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**INDUCTION OF LABOUR: THE
INFLUENCES ON DECISION
MAKING**

**A thesis presented in partial fulfilment of the
requirements for the degree of Master of Arts in
Midwifery**

**At Massey University
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Abstract

This thesis presents a study using a general qualitative approach that explores the reasons for induction of labour (IOL) for nulliparous women and the influences for women and Lead Maternity Carers (LMCs) on coming to that decision at a secondary care maternity facility in Auckland. It is part of a larger study that compares the outcomes for women who have had their labour induced and those whose labour began spontaneously.

Seventy-nine women and 74 of the LMCs who cared for these women were interviewed prior to induction in the period December 2002 to April 2003. The sample was obtained through the induction booking system used at the maternity facility.

Age, ethnicity, LMC type and data relating to the reasons for induction, information received, associated interventions and other methods used to induce labour in the community were collected. The qualitative data from the interviews was analysed using Boyatzis' method of thematic analysis and code development. Results showed that the main reason for induction was post-dates, however secondary influences were identified. The hospital booking system was a cause of inductions being commenced earlier than necessary. It appeared women had minimal information about the risks of induction and were not active participants in the decision making process. Communication between the health professionals, women and maternity facility was sometimes poor and led to the indication for induction being unclear. LMCs displayed a balancing of risk as they were conscious of the current research, previous experiences in relation to induction, expectations of peers, litigation and the concerns of women. Women were focused primarily on the safety of their baby. Induction of labour was viewed by women as having both a positive and negative effect on the birth experience.

Information sharing, stereotypes held by practitioners, fear of litigation and the type of relationship the LMC and women worked within appeared to influence the decision making to induce labour. A decision making tool that facilitates communication between all parties and outlines the risks and benefits of induction for women and their babies is one recommendation from the study. Research indicates that if such a tool is held by the woman it can promote informed choice in decision making.

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Chapter 1: Orientation to the Study

1.1 Introduction

The study explores the reasons for induction of labour (IOL) and the influences on the decision making process involved in coming to that reason for nulliparous women and their Lead Maternity Carer at a secondary care maternity facility in the Auckland region. It is part of a larger study that includes the clinical management and outcomes of induction. The background, current context and justification for the study are given in this chapter, as are the research questions and aims of the study.

1.2 Background

Birth by caesarean section is an increasing occurrence for women in New Zealand. A national maternity report placed the average caesarean rate for 2001 at 22.1% (Ministry of Health, 2003). The rate is up 1.3% from 2000 with the rate for nulliparous women increasing more so at 1.9%. The rising caesarean rate for nulliparous women has been of concern at the unit I work in as a Research and Quality midwife. A two-month retrospective audit was undertaken at the beginning of 2002 as part of my job. The aim was to look for variables that may be correlated with a woman having her first baby by caesarean.

The unit's induction rate, during the 2-month retrospective review of nulliparous women, was 28% (Austin & Belgrave, 2002). The mode of birth was ascertained for induction and spontaneous labour (Figure 1). Twenty two percent of women who had a spontaneous onset of labour delivered by caesarean compared to fifty four percent who had their labour induced. There were major limitations to the review as only 209 deliveries were reviewed retrospectively. However it raised the question, does having labour induced increase a woman's risk of having a caesarean section? It also showed the need for a prospective study looking at the reasons for induction, the management of the induction and the information women receive about the risks and benefits of an induction.

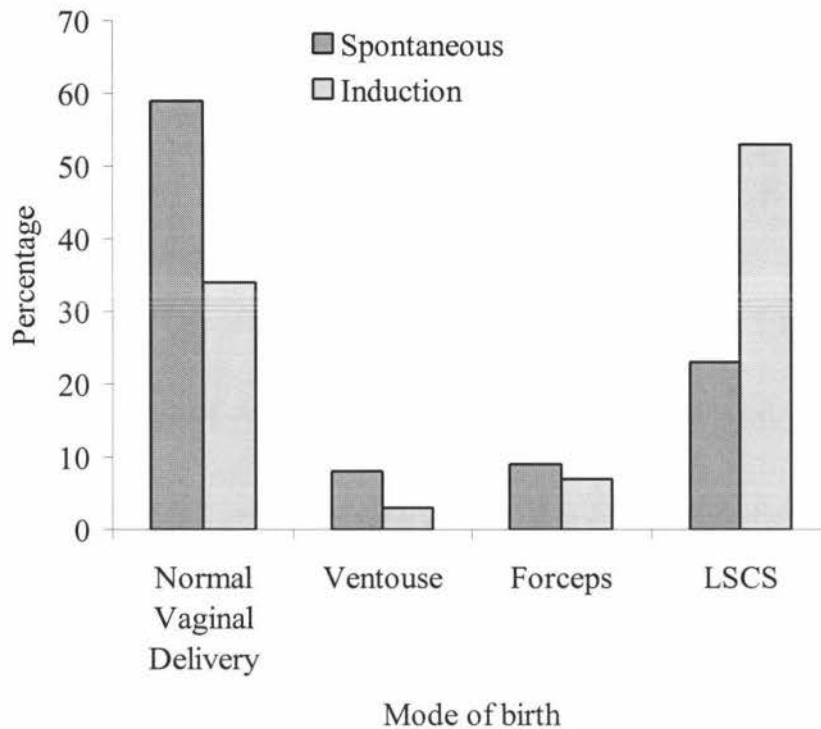


Figure 1 Mode of birth according to spontaneous (n=131) or induced (n=58) onset of labour for nulliparous women during October and November 2001.

Following the completion of the review the results were presented at an open meeting of Lead Maternity Carers (LMC), District Health Board staff and consumer representatives. At this meeting it was decided to pursue the development of a larger study looking at induction of labour.

1.3 Induction of Labour

Induction of labour refers to the “initiation of labour by artificial means” and is indicated when the health of the mother and/or fetus would “be compromised by the continuation of pregnancy” (Stables, 1999, p. 501). The onset of labour is a normal progression in the process of giving birth but the aetiology of labour is complex and not well understood (Stables, 1999). Enkin et al.(2000, p. 374) state “the decision to bring

pregnancy to an end before the spontaneous onset of labour is one of the most drastic ways of intervening in the natural process of pregnancy and childbirth.” It is essential therefore that the benefits of such action are clear and women are fully informed of both the risks and advantages.

The facility, in which the present study took place, has a higher rate of induction of labour than its neighbouring tertiary hospital, 26.0% and 23.4% respectively (Ministry of Health, 2003). There was also anecdotal evidence from LMCs that induction was occurring for ‘ridiculous’ reasons. These two factors initiated a need for a greater understanding of the reasons why women were having their labours induced and what was influencing this decision to induce labour for both the LMC and women. A greater understanding of the complexities of the situation rather than simplified, non-contextual data from the database was needed to identify areas that could be improved and ultimately reduce the induction and resulting caesarean rate in a maternity system that is predominately serviced by midwives as lead maternity carers.

1.4 New Zealand Maternity System

In this section the recent historical changes to the New Zealand Maternity system and the key points of the current system are discussed, thus providing the contextual background to the study.

Historical changes

In 1990 the New Zealand government vision statement for maternity was that

Each woman (and her whanau/family) has a safe and fulfilling outcome to her pregnancy and childbirth, through provision of programmes and services that are based on partnership, information and choice. Pregnancy and childbirth are a normal lifestage for most women, with appropriate additional care available to those women who require it (Health Funding Authority, 2000, p. 10).

In 1990 an amendment to the Nurses Act 1977 enabled midwives to practice autonomously and be the sole providers of maternity care for women. A review of Section 51 of the Health and Disability Services Act (1993) in 1996, due to escalating costs of maternity services, led to a modular system of payment where a single fee was paid to a Lead Maternity Carer. This was replaced by section 88 of the New Zealand Public Health and Disability Act 2000 (2002).

LMC system and section 88

A Lead Maternity Carer “means an Authorised Practitioner who is a General Practitioner with a Diploma in Obstetrics (or equivalent, as determined by the New Zealand College of General Practitioners), a Midwife or an Obstetrician who has been selected by the woman to provide her Lead Maternity Care...” (New Zealand Public Health & Disability Act 2000, 2002, p.8).

The Lead Maternity Carer system is the key point of maternity care in New Zealand. “A Lead Maternity Carer chosen by the woman with responsibility for assessment of her needs, planning her care with her and the care of her baby and being responsible for ensuring provision of Maternity Services, is the cornerstone of maternity care in New Zealand” (New Zealand Public Health & Disability Act 2000, 2002, p.11). The Section 88 notice in 2002 set out that every woman was to have a named LMC who would follow specific service specifications in order to be entitled to receive payments (New Zealand Public Health & Disability Act 2000, 2002). A standard fee was set for each module of the childbearing experience. The labour and birth module begins from the time labour is established until 2 hours after delivery of the placenta. No extra fee is available for induction of labour where, at the facility in this study, the LMC is expected to initiate the induction process and regularly assess the woman until labour is established. Unless the LMC completely hands over care to the hospital or ‘secondary care,’ the hospital will not be paid for initiating the induction either.

Guidelines for consultation with obstetric and related specialist medical services are provided as an appendix in the Section 88 notice. Induction of labour is categorised as a level 2 referral. Level 2 requires that the LMC “must recommend to the woman... that a consultation with a specialist is warranted...” and where a consultation occurs, “...the decision regarding ongoing clinical roles/responsibilities must involve a three way discussion between the specialist, the Lead Maternity Carer and the woman concerned” (New Zealand Public Health & Disability Act 2000, 2002, p.31). For clarity in this study the obstetrician seen by the woman specifically to consider induction of labour will be referred to as the ‘consulting obstetrician’. ‘Obstetrician’ will be used for the obstetrician on-call for the hospital or as an LMC. The consulting obstetrician is responsible for the decision to induce labour but does not assume automatic responsibility for ongoing care. The guidelines for induction of labour, at the maternity

facility where the study took place states, “the decision to induce, taking risk factors into consideration must be made in consultation with an Obstetric & Gynaecology Consultant. In making this decision the Consultant will use his/her clinical judgement as to the indication for induction and the presence of relative and absolute contraindications” (Women's Health Services, 2001, p. 4.4).

1.5 Study Context and Current System

The study was undertaken in a secondary level maternity service in the Auckland area. Approximately 3000 women give birth in the facility each year. The current system of induction involves a woman being referred by her LMC to a consulting obstetrician for a particular concern. Most women see a private obstetrician in the community although consulting obstetricians are available in the public system. If induction is decided to be a suitable option the hospital is rung and an available space found in the booking book, known as the ‘induction book’. The hospital allows two inductions a day with a third available if an urgent situation arises. Most inductions, for nulliparous women, are commenced in the evening with initial priming using prostaglandin gel. Inductions for women with medical complications, or if the LMC prefers, are commenced during the day. Following admission a cardiotocograph is performed and the on call registrar or obstetrician is notified of the woman’s arrival. The doctor discusses the situation with the LMC and may or may not look at the woman’s clinical notes and see the woman personally. Prostaglandin is prescribed based on the LMC’s assessment of the Bishop Score. Induction of labour requires referral to a specialist, as discussed above, however the boundaries of responsibility for care are blurred. The LMC is expected to initiate the induction and return to the unit as soon as the woman establishes into labour.

1.6 Research Question and Aims of the Study

The research questions for the study reported in this thesis are:

1. What are the reasons given for induction of labour by the Lead Maternity Carers and the nulliparous women having an induction of labour?
2. What influenced the decision to induce for the stated reason?

The aims of the study, relating to the research questions above are, to:

- Identify the reasons for inducing labour given by the LMCs and the women themselves.
- Determine the medical and non-medical factors that influenced the decision making.
- Identify the demographic characteristics of nulliparous women who have their labours induced.
- Identify what information women have about induction prior to the induction.
- Determine the informal methods of induction used by women prior to admission.

The research was part of a larger study that followed the retrospective audit. The larger study included the following research questions and aims that are not addressed in this thesis.

Research questions:

- What are the outcomes for nulliparous women and their babies when labour is induced compared to labour that begins spontaneously?
- What are the reasons for and methods of induction of labour and what aspects relating to these may be contributing to the high induction rate and the risk of caesarean delivery following induction for nulliparous women?

The specific aims relating to these research questions are:

- To determine the methods of induction.
- To assess the management of the induction in relation to the type of induction agent, dosage and timing of administration.
- To measure the type of delivery, maternal and perinatal morbidity and length of labour in relation to method and management used.
- To identify possible variables in the method and management that may lead to a vaginal delivery or a caesarean delivery.
- To validate the information entered into the hospital's computerised database.

1.7 Researcher's Situation

I work as a Research and Quality Midwife in the facility in which the study took place. It is a part time position created to initiate and implement quality improvement strategies for clinical indicators of concern in collaboration with other clinicians. It was a newly created position when I became the incumbent two years ago, which has led to studies such as this one amongst many other projects. The part time nature of the position makes it difficult to achieve the tasks that have been identified. The opportunity to combine the work and study expectations into creating a larger research project has been of benefit to both the hospital and myself. A summer studentship from the Health Research Council, obtained through Massey University allowed me to work on the project full time while collecting the data and to carry on with other projects at work. The induction of labour study, with a qualitative and quantitative component was conducted with agreement that the qualitative data be used for this thesis.

