women had three examinations, twice as many had four, and two-thirds as many had more than five (Table 7).

Table 7. Frequencies relating to vaginal examinations

Frequencies		Home n=109 (100%)	Hospital n=116 (100%)
No. of vaginal examinations	0	19 (17.4)	7 (6.0)
	1	36 (33.0)	26 (22.4)
	2	25 (22.9)	33 (28.4)
	3	5 (4.6)	17 (14.7)
	4	8 (7.3)	17 (14.7)
	5 – 9	10 (9.1)	16 (13.8)
	Missing	7 (6.4)	0 (0.0)
No. of people performing VE	0	18 (16.5)	6 (5.2)
	1	70 (64.2)	81 (69.8)
	2	12 (11.0)	24 (20.7)
	3	2 (1.8)	4 (3.4)
	Missing	7 (6.4)	1 (0.8)

Pain management

The term ‘pain management’ was used to describe any activity employed by the woman to assist her to cope with labour sensations. They included massage, acupressure, water immersion, homeopathy, TENS, and acupuncture as non-pharmacological methods. Entonox, Pethidine, epidural and spinal anaesthesia comprised the range of pharmacological methods. Women who used more than one method were coded accordingly, i.e. a ‘yes’ in the box for each method used. When pain management techniques were regrouped to reflect general types of activities, it was found that women in the hospital group were more likely to use pharmacological methods of managing their pain, whereas home women used more non-pharmacological methods (Table 8). This difference was highly statistically significant. The 11 women in the home group who used a mix of non-pharmacological and pharmacological pain management techniques will have done so following transfer to hospital in labour, as midwives in Aotearoa/ New Zealand do not carry any pharmaceuticals for use in home birth.

Table 8. Pain management groupings, home and hospital groups

Pain Management Groupings	Home 109 (100%)	Hospital 116 (100%)	Significance
No pain management	6 (5.5)	6 (5.2)	$\chi^2=36.402$, df=3, p=0.0001
Non-pharmacological only	92 (84.4)	58 (50.0)	
Pharmacological only	0 (0.0)	14 (12.1)	
Mixed	11 (10.1)	38 (32.7)	

Table 9 reflects the spread of different pain management techniques used by the women in each group. At home three times as many women used acupuncture, and twice as many used homeopathy, despite that their midwives could offer these same treatments in hospital. (It should be noted however that some institutions may have policies regarding homeopathy which may influence its use).

Table 9. Pain management techniques used in labour, home and hospital groups

Pain Management	Home n (%)	Hospital n (%)
Massage	35 (32.1)	27 (23.3)
Acupressure	38 (34.8)	27 (23.3)
Water immersion	90 (82.6)	78 (67.2)
Acupuncture	14 (12.8)	4 (3.4)
Homeopathy	43 (39.4)	23 (19.8)
TENS	1 (0.9)	1 (0.9)
Entonox	4 (3.7)	25 (21.6)
Pethidine	0 (0.0)	6 (5.2)
Epidural	12 (11.0)	28 (24.0)
Spinal	0 (0.0)	8 (6.9)

Some insights emerged regarding the use of water immersion, which was, in both groups, the most popular method of pain management, at home 82.6% (n=90) and in hospital 67.2% (n=78) used the birthpool or bath. At home, of the women who laboured in water, 41.1% (n=37) went on to have a waterbirth. In hospital, 34.6% (n=27) of those labouring in water stayed there to give birth. In the home group, 11.2% (n=10) of the women using water in

labour went on to use pharmacological pain management as well. In hospital this figure was 42.3% (n= 33).

Listening to the baby: Monitoring in labour

Midwives used more intermittent auscultation with a hand-held doppler device at home than in hospital, despite these two groups of women having the same low-risk status. Table 8 shows that women were three times more likely to have intermittent or continuous cardiotocography used if they gave birth in hospital (41%) compared with at home (13%), (Table 10). Although CTG technology is not available at home, the use of it in hospital is not supported by evidence in low risk women such as these (NICE, 2003). One woman in the home group had no monitoring; from examining the other data supplied about this birth it was probable that her midwife had arrived just in time to catch the baby, so would not have had time to auscultate the baby's heartrate.

Table 10. Monitoring in labour, home and hospital groups

Monitoring in labour	Home n=109 (100%)	Hospital n=116 (100%)	Significance
None	1 (0.9)	0 (0.0)	Fisher's Exact, p=0.0001
Pinard only	2 (1.8)	0 (0.0)	
Doppler/ sonicaid	91 (83.5)	68 (58.6)	
Intermittent CTG	2 (1.8)	21 (18.1)	
Continuous CTG	13 (11.9)	27 (23.3)	

Associated outcomes for women undergoing admission CTG (hospital group only)

Almost one in five women (24.1%) who gave birth in hospital underwent an admission CTG. Admission CTGs have been associated with increased rates of operative vaginal and caesarean birth, and other obstetric interventions (Thacker & Stroup, 2003). The group of women who did have an admission CTG performed, when compared with the group of women who had no admission CTG, were more likely to experience a range of further interventions, namely referral to an obstetrician, IV fluids, continuous electronic foetal monitoring, episiotomy, ventouse birth and active third stage management (Table 11).

Table 11. Outcomes associated with admission CTG, hospital group only

Intervention	Admission CTG YES n=28 (100%)	Admission CTG NO n=88 (100%)	Significance
Referral to obstetrician	20 (71.4)	32 (36.3)	$\chi^2=10.56$, df=1, p=0.002
Artificial rupt. of membranes	11 (39.2)	20 (22.7)	$\chi^2=2.974$, df=1, p=0.139
Syntocinon augmentation	7 (25.0)	16 (18.2)	$\chi^2=0.621$, df=1, p=0.606
IV Fluids	16 (57.1)	21 (23.8)	$\chi^2=7.982$, df=1, p=0.010
Continuous EFM	11 (39.2)	16 (18.2)	$\chi^2=5.29$, df=1, p=0.041
Epidural	10 (35.7)	18 (20.5)	$\chi^2=2.701$, df=1, p=0.165
Episiotomy	9 (32.1)	5 (5.7)	Fisher's Exact, p=0.001
Ventouse	8 (28.5)	3 (3.4)	Fisher's Exact, p=0.0001
Caesarean section	4 (14.3)	7 (8.0)	Fisher's Exact, p=0.457
Active third stage	20 (71.4)	34 (38.6)	$\chi^2=9.18$, df=1, p=0.005

The Second Stage of Labour and Birth of the Baby

The mean length of the second stage of labour was similar in both groups, at home (n=108) 1 hour 28 minutes \pm SD 52 minutes (range 9 minutes – 3 hours 50 minutes), and in hospital (n=106) 1 hour 19 minutes \pm SD 52 minutes (range 10 minutes – 3 hours 53 minutes). This difference was not statistically significant (z= -1.606, p= 0.108).

Of particular interest are the outcomes for the women who had what could be considered a “long” second stage i.e. over 2 hours duration.

One third (n=37) of the women in the home group experienced a “long” second stage. Of these, 92% had a normal birth. Twenty eight (75.6%) women stayed at home and had a normal birth. Of the nine (24.4%) women who transferred to hospital, six had a normal birth, two had assisted vaginal births, and one had a caesarean section.

Less than one fifth (n=22) of the women in the hospital group had a “long” second stage, and only 59% of these women had a normal birth. Nine women (40.9%) had an assisted vaginal

birth, and there were no caesarean sections in the hospital group of women who had a “long” second stage. Thus the women planning homebirths were much more likely to achieve a normal birth when they experienced a “long” second stage than the women planning a hospital birth (Fisher’s Exact, $p=0.006$).

The role of water immersion in the births of the women who experienced a second stage of labour over 2 hours was examined. At home, 24% ($n=9$) of these women went on to have a waterbirth. In hospital, of the 22 women who had a “long” second stage, only one (4.5%) had a waterbirth. Cluett et al. (2006) suggest that water immersion for women experiencing a delay in labour is a safe and viable option, reducing the need for further interventions. The findings of this study support this contention. Differences were also found for other second stage related outcomes including the type of birth, the birthing position, and where the birth actually took place.

Type of birth

In the total sample of 225 women, 87.3% ($n=196$) of the women achieved a ‘normal’ birth. This compares very favourably with the most recent figures for first-time mothers in Aotearoa/New Zealand as a whole. The 2004 Maternity Report (Ministry of Health, 2007) states a normal birth rate amongst primiparous women of 61.3% (p. 33). Overall there are a significantly higher number of normal births amongst the homebirth women. One fifth of the hospital women experienced assisted or surgical births, compared with one twentieth of the homebirth women (Table 12).

Table 12. Birth type, home and hospital groups

Birth Type	Home n=109 (100%)	Hospital n=116 (100%)	Significance
Spontaneous vaginal	67 (61.5)	65 (56.0)	Fisher’s Exact, $p=0.007$
Waterbirth	37 (33.9)	27 (23.3)	
Ventouse	1 (0.9)	11 (9.5)	
Forceps	1 (0.9)	2 (1.7)	
Caesarean Section	3 (2.8)	11 (9.5)	
Total normal birth	104 (95.4)	92 (79.3)	$\chi^2=12.978$, df=1, $p=0.0001$
Total assisted / CS	5 (4.6)	24 (20.7)	

Birth positions and locations

Women giving birth at home were more likely to give birth in an upright position, and women in hospital were more likely to give birth lying down on the bed. Both these differences were highly statistically significant (Table 13). At home women made use of a number of spaces to give birth. Of the 91 births which took place at home, 64% (n=58) took place in the lounge, 20% (n=19) in the bedroom, 8% (n=7) in the bathroom, 7% (n=6) in the dining room and one in the kitchen. In hospital babies were much more likely to be born on a bed.

Who caught the baby?

Most commonly the baby was caught by the midwife. At home, the second most likely person to catch the baby was the baby's father, but in hospital it was more likely to be a doctor. This difference was statistically significant (Table 14).

Table 13. Birth position, home and hospital groups

Birth Position	Home n=109 (100%)	Hospital n=116 (100%)	Significance
Upright position*	72 (66.0)	48 (44.0)	$\chi^2=13.748$, df=1, p=0.0001
Born on the bed	6 (5.5)	62 (56.8)	$\chi^2=62.027$, df=1, p=0.0001
Kneeling	36 (33.0)	25 (21.6)	Fisher Exact, p=0.003
Squatting	19 (17.4)	12 (10.3)	
Sitting	13 (11.9)	10 (8.6)	
Standing	4 (3.7)	1 (0.8)	
Left lateral	5 (4.6)	3 (2.6)	
Reclining	32 (29.4)	65 (56.0)	

**Upright position is the total of kneeling, squatting, sitting and standing*

Table 14. Who caught the baby? home and hospital groups

Baby Catcher	Home n=109 (100%)	Hospital n=116 (100%)	Significance
Woman herself	3 (2.8)	0 (0.0)	Fisher Exact, p=0.0001
Father of baby	12 (11.0)	4 (3.4)	
Student midwife	9 (8.3)	2 (1.7)	
Midwife	79 (72.5)	82 (70.6)	
Doctor	6 (5.5)	26 (22.4)	
Other	0 (0.0)	2 (1.7)	

Transfer rates for planned home birth group

In this study, 21% (n=23) of the women who had planned to give birth at home were transferred to hospital. Of these, 16.5% (n=18) in labour, and 4.6% (n=5) postnatally. Of the 18 women transferred in labour, 13 (72.3%) achieved a normal birth, one (5.5%) a forceps birth, one (5.5%) a ventouse birth and three (16.7%) had caesarean sections.