1.8 Structure of the Thesis

The following is an outline of the information covered in each of the chapters of the thesis.

Chapter 2: Literature review

In chapter 2 a critical review of the literature relating to induction of labour is provided to place the study in the context of the existing knowledge base. The chapter begins with an outline of the method used to conduct the literature review. The second part critiques the literature relating to the reasons for induction, risks and associated interventions with induction, methods of induction used both in the hospital and in the community. The final part examines influences on decision making already identified in the literature.

Chapter 3: Research design and methods

In chapter 3 an explanation of the theoretical perspective, research approach and methods used in this study are given. The process of data collection and analysis are described with consideration given to ethical issues and maintaining rigour in the study.

Chapter 4: Results – descriptive

Chapter 4 is the first of two results chapters. This first chapter presents data that assists in setting the scene for the analysis of the qualitative data in chapter 5. The demographic details of age and ethnicity for women having an induction of labour and nulliparous women having a spontaneous labour during the same time frame are given. Other quantifiable data such as the reasons for induction, information women have received, gestation at time of induction, epidural preference, mode of delivery and methods used to induce labour in the community are presented using tables and graphs.

Chapter 5: Results –thematic analysis and code development

In this chapter Boyatzis' method of thematic analysis has been used to make sense of the qualitative data from the interviews with women and their LMCs. This method has been described in detail with examples to clearly explain the process of thematic analysis. The resulting code and themes are defined and discussed with inclusion and exclusion criteria relating to the themes.

Chapter 6: Discussion

In chapter 6 the reasons for induction and the influences on decision making in coming to these reasons are discussed in relation to the results from this study and the literature reviewed in chapter 2. Influences on decision making at both an individual and systems level have been identified and discussed in relation to the New Zealand maternity system.

Chapter 7: Conclusions and recommendations

The final chapter outlines the conclusions, the limitations of the study and provides recommendations for practice, education and future research.

Postscript

A short post-script has been included to explain how the results were utilised in the study facility after the completion of the study. The subsequent effect and feedback from staff are described.

1.9 Summary

A concern about the high caesarean rate for nulliparous women having an induction of labour, discovered during a 2-month audit at the facility, initiated the implementation of the present study. The hospital system, in relation to induction of labour, and the wider structure of the maternity system in New Zealand have been described to give an understanding of the situation in which the study is set. The next chapter critically reviews the literature relating to induction of labour and the influences on decision making about inductions.

Chapter 2: Literature Review

2.1 Introduction

An initial literature review was undertaken to critically review the current research in relation to induction of labour (IOL) as a contributing factor to caesarean section for nulliparous women. The review was then broadened to include other issues that were identified in the 2-month audit or that were of concern at the facility under study such as interventions that were linked to induction of labour, reasons for induction of labour, initiation of labour, risks of induction and methods used to induce. The influences on decision making were explored in relation to childbirth experiences in general and specifically to induction. The first part of this chapter provides an overview of the search strategies used. The second section is a critical review of the literature that uncovers gaps and inconsistencies in the knowledge about induction of labour and related practices.

2.2 Search Strategies

The databases of CINAHL, Medline, Cochrane and Best Evidence were accessed through OVID via Massey University and Auckland University and PubMed. The use of American spelling, MeSH (medical subject headings) terms and truncations such as * and \$ increased the number of articles retrieved. The key words used in the search were labour (labor) induced and were combined with, post-dates (prolonged pregnancy, post-term), fetal growth compromise (fetal growth retardation, intrauterine growth restriction), pre-eclampsia, hypertension, diabetes, fetal macrosomia, maternal age, elective (maternal request), uterine hyperstimulation, caesarean section (cesarean) and epidural. The words in brackets indicate alternative terms/spellings of the key words that were also used in the searches. In the search for methods used to induce labour the following terms were combined with labour (labor) induced; sweeping of membranes (membrane sweeping), homeopathy, castor oil, raspberry leaf, evening primrose, exercise, sex and nipple stimulation. For the above searches no time frame limitation was specified. For the search on formal methods (prostaglandin, oxytocin and amniotomy) for induction used at the facility in the study a time limit of 10 years was

applied (1993-2003) as there was an abundance of literature comparing the methods and many of the preparations and techniques would have changed prior to this time. In searching for literature on decision making relating to childbirth or induction of labour the following key words or phrases were used; informed consent, informed choice, decision aids, paternalism, stereotypes, litigation and consumerism. Additional articles were identified from the reference lists of the literature retrieved in the searches described previously.

2.3 Initiation of Labour

The exact mechanism that initiates the onset of labour is not well understood with most research in the area involving animals. A brief overview of labour initiation, including the current theories of fetal cortisol, stretching of the uterus, progesterone block, oxytocin stimulation and prostaglandin is given.

The influence of the fetus in initiating labour was first postulated by Liggins (1973) who found that labour was delayed when the pituitary gland and adrenal cortex were removed in fetal lambs. Using the sheep model it is thought the maturation changes of the fetal hypothalamo-pituitary adrenal axis begins a chain of events resulting in the production of cortisol which triggers changes to the uterine muscles and prepares the fetus by promoting lung development (Harrison, 2000).

The mechanical stretching of the myometrium by the growing fetus increases muscle excitability and greater ability of the uterus to contract. However as preterm delivery can occur and polyhydramnios does not always initiate labour the stretching is only one part of the process (Harrison, 2000). Oxytocin is secreted in short pulses into the maternal blood supply in increasing amounts during pregnancy and labour in response to distension of the cervix and vagina by the presenting part. The progesterone block hypothesis proposes that progesterone blocks the formation of oxytocin receptors and gap-junctions until the last weeks of pregnancy thus suppressing effective uterine activity until then (Harrison, 2000).

Prostaglandin stimulates smooth muscle to contract and has a role in ripening the cervix and enhancing the effects of oxytocin. The production and release of prostaglandin

follows an increased ratio of oestrogen to progesterone (Harrison, 2000; McCormick, 2003). Mechanical stimulants such as sweeping of the membranes, which is discussed in the section on methods of induction, increase the production of prostaglandin. The initiation of labour involves several mechanisms that are poorly understood due to obvious difficulties in using human subjects in research. The 'acceptable' time for labour to begin is discussed further in the section titled post-dates.

2.4 Reasons for / Benefits of Induction of Labour

"The most important decision to be made when considering the induction of labor is whether or not the induction is justified, rather than how it is to be achieved" (Enkin et al., 2000, p. 394). The benefits of induction of labour relate to the reduction of risk for both mother and baby by discontinuing the pregnancy. Specific situations where this may be necessary are critically reviewed in relation to the current literature in the following paragraphs.

2.4.1 Post-dates

A common reason given for induction is post-dates, post-term or post-maturity (Moldin & Sundell, 1996; Parry, Parry, & Pattison, 1998; Yeast, Jones, & Poskin, 1999). These expressions are used interchangeably to describe a prolonged pregnancy but can be interpreted differently. A prolonged pregnancy is defined by the World Health Organisation and the International Federation of Gynaecology and Obstetrics as a pregnancy that lasts 42 weeks (294 days) or more from the last menstrual period (Chua & Arulkumaran, 2002). Post-term is synonymous with prolonged pregnancy when term is described as pregnancy lasting up to but not including 42 weeks gestation (Enkin et al., 2000). Post-maturity is used to describe a group of characteristics that often occur in a newborn following a prolonged pregnancy such as dry peeling skin and overgrown fingernails (Chua & Arulkumaran, 2002). Post-maturity is therefore a diagnosis that is made following the examination of the newborn. Literature on the topic does not always reflect the WHO definition of prolonged pregnancy so for this study the phrase 'post-dates' has been used as it implies the pregnancy has reached the estimated date of delivery (EDD) of 40 weeks gestation but is not necessarily prolonged (i.e. has not reached 42 weeks). The basis for the definition of prolonged pregnancy is to describe a situation of risk and the literature relating to the level of this risk is reviewed.

Duff and Sinclair (2000) found that, although the definition for a prolonged pregnancy was described at their facility according to the WHO definition, 33.2 % (335/1008) of women were induced at less than 41 weeks and 3 days gestation. There was a 5.14% higher rate of caesarean section among the women who were induced but the increase was not found to be statistically significant (chi-squared = 4.39, degrees of freedom = 2, $p = 0.2$). However some specific reasons for caesarean were significantly higher in the induced group such as abnormal cardiotocograph, cephalopelvic disproportion and inadequate progress in labour. “Although not attributed to failed induction, they could in some instances be due to the effect of syntocinon when labour has never been properly established” (Duff & Sinclair, 2000, p. 415). The study shows there is not clear evidence to “support the assumption that induction of labour improves outcomes¹ for the mother or baby” (Duff & Sinclair, 2000, p. 416). The article concludes by stating the need to provide women with the evidence to make informed decisions about the management of their labour. Alexander, McIntyre & Leveno (2000) looked at pregnancies 40 weeks and beyond and found induction at 41 weeks increases labour complications and operative birth without significantly improving neonatal outcomes.

A study by Gardosi, Vanner & Francis (1997) found most pregnancies induced for being prolonged were actually not prolonged when an ultrasound (between 14 and 22 weeks gestation) was used to date the pregnancy as opposed to using the date of the last menstrual period. Two Cochrane reviews also found that ultrasound for foetal assessment in early pregnancy reduced the rate of induction of labour for a prolonged pregnancy (Crowley, 1999; Neilson, 2001).

Crowley (1999) in the Cochrane review states “that this review provides evidence that ‘routine’ induction of labour reduces the risk of perinatal death in normally formed babies”. The review is based heavily on the Canadian trial by Hannah et al. (1992) where 3407 women were, at 41 weeks, randomly assigned to induction of labour or serial antenatal monitoring. There were two perinatal deaths in the monitoring group and none in the induction group. The researchers in the Hannah trial said the difference in either perinatal mortality or morbidity was not significant. One of the deaths was

¹ Outcomes measured included length of labour, analgesia, estimated blood loss, condition of perineum, method of delivery, fetal distress, meconium staining, birthweight, apgar score at 1 minute and 5 minutes, and neonatal jaundice.

attributed to meconium aspiration but the baby weighed only 2600gms which is an “abnormal birthweight in Canada for 42 weeks of gestation, so the hypothesis that death occurred as a result of gestation alone is dubious” (Menticoglou & Hall, 2002, p. 486). Menticoglou & Hall (2002) while conducting a study on cervical cord injury discovered a baby in the Canadian trial had suffered a high cervical cord injury and subsequent quadriplegia following being randomised to the induction arm which resulted in a precipitate labour, severe decelerations and forceps rotation and delivery. A woman died during the study time from intracranial haemorrhage. She required intravenous antihypertensive drugs but they could only be given in the labour ward, which at the time had no spaces due to women being induced at 41 weeks. Neither of these cases were recorded as outcomes in the trial but were discovered through another study by Menticoglou and Hall (2002) and through their work at the facility where the Hannah trial took place. Feeling very strongly about the matter, Menticoglou and Hall (2002, p. 490) conclude their commentary with the following statement:

The ‘evidence’ on which current practice and popularity of routine or as we prefer to think of it, ritual induction at 41 weeks, is based is seriously flawed and an abuse of biological norms. Such interference has the potential to do more harm than good, and its resource implications are staggering. It is time for this nonsense to be withdrawn.

This information, provided by Menticoglou and Hall, brings into serious question the conclusion drawn by Crowley (1999) following a systematic review to address the question of induction of labour for improving the outcome of delivery at or beyond term.

2.4.2 Fetal Growth Compromise

A study by Clausson, Cnattingius & Axelsson (1999) investigated how much of the perinatal mortality risk in a prolonged pregnancy can be attributed to babies who are small for gestational age. In a study population of 510 029 singleton births the authors found that, after excluding malformed infants, “compared with term AGA [appropriate for gestational age] births, term and post-term SGA [small for gestational age] births had an eight- and ten-fold increase in the risk of stillbirth, respectively, whereas post-term AGA births had no significant increase in risk” (Clausson et al., 1999, p. 760). Post-term in the Clausson et al. study was defined as 42 weeks completed gestational weeks or more. No studies were found that specifically investigated induction of labour

in women whose babies were suspected to have fetal growth compromise. This group is identified by the British 'Evidence-based Clinical Guidelines' to "enter labour in an increased state of vulnerability" (Royal College of Obstetrics and Gynaecologists, 2001, p. 21).

2.4.3 Pre-eclampsia

Pre-eclampsia is a potentially severe condition characterised by hypertension, proteinuria and/or oedema and can precede maternal seizures, disseminated intravascular coagulation and the baby may suffer growth restriction (Enkin et al., 2000). Along with post-dates it is a common reason for induction. A study by Xenakis, Piper, Conway and Langer (1997) sought to test the belief that women with pre-eclampsia respond faster and better to induction no matter what the Bishop score is. They found women actually had a two-fold increase in caesarean rate compared to non pre-eclamptic women who were being induced. Fetal macrosomia and an unfavourable cervix also had a statistically significant effect on failed induction.