Reasons for transfer in labour were slow progress (72.2%), FHR abnormalities (11.1%), antepartum bleeding (5.5%) and maternal request (27.7%). These percentages add up to more than 100% because some women had multiple indications. Postpartum transfer indications were for suturing beyond the scope of the midwives' expertise (n=2), a concern about the baby (n=2), and retained placenta (n=1). Postpartum haemorrhage (PPH) was not given as an indication for any of the transfers. The one PPH which occurred at home was successfully managed without transfer. The other two PPHs in the home group were associated with assisted or caesarean birth following transfer.

The Third Stage of Labour

The mean length of the third stage of labour at home was 25 \pm SD 24minutes (range 1 minute to 3 hours 5 minutes), compared to 16 \pm SD 24 minutes (range 1 minute to 3 hours 12 minutes) in the hospital group. Independent samples t-test revealed that this was a significant difference (t=2.712, df=223, p=0.007). The mean difference was 9 minutes (CI 2.375 – 15.006). Most of the women giving birth at home (n=81, 74.3%) experienced a physiological third stage, whereas less than half of the hospital group (n=50, 43.1%) did. This result was

also highly statistically significant ($\chi^2=26.469$, $df=2$, $p=0.0001$). Ecbotic administration described as “Treatment” refers to when the initial management was physiological, but an ecbotic was used where blood loss was thought to be worrying (Table 15).

Those who planned to give birth at home ($n=106$) had a smaller mean blood loss ($249 \pm SD$ 139 ml, range 50 to 800ml) than those who planned to give birth in hospital ($n=115$, $350 \pm SD$ 310 ml, range 30 to 2500 ml). This was a significant difference ($t=-3.169$, $p=0.002$). It was noted that in three cases in the hospital group, there was a blood loss of >1500 ml. When the t-test was repeated with these outliers excluded, the difference remained statistically significant ($t=-2.841$, $p=0.005$). Unequal variances were assumed in each of these tests. None of the three cases of extreme blood loss occurred in women who gave birth by caesarean section; two were normal births and the third was a ventouse birth. There were three cases in the home group where the blood loss was not reported, and one case in the hospital group.

Table 15. Third stage management and ecbotic use, home and hospital groups

Third Stage Management	Home n=109 (100%)	Hospital n=116 (100%)	Significance
Physiological	81 (74.3)	50 (43.1)	$\chi^2=26.469$, $df=2$, $p=0.0001$
Active	17 (15.6)	54 (46.6)	
Treatment	11 (10.1)	12 (10.3)	
Mean Blood Loss (SD)	249ml (139)	350ml (310)	$t=-3.169$, $df=160$, $p=0.002$
Among the women who did have ecbotic administered			
Ecbotic Use	n=28 (100%)	n=68 (100%)	Fisher's Exact, $p=0.421$
Intramuscular	17 (60.7)	31 (45.6)	
Intravenous	7 (25.0)	26 (38.2)	
Infusion	4 (14.3)	11 (16.2)	

Three women (2.7%) in the home group experienced a post-partum haemorrhage (blood loss over 500ml), compared with 14 women (12%) in the hospital group ($\chi^2=6.984$, $df=1$, $p=0.017$). Despite the fact that there was greater use of ecbotics in the hospital group, the PPH rate was significantly higher in this group. Given that the same midwives were caring

for both groups of women it is unlikely that under-reporting of blood loss in either group would explain this difference.

Perineal outcomes

There were no differences in perineal outcomes between the groups (Table 16).

Table 16. Perineal outcomes, home and hospital groups

Perineal Outcomes	Home n=109 (100%)	Hospital n=116 (100%)	Significance
Perineum intact	36 (33.0)	49 (42.2)	Fisher's Exact, p=0.124*
Labial grazes	14 (12.8)	9 (7.8)	
1st degree tear	31 (28.4)	23 (19.8)	
2nd degree tear	20 (18.3)	21 (18.1)	
3rd degree tear	2 (1.8)	0 (0.0)	
Episiotomy	6 (5.5)	14 (12.1)	

**Fisher's Exact test excludes those women who had Caesarean sections*

Whether or not perineal tears were sutured, and by whom, revealed some differences. In the home group, 50% (n=40) of the tears that women sustained were sutured, and 50% (n=40) were left unsutured. In hospital, 66.7% (n=48) were sutured and 33.3% (n=24) were left unsutured ($\chi^2=4.32$, df=1, p=0.048). In hospital, midwives were less likely to leave tears unsutured.

Most of the time midwives perform the suturing themselves in both birth settings, however it would appear that in hospital midwives twice as often used their medical colleagues for this task. This may be because if obstetricians perform an episiotomy for an assisted birth, they will usually suture the perineum themselves following the birth. Table 17 shows that among the women who did have their perineum sutured, there was no difference in who performed the suturing overall between the groups.

Table 17. Tear sutured by, home and hospital groups

Tear sutured by	Home n=40 (100%)	Hospital n=48 (100%)	Significance
Sutured by stud. mw	1 (2.5)	1 (2.0)	Fisher's Exact, p=0.064
Sutured by midwife	32 (80.0)	29 (60.4)	
Sutured by doctor	7 (17.5)	18 (37.5)	

The Baby

Although it was the intrapartum experiences of the women I wanted to compare, some data were also requested about the babies that were born, primarily because interventions in labour can sometimes lead to improved outcomes for babies (e.g. where a baby is identified as being distressed in labour, the birth can be expedited to prevent deterioration in the baby's condition). I wondered whether there might be poorer outcomes for babies in home situations where immediate paediatric assistance was unavailable.

There were no differences found for any outcome measures related to the babies born to women in either group. This is partly due to the fact that the numbers were small.

The mean birthweights in each group were similar with the home mean birthweight at 3523g \pm SD 394, range 2495g to 4480g) and the hospital mean birthweight at 3533g \pm SD 457, range 2325g to 4550g).

Apgar scores

Apgar score data were not reported in eight of the homebirth cases. In the home group, the mean one minute score was 9 \pm SD 1.3 (median 9) and in hospital was 9 \pm SD 1.2 (median 9). At five minutes, in the home group the mean score was 10 \pm SD 0.6 (median 10) and in hospital was 10 \pm SD 0.8 (median 10). There was no significant difference ($z=-0.783$, $p=0.433$) between groups in the number of babies with one minute Apgar scores under 7. In the home group ($n=101$), five babies (4.9%) had one minute Apgar under 7. Four of these babies had been born at home, and one in hospital following transfer. In the hospital group ($n=116$) six babies (5.1%) had one minute Apgar under 7. At five minutes, all the babies in the hospital group had five minute Apgar of 7 or over. In the home group, 3 of the babies with

one minute Apgar below 7 still had an Apgar below 7 at five minutes, though in each case the score was improving. (One of these babies was born by caesarean section following transfer to hospital, and the other two were born at home).

As Table 18 shows, very few babies required any resuscitative assistance following their births, and no differences were found between groups. These percentages do not add up to 100% because some babies required more than one type of respiratory assistance.

Table 18. Resuscitation rates, home and hospital groups

Resuscitation	Home n=109 (100%)	Hospital n=116 (100%)	Significance
Nil Resus required	102 (93.6)	103 (88.8)	Fisher's Exact, p=0.370
Suction	1 (0.9)	5 (4.3)	
Oxygen	2 (1.8)	3 (2.6)	
Ambubag	1 (0.9)	0 (0.0)	
Combination	3 (2.8)	5 (4.3)	

There was no difference in the presence of meconium-stained liquor in labour ($\chi^2=2.118$, df=1, p=0.146). Seven babies (6.4%) at home and 14 babies (12.1%) in hospital had meconium present in their amniotic fluid. In hospital, meconium-exposed babies were significantly more likely to be suctioned (Fisher's Exact, p=0.016) than at home.

There was no difference between groups (Fisher's Exact, p=0.282) in admission rates to the Special Care Baby Unit or Neonatal Intensive Care Unit (depending on whether secondary or tertiary hospital). In the home group two babies (1.8%) went to SCBU/NICU, and in the hospital group six babies (5.2%) were admitted to a unit.

In the home group, three babies (2.8%) were referred to a paediatrician following birth, one of these (0.9%) being an urgent referral. In hospital seven babies (6.1%) were referred, four (3.4%) being urgent. There was no difference in referral rates (Fisher's Exact, p=0.335) or in urgent referrals (Fisher's Exact, p=1.00).

The rates for babies receiving their first breastfeed within one hour of their birth were similar in both groups; 100 home born babies (92%) and 103 hospital born babies (89%). Further examination of the data relating to breastfeeding revealed that of the 196 women who

experienced a normal birth, 95% (n=186) breastfed their babies within an hour of birth. Among the 29 women who had either an assisted or surgical birth, only 59% (n=17) breastfed their babies within this time frame.

Patterns of Consultation in Labour

When the midwives were caring for women at home, they consulted more with another midwife than when they cared for women in hospital ($\chi^2=17.077$, $df=1$, $p=0.0001$). This is unsurprising, given that midwives will usually call a second midwife to attend a homebirth. In hospital, the midwives consulted with a midwife only (i.e. not going on to consult with obstetric staff), in just 4.3% (n=5) cases (Table 19). When practicing in hospital, midwives significantly more often consulted a medical colleague ($\chi^2=22.583$, $df=1$, $p=0.0001$).

Table 19. Consultation type, home and hospital groups

Consultation type	Home n=109 (100%)	Hospital n=116 (100%)	Significance
No consultation	50 (45.9)	59 (50.9)	$\chi^2=40.059$, $df=3$, $p=0.0001$
Consult with midwife only	42 (38.5)	5 (4.3)	
Consult m/w then obstetrician	10 (9.2)	20 (17.2)	
Consult obstetrician only	7 (6.4)	32 (27.6)	

When midwife-only consultations were made, 100% of the women in both groups achieved a normal birth. This is an obvious figure, for to have not had a normal birth would have involved a consultation with an obstetrician. When midwives consult with another midwife as well as an obstetrician, in the total sample 67.7% (n=31) achieved a normal birth. In the home group, 91% (n=10) of the women whose consultations included a midwife and an obstetrician had a normal birth. This figure was 55% (n=11) for the hospital group. Where consultation was made directly with an obstetrician, and a second midwife was not involved, 51.2% (n=20) of the total sample (n=39) achieved a normal birth. The home group had 42.8% (n=3) normal births and the hospital group had 53.1% (n=17) normal births (Table 20).

Table 20. Consultation and birth type, home and hospital groups

	Waterbirth	SVB	Forceps	Ventouse	C.Section
Type of Consultation	n (%)	n (%)	n (%)	n (%)	n (%)
HOME Midwife only n=42	13 (30.9)	29 (69.1)	0 (0.0)	0 (0.0)	0 (0.0)
HOSP Midwife only n=5	3 (60.0)	2 (40.0)	0 (0.0)	0 (0.0)	0 (0.0)
HOME m/w & obstetrician n=10	1 (9.0)	8 (80.0)	0 (0.0)	1 (9.0)	0 (0.0)
HOSP m/w & obstetrician n=20	0 (0.0)	11 (55.0)	1 (5.0)	6 (30.0)	2 (10.0)
HOME Obstetrician only n=7	0 (0.0)	3 (42.8)	1 (14.3)	0 (0.0)	3 (42.8)
HOSP Obstetrician only n=32	1 (3.1)	16 (50.0)	1 (3.1)	5 (15.6)	9 (28.0)

Support for the Woman in Labour

In addition to their midwife, (apart from one woman in the hospital group who was unaccompanied) all the women in both groups had at least one support person present in labour (Table 21). More support people were present with women who planned to give birth at home ($z = -1.955$, $p=0.051$), median 2, range 1 to 6, when compared with women giving birth in hospital (median 1, range 0 to 6). This result is almost statistically significant.

Length of Time Midwife Continuously Present in Labour

Midwives spent more hours continuously present with women in labour when the women chose to give birth in the hospital ($z=-2.473$, $p=0.014$). At home ($n=106$), midwives spent an average of 8 hours 40 minutes present (\pm SD 4.34 hours, range 2 hours 30 minutes – 24 hours,) and in hospital ($n=116$) spent an average of 10 hours 8 minutes (\pm SD 4.57 hours, range 3 hours 30 minutes - 24 hours).

The mean total length of labour was very similar between groups; at home ($n=107$) 9 hours and 10 minutes (\pm SD 5 hours 4 minutes), and in hospital ($n=106$) 10 hours 27 minutes (\pm SD 5 hours 43 minutes). However, the midwives spent longer with the women who gave birth in hospital.

Table 21. Number of support people in labour, home and hospital groups

Number of support people	Home n=109 (100%)	Hospital n=116 (100%)
No support person	0 (0.0)	1 (0.8)
1 support people	43 (39.4)	60 (51.7)
2 support people	34 (31.2)	27 (23.3)
3 support people	18 (16.5)	14 (12.1)
4 support people	9 (8.3)	9 (7.8)
5 support people	3 (2.7)	1 (0.8)
6 support people	2 (1.8)	2 (1.7)
Missing	0 (0.0)	2 (1.7)

Comments from the Open-Ended Question

One open-ended question was included on the survey which gave the midwives the opportunity to report anything about each woman's birth which was especially memorable. Quotes are reported with the key HB for homebirth data and HSP for the hospital birth data. Original emphasis, for example underlining, is maintained from the original and abbreviations have been expanded for the reader's understanding. Quotes are also italicised to reflect their origins as raw data, as was done in the qualitative analysis section of this thesis.

For the women planning homebirths, comments made were principally related to transfer situations. Despite that the transfer indication had been coded and reported in the survey, many midwives elaborated on the reason for the transfer, for example "*FHR ↓ 60-80 for 5 mins continuously, thick meconium*" (Survey 007, HB4) and "*Check of suturing, unusual anatomy – nil action by medical staff, just checked*" (Survey 004, HB3).

For the women planning hospital births, comments most commonly related to the need for intervention. More than half of the women who had undergone a caesarean section had comments which further elaborated the woman's story. "*Obstructed labour possibly due to known fibroids, PPH and blood transfusion*" (Survey 001, HSP3) and "*Long haul! Mec[onium] liq[uor] and fet[al] distress 2nd stage. Failed vent[ouse] and N[eville] Barnes [forceps] in OT, LSCS*" (Survey 011, HSP3) are examples of these comments.

On two occasions the midwives reported that the woman was prepared and waiting in theatre for caesarean section to be performed and a delay resulted in the women giving birth normally. One of these cases was a woman transferred from home for a delay in first stage (Survey 003, HB3) and the other was a planned caesarean section for a breech baby (Survey 001, HSP2). One other case described a consultation and decision by the woman to have an epidural, *“Woman requested epidural (hence consult) but it all took too long, so she got back into the pool and had the baby”* (Survey 001, HSP1). These comments reflect those made by the midwives in the focus group in relation to the allowance of time enhancing the possibility for normal birthing to occur.

Another cluster of comments were related to the babies who did not breastfeed within the first hour of birth. *“Paeds chose to take baby away to SCBU which delayed initiation of breastfeeding”* (Survey 006, HSP5) and *“Retained placenta. Bled when placenta partially removed by Reg[istrar]. No BF”* (Survey 010, HSP7) illustrate the midwives desire to ‘explain’ the delay in breastfeeding.

Only one comment related specifically to the midwife herself. *“This birth was a few months after a stillbirth I had with prolonged RMs [ruptured membranes]. This woman had 25 hrs of RMs and declined ABs [antibiotics]. Very scary for me then”* (Survey 001, HB4). This midwife was nervous because of a previous experience which had lead to an unfortunate outcome, so her memories were centred around her own level of discomfort in supporting the woman’s choice to decline the antibiotics.

The comments of the midwives validate the idea that the numbers only tell part of the story. Even when the survey tool allowed the midwives to describe the events for the women in their care, in many cases explanation as well as description seemed to be important for the midwives. This was particularly evident in situations where intervention occurred, as fewer comments were reported for the women who experienced straightforward births.

Summary

In this section I have presented the findings in relation to the survey. The survey was based on an audit tool in widespread use by midwives in Aotearoa/New Zealand. It was further refined by the midwives who participated in the focus group phase of this study, a step which

proved crucial, in that a question added by the midwives led to a new understanding about the role midwives play as consultants. The survey revealed that despite that it was the same midwives caring for the women in both home and hospital settings, a number of differences were found in labour and birth events between the two groups of women. Those that reached levels of statistical significance were mostly related to a greater number of obstetric interventions being used in the hospital group.

Generally, if women gave birth at home they had more people supporting them in labour, and they experienced more early labour visits from their midwife prior to needing her continuous presence. They used more non-pharmacological pain management techniques, and were more likely to achieve a normal birth. They were more likely to remain upright when giving birth, and very rarely gave birth on a bed. They had fewer obstetric interventions during labour (less ARM, IV fluids, pharmacological pain management techniques, syntocinon augmentation, episiotomy, assisted or surgical birth, actively managed third stage of labour, and suturing). They had fewer vaginal examinations in labour, by fewer different people. Their babies were more likely to be caught by the baby's father, or a student midwife. They more often experienced physiological birth of their placenta, and lost less blood when doing so. Their midwife more often consulted with another midwife, and very few of them transferred to hospital from home for consultations with obstetric staff. Their babies were of similar size to those born in hospital, and fared as well as their hospital-born counterparts.

Conversely, when women chose to give birth in hospital, they were likely to be visited by their midwife once at home prior to going to hospital. They used more pharmacological pain relief, and were much less likely to experience a normal birth. If they had an admission CTG performed, they were more likely to be referred to an obstetrician, have IV fluids, continuous electronic foetal monitoring, episiotomy, and ventouse births than if an admission CTG was not performed. Hospital women were more likely to have an actively-managed third stage of labour, and more often had a post partum haemorrhage. They were less likely to be in an upright position to give birth and more often gave birth on a bed. Their babies were more likely to be caught by a doctor and the women's perineae were sutured more often. Their labours were no longer than those of the women who gave birth at home, but their midwife spent longer with them.

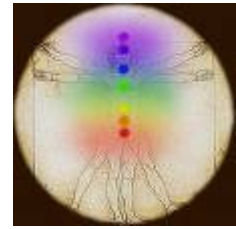
To my knowledge this is the first survey that has asked about the consultation practices of midwives in relation to other midwives as well as with obstetricians. It has demonstrated that when a second midwife is involved in a woman's care if it becomes complex, this leads to a greater likelihood of normal birth for that woman. This finding is particularly resonant with midwives' description of their role as being guardians of normal birth.

In the section that follows, I will discuss the findings of both phases of the study in relation to one another. In many respects the ideas that the midwives expressed about how their care was the same and different at home and in hospital can be seen to be manifest in the maternity outcomes just described. The FIRE which has illuminated the results gives way to the application of intellectual thought, represented by the element AIR. Adding air to fire makes it burn more brightly. Thinking about these results has assisted me to draw some conclusions about how the way some midwives practice can result in differences in labour events which occurred for these women giving birth.

AIR



Putting it All Together



The beautiful collision of movement-in-air, a still moment at the centre to think conceptually about how the findings of the focus group and the survey can fit together to expand an understanding of the first birth experience in different settings. Applying intellect, and seeking balance. In this section I mix the ideas of the focus group midwives and the outcomes found in the survey, in a way that exposes how the experiences of the women differed, shaped by their choice of birth setting. I go on to look at how this study's findings sit in relation to the previous work in the literature. Lastly, I discuss what I perceive to be the limitations and strengths of the work, its significance, and some recommendations which arise out of the findings.

The presentation of the results from both the focus group and the survey in the FIRE section of this research have addressed the first two aims of the study. The first was to explore midwives' ideas about how they provide intrapartum care at home and in hospital. The second was to describe the labour and birth experiences of two groups of first-time mothers, one group who gave birth at home, and the other who gave birth in a secondary/tertiary hospital environment. Thus I have viewed the phenomenon of the first birth experience through two conceptual lenses. I have identified differences in the practice of midwives and in the experiences of women. Seeking out links between the two was the substance of the third aim of my research. I sought to discover whether differences in intrapartum care provision might lead to differences in the experiences women had of giving birth in each setting. Now a third conceptual lens has been applied over the two sets of results. Mixing the midwives' voices and the survey data has enabled me to articulate how a woman's experience has been shaped by the choice she has made about where to give birth. What became apparent in putting these two sets of data together was that when women make a choice to give birth at home, they will experience 'being with' their midwife differently. They will use

space differently. They will ‘do birth’ differently, and they will experience ‘being safe’ differently.

Using the data from the survey I have constructed vignettes of these areas of women’s experience, including the midwives’ ideas from the focus group. In this way it becomes possible to develop a picture of how first birth is experienced at home and in hospital. The phrase “women’s experience” is used throughout this section to describe collectively the birth events which have been uncovered by the survey. I do not mean to imply that women’s subjective experiences have been sought or explored in this study.

Women’s Experience of ‘Being With’ their Midwife

When a woman has made a choice to give birth at home, she initiates contact with her midwife when labour begins. In early labour, the woman may be happy for the midwife to come and go, and it would not be unusual for the midwife to visit three times during this period. The midwife will make assessments, provide reassurance, and assist the woman’s family to understand how to support and care for her until labour is well established and the midwife returns to provide continuous care. The woman is likely to have a number of people present to help her and she is enabled to give birth in her own time.

Once labour is established and the woman has requested the midwife to provide continuous care, this will be given alongside ongoing care from her family and support people. The midwife is “*looking after the family who are looking after the woman, the second bubble around the bubble*” to use Connie’s words. The midwife may not always be in the same room as the labouring woman, but will be on hand. Although she will often be the person who catches the baby, she will facilitate others to do so if this is appropriate. This will sometimes be the father of the baby, and sometimes a student midwife. So while the midwife will be with the woman, ‘holding a safe space’ by assessing the woman and her baby’s well-being, she may be quite peripheral to the hands-on, physical care which is more likely to be provided by those supporting the woman. A documented expression of ‘being with’ can be seen in the way the midwife records the woman’s birth story. At home, the clinical notes are more likely to contain references to the activities of those that are supporting the woman, so in this way the midwife is ‘being with’ as the observer and chronicler of the woman’s experience. The midwife may feel more relaxed being with a woman at home, because the

environment is physically comfortable, and because she feels no pressure on her from the scrutiny of others. A few hours after the baby is born, the midwife will leave the family together and more distantly 'be' with the woman by being available to contact if any concerns arise.

In this research, when a woman chooses to give birth in hospital, she experiences being with her midwife differently. The midwife is more likely to visit the woman only once at home, before meeting her at the hospital when the woman says she is ready to go there. Once in the hospital, the midwife is not so free to come and go, because there is an "*unspoken kind of commitment to being there*" (Connie). Having said that, the midwife may need to be in and out of the woman's room as she negotiates the administrative needs of the institution, keeping the staff informed of progress and so on. The woman is likely to have fewer support people present with her, and the midwife is thus likely to provide more hands-on physical care to the woman during labour. The midwife will spend more hours physically present with the woman giving birth than she would if the birth was planned at home. She may have occasion to 'be with' the woman by being her advocate, providing a midwifery perspective to decision-making where a consultation has taken place. As an observer and recorder of the woman's birth story the midwife may write more often in the woman's notes, but may be more likely to document only physical recordings and interventions, rather than making observations about the activities of those present. Being with the woman in hospital may be less relaxing for the midwife, she may even feel physically unwell because of the effects of the built environment.