2.4.4 Diabetes

Diabetes complicates about 3% of pregnancies at National Women's Hospital (2000), a tertiary care facility in New Zealand and approximately 2.6% internationally, most of which are gestational diabetes (Boulvain, Stan, & Irion, 2003a). There is no attainable data on the number of women, at the facility in which the present study was undertaken, who have diabetes and who are currently being induced. Women with all types of diabetes have a higher tendency to be induced, with rates between 73 % for women with type 1 diabetes and 57 % for those with gestational diabetes due to concerns about late fetal death and birth trauma relating to increased fetal size (National Women's Hospital, 2000). The one study comparing outcomes for induction compared to expectant management involved 200 women with insulin dependent diabetes in California. A minimal difference in caesarean rate was found between the groups (Kjos, Henry, Montoro, Buchanan, & Mestman, 1993). The comparison of outcomes relating to induction must have been affected by the fact that 49% of the women in the expectant management group were actually induced anyway. Prior knowledge and fear of risks may also have contributed to a lower threshold for intervention in the study by Kjos et al. (1993). The expectant group had a higher mean birth weight and 3 cases of mild shoulder dystocia. The authors of the Cochrane review (Boulvain et al., 2003a, p. 6)

conclude that although there is minimal evidence available to support either induction or expectant management “that there may be little advantage in delaying delivery beyond 38-39 weeks in insulin-requiring diabetic women.” During the literature review it has become increasingly apparent that the Cochrane reviews are not based on an underlying premise of birth being a normal event. If evidence does not purport harm to a woman then the intervention appears to be supported.

2.4.5 Suspected Fetal Macrosomia

Some women with an expected ‘large’ baby on board are induced near term in the anticipation that it will increase the probability that vaginal birth will occur. A study by Gonen et al. (1997) had 273 women who had an ultrasound estimation of fetal weight between 4000 and 4500 grams at term, randomised into either immediate induction or expectant management. Their findings showed that there was no significant difference in the rate of caesarean section, shoulder dystocia or cord pH between the two groups. Analysis was separated for nulliparous women showing a caesarean rate of 38% in the induction group and 35% in the expectant group. Ultrasonic overestimation of weight occurred in 70.1% of cases and underestimation in 28.4%. The authors conclude, “because induction of labor did not have any maternal or neonatal advantages, the longer hospital stay and additional cost associated with such an approach are, in our opinion, unjustified” (Gonen et al., 1997, p. 917). The finding is supported by Irion and Boulevain (2000) in a systematic review of induction of labour for suspected fetal macrosomia which included 2 trials, one of which was the study by Gonen et al. Induction of labour was not found to reduce the risk of caesarean section and did not appear to alter the risk of maternal or neonatal morbidity for non-diabetic women.

2.4.6 Age

Age is a very topical issue with the average age of women giving birth increasing each year (Ministry of Health, 2003). Older women over 40 years of age have their labour induced at a higher rate in New Zealand, 25.9% when compared with the national rate of 20.6%. For women between 35 and 39 years the rate is 21.4% (Ministry of Health, 2003). Risk factors, such as gestational diabetes, placenta previa, antepartum haemorrhage and preeclampsia for perinatal mortality, have been found to increase with advanced maternal age (Bianco et al., 1996; Jolly, Sebire, Harris, Robinson, & Regan, 2000). The evidence for age as a risk factor in itself is less clear.

A study by Bianco et al. involving 1404 women over 40 years and 6978 controls (between 20 and 29 years) found the frequency of fetal death and preterm birth was the same between the two groups when race, tobacco use and chronic medical illness were controlled for. However a study by Jolly et al. (2000) found the stillbirth rate increased with age with a rate of 4.7 per 1000 for 18-34 years, 6.1 per 1000 for 35-40 years (OR 1.41) and 8.1 per 1000 (OR 1.83) for over 40 year olds. Confounding factors such as fetal abnormalities and pregnancy complications were not controlled for. Huang et al. (2000) also found an increase in unexplained fetal death for 35-39 year olds (OR 1.25) and a further increase for ≥ 40 year olds (OR 1.79). There was also an increase in stillbirths for the women aged 19 years and under. Early induction has been used as a way of reducing this risk although Jolly et al. (2000) found that only 8.1% of unexplained fetal deaths occurred 7 days or more postdates. With increasing age fertility decreases and the available time left on the biological clock also decreases. It appears more anxiety on the part of the health professional and the woman leads to more intervention such as induction and hence is a contributor to the higher caesarean rate in older women (Ecker, Chen, Cohen, Riley, & Lieberman, 2001).

2.4.7 Elective or Maternal Request

A common statement by health professionals, in defence of inducing a woman's labour is that the women themselves are asking for it. This is supported by a prospective questionnaire based survey that showed only 31% of women were happy to have conservative management of their labour at 41 weeks (Roberts & Young, 1991). It is unclear how much information these women received before answering the questionnaire. The type of information received and how it was presented may influence how women balance the decision to continue pregnancy or have their labour induced.

Some studies have looked specifically at women's satisfaction following induction of labour (Brown & Lumley, 1994; Hodnett et al., 1997; Nuutila, Halmesmaki, & Hiilesmaa, 1999). Nuutila et al. interviewed 135 women, using closed ended questions, 48 hours or less before an induction of labour commenced and 135 women whose labour began spontaneously when they arrived in labour at the maternity unit in Helsinki. Both groups were asked to rate their attitude to induction of labour. In the induction group 78% were scored as having a positive attitude and 69% in the control group. Both groups were also interviewed 48-72 hours after birth and it was found that

the experience of labour corresponded better in the control group to women's expectations however in all other areas satisfaction was similar. The researchers conclude that induction is a positive experience for women. Some caution is required with interpreting these results as interviewing women when in labour seems inappropriate and certainly not comparable to interviewing women pre induction. Reducing women's experience to numbers is also limiting. It appears the researchers asked an important question but did not use the best method or tools to develop an answer.

An Australian study surveyed 790 women's satisfaction with labour and birth using a postal questionnaire 8-9 months after birth (Brown & Lumley, 1994). Women were asked to select responses to rate their overall satisfaction of care and specific aspects of care such as access to information. Within the nulliparous induction of labour group 50% were said to be dissatisfied compared to 34% in the spontaneous labour group. Homer and Davis (1999) have proposed a study that led to much contention among midwives in their unit. They planned to look at the physical and psychological outcomes of induction of labour for no medical reason. If the results demonstrated no difference compared to spontaneous labour, could induction be justifiable for any reason? "Eventually the woman's choice was seen as paramount – if a woman requests an IOL and it is proven to be safe through rigorous research, how can she be denied this choice?" (Homer & Davis, 1999, p. 686). Induction was to be considered 'safe' in the proposed study if there was found to be no difference in the outcomes following spontaneous or induced labour. There are ethical issues associated with even undertaking such a study, as women would be required to have an intervention that was not indicated. The study would also require time, money and expertise to undertake in an environment of limited resources. As I was unable to locate whether the study was undertaken or published I am unaware what outcomes or from whose perspective the outcomes were to be measured to consider induction 'safe'.

Cartwright (1979, p. 5) acknowledged the lack of "systematic assessments of women's views" and undertook a comprehensive study in England and Wales of women's views of their experiences, their attitudes to the information they were given and their choice of treatment for further pregnancies. In her study of 520 women who had their labour induced and 1591 women whose labour began spontaneously Cartwright asked women

what their preference would be about the initiation of labour if they had another child. Seventy eight percent of those who had their labour induced said they would not want another induction and 5% of those whose labour started spontaneously said they would have preferred the labour to be induced next time. The main reason for not wanting another induction was because women would rather the baby came naturally than rushed if it was not necessary. Although this study is comprehensive with a large sample size it was undertaken in 1975, nearly 30 years ago and most of the interviews were between 3 and 5 months after the birth of the baby when recall may be difficult. Research in such depth that investigates the woman's perspective of induction appears to be lacking since Cartwright's study.

Another argument by health professionals in defence of inductions is that it is the reason for induction that influenced the outcome of caesarean not the induction itself. Several studies looked at elective inductions or inductions for reasons not acknowledged as medical. The rate of elective or non-medical inductions ranged from 3% to 59.2% (Dublin, Lydon-Rochelle, Kaplan, Watts, & Critchlow, 2000; National Women's Hospital, 2000). All the studies showed a significant increase in the rate of caesarean section following an induction of labour with no apparent medical indication (Dublin et al., 2000; Maslow & Sweeny, 2000; Seyb, Berka, Socol, & Dooley, 1999).

2.4.8 Pre-Labour Rupture of Membranes

Pre-labour rupture of membranes is an indicator for induction of labour, but it presents a different clinical picture as part of the process of labour has already commenced. The management of pre-labour rupture of membranes requires a literature review of its own and is not pursued further in this thesis.

The evidence to support many of the reasons for induction, that are commonly given, is either absent, limited or controversial in the literature reviewed. The literature confirms the need for induction for fetal growth restriction and preeclampsia to reduce the risk for mother or baby. The debate continues over the actual risks associated with post-dates, diabetes and advanced maternal age. There is no evidence to support the belief that induction of labour reduces delivery problems related to macrosomia. A study is needed that accurately identifies why inductions are being undertaken in the facility and whether they are based on the current evidence.

2.5 Risks of Induction of Labour

The risks identified in obstetric textbooks for women and their babies following labour being induced include uterine hyperstimulation, placental abruption, uterine rupture, maternal hyponatremia, fetal hypoxia, fetal heart rate abnormality (Hickey, 2002; Howarth & Halligan, 2000; Mackenzie, 2002), cord prolapse, increased postpartum haemorrhage due to hypotonic uterus, inadvertent preterm delivery, neonatal hyperbilirubinemia, failed induction (Howarth & Halligan, 2000; Mackenzie, 2002), breastfeeding difficulties, (Howarth & Halligan, 2000), gastrointestinal upset (nausea, vomiting, diarrhoea), fever, back pain, amnionitis, premature rupture of membranes, and fetal sepsis (Hickey, 2002). The authors of the Cochrane database of systematic reviews relating to induction of labour have agreed upon 5 primary outcomes “as being most representative of the clinically important measures of effectiveness and complications” (Kavanagh, Kelly, & Thomas, 2001a, p. 5). They are:

1. vaginal birth not achieved within 24 hours;
2. uterine hyperstimulation with fetal heart rate changes (FHR);
3. caesarean section;
4. serious neonatal morbidity or perinatal death (e.g. seizures, birth asphyxia defined by trialists, neonatal encephalopathy, disability in childhood);
5. serious maternal morbidity or death (e.g. uterine rupture, admission to intensive care unit, septicaemia) (Kavanagh et al., 2001a, p. 5).

These variables are measured in the larger study but are not reported on in this thesis.

The literature pertaining to uterine hyperstimulation is critiqued in this review as it is the most common, significant complication of induction of labour. Caesarean section is discussed under the heading ‘induction and associated interventions’. Hyperstimulation refers to contractions that are very powerful with little or no rest period in between which may or may not be accompanied by fetal heart rate changes. It can lead to some of the other complications mentioned above such as placental abruption, ruptured uterus, postpartum haemorrhage and fetal hypoxia. The varying definitions of hyperstimulation makes the establishment of an exact rate difficult but two reports on the effects of prostaglandin gel inserted vaginally, as used in the facility under study, reported it as 4% (Pollnow & Broekhuizen, 1996) and 3.6% (Jackson, Sharp, & Varner, 1994). These studies were relatively small with 200 and 158 women respectively and compared the use of prostaglandin with low-dose oxytocin for cervical ripening. For both studies hyperstimulation was defined as contractions occurring more frequently

than every two minutes or more than five contractions in ten minutes. The rate of hyperstimulation using prostaglandin was the same as occurred when oxytocin was used in Pollnow and Broekhizen's study (1996) but higher than oxytocin in the study by Jackson et al. (1994). The rate of hyperstimulation is higher with oxytocin and varies considerably depending on the doses used. However hyperstimulation is more readily detected due to continuous fetal monitoring and then reversed by decreasing or stopping the infusion due to oxytocin's short half life of 3-6 minutes (Stubbs, 2000).

On reviewing the literature available to women about induction of labour I found little on the risks of induction. In the Midwives Information and Resource Service (MIDIRS) informed choice leaflet 'When your baby is overdue' the only consequence of induction stated was that an instrumental delivery or possibly a caesarean may be more likely (MIDIRS, 2003). The risk of hyperstimulation is identified as a rare side effect of both prostaglandin and oxytocin in an information booklet 'About induction of labour' available on the website from the National Institute for Clinical Excellence (National Institute for Clinical Excellence, 2003). The information leaflet, provided by the facility where the study took place, did not mention any risk factors of induction but stated "labour is always better if it occurs naturally but there are times when it may be considered safer for mother or baby if the birth is sooner rather than later..." (Maternity Services, 2000).

As a measure of informed decision making it is important the present study investigates the information women have on the risks of an induction of labour before it is commenced. Hyperstimulation and its associated complications are a significant risk to women and their babies where labour is commenced by either prostaglandin or oxytocin.

2.6 Induction and Associated Interventions

Induction can be the beginning of what is often referred to in maternity care as the 'cascade of intervention' (Tracy & Tracy, 2003). "This chain of events illustrates a most important characteristic of birth technology, namely, the tendency for one intervention to lead to another, resulting in a geometric escalation of technology use" (Wagner, 1994, p. 149).

This section considers the literature about interventions that were identified in the audit to be more commonly associated with induction of labour; caesarean section, instrumental delivery and use of epidural anaesthesia. The two-month audit showed a doubling of the caesarean section rate with induction but a decrease in instrumental deliveries and an increased use of epidural in labour. A detailed critique has thus been undertaken of caesarean section and its link with induction of labour followed by a briefer review of instrumental delivery and epidural.

2.6.1 Caesarean Section

Six articles were retrieved that specifically aimed to explore the relationship between induction of labour and caesarean section (Dublin et al., 2000; Maslow & Sweeny, 2000; Parry et al., 1998; Prysak & Castronova, 1998; Seyb et al., 1999; Yeast et al., 1999). The size of the samples ranged from 846 to 7224 women (Parry et al., 1998; Yeast et al., 1999). The larger sizes increased the ability to show statistical significance but if the time frame over which the cases were reviewed was long, induction practices may have changed, as was reported in two studies (Parry et al., 1998; Yeast et al., 1999) where the rate of induction increased 10-20% during the time frame.

Each of the six studies showed an increase in the caesarean rate among nulliparous women who were being induced compared with those whose labour began spontaneously (Table 1). The differences were less marked for multiparous women. All but two of the studies were done retrospectively using electronic databases to obtain the samples and outcomes. Although clear inclusion and exclusion criteria were given none of the studies using electronic information said there had been validation of the data in the databases. Experience with our own hospital database has shown that there can be discrepancies in the data collected and frequently omissions of data entry for interventions such as induction of labour.

Table 1 Rate of caesarean section for nulliparous women in studies from the literature

Author	Induction	Spontaneous labour
Yeast, Jones & Poskin (1999)	18.5%	7.9%
Maslow & Sweeny (2000)	17.5%	6.0%
Dublin, Lydon-Rochelle & Kaplan (2000)	19.0%	10.0%
Seyb, Berka, Socol & Dooley (1999)	17.5%	7.8%
Parry, Parry & Pattison (1998)	22.0%	11.0%
Prysak & Castronova (1998)	21.4%	9.7%

There are no randomised controlled trials comparing spontaneous onset of labour to induced labour so there is no clear evidence that rules out other possible explanations for the relationship with caesarean section such as the initial reason for induction contributing to a caesarean section, women's attitudes to intervention or the influence of health practitioners. Studies that have randomised women into induction or monitoring for post-dates have had large numbers of cross over treatments. For example, in the trial by Hannah et al. (1992) 32.5% of the women randomised to the monitoring group had an induction and only 66.1% of the induction group received an induction. The results therefore reflect the outcomes for intended treatment rather than for the actual treatment of induction. Despite the reoccurring link between induction of labour and caesarean section it is not possible to talk about cause and effect (Minichiello, Sullivan, Greenwood, & Axford, 1999). It is important to "...make sure that these subgroup predictions are not being distorted by the unequal occurrence of another, powerful prognostic factor..." such as those mentioned above (Sackett, Straus, Richardson, Rosenberg, & Haynes, 1999, p. 99).

The Cochrane review on prolonged pregnancy by Crowley (1999, p. 6) claims "there is no evidence that induction of labour increases the likelihood of Caesarean section." The claim is based predominately on the Canadian trial by Hannah et al. (1992) mentioned in section 2.4.1. Women were randomised at 41 weeks into either induction or monitoring. The caesarean rate was compared between the two groups and it was found induction resulted in fewer caesareans. However within the monitoring group 32.5% were induced but without the advantage of prostaglandin priming as was the case in the

induction group. Priming is known to reduce the number of failed inductions (Royal College of Obstetrics and Gynaecologists, 2001). As the clinicians were not blind to the study arms there is the potential that caesareans may have been performed more readily when presented with a woman who has suspected fetal distress and is 'overdue' (Crowley, 1999; Menticoglou & Hall, 2002). Crowley (1999), although identifying these biases, had the confidence to say women should be advised that induction would not increase their risk of caesarean birth.

The lack of experimental research has resulted in the outcomes of some studies being interpreted in contradictory ways. For example Yeast et al. (1999) comment that despite an increasing induction rate during their retrospective study the caesarean rate remained consistently low at or below 20%, a comment that was used in another article to support its authors' view that induction had no effect on the caesarean rate (Rand, Robinson, Economy, & Norwitz, 2000). However the nulliparous women who were induced in Yeast's study had a two-fold increase in caesarean birth that was statistically significant. The debate continues.

The two prospective studies using quasi-experimental designs attempted to ensure internal validity by statistical analysis (Parry et al., 1998; Seyb et al., 1999). Seyb et al. (1999) who undertook a study in Chicago, used stepwise regression to control for potential confounding factors. Induction of labour, for both medically and non-medically indicated reasons, resulted in a caesarean rate of over 17% compared to 7.8% for women who had spontaneous onset. Other variables that remained significant risk factors for caesarean birth in Seyb et al.'s study were epidural analgesia (especially if inserted prior to 4cm cervical dilatation), chorioamnionitis, birth weight greater than 4000g, maternal body mass index greater than 26 kg/m², Asian race and magnesium sulphate use.

Parry et al. (1998) in their multivariate analysis identified parity and marital status to be statistically associated with the decision to induce labour. However there may be many other variables that are significantly associated with the decision to induce. Such influences can only be adjusted for if they have been identified in the planning of the study as important enough to measure in the study and are in fact measurable. The woman's perspective or attitude towards intervention at birth was not considered in any

of the studies, a factor that could be very influential in the decision to have labour induced. Bailit, Downs, & Thorp (2002, p. 95) used a decision analysis method to assess the benefits of using a foetal fibronectin test to predict likelihood of vaginal birth following induction. From the literature they found “no data on how women ranked a planned vaginal or caesarean delivery vs. a spontaneous labour with a vaginal delivery or caesarean” so they made an assumption that a vaginal delivery was always better than a caesarean (which will not always be correct). By deciding to have an induction their analysis showed women needed to be willing to take on an additional 10% risk of caesarean birth.

Caesareans place women at extra risk of haemorrhage, pulmonary embolism, infection and are a substantial increase in cost to maternity services (Stables, 1999). For these reasons caesarean section has been considered an outcome of concern. However there is a “re-emergence of interest in the total well-being of the patient rather than concern only for the clinically measurable and biomedical aspects of disease” (Jackson, Lang, & Ganiats, 1999, p. 398). They state that “caesarean section remains an intermediate measure as it does not indicate the actual health status of either the mother or the infant” (p. 398). The question can be asked, is caesarean section an outcome of intrapartum care or a process by which an infant is delivered?

2.6.2 Instrumental Delivery

Instrumental delivery refers to delivery of the baby by either forceps or ventouse. The two-month audit of nulliparous women at the facility in the current study showed a decrease in instrumental delivery rate for women having an induction of labour from 17.6% for spontaneous labour to 10.4% for induction (Austin & Belgrave, 2002). Some of the studies that compared the caesarean section rates with induction also separated out the rate of instrumental delivery. The studies by Parry et al. (1998), Hannah et al. (1992) did not show any difference in instrumental delivery rates for nulliparous women who had an induction of labour compared with spontaneous labour. For other studies specifically looking at the caesarean section rates between spontaneous and induced labour, instrumental deliveries were included in the vaginal delivery group and separate analysis was not done (Seyb et al., 1999; Yeast et al., 1999). The Cochrane review of pregnancy after 40 weeks gestation stated that routine induction had no effect on

instrumental delivery rate (Crowley, 1999). However the reviewers had said there was no difference in caesarean section rates also, as discussed in the previous section.

2.6.3 Epidural

During the 2-month audit the rate of epidural for women whose labour was induced was 74% and 54.2% for women where labour began spontaneously. The increased usage of epidural for induction of labour was also found in a study by Parry et al. (1998) in which 54% of women from the induced group had an epidural compared with 43% of the women in the control group ($p < 0.002$). Crowley (1999) in the Cochrane review stated that induction of labour had no effect on the use of analgesia.

The literature is controversial on whether epidural increases the risk of caesarean or whether there are other variables that influence the increase such as maternal preference. Unless a randomised trial is undertaken it cannot be proved and as discussed previously there remain problems with randomised trials also. Through measuring mode of birth and epidural a degree of risk can be identified but the exact cause of this risk cannot be identified. A study by Seyb et al. (1999) found that epidural use, especially if placed before 4 cm dilatation, had an effect independent of induction of labour or other measured variables on caesarean delivery rates for women having an induction of labour.

There appears to be a strong link between induction of labour and increased intervention. However as a randomised trial is unlikely a definite cause and effect relationship cannot be determined. Local data that identifies the strength of the risk of increased intervention following induction at the facility under study could assist women in their decision making. Assessing women's preference for epidural prior to induction will measure the effect of this variable on epidural use in labour.

2.7 Methods of Induction Used in the Hospital Under Study

The maternity unit has a policy for induction, for nulliparous women of using prostaglandin as a ripening agent for the cervix followed by artificially rupturing the membranes and if necessary an oxytocin (Syntocinon) infusion. These three methods are briefly discussed.

2.7.1 Prostaglandin

Prostaglandin E₂ (PGE₂) gel is used vaginally for both priming and induction of labour. Priming or ripening of the cervix refers to treating the cervix in some way to render it more favourable to formal induction and is an artificial distinction in the progress of labour initiation (Mackenzie, 2002). The use of prostaglandin is, consistent with the current literature, effective in promoting delivery within 24 hours compared with a placebo (Kelly, Kavanagh, & Thomas, 2001). Vaginal insertion is less invasive than intracervical and is as effective in initiating labour (Royal College of Obstetrics and Gynaecologists, 2001). The Royal College of Obstetrics and Gynaecology (2001) guidelines for induction of labour recommend tablets as opposed to gel as it is as effective yet much cheaper. However, the tablet form is no longer available in New Zealand.

2.7.2 Amniotomy

Amniotomy refers to the artificial rupture of the amniotic membrane and can be used as the initial method to induce labour or following the use of prostaglandin. Once an amniotomy is performed it implies a commitment to delivery and there is an increasing risk of infection the longer it takes for delivery to occur (Royal College of Obstetrics and Gynaecologists, 2001). Despite it being a regular part of induction there is a lack of evidence about the safety and effectiveness of amniotomy alone and amniotomy with oxytocin, with only small studies having been undertaken (Bricker & Luckas, 2001; Howarth & Botha, 2003).

2.7.3 Oxytocin

Intravenous oxytocin is used in titrated amounts to increase uterine contractions. Its effect is dependent on the dosage and excitability of the myometrial cells (Shiers, 2003). Following a critique of the literature, the Royal College of Obstetricians and Gynaecologists recommend a regimen of oxytocin increase no more than every 30 minutes as this resulted in less uterine hyperstimulation and no decrease in vaginal delivery rates (Royal College of Obstetrics and Gynaecologists, 2001). The guideline at the facility under study recommends an increase in rate of oxytocin infusion every 15 minutes until labour is established (Maternity Services, 2003).

A small study by Howarth and Botha (2003) showed that combining oxytocin with amniotomy, as a method of inducing labour, is more effective in reducing the number of women undelivered within 24 hours than amniotomy alone. However oxytocin alone when compared with vaginal prostaglandin is associated with an increase in unsuccessful vaginal delivery within 24 hours but with no increase in caesarean section rates (Kelly & Tan, 2003). When oxytocin is compared with expectant management the rate of unsuccessful vaginal delivery within 24 hours is reduced but the rate of caesarean section is increased (Kelly & Tan, 2003).

2.8 Methods Used to Induce Labour in the Community

Traditional, alternative or unconventional therapies appear to be gaining popularity as women and health professionals attempt to avoid medical intervention in the natural process of labour (Smith, 2001). In reality there is often a fine line between an alternative and conventional medicine with the baseline active ingredient being extracted from natural sources in both cases. According to Heinemann (2001, p.23) “...purification, modification or synthesis do not automatically make conventional drugs different from alternative agents in their effect, usefulness, or safety.” Scientifically rigorous studies are often absent for alternative therapies with a tradition of being passed on by word of mouth. However, conventional medicine also needs to acknowledge that it holds on to practices that lack scientific evidence (Murphy, Kronenberg, & Wade, 1999). The validity of assessing the effect of alternative therapies in a paradigm of biomedicine where treatment is disease-specific rather than holistic and energy balancing can be questioned (Belew, 1999; Murphy et al., 1999).