This study suggests that at home, 'being with', whether physically present or 'at-a-distance' present, is negotiated by the woman and her midwife in partnership. 'Being with' in the hospital may be similarly negotiated, or it may be circumstantial because of the woman's desire to be there, or because of an institutional expectation about the presence of the midwife. Who does the 'being with', and how, may differ in each place, with women at home tending to have more support people helping them. The time it takes to 'be with' the woman is different, as is the way that midwives use this time, and this can lead to different experiences occurring for the woman.

Edwards (2000) found in her study of women's experiences of homebirth, that some women valued the fact that they were left alone by their midwife at times during their labours. They

felt this enabled them to talk freely with their husbands about how they were feeling, or meant that they could make comments which the midwife might take too seriously, like “I’m going to die”, without causing over-concern (p. 229). Some women appreciated that they could go to the laundry or out into the hall if they did not want to be watched. The midwives who participated in my focus group spoke about this too, enjoying the fact that at home they could be in the room with the woman or not, ‘on hand’ but available when the woman wanted them.

To my knowledge there have been no other studies which have investigated differences in the way midwives document women’s birthing journeys in different birth settings, or how the birth setting affects the emotional or physical well-being of the midwife, so this could constitute new knowledge, although it is not generalisable to the greater midwifery population. On the other hand, there are some differences in women’s experience of being with their midwife which are clear from my practice, but about which I did not ask and therefore can make no claims. For example, at the conclusion of a homebirth, the midwife is the person who leaves, and the family remain together. Typically, at the conclusion of a hospital birth, at some point the father of the baby leaves also, and the mother is left alone with the baby. Women I have cared for have often expressed that this was something they never even considered when deciding about place of birth, and found it distressing to say goodbye to their partners. This might be a fruitful topic of further investigation as it may be that it is a consideration for families in choosing a birth place that has to date been overlooked.

Women’s Experience of Using Space

At home women and their families have typically set up their birthing space before the midwife arrives. During labour the woman is free to roam around the house, to secure privacy as she requires or to be surrounded by supporters if she so desires. The survey data revealed that she will very often give birth in the birthpool. She will most often give birth in an upright position, either kneeling, sitting or squatting. It is unusual for her to give birth in the bedroom, and very rare for her to give birth on her bed. The birthing space belongs to, and is constructed by, the woman, and is not modified much (if at all) when the midwife arrives.

In hospital, the room that the woman is allocated to give birth in belongs to the hospital, and she may not be able to choose which room she can use. Because she is low risk, she may have chosen to use a birthing suite with a pool, but this choice will be determined by room availability. Together the woman and her midwife may modify this birthing space. The woman might bring familiar things with her from home, perhaps pillows, or music, and her own refreshments. Prior to the woman's arrival, the midwife might rearrange the birthing room, so that the bed is no longer the focal point. She may remove the cardiotocograph, and bring in a birthstool or an exercise ball so that there is no implicit message about lying down to give birth. The woman is still free to move, but usually she will want to stay within the room she has been allocated. If she desires privacy, she will need to request her support people to leave the room, rather than being able to absent herself. The survey data showed that she may have a waterbirth, but in this space, more than half the time she will end up giving birth on the bed, and in a reclining position.

Differences in experience occur for women around the use of the physical birthing spaces they occupy. A choice to give birth in the hospital means they are more likely to be lying down on a bed, regardless of how the room is reconstructed by the woman and her midwife on arrival there. At home women are more likely to give birth in an upright position, and a third of the time this will be in the birthpool. The lounge, and not the bedroom, is the space most commonly used for giving birth in at home.

None of the studies I identified which compared home and hospital birth experiences were explicit about the use of space. Birth outcomes did not report waterbirth rates, or specify which position the women gave birth in. Upright birthing postures are said to optimise the physiology of pushing (Walsh, 2007) and in this study the women who gave birth at home were upright two-thirds of the time, compared with only one-third of the women in hospital. The home birth women achieved a significantly higher rate of spontaneous birth. Davis (2006) described the evolution of 'hybrid' birthing spaces which are a blend of homelike furnishings and medical equipment, but has made the point that when attempting to replicate a domestic space within a hospital it is the bedroom which has been deemed to be appropriate. This research suggests otherwise, with very few women in the home sample using the bedroom for birthing.

Women's Experience of 'Doing Birth' Differently

Some things that midwives do while they are supporting women giving birth were shown to be different in each birth setting. One area of what midwives 'do' is performing interventions, and the survey revealed that midwives performed different interventions at home when compared to being in hospital. Women who gave birth at home were more likely to labour physiologically throughout their childbirth. One fifth of them had no vaginal examinations performed in labour, and those who did usually had only one person performing the examinations. Most of them had spontaneous rupture of their membranes. Few of these women needed IV fluids for hydration, and few had their labour augmented with syntocinon. If labour was progressing slowly, the woman might initially be offered a bath or a rest in preference to transfer to hospital. Most had a physiological third stage, and fewer were sutured when compared to the women who gave birth in hospital.

The way that women and midwives worked together to manage labour pain was different at home. Here, the women were more likely to utilise non-pharmacological methods of pain management. They were massaged more, given more acupressure and were much more likely to use water, homeopathy and acupuncture than the women in hospital.

Women who gave birth in hospital were less likely to labour physiologically. One fifth of them had their labours augmented, and a third of them had their membranes artificially ruptured. Very few of them had no vaginal examinations in labour, and twice as many women in hospital had these examinations performed by two different people. More than half of the women had an actively managed third stage and they were more likely to suffer a postpartum haemorrhage. Women and midwives managed pain differently in hospital, with significantly more use of entonox and epidurals.

There was one intervention which occurred in hospital which could not have occurred at home. This was the performance of cardiotocography (CTG) on admission to hospital. This seemingly benign intervention proved to have significant implications for the woman, because it acted as a catalyst for further interventions to be performed. In low risk pregnancies, when mothers are well, intermittent auscultation of the baby's heartbeat in labour is considered sufficient to assess the baby's well-being (NICE, 2001). Current evidence does not support the use of admission cardiotocography for women giving birth in

hospital with access to this technology where the pregnancy has been straightforward and a normal birth can be anticipated (Gourounti and Sandall, 2007). This finding was the most obvious point of divergence between what the midwives said in the focus group and the reported outcomes from the survey. When asked what midwives did in the first half hour of being in continuous attendance with the labouring woman, they reported that they did little beyond getting a 'feel' for where the woman was 'at' in her labour, and listening to the baby's heartbeat. None of them reported that they would perform an admission CTG. Yet in the hospital group of women, 24% underwent an admission CTG. There are a few possible explanations for this. The first is that the four midwives who took part in the focus group (who were a subset of the twelve who completed the survey) were not those who performed admission CTGs. Or it could be that the secondary/tertiary hospitals in which those four midwives practiced do not have a protocol requiring admission CTG, but that other midwives completing the survey in other parts of the country do work in hospitals which have such a protocol. The third, and probably least likely scenario, is that what the midwives do, and what they say they do, is divergent.

Interventions are to some extent a visible expression of midwifery practice. They can more easily be quantified/described than relational or supportive care can. There is little consensus about what constitutes a childbirth intervention. Studies which discuss or compare intervention rates invariably include such things as induction of labour, artificial rupture of the membranes, continuous electronic foetal monitoring, use of analgesia, episiotomy, epidural anaesthesia, syntocinon augmentation, ventouse, forceps and caesarean section birth (see, for example Ackermann-Liebrich et al., 1996; Janssen et al., 2002). These studies do not differentiate interventions according to the role of the person who performs them. Others have made an attempt to distinguish midwifery interventions from obstetric interventions, and further categorise midwifery interventions as being 'midwifery technological interventions' (e.g. sweeping of membranes, amniotomy and episiotomy) or 'midwifery management interventions' e.g. consultation with obstetrician without referral, and referral for care under obstetric supervision (van der Hulst et al., 2004).

Anderson invites us to accept the idea that the midwife herself is a significant intervention, because she makes suggestions, performs actions and gives directions which alter how a woman labours and gives birth. From her perspective the essence of midwifery care is where

a midwife 'holds a safe place' for the labouring woman, providing silent, strong reassurance and being there as a safety net in case of difficulties (Anderson, 2002).

Women I have cared for have not always considered some things to *be* interventions. For example, they have not seen acupuncture and homoeopathy as interventions because their mode of action was to 'restore balance' to their body system and thus optimise the potential for physiological birth by enhancing their body's own ability to function normally. The difficulty of defining what is and is not an intervention leads me to wonder whether, like the definition of a 'normal birth', one could arrive at an understanding akin to that of the 'unique normality' of birth as proposed by Downe and her colleagues (Downe, 2002). This notion sees each individual woman having her own unique rhythm in labour, her own 'normality'. Fluid definitions within each woman's own experience may ultimately be more illuminating than fixed ones in relation to interventions as well. What was highlighted in this study was the fact that women's experiences with respect to the interventions they received (the things that happened to them) were determined by the place-of-birth choice that they made. This is resonant with the findings of other studies comparing outcomes of home and hospital births, as previously discussed in the background section of this study.

Another way that birth is 'done' is expressed as the mode of birth. At home, almost all the women (95.4%) achieved a normal birth. In hospital, while most of the women achieved a normal birth (79.3%), significantly more women had a ventouse-assisted birth. This relates strongly to another aspect of what midwives do, and that is consulting with other health professionals. The midwife facilitates the presence (and sometimes the absence) of other personnel by requesting or declining midwifery, obstetric, anaesthetic or paediatric assistance. The impact of referral was fully revealed in the survey where it was found that 44.8% of the women in the hospital group were referred to an obstetrician, compared to 16.8% of the home birth group. This perhaps constitutes the most important finding of the study in relation to a difference in practice and how it manifests in birth outcomes. It seems that when practising in hospital, the midwives were much more likely to have an obstetrician as their first point of reference, despite probable easier access to other midwives. What the figures suggest, though, is that when a woman's labour becomes complex and requires input from obstetric staff, the support of another midwife alongside the primary midwife results in a higher number of normal births. This may be because the second midwife affirms the

practice of the primary midwife, especially in relation to support during a long second stage of labour.

Only one study has compared consultation rates between home and hospital births for first-time mothers (van der Hulst et al., 2004). This study also found a higher rate of consultation with obstetricians in the hospital group of women. In this study 72% of the hospital birth mothers were referred, compared to 68% of the home birth mothers and this difference was not statistically significant.

So in this research, the same midwives, looking after two groups of similar women in different environments, made significantly more referrals to obstetricians when caring for women in hospital. One has to ask why these midwives seemed more confident pursuing their midwifery practice in a home environment, yet resorted more readily to referring women in labour to obstetricians when working in a hospital setting. Perhaps the focus group findings about midwives' sense of needing to conform, and the pressure of the scrutiny of medicine lead them to make so many referrals. This fits with Hunter's (2000) findings about how practicing 'real midwifery' entails a greater acceptance of 'carrying the can' when practicing outside the hospital. At home the midwives felt more 'sure' of their practice, claiming pride in their autonomy, but accepted that in hospital they were more likely to be influenced by *"being okay by the protocols and guidelines"* to avoid going *"up in flames"* (Rachel). Perhaps in hospital the willingness to refer is about deflection of responsibility. It could be that when supporting a woman to give birth at home, the midwife has more of a sense that the woman will protect her in an uneasy space because of the relationship that they share, complicit in the choice to give birth at home as being a counter-cultural choice. Maybe midwives are less 'sure' of the support of their women in hospital, so are less prepared to *"go right out there"* (Lydia) by pushing some perceived boundaries about what constitutes safe practice.