2.8.1 Homeopathy

The word homeopathy literally means “like-suffering.” It is based on the principle that a substance can cure symptoms in an unwell person similar to those that it can cause in a healthy person (Brennan, 1999). Assessment is holistic and if incorrect “the person’s vital force will simply not respond to (or resonate with) the remedy and their symptoms will remain unaffected; thus, the remedies either help or they do no harm” (Brennan, 1999, p. 294).

Caulophyllum has been proposed to be useful to establish labour, and assist in developing a coordinated pattern of contractions (Smith, 2001). Brennan (1999, p. 296) however identifies that the term induction is inappropriate in homeopathy, “a remedy can only induce the vital force to move in the direction needed in order to balance.” No remedy will bring on labour if a baby is not yet ready to be born. Smith (2001), in a Cochrane review of homeopathy, found one randomised controlled trial comparing caulophyllum to a placebo on a sample of 40 women who had prelabour rupture of membranes. Each woman in the treatment group (n=20) was given an hourly dose, for seven hours, of 250mg of caulophyllum trituration D4, a mixture of magnesium stearate and a wheat starch mixture. All but one woman in the control group (n=20) had delivered within 24 hours. There were no significant differences between the control and treatment groups. The reviewer comments that the study looked at a standard prescription of caulophyllum in contrast to “classical homeopathy where an individualised agent is prescribed” (Smith, 2001, p. 10). The one trial available does not support the effectiveness of homeopathy for initiating labour however it can be debated that a randomised trial is an inappropriate method of assessing homeopathic remedies.

2.8.2 Herbal Remedies

The principles of herbal medicine involve holism, individuality, diversity, empowerment, connectedness and can “strengthen and nourish the person, targeting patterns of excess or deficiency in different organ systems and correcting underlying stress patterns and imbalances (Belew, 1999, p. 231). The evidence of their effect has been passed on through generations with limited scientific evidence available.

Raspberry leaf is a commonly used herb in New Zealand often taken as a tea. It has apparently been used for centuries as a tonic that nourishes the uterus and provides a normalising effect on contractions (Belew, 1999; Simpson, Parsons, Greenwood, & Wade, 2001). Simpson et al. (2001) conducted a double-blind, randomised, controlled trial with 96 women receiving a raspberry leaf tablet and 96 receiving a placebo. A 1.2gm (400mg of 3:1) extract of raspberry leaf was taken twice daily by the women from 32 weeks gestation. The results showed no difference in the length of gestation. Formal induction with prostaglandin or oxytocin was required for 20.4% of women in the raspberry leaf group and 21.4% in the placebo group. Caesarean section rates were the same in both groups but instrumental deliveries were higher in the placebo group.

The study did not support the notion that raspberry leaf produces more co-ordinated contractions as there was a slightly higher need for medical augmentation in the treatment group (31.2%) compared to the control group (28.1%).

2.8.3 Castor Oil

Castor oil is derived from the bean of the castor plant and reports of its use to initiate labour date back to Ancient Egypt (Garry, Figueroa, Guillaume, & Cucco, 2000). It stimulates production of prostaglandin followed by contractions. Despite its widespread use there is little literature of its use in maternity. Garry et al. conducted a study of 103 women who had intact membranes, were 40-42 weeks pregnant and had a Bishop's score of 4 or less. Alternate women who met these criteria and came to the clinic for assessment received a single dose (60ml) of castor oil diluted with juice. Following the castor oil 57.7% began active labour compared to 4.2% in the control group who received no treatment, a 36-fold increase in the likelihood of labour within 24 hours. The castor oil was equally successful for both nulliparous and multiparous women. The caesarean rate was 19.2% in the castor oil group compared to 8.3% in the control but this was found not to be statistically significant due to the small numbers. All women in the castor oil group felt nauseous.

2.8.4 Evening Primrose

Evening primrose oil is recommended by some midwives as a method to promote cervical ripening. Dove and Johnson (1999) investigated the effect of evening primrose oil on gestation, labour length, abnormal labour patterns and caesarean birth. The authors acknowledged that evening primrose oil was recommended to women as a natural way to induce labour although there was no scientific evidence to support this. Data was obtained from the clinical records on a group of 54 women who had taken a standard regimen of evening primrose oil (according to a standard procedure) and compared to a control group randomly selected. The prescribed dosage was 500mg orally three times a day for 1 week beginning at 37 weeks then 500 mg daily until labour was initiated. There was found to be no difference in length of gestation. Labour was longer, on average, by 3 hours in the evening primrose oil group. A trend of protracted active phase, prolonged rupture of membranes, oxytocin augmentation and arrest of descent was also noted in the evening primrose oil group. The study has major limitations as the data was collected retrospectively from the clinical records with no

clear definitions of criteria for the establishment of labour and was reliant on practitioner documentation of outcome variables. The authors conclude, “replication of this study by drawing upon a larger, more controlled sample appears to be indicated prior to recommending the use of orally administered evening primrose oil for the purpose of cervical ripening in pregnancy” (Dove & Johnson, 1999, p. 323).

2.8.5 Exercise

The Cochrane review on exercise and pregnancy did not report any studies investigating the effect of exercise on initiating labour (Kramer, 2002). A study by Magnann, Evans, Weitz and Newnham (2002) collected data on 750 low-risk women and put them into 4 groups based on level of exercise. The group that did most exercise were more likely to need induction of labour ($p= 0.033$, relative risk 1.84, 95% confidence interval 1.05, 3.20) but all the exercising groups had a higher rate of induction compared with the no exercise group. The non-exercising group had a shorter first stage of labour compared with the strongly exercising group ($p=0.009$) and required less oxytocin for induction and augmentation. Caesarean section for failure to progress was also higher in the exercising groups despite the birth weights being lower in these groups.

2.8.6 Sex, Nipple Stimulation

The Cochrane review identified only one study that assessed the impact of sexual intercourse on the initiation of labour and Bishop score (Kavanagh, Kelly, & Thomas, 2001b). The study by Benvold in 1987 (cited in Kavanagh et al., 2001b) consisted of 28 women and compared the vaginal deposit of semen over a three-night period compared to no intercourse. No difference was found in the Bishop’s score or in the number of women who gave birth within three days of the intervention. The reviewers, Kavanagh, Kelly and Thomas (2001b) identified limitations to the study but the original could not be obtained. They concluded there was not enough evidence to draw any conclusions about the efficacy of sexual intercourse as a method of induction of labour.

Six randomised trials have been done investigating the effect of nipple stimulation on initiating labour that have been considered of high enough quality for inclusion in the Cochrane review (Kavanagh et al., 2001a). The combined studies included a sample of 719 women. The treatment ranged from one hour per day of nipple stimulation for 3 days to 3 hours per day, alternating breasts every 10 minutes. The percentage of women

not in labour after 72 hours was reduced in the treatment group to 62.7% compared with 93.7% in the control group. No significant differences were found in the women who had an unfavourable cervix after 12-24 hours or in caesarean rates. The rate of postpartum haemorrhage was reduced by nipple stimulation (0.7%) compared with no treatment (6%). One trial with high-risk women was stopped after only 17 women had entered the breast stimulation arm of the study, as there had already been three perinatal deaths in this group. Information on the causes of the deaths or method of randomisation was not given so it cannot be concluded that the stimulation caused the deaths however the study was stopped because of them. It appears that nipple stimulation is effective in initiating labour but the number of perinatal deaths is of huge concern. Further research also needs to include satisfaction of the women.

2.8.7 Sweeping of the Membranes

Sweeping of the membranes involves the separation of the membranes from the lower uterine segment using the clinician's finger. It is recommended as a method of induction in the Royal College of Obstetricians and Gynaecologists' evidence based guidelines for induction (2001).

The Cochrane systematic review included 19 studies and concluded that "sweeping the membranes in women at term generally reduces the delay between randomisation and spontaneous onset of labour, or between randomisation and delivery, by a mean of three days" (Boulvain, Stan, & Irion, 2003b). Caution about the interpretation of these results was suggested, as the difference was more apparent in the smaller studies than the larger. The overall risk reduction, in requiring formal induction, from the available trials was 15%. Sweeping of the membranes of 7 women would be required to avoid one woman needing formal induction methods. The effect was found to be greater in multiparous women. This was in contrast with a study by McColgin et al. (1990) who found the most benefit to be in the nulliparous group with unfavourable Bishop scores.

A study by Boulvain et al. (1998) included questions about maternal satisfaction with the procedure. They found that 86.8% would recommend it to a friend and 77.3% believed its advantages outweighed the disadvantages. Twenty one percent reported sweeping as painful.

The literature is either inadequate or does not support the use of many of the methods used in the community to initiate labour apart from the use of sweeping of the membranes, castor oil and nipple stimulation. However nipple stimulation possibly carries serious risks for the baby. It is important to find out what methods women are using in the community to initiate labour and whether education is needed to encourage or discourage certain methods according to the evidence from the current literature.

2.9 Influences on Decision Making in Childbirth

Induction of labour fits into what O'Connor, Legare and Stacey (2003, p. 736) describe as 'preference sensitive' health services in which "the ratio of benefit to harm are either uncertain or dependent on patient values." Informing women and involving them in the decision making process can improve the "quality of decisions and prevents overuse in the subset of informed patients who don't value the options" (O'Connor, 2003, p. 736). This section reviews the literature that considers the influences on decision making; the principle of informed consent, information giving, litigation, stereotypes and types of women-health professional relationships.

2.9.1 Informed Consent

The active participation of patients, clients or women in planning care has been advocated widely in New Zealand and overseas (Beech, 2003; Coney, 1993; Draper, 2004; May, 2002). Within this section informed consent, as a concept or principle, is discussed in relation to our history and values of autonomy and consumerism. Informed consent is also discussed further in the section on types of women-health practitioner relationships.

New Zealand's history

Past events in New Zealand's history, such as the Cartwright (1988) inquiry have highlighted the women's expectation of giving informed consent. This inquiry uncovered a study where women with positive smears for cervical cancer were not treated so the investigator could prove treatment was not necessary despite it being against the available evidence at the time (Cartwright, 1988). The women were unaware they were part of a study or that they were not being treated. The high profile nature of the trial gave a strong message to the health professions that informed consent is

essential. Cartwright recommended the appointment of a Health Commissioner with one of their roles being “heightening the professionals’ understanding of patients’ rights” (Cartwright, 1988, p. 214). Following the appointment of a Commissioner came the Health and Disability Commissioner Act 1994 and the Code of Health and Disability Services Consumers’ Rights which clearly outlines a consumer’s right to be fully informed, to effective communication and to make an informed choice and give informed consent (Health and Disability Commissioner Act, 1994). Section b of Right 6 states that every consumer would expect to receive “an explanation of the options available, including an assessment of the expected risks, side effects, benefits, and costs of each option.”

Informed consent is now a common phrase in New Zealand health care but how we are doing in reality has been poorly evaluated. Few studies have addressed whether we are actually providing a better service to our customers (Scott, McKenzie, & Webster, 2003). The Ministry of Health have attempted to evaluate satisfaction through a consumer satisfaction survey of maternity care in 1999 and 2002. In the 2002 survey 84% of women said they either agreed or strongly agreed that they received good information about different options for labour and birth, an increase of 4% from 1999 (Brown, Hogan, Ngatai, & Sawers, 2003). The response rate for the survey was 40% and it did not specifically address the question of induction of labour.

Autonomy

Autonomy is the key principle that underlies informed consent and is one of the basic ethical principles upheld by Western society, now incorporated into law in New Zealand by the Health and Disability Act (Jones, 2000). Autonomy is expressed through the formal process of gaining ‘informed consent’ and with that comes responsibility. “If a person chooses to do one thing rather than another then that person can, and should, be held responsible for the decision” (Draper, 2004, p. 19). Draper (2004, p. 21) points out the difficulties of whether, as a health professional, we hold autonomy to be absolutely valuable and can be overridden by nothing or “only relatively valuable” and other considerations may also become important. The latter leaves the problem of “determining what kinds of things are more important than autonomy and devising a system to apply the scale of value consistently” (Draper, 2004, p. 21).

Consumerism

Consumerism has evolved from a market ideology where the “consumer of services should enjoy a relationship with the ‘producer’ that can be said to be similar to that which exists in the free-market economy...” and “...services should satisfy consumer preferences, and be responsive to their demands” (Fox, 2003, p. 322). Although good in theory the concept of consumerism has led to a gap between what the public expects as reasonable care and what the government can provide. One study looked at the cost entailed with induction and found an increase of US\$273 per induction followed by vaginal birth as compared with vaginal birth following spontaneous onset of labour (Maslow & Sweeny, 2000).

Having choice in childbirth has been strongly advocated by consumer groups in New Zealand and supported especially by midwives who successfully had the Nurses Act changed to allow midwives to be chosen as the sole provider of care for women in childbirth in 1990. Choice in childbirth has extended to induction of labour and caesarean sections (Savage, 2002). As waiting lists lengthen for surgery in one area of health in New Zealand, maternity services are still able to provide expensive interventions because it is what some women want.

Service providers are trying to assess their success in providing what consumers want through consumer surveys but Williams (1994) argues these surveys are not evaluating satisfaction from the consumer’s perspective and what really matters to them. “Patient satisfaction questionnaires do not address an independent phenomenon but in a sense, actively construct it by forcing service users to express themselves in alien terms; consequently, inferences made from their results may misrepresent the true beliefs of service users” (Williams, 1994, p. 514).

2.9.2 Information

This section looks specifically at sources of information that may be used by health professionals and women, such as decision aids, women held records, antenatal education and family and friends.

Decision aids

Decision aids focus on providing specific, detailed personalised options and outcomes for people in preparation for making decisions and may use media such as audiovisual, internet or written word. This is in contrast to general health information leaflets. A detailed Cochrane review identified 221 decision aids of which 31 have been reviewed in randomised reports. The authors of the review concluded that:

the trials consistently demonstrated that decision aids do a better job than usual care interventions in improving people's knowledge regarding options, enhancing realistic expectations about the benefits/harms of options, reducing their decisional conflict, decreasing the proportion of people remaining undecided, and stimulating people to take a more active role in decision making” (O’Connor et al., 2003, p. 30).

The review of the studies by O’Connor et al. (2003, p. 30) also showed that “there has been no impact on satisfaction with the decision making process or with the actual choice, nor has there been an impact on health outcomes such as anxiety, general quality of life, or condition-specific quality of life.” When the decision aid was related to elective surgery people tended to favour more conservative options rather than elective surgery (O’Connor et al., 2003).

A randomised trial in the United Kingdom involved more than 6000 women in 13 maternity units and compared the effect on informed consent of women reading 10 evidence based information leaflets produced by the Midwives Information and Resource Services (MIDIRS) compared with women who did not receive the leaflets (O’Cathain, Walters, Nicholl, Thomas, & Kirkham, 2002). It did not include the only leaflet produced by MIDIRS relating to induction, ‘When your baby is overdue’ (MIDIRS, 2003). O’Cathain et al. found that there was no change in the proportion of women who reported exercising informed choice. There was however a significant increase in the satisfaction of women about the information obtained among those who received the leaflets. The researchers had to conclude that “in every day practice, evidence based leaflets were not effective in promoting informed choice in women using maternity services” (O’Cathain, Walters et al., 2002, p. 643). There was no mention in the report of the type of information women may have received in the control group and it is most likely that maternity facilities would have had some other sources of information available for women. The authors also made the comment that women found it hard to distinguish the MIDIRS leaflets from other information they

received. It is also possible the leaflets were used as education material alone and not incorporated into the decision making process, something which the authors acknowledge happens in the real world (O'Cathain, Walters et al., 2002).

Alongside the randomised trial by O'Cathain et al.(2002), Stapleton, Kirkham and Thomas (2002) undertook a qualitative study to understand the social context in which the leaflets were used. They found the leaflets were seldom used to their maximum effect due to staff disagreeing with the content, the options suggested were not available locally, staff making inaccurate assumptions about the ability and willingness of women to participate in decision making and the leaflets being given out wrapped up in advertising material. Time pressure was another constraint to their use “within a culture that supported existing normative patterns of care rather than informed choice” (Stapleton, Kirkham, & Thomas, 2002, p. 641). The organisation and hierarchical structure of the maternity services, with the obstetricians at the top, women at the bottom and midwives and other non-doctor health professionals in the middle, were found to work against the maximum benefit of the leaflets.

Women-held maternity records

Women-held maternity records have been shown to increase communication as carers are more likely to explain all the information in their records (Rowe, Garcia, Macfarlane, & Davidson, 2002). Rowe et al.'s critical review of trials involving interventions to improve communication in maternity care identified three trials that compared women-held maternity records with those who did not. Women, who held their own notes, found it easier to talk to their carers, were more likely to report they felt well informed and their caregivers were more likely to explain everything in their records.

Antenatal education

There has been much debate over whether childbirth education results in changed practices in labour (Hetherington, 1990; Nolan, 1997; Spiby, Henderson, Slade, Escott, & Fraser, 1998). None of the studies retrieved specifically discussed induction of labour. The use of pain relief in labour was found to be reduced for women who had received antenatal education in a case controlled study involving 52 couples who had

attended classes (Hetherington, 1990). A study by Spiby et al. (1998) found that strategies taught in classes for coping in labour did not translate into practice in labour.

Communication skills training

Although tools may help in giving information, good communication that involves listening and responding to individual needs is important to women (Rowe et al., 2002). Elwyn, Edwards, Gwyn and Grol (1999) explored how a group of 39 general practice registrars involved patients in decision making and found they did not have the necessary skills to do so. Stapleton, Kirkham, Thomas and Curtis (2002, p. 274), following observations of antenatal consultations, found that the “language used by health professionals to convey information to women tended to belittle procedures and emphasise their routine nature.”

Much has been written about communication between health professionals and pregnant women yet “there have been few attempts to evaluate interventions specifically designed to facilitate more effective communication during labour and birth” (Brown & Lumley, 1998, p. 106). The translation of communication skills training into patient satisfaction was found to be absent in a randomised trial of a 10-hour training package (Brown, Boles, Mullooly, & Levinson, 1999). Clinicians reported a slight improvement in their own skills.

Receiving information is important but its effectiveness is dependent on how it is given and used in the decision making process. By finding out what information women have about induction and then examining it in the context of how it was given and by whom will give an understanding of how information-giving influences the decision to induce labour.

2.9.3 Models of Relationships

Three models of relationships between health professionals and women are explored in relation to their influence on decision making. They are paternalism, informed choice and shared decision making.

Paternalism

A paternalistic approach involves “taking the responsibility for decision making” (Elwyn et al., 1999, p. 753). A popular view of paternalism put forward by Jones (1996, p. 378) is that the “doctor/nurse knows best.” A focus group study looking at decision making among general practitioner registrars found that most “bias their presentation of facts and consciously ‘steer’ patients” and as one of the participants stated “you choose the data to help the patient make the decision you think they ought to make. I’m sure I do that” (Elwyn et al., 1999, p. 755). Barriers identified in Elwyn et al.’s study included lack of skills in involving patients in decisions, not actually knowing the facts to give patients, time restraints, contextual factors such as age and educational level of the patient and the type of decision needing to be made. Although this study was in Wales similar sentiments have been expressed by professionals in New Zealand (Coney, 1993) although a similar study was not found. Paternalism may be well intentioned “but it has the effect of creating and maintaining an unhealthy dependency which is out of step with other currents in society” (Coulter, 1999, p. 719).

Informed choice

Informed choice is at the other end of the spectrum to paternalism and is “where the patient is provided with “sufficient” information and the clinician withdraws from the decision process” (Elwyn et al., 1999). Charles, Whelan and Gafni (1999, p. 781) state that the transfer of information is the “key responsibility and only legitimate contribution of the doctor to the decision making process.” However informed choice has been viewed in quite contrasting ways. When first introduced formally in New Zealand, following the Cartwright inquiry, consumers welcomed informed choice in decision making as they saw it as a process of gaining more information and options (Strid, 1993). Some health professionals however thought “the notion of choice was attractive as it suggested to them [doctors] the transfer of accountability to the patient, as the patient would be responsible for the choice made (Strid, 1993, p. 144). The signing of a ‘consent form’ is proof for the health professional that the woman has made a choice and is taking responsibility for that choice. But in reality is there choice, and if there is, do women get the right information to make it and do they see themselves as fully accountable and responsible for that choice?

Quill and Brody (1996, p. 764) describe an independent choice model as ‘patient-centered,’ where patients can be “free to make choices unencumbered by the contaminating influence of the physician’s experience or other social forces.” The authors see this type of decision making posing as serious problems as paternalism. The primary aim can become the communication of all possibilities and associated risks with the absence of adequate health professional guidance.

Shared decision making

Shared decision making fits between paternalism and informed choice with the responsibility being on both the patient and health professional. Quill and Brody (1996) describe this as an enhanced autonomy approach that is relationship centered. This model requires that the health professional “engage in open dialogue, inform patients about therapeutic possibilities and their odds for success, explore both the patient’s values and their own, and then offer recommendations that consider both sets of values and experiences” (Quill & Brody, 1996, p. 765). The potential imbalance in power between health professional and patient or bias is not denied but acknowledged and discussed.

The concept of partnership underpins the backbone of New Zealand’s existence with the signing of the Treaty in 1840 between indigenous Maori and the British Crown. Models promoting partnership have been particularly advocated in midwifery, such as Guilliland and Pairman’s (1994) ‘Midwifery Partnership’ which probably fits within the shared decision making model described above although also has elements similar to the informed consent model. Within this model the partnership between the midwife and women is said to be women-centred and thus is “defined in the context of pregnancy and childbirth and celebrates the centrality and value of women’s experiences and culture” (Guilliland & Pairman, 1994, p. 7). The New Zealand College of Midwives (2002) sets out standards of practice for midwifery care. Standard one is that “the midwife works in partnership with the woman” which includes “facilitate[ing] open interactive communication and negotiate[ing] choices and decisions” (p. 8). The midwife also “acknowledges and respects different ways of knowing” (New Zealand College of Midwives, 2002, p. 8). The College’s code of ethics includes responsibilities such as “midwives accept the right of each woman to control her pregnancy and birthing experience” (New Zealand College of Midwives, 2002, p. 5).

Despite the extensive debate amongst health professionals in the literature on how best to make decisions there is less evidence of what consumers actually want and how to achieve that. A small study of decision making during the childbirth experience by Calvert (1998) showed that women have different expectations and within each woman that expectation may change. Calvert (1998, p. 151) describes a participant who thought of informed consent as a “great goal but in her labour situation, she needed help and was pleased that her midwives made decisions for her.” Some women wanted to be told what to do and when. “To have made these women actively participate in the decision making process may have been disempowering and not, in these cases woman-centred” (Calvert, 1998, p. 175).

2.9.4 Stereotyping

During the study by Kirkham, Stapleton, Curtis and Thomas (1992) involving the MIDIRS information leaflets the researchers found that stereotyping was used as a professional defence mechanism. By putting women into categories health professionals were able to “protect themselves from what they considered to be inappropriate requests” (Kirkham et al., 1992, p. 549). Other times labelling was done with the aim of protecting or controlling women and they quoted a health professional as saying “There are a lot of women in my case load I wouldn’t dream of giving the leaflets to...like I wouldn’t give some of them certain information because I don’t want them having certain choices...like not having a scan or having the baby at home for instance...” (Kirkham et al., 1992, p. 551). Some of the stereotypes were found to be self-fulfilling such as women labelled as not wanting information were given fewer opportunities to ask for it.

Green, Kitzinger and Coupland (1990) undertook a prospective survey of 825 women’s expectations of birth. They compared the outcomes to commonly held assumptions about what women want in labour and delivery based on education and social class. There was little evidence to support the stereotypes. Although no specific question about induction of labour was asked the researchers found that “...interventions that women experienced during labour were unrelated to their level of education” (Green et al., 1990, p. 130).

2.9.5 Litigation and Defensive Practice

Fear of litigation was found by Symon (2000a) to affect health professionals and their decision to induce labour. A large scale postal survey involving 2000 midwives and doctors showed 53% of midwives and 45% of obstetricians have personally changed their practice in response to fear of litigation. Induction of labour was said to be carried out as part of defensive practice by 3.8% of midwives and 2.4% of obstetricians surveyed. The studies, specifically looking at the relationship between induction and caesarean section, had not considered this variant.

The qualitative study by Stapleton, Kirkham and Thomas (2002) identified the effect of litigation as promoting technology rather than evidence based information. “Fear of litigation promoted notions of ‘right’ choices with which clinicians felt clinically secure and which they thought would afford them protection against litigation” (Stapleton, Kirkham, & Thomas, 2002, p. 641). Risks of interventions were minimised and potential for minimising harm emphasised.

2.10 Summary

In this chapter I have provided a review of the literature pertaining to some key areas of induction of labour and possible influences on the decision to induce. There is a lack of evidence to support the use of induction for some of the common reasons given for induction such as post-dates, large for gestational age and maternal choice. Indications for induction are open for interpretation and can vary between practitioners (Bailit et al., 2002). Most of the research reviewed has relied on retrospective data found on databases to give rates and reasons for induction and the accuracy of the indications was not validated. A study is needed that accurately and prospectively identifies the reasons for induction and other influencing factors on that decision.

Although there are benefits for both mother and baby in having an induction there are also risks due to starting labour artificially with the use of induction agents and an increase in associated interventions. Decision making can be influenced by the information women receive about these benefits and risks but the literature indicates that the way it is presented and within what type of relationship will determine the effectiveness of that information in assisting decision making. The study in this thesis

explores the contributing factors to the decision to induce labour by nulliparous women and LMCs in the facility, increasing the local understanding of why women's labours are being induced and comparing this to the current literature. The research design and methods used to achieve these goals are discussed in the following chapter.

Chapter 3: Research Design and Methods

3.1 Introduction

In this chapter an explanation of the theoretical perspective, research approach and methods is given. A description of the variables for which data was collected, the data collection process and tools used are outlined. Boyatzis' (1998) method of thematic analysis was used to make sense of the qualitative interviews and this method of data analysis is described. An outline of the issues relating to rigour of the research process and credibility of the findings is given. Ethical considerations relating to recruitment, data collection and presentation of the results are examined.