At home, then, midwives and women most often 'do birth' by allowing it to unfold at its own pace, and by promoting an environment in which the physiological process of labour remains undisturbed. This can include the use of non-pharmacological methods of pain management (for example, water immersion) which can relax the woman and enhance the progress of labour. The use of obstetric interventions is confined, for the most part, to those women who

transfer to hospital in order to receive them. The midwife will usually call a second midwife to be present at the birth.

In hospital, it seems that 'doing birth' may well begin in the same manner, that is, by assuming normality and providing similar care. But women are more likely to access pharmacological forms of pain management in this environment, which can disturb the physiology of labour, as previously discussed in the EARTH section. If the labour process appears slow, the woman is more likely to experience obstetric interventions to achieve 'better' progress. The increased use of IV fluids and syntocinon augmentation are a reflection of this. The midwife is much more likely to consult with obstetric staff, and this leads to increased rates of assisted birth.

Women's Experience of 'Being Safe'

'Being safe' at home is centred around 'being with' not 'doing to'. Women who give birth at home are 'kept safe' by their midwives' skills and knowledge about physiological birth, and by their own belief that home is the safest place for them to give birth. The atmosphere of undisturbedness created by the woman, together with her support people and her midwife, contributes to her safety because of the avoidance of potentially unsafe interventions. At home the woman need not be vigilant about who may enter her birthspace uninvited. The midwife arranges her 'safety' equipment out-of-sight, but handy. She will call a second midwife to be present for the birth as another expression of 'being safe'.

The midwives' use of time contributed to safety for the women, especially in the second and third stages of labour. The "allowance" of time in the second stage of labour resulted in less application of obstetric interventions. At home fully one third of the women experienced a 'long' (over two hours) second stage of labour, and yet 92% of those that did, achieved a normal birth. In hospital, only one fifth of women experienced a long second stage (which may reflect that the midwives referred more women for consultation prior to reaching the two hour mark), and among these women only 59% achieved a normal birth. The survey did not differentiate whether those who transferred from home for slow progress did so during the first or second stage of labour. It is possible that the women who began labour at home may have been transferred during the first stage of labour, had epidurals and augmentations and thus had long second stages of labour as well. This would be an interesting avenue of further

study. Either way, there were differences in the way midwives supported women during the second stage, allowing time to achieve spontaneous birth at home rather than referring for ventouse or forceps assistance as they tended to do in hospital. Rachel's reflection about supporting a woman in hospital "*when it's veering off from normal*" was that she is "*less likely to allow it...because of the pressures of conforming*", and the others' descriptions of medical scrutiny leading to increased referral, and feeling constrained by the clock tend to be validated by these findings.

The 'allowance' of time in the third stage of labour also resulted in different experiences for the women between the home and hospital groups. The length of third stage was significantly longer in the home group which relates to the fact that the management of third stage was more often physiological, and yet the mean blood loss was less than for the women giving birth in hospital. The 'hurrying' of the third stage which occurs with active management (and which more often occurred in hospital) resulted in a higher number of postpartum haemorrhages in the hospital group. Given that the same midwives cared for both groups of women it is unlikely that under-reporting of blood loss occurred in either group. Walsh (2007) makes the observation that all studies which have reported on the issues around third stage management have been conducted in hospitals. The findings from this study can therefore constitute a beginning in terms of comparisons between physiological and active management within an out-of-hospital context as well.

In hospital 'being safe' is expressed in a number of ways. The midwives described how 'keeping it safe for the woman' might involve the subterfuge of under or over-estimating labour progress in order to adhere to (what might be illusory) time limits about acceptable progress. Ironically, protocols which are designed to keep birth 'safe' may pose risk to physiological birth by restricting time, and thus increasing intervention. The medical discourse has it that interventions provide safety, and in some cases this is true. However, for the midwives who participated in this study, interventions were sometimes described in terms of 'unsafety', because of the morbidity associated with them. Some midwives perform an admission CTG to be safe. I have already highlighted how this expression of being safe lead to much more intervention. In this respect, then, being safe was about 'doing to' alongside 'being with'. Being safe in this birthspace might also be linked to making referrals to other health professionals, and again, I have discussed how this process could contribute to 'unsafety' for the woman. It is somewhat paradoxical that the things which can constitute

safety, can also create unsafety, and perhaps it is about from whose perspective safety is viewed.

Women experience being safe differently when they make a choice to give birth at home, compared to when they give birth in hospital. As with all the experiences of difference, the description for what has occurred in each place is not meant to portray a value judgement about those experiences. I am not suggesting that one set of experiences is better than another. My intent is to describe these women's experiences so that other women and their families can make better-informed decisions around the choice of birth place.

Recalling the literature about women's choice of birth place in relation to safety, Pratt (1990) found that women who chose home birth did so because they believed that home was the safest place to give birth if one's pregnancy was uncomplicated, and they perceived risk in terms of anxiety about exposure to childbirth interventions. Women who chose hospital birth believed that the availability of technology could mitigate risk, and for these women their anxiety was about the perceived medical risks of giving birth. Edwards (2005) similarly found that women who chose homebirth perceived the hospital to be an unsafe place because of the risk of unnecessary intervention. She postulated that women and health professionals may weigh up risk and safety in different ways. This idea seems to be congruent with the findings of this study in relation to the midwives' perceptions of safety, that it could in a sense be in the eye of the beholder. The midwives believed that society considers that instant access to technology is what makes birth safe, but the midwives saw technology as presenting risk sometimes, and not always reducing it.

Discussion

This project commenced with a wondering arising out of my midwifery practice; do I and others like me behave in a different way when we support women to give birth at home than we do when we are with women giving birth in hospital? I wondered about what influences our behaviour in each place, and how the differences in our behaviour impact on the care that we provide, and thus on the 'inputs' that we have into women's labours. It was important to me to find out whether the events of labour and birth were the same in different birth settings, especially in relation to first-time mothers. This was because my 'practice wisdom' was that assisting a woman having her first baby to achieve physiological birth was satisfying to me

personally, but was especially victorious for the woman. Those who achieved normal births contemplated their second pregnancies feeling optimistic about giving birth for a second time, whereas those who had experienced abnormal birth often felt wary and anxious about what might be in store for them next time.

The background literature certainly seemed to confirm that ‘getting it right’ first time was important. Women’s ongoing psychological and physical well-being appears to be compromised in some situations where obstetric interventions or traumatic experiences have occurred. Examining the reasons behind women’s choice of birth setting allowed me to understand some attitudinal differences which can be present between those choosing home birth and those choosing hospital birth. Safety was an important aspect of women’s choice in both settings, but women’s ideas about what was safe have been shown to differ. Some saw the availability of technology as being safe, and others saw the avoidance of technology as the safest thing. Disturbances to the physiology of the labour process are evident when women use pharmacological methods of pain management to assist with coping in labour. The absence of these resources at home is a major difference between the two settings, and may account for some of the differences found in relation to both women’s choice of birth setting and the events which unfold for her during labour.

A focussed look at the research relating specifically to midwifery care in different settings was useful in that it strengthened my sense that midwifery care provision *was* different. As previously reported, these studies identified that much of their behavioural difference related to the midwives’ interactions with the physical birth settings (their use of space) and their relational care, rather than the actual performance of tasks in the form of examinations or monitoring of the woman’s labour. Midwives identified that time management could be different, and that protocols in existence might alter their practice too. However some of this research was not reflective of comparisons between home and hospital, and so some questions remained for me about this particular context.

The research which compared intervention rates and birth outcomes between home and hospital was illuminating, but because of the inconsistencies in methodology, risk status, parity, caregiver and so on they were of limited value in answering my own research question. The value they did have was in assisting me with the design of my study. My

perception of their limitations was instructive in helping me determine what to include, and what to leave out, of my survey. The focus group phase further assisted me with this process.

There was a high level of congruence between the findings of this study and those from the previous literature in the field. Qualitative studies which explored midwives' ideas about whether their practice was the same in different settings had revealed that in a number of areas practice did differ. Van der Hulst (1999) also found that midwives were more relaxed providing care at home, and visited more often in early labour, though the midwives in her study spent longer in labour with women giving birth at home, in contrast to this study where midwives spent less time with women in labour at home. As with this study, Harris (2000) found that midwives more often used complementary therapies at home and that this may be a factor in the achievement of more normal births. The way in which midwives use the space surrounding the birthing woman differed as Davis (2006) had discussed and their use of time was consistent with Hunter's (2000) thesis findings where midwives were more likely to allow the woman time to achieve spontaneous births in the small unit when compared with the large obstetric hospital.

The points of departure from the literature in relation to midwifery practice in different settings were the findings that contrasted with van der Hulst (1999) relative to obstetric-technical care. She had reported that although midwives' practice differed with respect to relational care, the actual 'doing' of midwifery differed little, i.e. the performance of examinations and procedures was much the same at home and in hospital. This study revealed that the intervention rates between the two groups were markedly different, with more use of IV fluids, ARM, pharmacological pain relief, ventouse birth and active third stage management amongst women giving birth in hospital.

With respect to the quantitative studies comparing birth outcomes between home and hospital birthing women, this study's findings were very consistent with those reported earlier in the EARTH section of this work. There were no differences in maternal or neonatal morbidity or mortality found (acknowledging that this study is so small that differences would not be discovered), but significant differences were found with respect to intervention rates. This strengthens the evidence in relation to the safety and desirability of encouraging low-risk first-time mothers to consider giving birth either at home or in a primary setting.

It would appear from the findings of this study that when providing intrapartum care in a home setting midwives find it easier to practice evidence-informed midwifery. This was noticeable in a number of respects.

At home these midwives supported physiological birthing by allowing time for labour events to unfold without interference. Women's membranes more often ruptured spontaneously and the women enjoyed supportive physical care in the form of massage, acupressure and water immersion. Healing modalities based on transforming energy were used in the form of acupuncture and homeopathy. Invasive vaginal examinations were kept to a minimum. Babies' well-being was monitored in such a way that the women remained free to be mobile, or to be immersed in water. During the birthing phase, time limits were not applied, with the result that almost all of the women achieved spontaneous births. When babies were exposed to meconium, they were mostly just observed at birth and not suctioned routinely. Management of the birth of the placenta is the only area where the midwives' practice was contrary to accepted best practice.

The evidence is overwhelming in support of all these practices. Artificial rupture of the membranes has been shown to increase the pain of labour, resulting in more use of epidural (Barrett, Savage, Phillips & Lilford, 1992). Women's perception of ARM is of having had their physiological experience interfered with (Macdonald & Henderson, 2004). It can result in an increase in caesarean section and foetal distress (Fraser, Turcot & Krauss, 2004; Goffinet, Fraser, Marcoux et. al., 1997). One systematic review concluded that ARM should be reserved only for those labours that are not progressing normally (Enkin, Keirse & Jenkin, 2000).

With respect to vaginal examinations, keeping their number to a minimum is an important way to avoid precipitating infection. Women who have a history of sexual abuse or who have post-traumatic stress disorder can find vaginal examinations very problematic (Walsh, 2007). Vaginal examination is best seen as one tool among many to be used as a labour progress assessment, and the fact that such a large number of women in this study received no vaginal examinations in labour attests to the fact that these midwives used other skills to assess labour progress without detriment to the outcomes of birth.