3.2 Theoretical Perspective

The researcher's world view of the environment influences the type of research undertaken (Crotty, 1998). There are two competing paradigms of birth in the literature, the 'social model' and the so called 'medical model' (Rogers-Clarke & Smith, 1998). In the social model birth is seen as a normal physiological process and in the medical model birth is seen as potentially dangerous and can only ever be considered as normal in retrospect. The midwifery profession has made claims that hold the normality of birth as fundamental to their practice alongside claims that the medical profession manages labour as if it is potentially problematic (Thomas, 1999).

My own perspective of the world is moving more and more towards a constructivist perspective. The constructivist's view of the world is relative "which assumes multiple, apprehendable, and sometimes conflicting social realities that are the products of human intellects, but that may change as their constructors become more informed and sophisticated" (Guba & Lincoln, 1994, p. 111). Such a world view can see the benefits and failings of both the social and medical models with practice and research being possible within both simultaneously depending on the interpretation of the situation at the time. In research "meaning is described, interpreted and constructed through the eyes of the researcher or the participants in the investigation" (Minichiello et al., 1999, p. 18). There can be value and meaning in undertaking research within any paradigm

however it can be of more value if it can fit within the common worldview of the readers or for the present study, fits with the practitioners at the facility.

The medical model dominates in the facility in the current study however I believe that it would be incorrect to categorise all doctors as working in this model or to say that all midwives believe that birth is a normal physiological process. The medical model is based on objectivism and a supreme confidence in science that “stems from a conviction that scientific knowledge is both accurate and certain” (Crotty, 1998, p.29). A belief that there is a cause and effect relationship between actions or interventions and outcomes influenced the design of this study. For example the possibility of a link or an association is presumed between information women receive about risks and benefits and women’s likelihood to undertake an intervention.

The maternity facility in which the current study took place had a high caesarean rate, which was found to be much higher if women’s labours were induced. It seemed important to find out why their labours were being induced and part of the study was to ask the LMC why the woman they were caring for was being induced to gain accurate ‘numbers’ for each reason. I felt this was going to ‘context strip’ the data (Guba & Lincoln, 1994, p. 20). Context stripping is a process that occurs when “precise quantitative approaches that focus on selected subsets of variables necessarily ‘strip’ from consideration, through appropriate controls or randomisation, other variables that exist in the context that might, if allowed to exert their effects, greatly alter findings”. To reduce the occurrence of context stripping a qualitative approach that allowed participants to express what they felt had influenced the decision was important. However, the women were limited in their answers to positive and negative effects and the LMC was limited by time restraints due to their primary responsibility to care for the woman having the induction.

A general qualitative study was seen to be the most appropriate type of research to fit into the constructivist world view of the researcher while working in a facility dominated by a medical world view. In this study there was no exploration into the social reality of the participants to understand their expectations, values and meaning of the experience of induction. My world view has influenced the study design and the data interpretation yet this part of the study has been undertaken within an objectivist

framework and what is commonly called the medical model, the dominant model within the secondary care facility.

3.3 Research Approach

An interpretive approach, using a structured questionnaire with open ended questions, has been used to gain an understanding of the reasons for induction and the influences on the decision to induce. Although the study predominantly used an inductive process, some deductive processes were also used. How this approach was decided on and the inductive and deductive processes used are discussed.

Inductive

An inductive approach (LoBiondo-Wood & Haber, 1994) was used where I had a general idea that there were several reasons both clinical and non clinical for deciding to induce for both the women and LMCs. By using open-ended questions I was able to get the participants to provide the answers for me. No specific model is available in the literature that has already identified the influences involved in deciding to induce for women having their first baby. Through gathering the specific information from women and LMCs relating to the decision to induce, some general conclusions have been drawn about the decision making process in this situation

For the LMCs it was presumed they should know why the woman was being induced but the complexity of the situation that resulted in the women having her labour induced is not clear from the clinical notes or the database. As was discussed in the literature review there were no studies looking at the decision making process relating to induction of labour although some had looked at decision making in other situations relating to childbirth (Calvert, 1998; O'Cathain, Thomas, Walters, Nicholl, & Kirkham, 2002).

Deductive

The inductive process dominated the study however some deductive processes also occurred. The development of the questionnaire to explore the decision making process was based on some assumptions identified in the literature, such as women should have some information before being induced based on the Code of Rights (Health and

Disability Commissioner Act, 1994), that there are both negative and positive effects of being induced, that alternative methods are tried by women and epidural anaesthesia is often used by women having an induction. This type of information was obtained through a deductive process.

3.4 Ethics

Approval to conduct the study was gained from the General Manager of the facility where it was undertaken. A signed letter was obtained from the service manager giving me permission to access hospital data for the study. Ethics approval was obtained from the Massey University Human Ethics Committee on 28 November 2002 and the Auckland Ethics Committee on 3 December 2002. The ways in which the ethical principles were maintained throughout the study are integrated throughout the following sections.

3.5 Recruitment

Women

Women were accessed through the book used by the facility's birthing suite for booking women in for induction and through the antenatal clinic. Those who met the eligibility criteria (p. 47) were posted or given an information sheet (Appendix A) about the study. The contact details of women that were not already recorded in the induction book were obtained through searching the maternity database using their name or NHI number. The childbirth educators at the hospital were informed about the study and asked to pass this on to the women that they may be asked to take part in an interview.

Although the information sheets were only sent out a few days prior to the planned induction date there were a large number of women who delivered prior to their planned date for induction. When the women arrived in the birthing suite for induction, which was usually either 7am or 7pm, I met them and asked if they had received the information sheet, had any questions or required any further information. Those who agreed to be part of the study were asked to sign a consent form (Appendix B). They were also asked if they were happy for me to interview the midwife or doctor initiating the induction, who was in most cases the LMC.

The criteria for eligibility for women to be recruited into the study were:

- Nulliparous women
- Gestation ≥ 37 weeks
- Singleton pregnancy
- Planning a vaginal birth

Women who were having their labour induced due to pre-labour rupture of membranes were not included in the study sample as their situation presents a different clinical picture as part of the labour process has already commenced. They also commence induction at any time of the day or night and meeting them for an interview prior to induction commencing was considered too difficult.

LMC

Prior to the study commencing I informed Independent Midwives and General Practitioners (GP) who were Lead Maternity Carers about the study through visiting midwifery practice groups and talking individually with GPs when they were at the birthing suite. One GP had been asked to be part of the planning of the study by reviewing the proposal however no feedback was received. I presented the study proposal to the hospital obstetricians at their regular monthly meeting and to the Know Your Midwife (KYM) group at their weekly meeting. Information about the proposed study was put in the communication books for the hospital staff so they could be aware as each stage developed. Signs were placed around the facility so all who used the area were aware when data collection had commenced. Prior to the interview LMCs were given an information sheet about the study. They were also asked to mention to the women they were caring for that they would be approached about the study. Written consent was obtained prior to the interview.

The eligibility criteria for Lead Maternity Carers to be recruited into the study were:

- Caring for a woman who is having an induction and who meets the eligibility criteria for women.
- Consent given by women to be interviewed.

3.6 Anonymity and Confidentiality

While interviewing the women I asked that the LMC be out of hearing distance so the women would be able to respond freely. The LMCs' interviews took place in private unless they specifically asked to stay in the general staff area. For example one LMC said, "everyone knows what I think anyway." Anonymity and confidentiality for the LMC could not be guaranteed if the LMC asked to stay in hearing distance of others.

Each interview was coded with a number. The names and the associated code were kept separate from the content of the interviews. The raw data was kept locked in a filing cabinet in a locked office.

3.7 Concern for Participants

Women

Benefits from participating in the study for women included being part of providing local information about being induced from their perspective that could assist in improving the decision making process for women in the future. The results of the study were not going to be beneficial for their current situation. The questions they were asked had the potential to trigger the request for more information about induction, which could have been beneficial or harmful for women. Very few women did ask for further information but more may have asked their LMC as the information sheet had instructed that they do this. More information may have been beneficial if women had wanted more information but if they then learned of possible risks that they had not heard of before the decision to induce was made, it may have caused alarm. As I did not share further information about induction but referred them to their LMC I am unaware of conversations that may have occurred following the interview. The initial receiving of the information sheet by women may have stimulated further conversation with their LMC. One woman rang up and cancelled her induction – the comment in the unit by some of the midwives was that she must have read the information sheet and "come to her senses". As I did not meet the woman I have no idea if the information sheet about the study had influenced her.

LMC

For the LMC benefits also included having local information about the influences on the decision to induce that had the potential to affect their practice in the future. Some LMCs displayed an element of concern about their practice being 'judged'. Reassurance of anonymity was given however I was aware that in presenting the results some of the LMCs might recognise their own practice and hence feel criticised. Hopefully if this were the case they would use it as an opportunity to examine their practice and why it is they do what they do.

3.8 Data Collection Instruments

Three tools were developed to collect the data, and are described below.

A. Questionnaire for women

To gain information from a woman's perspective, a short questionnaire (Appendix E) was developed. It was developed in a way that the woman could fill it in herself if she chose to. However most of the information was obtained through interviewing and this technique was found to be more successful in obtaining more detailed information on the topic.

B. Quantitative data collection tool.

A quantitative data collection tool was developed to collect data from women whose labour was induced or began spontaneously as part of the larger study. A portion of this was used to collect the demographic data and the outcomes of epidural use and mode of delivery for women having an induction. The portion used has been included in Appendix E. Most of this data was obtained from the woman's clinical notes or from the hospital database. The LMC was asked the questions relating to gestation and dating method used. The variables for which data was collected are described in more detail below.

Age and ethnicity

Data was collected for the demographic variables of age and ethnicity. These were collected from the maternity database or the clinical notes.

LMC type

The LMC type, such as independent midwife, private specialist, public care and general practitioner, was recorded at each interview.

Gestation at time induction commenced

LMCs were asked at the interviews to state the gestation of the woman's pregnancy in days before or after the woman's due date. In most cases this date had been adjusted to be in line with the scan date if this was necessary. They were also asked whether a scan or the Last Menstrual Period (LMP) date had been used.

Epidural use

The clinical notes were looked at following the birth to ascertain if an epidural had been used in labour and if so at what dilatation it had been inserted.

Mode of birth

The hospital database or clinical notes were used to ascertain the method of delivery the woman had.

C. Qualitative interview guide

As the decision to induce can be based on reasons other than clinical indicators, open-ended questions (Appendix E) were developed to assist the interviewer to obtain information from the LMCs in a more open and less restrictive way.

3.9 Data Collection

Interviews

The women and their LMCs who consented to be part of the study were interviewed in the birthing suite prior to the induction commencing. This usually occurred during the preliminary cardiotocography (CTG) as both women and LMCs were keen that my interviews did not delay induction commencing. Most interviews took about 10 minutes although some wanted to talk further on the topic and this was encouraged.

Two research assistants, who were midwives working in the birthing suite, assisted by undertaking about 15 of the interviews between them. A confidentiality agreement

(Appendix C) was signed by them to ensure information obtained from the interviews was not then included in general discussions. I completed the remainder of the 79 interviews.

The data was collected through structured and semi-structured interviews. “Increasingly, qualitative researchers are realizing that interviews are not neutral tools of data gathering but active interactions between two (or more) people leading to negotiated, contextually based results” (Denzin & Lincoln, 2003, p. 62). Denzin and Lincoln (2003, p. 70) also state that it is important to understand interviewing techniques and mechanics but “it is also important to understand the respondent’s world and forces that might stimulate or retard response.”

During the interviews I found that when I showed empathy towards the participants they were encouraged to share more of their feelings about the subject of induction. At times this involved showing understanding for contradictory viewpoints. As I felt it was important not to disagree with any of the participants during the interviews I was aware I was possibly deceiving them into thinking I agreed with them. This was predominantly a concern for LMCs as they were expressing their viewpoints on induction. The perception of being deceived did occur and is discussed in the postscript.

The opportunity to discuss a relevant issue can be therapeutic for some participants. In the process of giving the researcher data they have someone willing to listen to their point of view in return.

Possible influences on the data obtained

- Women may have given answers they thought the researcher wanted to hear or what was considered to be socially desirable. As I was working in the facility and was employed by the hospital women may have felt less comfortable about criticising the hospital system.
- The interviewer characteristics or questioning techniques can alter the communication of the questions which might have influenced the process (Denzin & Lincoln, 2003). I was aware that I was nervous when interviewing the LMCs, as I was conscious of not appearing to be critical of their practice or

wanting to take up too much of their time. As a consequence some of my questions did not come out clearly and required a second asking.

- Women may have forgotten information. Some women stated they had heard about induction in antenatal classes but could not remember much or had not taken much notice at the time.
- There may have been ways that the design of the questionnaire could have been improved to obtain more data. Initially women were asked to complete the interview questionnaire but more detailed information was obtained when women were interviewed.
- Inaccurate recording of interviews. During interviews the information was written down briefly or verbatim if the answer was short as was often the case. Immediately after completing the interviews I read what I had written and filled in any gaps or clarified what had been written. Therefore no quotes used to illustrate the identified themes can be considered verbatim but are used as the most accurate reflection of their statements or comments.