The evidence around caring for women in the second stage of labour strongly supports the allowance of time to achieve spontaneous birthing. It is well-recognised that as long as the

woman and her baby are both coping physically (and the woman emotionally), placing time limits on the length of the second stage of labour is inadvisable. There is no association between the length of second stage and low Apgar scores, neonatal seizures or admission to special care units (Janni, Schiessl & Peschers, 2002; Menticoglou, Manning & Harman, 1995; Myles & Santolaya, 2003; Saunders, Patterson & Wadsworth, 1992). Meta-analyses of upright postures for giving birth have been shown to result in fewer episiotomies, fewer assisted births, fewer foetal heart rate abnormalities and shorter second stages (De Jong, Teunissen & Largo-Janssen, 2004; Gupta & Hofmeyr, 2006). The women in the homebirth group in this study achieved more spontaneous births and this is in part due to the support they received to birth their babies in their own time in addition to the use of more upright birthing postures.

Recent evidence refutes the practice of suctioning meconium-exposed babies, as it has been found that routine suctioning does not decrease the incidence of meconium-aspiration syndrome (Diehl-Surjcek & Price-Douglas, 2007). When practicing at home the midwives in this study suctioned only 14% of the babies who were meconium-exposed, in contrast to the 78% who were suctioned when the babies were born in hospital.

Lastly, the acceptance of active management of the third stage of labour as an important contributor to the reduction in postpartum haemorrhage rates has been widespread since the famous Bristol trial of 1988 (Prendiville, Harding, Elbourne & Stirrat, 1988). A recent Cochrane review affirmed this stance (Prendiville, Elbourne & McDonald, 2006). In this study, however, the midwives much more commonly allowed the third stage to occur physiologically at home and had a significantly reduced PPH rate when compared to the (more often actively-managed) hospital group of women. The length of the third stage was significantly longer in the home group reflecting more physiological placental birth. The mean difference of nine minutes in the length of third stage is not much more time to wait when balanced against the benefits accrued to the women in the home group: less blood loss, increased delayed cord clamping with its benefits to the transition for the baby (Mercer & Skovgaard, 2002) and enhancement of the undisturbed moments after birth so important for hormonal imprinting (Buckley, 2005; Foureur, 2008).

The package of care most commonly provided by the midwives when they supported women giving birth at home is very akin to evidence-informed practice advocated by these recent

research projects. It seems that in hospital, it is not so easy to support this kind of practice, perhaps because midwives' practice there is so strongly influenced by the medical discourse. Midwives certainly need to take some responsibility for the fact that it is they who make the referrals which so often lead to interventions in hospital, and use one another for support in applying the evidence-base their education has provided them with.

The additional component of the findings from this study is that the care to the two groups of women was provided by the same midwives, and therefore it falls to the birth setting *per se* to assist our understanding of why the differences in outcomes might have occurred. The environment for birth includes those "unseen, pervasive" things Rachel spoke of; the culture operating within the unit. This is influenced by personnel, protocols, pathogens and props! If midwives are less able to relax in the hospital environment, and less comfortable about using birthpools (for fear of pathogens) or complementary therapies, this could be part of what contributes to the lower rates of physiological birth. These are some of the midwifery 'inputs' to a woman's birthing journey which I believe are intrinsically connected to favourable birth outcomes.

Returning to my research question, this study found that midwives do not consistently offer the same intrapartum care at home and in hospital, and it has been possible to articulate the differences in women's labour and birth experiences arising from this. Given that 'getting it right first time' has been shown to be important for women's ongoing psychological and physical well-being, not to mention the resource implications of highly medicalised care, how can we use this information to encourage change? Incremental progress might be made in changing the powerful medical culture which exists in hospitals, but as fewer options exist for primary birth places and care is increasingly concentrated in secondary and tertiary hospitals, intervention rates continue to climb (Ministry of Health, 2007). Given this culture, it seems unlikely that the behaviour of midwives in this environment can change enough to influence women's experiences for the better. The best opportunity for change we have is to inform women's choices about where they wish to give birth, by assisting them to understand what types of interventions can be anticipated in each birth setting.

The structure of the maternity system in Aotearoa/New Zealand is underpinned by our belief that the woman is the crucial centre-point of any care provided. The LMC follows the woman to her chosen place of birth, and not vice versa. This means that researchers in this country

are uniquely placed to isolate the effects of birth place. This study goes some way towards providing information that women and their families may find useful to assist their decision-making. The background literature revealed that the things women considered important in determining their choice were about personal control, involvement in decision-making, minimal intervention and safety for both themselves and their babies. The findings of this study confirm that for first-time mothers, a choice to give birth at home is safe and associated with significantly less intervention. In an atmosphere of calm support, physiological birth can flourish. The ebb and flow of the hormonal tide is not interrupted in this space and the 'fear cascade' is less likely to gain ground. It seems from this research that the ability to maintain this atmosphere is easier to achieve at home, where women are cared for by their loved ones with the help of the midwife, and where the midwife can feel free to artfully and skilfully practice midwifery. While it is possible to achieve an atmosphere of calm support in hospital, it seems that both women and their family/whanau, and midwives, can feel constrained by a number of things; the clock, the protocols and politics of the unit, and the availability of technology. Women use what is around them to support birthing. If 'what is around' is technology, it is unsurprising that it becomes attractive when the woman reaches that part of labour which demands much of her. This research could begin the process of enabling a shift in women's attitudes regarding birth place choices, because it shows that birth without technology is both achievable and desirable.



Limitations and Strengths: Being Up in the Air

The still point of the dance is that place in which the aerial lift of the dancers balances the gravitational pull back to earth. In much the same way, the limitations of this study find some point of balance with its strengths.

It could be argued that there are attitudinal differences between women who choose to birth at home, and those who choose to birth in hospital. The midwives who provided labour and birth event data for this study articulate a strong philosophical stance about the provision of care which enhances the likelihood of physiological birth; a non-interventionist approach, with judicious use of technology when required or requested. Women who favoured a technological approach to their care would have been unlikely to have chosen these particular

midwives to care for them. Thus the two groups of women were as similar as it was possible to determine, having chosen this style and philosophy of care, and given the limited amount of demographic data sought. They were matched for risk status, which has not been apparent in other studies. Inclusion criteria meant that only women whose labours began spontaneously were included. The studies I have used to background this research (Ackermann-Liebrich et al., 1996; Janssen et al., 2002; Johnson & Daviss, 2005; van der Hulst et al., 2004), all reported induction rates, even when they have stated that risk status was similar. Women whose labours are induced cannot be said to have the same risk status as women who spontaneously labour; the fact that they are being induced means there must be some additional risk factor present, even if it is only being beyond the calculated due date. It is also important to bear in mind that these outcomes relate to an elite group of experienced midwifery practitioners, and that the midwifery population at large may not share the same commitment to physiological birth as this group.

The small size of this descriptive study is also a limitation, but in Aotearoa/New Zealand where the home birth population is small for first-time mothers, it has at least been possible to describe retrospective outcomes for more than a hundred women. This information is useful to broaden our understanding, but obviously a larger prospective study would elicit more data (though it might take several years to collect enough data to satisfy a power calculation of more useful magnitude). Despite that this sample was relatively small it was still possible to demonstrate statistically significant differences in outcome.

In relation to the survey, because the midwives were a self-selected sample, it is possible that those who responded may have had a bias. It was not possible to double check whether the midwives had selected cases to report which reflected their philosophical stance. Midwives were asked to report data for their *last ten* women in each group. I have presumed that this is what they have done and trust therefore, that they have not picked and chosen their cases to reflect positively on their own labour support skills.

The most obvious difference between this study and others of its ilk is the fact that the two groups of women were cared for by the same midwives in each birth setting. This constitutes its major strength in my view, because the differences found in labour and birth events cannot be attributed to the fact that different caregivers are looking after the women in each birth place. Two groups of women who are essentially the same, cared for by the same midwives

have been found to have a different experience of childbirth if they chose to give birth at home when compared to those who chose to give birth in hospital.

A further strength of this research is that to my knowledge no other study has investigated the consultation patterns of midwives amongst one another. Referrals to obstetricians are commonly featured in reports about birth outcomes, but this study has generated the important finding that when midwives consult with one another this can lead to improved rates of normal birth, even when obstetric referral has occurred as well.

The strength of the survey is that the midwives were familiar with the data collection tool from their everyday practice. The data sets were both very complete with few exceptions as a result of this. And, finally, the findings from the focus group triangulated with those of the survey. The themes generated from the focus group found expression as the differences which occurred in the labour and birth events for the two groups of women. Thus a corroborative picture was drawn, reflecting the experiences of the women through the lens of the midwives' ideas about how the birth setting affected their care.



Reflections on the Research Process

When I began the study, I had high hopes of producing a work that would change the face of decision-making around place of birth for first-time mothers. I hoped I could enable them to be better-informed about how what happens during labour and birth relates to choice of birth place. Given this knowledge, the number of women choosing to give birth in a secondary/tertiary setting would reduce, and therefore intervention rates would reduce also. Time and good sense have reined me in, and I am now content to add my set of results and my interpretation of them to what is already known in the field. I was disappointed that the midwives in the focus group seemed happy to speak in generalities rather than specifics about what influenced their care and how they worked differently. I now understand that if I had had more experience at conducting a focus group I could have more skilfully teased out that information. Having exhausted the avenues for recruiting midwives to participate in the survey, I worried that so few responded to my request, but am satisfied that the size of my

sample, though small, has produced enough data of interest to demonstrate that labour and birth events can be affected by place of birth decisions.

With the benefit of hindsight I am able to see some things I would do differently if I was to repeat the research. In an ideal world with plenty of time and resources I would follow up this research by regathering the same four midwives for a follow-up focus group discussion. I would present the outcome data to them for comment, and listen to what they had to say about the identified differences in outcomes. For example I would be interested to explore more deeply why midwives seem more confident to not refer at home, when they seem so ready to do it in hospital. Or why they are more likely to suture the woman's perineum if she is having stay in the postnatal ward rather than staying in her own home. It is about the bacteria, or about who might be looking at the perineum?

I would make some refinements to the survey tool, including recoding the birth position question to include lithotomy and supine, and would clarify how the diagnosis of the second stage of labour occurred i.e. whether by vaginal examination or by the assumption of full dilatation based on behavioural change in the woman.

I have acquired many new skills during the process of undertaking this enquiry, and can appreciate the advantage of choosing one method rather than two. Using a mixed-methodology has necessitated learning two new sets of skills, which although valuable has meant getting to grips with a vast amount of new information. I have reflected upon what knowledge I would have gained by using a single method in isolation, and thus have felt vindicated about my decision to do a mixed-method study. The focus group surfaced ideas about how midwives use time and space in each birth place, but they did not talk specifically about time in terms of second and third stage management, or discuss details about where the babies were born. They discussed safety and 'unsafety', but did not relate these ideas to Apgar scores or blood loss. They talked of "fiddling", and being with their women, but did not quantify intervention rates or labour support.

By examining the quantitative data alone I could have made interpretations about differences in outcome that in fact bore no relation to how midwifery care might be provided differently. For example, I could have identified that midwives were more likely to use acupuncture and homeopathy at home, and even related this to previous research findings, but it would not

have occurred to me that midwives might intervene in this way in a woman's labour in order to *prevent* further intervention ...keeping it good rather than making it better.

One of the more important findings of this study is that when a woman's labour becomes complex and she requires input from other health practitioners, the consultation with another midwife can demonstrably improve the normal birth rate. This finding was generated *only* because the midwife participants in the focus group requested that I make a distinction in the survey questionnaire between consulting with a midwife, and consulting with an obstetrician. Had it not been for their assistance in the development of the survey, this important discovery which has implications for every midwife and every birthing woman would not have been made.

So the mixed-methods approach has allowed the study to produce a richer set of understandings in relation to the first birth experience of women in Aotearoa/New Zealand. Not only have I been able to demonstrate that women who plan to give birth at home are more likely to have physiological births with less intervention and no compromise to either themselves or their babies, I have been able to offer some ideas about why this might be so. This relates to the effects on both women, and midwives, of being in a hospital environment, where the presence of technology, the "obstetric gaze" and the clock can influence their behaviour.

Recommendations

An examination of the sample as a whole, has revealed also what a wonderful set of outcomes have been achieved by these women and their midwives, quite distinct from subsets of where the birth took place. Overall, 87.3% of these first-time mothers achieved a normal birth, a stunning figure in today's climate of increasing intervention rates, and impressive alongside our current national figure of 61.3%. Perhaps the boldest recommendation I can make is that if a woman is expecting her first baby, and is committed to achieving a normal birth, then booking with a midwife who provides both home and hospital birth services will enhance her likelihood of achieving her goal.

District Health Boards could be responsive to these findings by undertaking to provide birthing facilities which reflect women's and midwives' needs, alongside those of

management budgets and architects. Primary care women need facilities which promote primary care, not secondary/tertiary facilities with one or two user-friendly rooms from which one can easily be catapulted into theatre. In this way women who are low risk, but who choose not to give birth at home, can be supported to achieve physiological birth without having to look over their shoulder for readily-deployed technology and personnel. 'Getting it right' first-time will reduce pressure on over-stretched high-risk service providers, by reducing the costs of technology provision and by enabling targeting of services to those who most need them.

Midwives need also to continue to support each other; to honour each other's knowledge and skills, and to stand in their space as midwives when working within a hospital setting. We must remember where appropriate to consult with another midwife as a first point of reference, rather than opting to consult directly with an obstetrician. This study has highlighted how birth outcomes are influenced by the consultation process. We must adopt evidence-based guidelines for normal birth using midwifery evidence for primary care women (Walsh, 2007) as well as being aware of what obstetric evidence can offer us when appropriate.



Significance and Conclusions

Combining all the elements back into a whole, I will revisit my original aims and the research question itself. My first aim was to explore midwives' ideas and attitudes about the provision of intrapartum midwifery care at home and in hospital. The midwives who participated in the focus group were able to articulate a number of areas where they felt their practice differed, and some where they felt their practice was the same. Differences included how they used time and space, and their ideas about "being with" and "doing to" women in labour and how these things were all affected by the birth setting. They described feeling constrained by time and protocols in the hospital, and felt that the 'restrictive' atmosphere led to increased referral and higher intervention rates. They also felt less relaxed in the hospital environment, which was expressed physically, emotionally and spiritually.

Secondly, I aimed to describe birth outcomes for two groups of first-time mothers, one who planned to give birth at home and another who planned to give in hospital. Because I was interested to make the place of birth the only variable between the groups, I obtained birth outcome data for the two groups from the same midwives, so that differences in practitioner 'style' could be controlled for as far as possible. The survey revealed significant differences in outcomes between the two groups. Specifically, the home birth women were more likely to achieve a normal birth. They experienced less intervention in their labours (less artificial rupture of membranes, vaginal examinations, pharmacological pain relief, IV fluid use, ventouse birth, suturing, ecboloc use and they lost less blood) without compromise to either themselves or their babies. They made more use of water immersion in labour, acupuncture and homeopathy. They were more likely to give birth in an upright position, and very rarely gave birth on a bed.

Mixing these two sets of data together was my third aim. This has enabled me to describe how the way that midwifery practice is provided in each birth setting has expressed itself as differences in the experiences of women. The experiences of women are shaped by their choice of birth place: women are "with" their midwives differently, they use space differently, they "do birth" differently and they are "safe" differently. Midwives felt able to allow more time for the woman to achieve spontaneous birth at home. This was particularly evident in the second and third stages of labour, where the normal birth rate for those having a long second stage is higher in the home birth group, and the postpartum haemorrhage rate is higher in association with active management in the hospital group. Midwives used space differently in hospital, with more babies being born on the bed and less use of birthpools there than at home. Midwives used different and more interventions in hospital, and in particular referred far more often to obstetric services, resulting in much higher intervention rates. Safety was expressed and experienced differently, the paradox being that what some women and midwives consider safe, can also be considered as 'unsafe'.

The significance of this study resides within my original quest to find out what happens when first-time mothers choose home or hospital as a birth setting; closing the circle by becoming once again the midwife, now better able to inform women and their families in Aotearoa/ New Zealand about place of birth, framed up around local research, and going beyond the rhetoric of the perceived 'safety' and 'unsafety' of birth place choice. By describing the experiences of over two hundred women giving birth both at home and in hospital, I have

shown that a choice to give birth at home is both safe and subject to less medical intervention than a choice to give birth in a secondary/tertiary hospital. Further, I have explored some reasons why this might be so. When women and their families have access to information about the way that the birth setting influences both their own behaviour, and that of their midwives, they can use this information to further inform their decisions about place of birth.



EARTH grounded the study by revealing what we knew in relation to the phenomena that is the first birth experience: why it matters to get it right for women giving birth for the first time, and how birth can be influenced by a number of factors. EARTH uncovered how both midwives' practice and birth experiences are affected by the birth place choice of the woman.

WATER yielded up a plan to obtain information about how the birth place choice affects the practice of midwives in Aotearoa/New Zealand, and how to discover if these affects might alter the experience of first-time mothers.

FIRE exposed the landscape created by the midwives' discussion about how they perceived their practice was influenced by the birth place and shed light on the birth outcomes of the women who gave birth at home and in hospital.

AIR allowed thought to interpret the findings of both parts of the study, to mix the data sets and seek links between the 'meanings' of the midwives ideas and the 'numbers' from the survey.

“Do midwives offer the same intrapartum care at home and in hospital, and if differences exist, how might they be made manifest in the labour and birth events of first-time mothers?”.

A number of differences exist in the provision of midwifery care at home and in hospital. Midwives acknowledge that each birth setting has elements which can promote or hinder the achievement of physiological birth. Birth outcomes for women giving birth for the first time

were better when the women gave birth at home, when compared with those who gave birth in hospital. This is in part related to the way midwives' practice is influenced by time constraints, hospital personnel and access to technology. If we are serious about reducing intervention rates, and enhancing women's satisfaction with their birth experiences, we must encourage low risk women to give birth at home or in primary care settings, and restrict access to secondary/tertiary settings to those women who need that level of care.

Appendices

Appendix 1: Ethical Approvals



MEMORANDUM

TO	Suzanne Miller
COPY TO	
FROM	Dr Allison Kirkman, Convener, Human Ethics Committee
DATE	October 3, 2005
PAGES	1
SUBJECT	Approval: No121/2005, An exploration of the differences in midwifery practice between home and hospital.

Thank you for your application for ethical approval, which has now been considered by the Standing Committee of the Human Ethics Committee.

Your application has been approved and this approval continues until 30 December 2006. If your data collection is not completed by this date you should apply to the Human Ethics Committee for an extension to this approval.

Best wishes with the research.

Allison Kirkman
Convener

27 October 2006

**Suzanne Miller
Victoria University of Wellington
255 Horokiwi Road
Horokiwi
Wellington**

Dear Suzanne

A comparison of birth outcomes for first time mothers between those who plan a home birth and those who plan to give birth in a secondary/tertiary hospital setting

Lead Investigator: Suzanne Miller, Victoria University of Wellington

MEC/06/08/077

The above study has been given ethical approval by the **Multi-region** Ethics Committee.

Approved Documents

- Information Sheet for Midwives
- Key to Data Sheet
- Advertisement, "Seeking Expressions of Interest"
- Homebirth Data Set

Accreditation

The Committee involved in the approval of this study is accredited by the Health Research Council and is constituted and operates in accordance with the Operational Standard for Ethics Committees, April 2006.

Final Report

The study is approved until **27 October 2007**. A final report is required at the end of the study and a form to assist with this is available from the Administrator. If the study will not be completed as advised, please forward a progress report and an application for extension of ethical approval one month before the above date. Report forms are obtainable from the Committee website, www.newhealth.govt.nz/ethicscommittees.

Amendments

It is also a condition of approval that the Committee is advised of any adverse events, if the study does not commence, or the study is altered in any way, including all documentation eg advertisements, letters to prospective participants.

Please quote the above ethics committee reference number in all correspondence.

It should be noted that Ethics Committee approval does not imply any resource commitment or administrative facilitation by any healthcare provider within whose facility the research is to be carried out. Where applicable, authority for this must be obtained separately from the appropriate manager within the organisation.

Yours sincerely



Michelle Judge
Multi-region Ethics Committee Administrator

Email: michelle_judge@moh.govt.nz

Appendix 2: Focus Group Information Sheet

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wananga o te Upoko o te Ika a Maui



AN EXPLORATION OF DIFFERENCES IN MIDWIFERY PRACTICE BETWEEN HOME AND HOSPITAL.

INFORMATION SHEET FOR PARTICIPANTS.

My name is Suzanne Miller, and I am a postgraduate student at Victoria University. As part of my Masters study, I am this year undertaking a research project for my thesis. As a midwife who assists women both at home and in hospital, I have developed a growing awareness of how birth outcomes are impacted on by the environment in which a woman chooses to give birth. You are invited to participate in this research study which aims to explore some aspects of birth environment and labour outcomes for primigravid women. The study is in two parts.

Firstly, I wish to run a focus group to discuss with midwives how they perceive their decision-making in labour is influenced by whether they are at home or in hospital. (For this purpose, "hospital" is defined as being a secondary or tertiary setting with availability of anaesthetic and surgical services.) Conversations from the group will be taped. You will be assigned a pseudonym so that any statements you make will not be identifiable to readers when the study results are written up.

Following on from this, the second part of the study involves the collection of client outcome information. I may contact you again once ethical approval has been granted for this second stage of the study. Your participation in the first part of the study places you under no obligation to also participate in the second part.

Only myself and my supervisors will have access to any audiotape or written data, and the tapes will be destroyed upon completion of the thesis. Results may be published in a midwifery journal, or used as part of a conference presentation.

My supervisors for this project are Maralyn Foureur and Joan Skinner and you may contact them at Victoria University (ph 04 4636654) if you have any questions about the research. If you are interested in participating in this study, please sign and date the consent form and return it to me in the envelope provided. I will then contact you to discuss a suitable time to get everyone together for the focus group. In recognition of your time, and your value to my project, I will reimburse you with a petrol voucher to cover your travel costs to the focus group.

Many thanks

Suzanne Miller.

Appendix 3: Focus Group Consent Form

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wananga o te Upoko o te Ika a Maui



CONSENT FORM FOR MIDWIVES.

AN EXPLORATION OF DIFFERENCES IN MIDWIFERY PRACTICE BETWEEN HOME AND HOSPITAL

Researcher: Suzanne Miller

I have been given and have understood an explanation of this research project. I have had an opportunity to ask questions about the project, and have had them answered satisfactorily.

I understand that I am being asked to participate in a focus group discussion of about 90mins duration and that this group discussion will be audiotaped

I understand that my privacy will be protected by the use of a pseudonym for any comments made by me that are reported in the published findings.

I understand that only Suzanne Miller and her supervisors, Maralyn Foureur and Joan Skinner will have access to any data provided by me.

I am aware that this project has been granted ethical approval from the Victoria University Human Ethics Committee.

I would like to receive a summary of the study findings yes / no

I agree to participate in the study yes / no

You may recontact me regarding participation in Part Two of the study yes / no

Signed _____ Date _____

Name of Participant _____

Contact phone number _____

Appendix 4: Survey Pack – Information Sheet for Midwives

VICTORIA UNIVERSITY OF WELLINGTON
Te Whare Wananga o te Upoko o te Ika a Maui



Information Sheet for Midwives.

Comparing Birth Outcomes for First-time Mothers Between Home and Secondary/Tertiary Hospital Settings.

My name is Suzanne Miller and I am a Masters student in the Graduate School of Nursing and Midwifery at Victoria University, Wellington. I am conducting a mixed methods research project which explores birth outcomes for women giving birth for the first time, particularly in relation to whether they planned to give birth at home or in a secondary/tertiary hospital.

The first part of my project (already completed) was a focus group exploration of midwives' ideas about how they perceive they practice in each setting, looking at differences and similarities of how midwives provide intrapartum care and how the place of birth influences their decision-making in labour.

This second part of my project aims to look at some outcome data for midwives' clients, based on information collected for the generation of maternity claims and Midwifery Standards Review purposes. The survey form asks that you collect a data set for your last ten primiparous homebirth clients, and your last ten primiparous hospital birth clients. If you are unable to provide data for ten primiparous homebirth women, could you please provide data for the number that you do have, and also for the same number of hospital birth clients, so that I will be able to analyse equal numbers in each group.

For the purposes of this study, a 'hospital birth' client is one who planned to give birth in a secondary or tertiary hospital, where anaesthetic and surgical services were available. The place of birth is defined as being the planned place of birth at the onset of spontaneous labour, so does not include inductions of labour, or women who planned to birth at home but were transferred antenatally for any reason. It is the intrapartum experiences of the women I am interested in comparing.

I anticipate that once you have assembled the necessary charts it will take you approximately one and a half hours to complete the survey form. I appreciate that your time is valuable and when your completed form is returned to me, your name will go in a draw to receive a copy of "Gentle Birth, Gentle Mothering" by Sarah Buckley.

Any information supplied by you will remain confidential. It will be kept in a locked file, and the only people with access to the information will be myself and my supervisors. Client data you provide will not be identifiable because I will not require each woman's NHI number. All data will be destroyed upon completion of the Masters examination process.

Please note that by filling in and returning the survey form, you are consenting to the use of this data for the project.

My supervisors for this project is Dr Joan Skinner. She may be contacted on 04 4636654 if you have any questions about the project. I may be contacted via email suzandjim@xtra.co.nz or by phone 0272727308.

Many thanks

Suzanne Miller

Midwives' Demographic Sheet

A Comparison of Birth Outcomes for First Time Mothers Between Those Who Plan a Home Birth and Those Planning to Give Birth in a Secondary/Tertiary Hospital Setting.

Researcher: Suzanne Miller

Demographic data about study participants:

Type of Midwifery Registration: RGON/RM RCompN/RM BMid/RM ADN/RM

Number of Years Registered: 0-5 6-10 11-15 16-20 21-25 >26

Number of Years in Hospital-based Practice:

Number of Years in Independent Practice:

Practice area: Rural Urban Mixed rural/urban

("Rural" means the woman lives greater than thirty minutes away by car from the secondary/tertiary hospital)

Approx. percentage of total caseload are Homebirth?
Secondary/Tertiary Hospital?

Key to Data Sheet

Key to Data sheet: Please Read Carefully Before You Begin.

Please be aware that by filling in and returning the survey form, you are consenting to the use of this data for the project.

Remember, place of birth is defined as being planned place of birth *at the onset of spontaneous labour* i.e., excludes antenatal transfers, inductions of labour etc.

Any question that you are unable to answer for any reason, e.g not recorded in the notes or can't remember, please leave the field blank.

Ethnicity P Pakeha M Maori PI Pacific Is O other

Procedures prior to labour: MS (membrane sweep) Acup (acupuncture) ARM
H (homoeopathy) EPO (evening primrose oil)

Rupture of membranes/ no of cms if known S (spontaneous) or A (artificial) e.g. S / 9

Visits prior to established labour if you haven't documented the length of time for the visits, please give an approximation with reference to what's written and what you remember. Please express your answer in minutes eg 20mins or 90 mins.

Pain Management M (massage) W (water) Acup (acupuncture)
Hom (homeopathy) Apres (acupressure) T (TENS) Ent (entonox) P (pethidine) Ep
(epidural) Sp (spinal) **If Ep or Sp.....** L in labour for pain relief B for effecting birth e.g.
with ventouse

Indication for transfer (A/N) MR (maternal request) SP (slow progress) BI (bleeding)
Mec (meconium) FHRA (foetal heartrate abnormalities)

Indication for transfer (P/N) PPH (postpartum haemorrhage) RP (retained placenta)
Sut (suturing) Baby (any concern regarding the baby).

Womans position for birth Kn (kneeling) Sq (squatting) LL (left lateral)
Rec (reclining) Sit (sitting – includes birthstool)) St (standing)

Baby's presentation C (cephalic) Br (breech) POP (persistent posterior) H/H (head
and hand) O (other)

FHR monitoring in labour P (Pinard only) D (Doppler/sonicaid)
IntC (intermittent CTG) Cont C (continuous CTG)

Type of birth S (spontaneous) SW (spontaneous waterbirth) V (ventouse)
F (forceps) C/S (Caesarean Section).

Baby caught by W (woman) F (father) M (midwife) StM (student midwife)
Dr (doctor) O (other)

Ecibolic used N (nil) A (active) T (treatment)
Ecibolic method IM (intramuscular) IV (intravenous) Inf (infusion)

Perineum Int (intact) Gr (graze) 1st 2nd 3rd degree tear Epis (episiotomy)
Sutured by m (midwife) Stm (student midwife) Dr (doctor)

Resuscitation N (nil) S (suction) O (oxygen) Amb (ambubag) Int (intubation)

Anything else? An opportunity to write about anything else that was interesting about the birth eg shoulder dystocia, BBA, co-existing medical disease, any other thing which might have contra-indicated homebirth if it was a homebirth woman.

Data Sheet

HOMEBIRTH DATA SET										HB1	HB2	HB3	HB4	HB5	HB6	HB7	HB8	HB9	HB10	
Woman's age																				
Ethnicity P M PI O																				
Gestation at onset of labour wks / days										/	/	/	/	/	/	/	/	/	/	
Procedures prior to labour MS Acup ARM																				
H EPO																				
Rupture of membranes S or A / no. of cms if known										/	/	/	/	/	/	/	/	/	/	
IV fluids for hydration Y or N																				
Visited in early labour prior to continuous presence of mw?																				
Number of visits in early labour																				
Approximate length of time for each visit																				
Length of labour 1 st stage h:m										:	:	:	:	:	:	:	:	:	:	
2 nd stage h:m										:	:	:	:	:	:	:	:	:	:	
3 rd stage h:m										:	:	:	:	:	:	:	:	:	:	
Pain management M W Ac Hom Apres																				
T Ent P Ep Sp																				
If Epidural or Spinal L or B																				
Woman's position for birth - Kn Sq LL Rec Sit St																				
Baby's presentation at birth C Br POP H/H O																				
FHR monitoring in labour P D Int C ContC																				
No of VE in labour / no of different people doing them										/	/	/	/	/	/	/	/	/	/	
Syntocinon augmentation in labour Y or N																				
Meconium present in labour Y or N																				
Baby suctioned if meconium present Y or N																				
Transfer to hospital in labour (L) or postnatally (P)																				
Were you able to provide m/w care after transfer Y or N																				
Indication for transfer (A/N) MR SP BI Mec FHRA																				
Indication for transfer (P/N) PPH RP Sut Baby																				
Consultation with midwifery colleague in labour Y or N																				
Consultation with Sec'dy care provider in labour Y or N																				
Type of birth S SW V F C/S																				
Baby caught by W F M StM Dr O																				
Which room was the baby born in (please specify)																				
If in the bedroom was baby born on the bed																				
Ecobolic used N A T																				
Ecobolic method if used IM IV Inf																				
Estimated blood loss (mls)																				
Perineum In Gr 1 st 2 nd 3 rd Epis																				
Sutured Y or N																				
Sutured by M StM Dr																				
Apgars 1 min / 5 min										/	/	/	/	/	/	/	/	/	/	
Birthweight (g)																				
Resuscitation N S O Amb Int																				
Admission to SCBU / NICU																				
Referral to paediatrician following initial exam Y or N																				
Was referral urgent (U) or non-urgent (NU)																				
Baby to breast within one hour of birth Y or N																				
No of support people present in labour																				
No hours midwife continuously present at labour and birth																				
Anything else? Please turn the page sideways and note any other memorable things about this birth. Continue on a separate sheet if necessary but please remember to include woman's reference number (eg HB3).																				

Please note that the layout for this data sheet has been reduced for inclusion in the thesis

HOSPITAL BIRTH DATA SET						Hsp1	Hsp2	Hsp3	Hsp4	Hsp5	Hsp6	Hsp7	Hsp8	Hsp9	Hsp10
Woman's age															
Ethnicity	P	M	PI	O											
Gestation at onset of labour	wks / days					/	/	/	/	/	/	/	/	/	/
Procedures prior to labour	MS	Acup	ARM												
	H	EPO													
Rupture of membranes	S or A / no. of cms if known					/	/	/	/	/	/	/	/	/	/
IV fluids for hydration	Y or N														
Woman visited at home prior to admission to hospital Y/N															
Number of home visits in early labour															
Approximate length of time for each visit															
Length of labour	1 st stage		h:m			:	:	:	:	:	:	:	:	:	:
	2 nd stage		h:m			:	:	:	:	:	:	:	:	:	:
	3 rd stage		h:m			:	:	:	:	:	:	:	:	:	:
Pain management	M	W	Ac	Hom	Apres										
	T	Ent	P	Ep	Sp										
If Epidural or Spinal	L or B														
Woman's position for birth -	Kn	Sq	LL	Rec	Sit	St									
Baby's presentation at birth	C	Br	POP	H/H	O										
CTG on admission to hospital	Y or N														
FHR monitoring in labour	P	D	Int	C	ContC										
No of VE in labour / no of different people doing them						/	/	/	/	/	/	/	/	/	/
Syntocinon augmentation in labour	Y or N														
Meconium present in labour	Y or N														
Baby suctioned if meconium present															
Consultation with midwifery colleague in labour	Y or N														
Consultation with Sec'dy care provider in labour	Y or N														
Able to continue providing m/w care after consult	Y or N														
Type of birth	S	SW	V	F	C/S										
Was the baby born on the bed															
Baby caught by	W	F	M	StM	Dr	O									
Ecobolic used	N	A	T												
Ecobolic method if used	IM		IV	Inf											
Estimated blood loss (mls)															
Perineum	Int	Gr	1 st	2 nd	3 rd	Epis									
Sutured	Y or N														
Sutured by	M	StM	Dr												
Apgars	1 min / 5 min					/	/	/	/	/	/	/	/	/	/
Birthweight (g)															
Resuscitation	N	S	O	Amb	Int										
Admission to SCBU / NICU															
Referral to paediatrician following initial exam Y or N															
Was referral urgent (U) or non-urgent (NU)															
Baby to breast within one hour of birth Y or N															
No of support people present in labour															
No hours midwife continuously present at labour and birth															
Anything else? Please turn the page sideways and note and other memorable things about his birth. Continue on a separate sheet if necessary but remember to include the woman's reference number e.g. Hsp3															

Please note that the layout for this data sheet has been reduced for inclusion in the thesis

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