3.10 Data Analysis

The descriptive statistics included in this thesis are a portion of the larger study undertaken at the facility and the results are presented in chapter 4. Tests for statistical significance are not included in this thesis, as they will be performed within the larger study. The qualitative data analysis and results are presented in chapter 5.

Descriptive statistics

Descriptive statistics have been used to give an overview of the sample interviewed in relation to age, ethnicity and LMC type. This data has been compared to the age, ethnicity and LMC type of women who had an induction and were either not offered or declined to be part of the study and compared to all nulliparous women where labour began spontaneously during the same time frame. A bar graph has been used to show the gestation of those women where the main reason for induction was given as post-dates.

The primary and secondary reasons for induction have been presented in tables showing the comparisons between those reasons identified by the LMC and the woman. Each

situation where the reason differed between the LMC and the woman has been discussed in detail in an attempt to identify how the difference has come about. The methods tried by women to initiate labour before coming into hospital have been graphed and discussed in relation to the effectiveness of the methods as documented in the current literature.

Qualitative data

The process of thematic analysis, as described by (Boyatzis, 1998), was used to ‘make sense’ of the qualitative data obtained during the interviews with the women and LMCs. This method is described briefly here and in more detail in chapter five. Boyatzis (1998, p. 11) identifies “four stages in developing the ability to use thematic analysis

1. *Sensing themes*-that is, recognizing the codable moment
2. *Doing it reliably*-that is, recognizing the codable moment and encoding it consistently
3. *Developing codes*.
4. *Interpreting the information and themes in the context of a theory or conceptual framework*-that is, contributing to the development of knowledge.”

Some adaptations were made to Boyatzis’ method to accommodate the style of research and the sample groups. The changes have been acknowledged in chapter 5. Denzin and Lincoln (2003) describe the process of interpreting as both artistic and political. However to establish rigour in the research process it is important to clearly document the journey of interpretation of the data with any changes to the chosen method.

In some qualitative research the interpretation of the data analysed is out of the control of the participant and the possibility of misinterpretation due to influences of the researcher can occur. I aimed to eliminate my personal values and biases and not be judgemental of women’s choices or LMCs’ viewpoints, however it is very difficult to be completely objective. Being immersed in the data that I was both collecting, analysing and interpreting and being employed by the facility where the study took place may have created a familiarity with the situation of induction that resulted in subjectivity of analysis. For the safety of professionals participating in the study and for establishing rigour in the research the thought processes that led to the findings have been clearly detailed and then explained within the social and interactional context of

the research process, as recommended by Holloway and Wheeler (1995): “Nurses and midwives must account for the influences of their professional perspectives in the process and outcome of the research” (p. 226).

Establishing rigour involves asking the question:

Are these findings sufficiently authentic (isomorphic to some reality, trustworthy, related to the way others construct their social worlds) that I may trust myself in acting on their implications (Denzin & Lincoln, 2000, p. 178).

Within a world view of objectivism, objectivity or lack of bias is a highly important aspect to provide validity for a study. To be completely objective is a fallacy, however by identifying bias the credibility of the findings can increase (Denzin & Lincoln, 2000). The assistant researchers and myself interact on a daily basis with the LMCs, the assistant researchers more so as they are based in the birthing suite and are responsible for accepting bookings for induction and working with the LMCs to care for women being induced. Being employed by the hospital, which does not always have a reputation of working well with LMCs, will also have influenced the relationship while interviewing the LMC. During the development of the project and collection of data many midwives asked me leading questions about what my personal opinions were, what the preliminary results were showing and what ‘rules’ the hospital will be bringing in. I refrained from discussing anything but the mechanics of the study until it was completed. I was concerned that midwives would tell me what they thought I wanted to hear in the interviews or that I would influence some in the decision to induce.

The perception of power and control that a hospital facility portrays may have affected the way some women responded to questions during the interview. It is important to identify that the sample of women interviewed represent a subset of the community, namely nulliparous women who had accepted the option of induction at the hospital. This is also true of the LMCs as only those who cared for women who were having an induction of labour were interviewed.

It was important that a representative sample of women from the subset above, who met the inclusion criteria, was obtained. Asking each consecutive woman to be part of the study assisted in achieving this aim. Some women were unable to be invited to take part

as their names were not placed in the induction book and I was not rung by the maternity staff when they arrived for an induction of labour at the facility or both the research assistants and myself were unavailable due to other commitments. The demographic details of women who declined to be part or were not asked are compared to identify if there were differences.

The generalisability of a study infers that the data is representative of a similar phenomenon in a population beyond that of the study sample (LoBiondo-Wood & Haber, 1994). From this study generalisations can be made about the reasons for induction and the influences on coming to that decision for nulliparous women and LMCs in similar maternity care settings. However it is recognised that the set up of other hospital facilities for induction of labour may be different and limit the generalisability of the results. Before considering the results in relation to another maternity facility or LMCs practice in New Zealand it would be necessary to caution readers to assess the similarity in situation to the one described in this study.

It is impossible to separate my personal beliefs and knowledge from the study. The underlying belief that birth is a normal life event and that the increasing caesarean rate is detrimental to the long-term health of women has influenced the study design (National Collaborating Centre for Women's and Children's Health, 2004). The study has aimed to find ways in which intervention in labour could be reduced by looking specifically at the decision making process. The aim and my personal bias have influenced the analysis of the data and resulting discussion. Both of these influences however may have provided a greater depth of understanding of the analysis of the results.

My personal midwifery experience has been predominately in large hospital facilities, including childbirth education. As a consumer, both children were born before their due date and rapidly without any need for inducing agents. I am aware that my own experience has supported my underlying assumptions.

Despite being influenced by my beliefs, knowledge and experience, the accuracy of the interpretation can be tested by presenting the results to participants and colleagues. My Massey University supervisor initially read the preliminary themes. The themes were

then presented to fellow students, some of whom were midwives, and to colleagues and clinical leaders in the hospital. Some changes in the way the themes were labelled were made following the presentation to these groups and these are discussed further in the results section.

A brief overview of the study and findings was also presented at the facility's maternity consumer meeting. This consumer group consists of women who have recently used maternity services. Three of these women had had inductions, one of whom was in the study. There was a general agreement about the code developed however one woman felt the lack of space and privacy in the facility was of more concern than the areas of concern I had identified.

3.11 Reliability

Possible threats to reliability include having more than one person doing the interviewing. I went through the recorded information with the assistant researchers after their first interviews to assess we were interpreting the questions and replies similarly. I found the information to be similar but they recorded more answers briefly rather than documenting the detailed discussions as I had. I requested that they record everything stated in response to the questions but the documented responses remained brief in comparison to my own. I decided this would not reduce the reliability but rather decrease the richness of those particular interviews.

3.12 Triangulation

“Triangulation is the process by which the same issue is investigated in a variety of ways so that different types of evidence are produced to support a particular finding” (Minichiello et al., 1999, p. 45). In the full study both quantitative and qualitative methods were used to investigate the reasons for induction. It was anticipated that combining methods would increase the accuracy of the results and give a greater depth to them.

3.13 Guide to Data Chapters

A coding system has been used to identify the quotes from both women and LMCs. Each interview was given a number. Following the quotes the number of the interview is given with either '*W*' for woman or '*LMC*' written before it. For example a quote from the woman coded as 3 would have (*W 3*) written after it.

The use of [] indicates that a word or words have been added to the quote to clarify the quote's meaning.

The use of an ellipsis (...) indicates that a portion of a quote has not been included. As discussed previously 'consulting obstetrician' refers to the obstetrician seen specifically to discuss induction of labour and is not the on-call obstetrician at the hospital or the obstetrician LMC. 'Obstetrician' will be used to refer to these latter two.

3.14 Summary

This general qualitative study is influenced predominately by objectivism and the medical model. Both inductive and deductive methods have been used to find out the reasons for induction and the influences on the decision making about that reason. Descriptive statistics are used to describe the characteristics of women who had their labour induced in this study. Boyatzis' method of thematic analysis has been used to analyse the qualitative data from the interviews. Ethical considerations for this study and issues relating to rigour have been discussed. The next chapter presents the descriptive results.

Chapter 4: Results – Descriptive

4.1 Introduction

The results from the study are presented in two chapters. In this chapter the demographic details of age, ethnicity and LMC type are presented for women having their labour induced. These are compared to nulliparous women, in the study hospital, having a spontaneous onset of labour during the same time frame. Reasons for induction, as identified by both LMC and women are presented in tables and where there are differences these have been discussed in detail. The aim of this section is to provide some descriptive data that assists in the interpreting of the qualitative results presented in chapter 5. Methods to initiate labour, used by women prior to admission to hospital, are presented. In chapter 5 the findings from the thematic analysis of the qualitative data are presented.

4.2 Participants

Eighty-seven women were invited to be part of the study. Of these seventy-nine women agreed to be interviewed. Those who declined gave a very definite “no” when approached in the birthing suite. One woman gave a reason saying she was already “stressed enough about being here” and was “shocked” to receive the information sheet in the mail. In the presentation of the data on mode of delivery one woman was removed as it was found that her baby was in a breech position after the commencement of the induction. The recommended practice at the facility is to deliver breech babies by caesarean section.

Twenty-one women who were having an induction were not invited to be part of the study as they were booked after I had checked the booking book for the day or were not booked at all and the maternity staff did not ring to inform me. Two further women were not invited to take part as I had to be out of town for family commitments and the assistant researchers were also unavailable. The presentation of demographic data includes these women and those who declined to participate so the true characteristics of nulliparous women having their labour induced can be identified. They are presented

in separate columns so any differences in the characteristics between the women interviewed and those not interviewed can be seen.

Seventy-four LMCs were interviewed. The remaining six LMCs did not decline but were either too busy or the woman had been handed over to secondary care. For the LMCs that were too busy they were still able to tell me the main reason for induction. When a woman declined, her LMC was not interviewed.

In the presentation of the descriptive data the characteristics of nulliparous women whose labour began spontaneously during the same time period are shown as a comparison.

4.3 Demographics of Women

4.3.1 Age of Women

Table 2 Age of women

	Induction of Labour (IOL) (excluding prelabour rupture of membranes)			Total IOL (N=109)	Spontaneous Labour (N=294)
	Interviewed (n=79)	Not Interviewed (n=23)	Declined (n=7)		
Average age (years)	29.5	28.8	31	29.5	28.3

The age of the women interviewed ranged from 19 years to 42 years with an average age of 29.5 years.

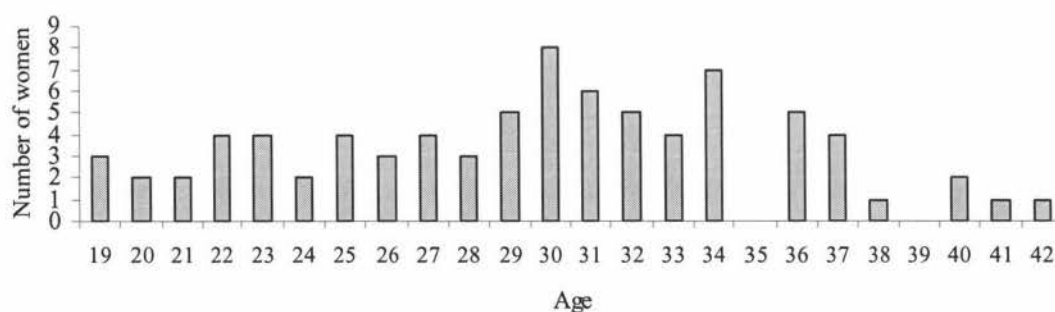


Figure 2 Age distribution of women who participated in the study (n=79)

4.3.2 Ethnicity of Women

The table below outlines the ethnicity of the women who participated in the study, those who declined and those who were not invited, compared to the ethnic groups of nulliparous women who began labour spontaneously during the same time frame. A higher rate of European women was induced compared to all women who had used the service according to the District Health Board's maternity services annual report (2002). All other groups had a lower representation in the induction group.

Table 3 Ethnicity of women whose labour was induced in the study and women whose labour began spontaneously during the study time frame

Major Ethnic Groups	Induction of labour (excluding prelabour rupture of membranes)				Spontaneous labour
	Women interviewed	Women not interviewed	Women who declined	Total	Total
	n (%)	n (%)	n (%)	N (%)	N (%)
European	67 (84.8)	16 (69.7)	6 (85.7)	89 (81.7)	206 (70.2)
Maori	1 (1.3)	3 (13.0)	0	4 (3.7)	17 (5.8)
Pacific Island	2 (2.5)	0	0	2 (1.8)	11 (3.7)
Asian	8 (10.1)	3 (13.0)	1 (14.3)	12 (11.0)	57 (19.4)
Not known	1 (1.3)	1 (4.3)	0	2 (1.8)	3 (0.9)
Total	79 (100.0)	23 (100.0)	7 (100.0)	109 (100.0)	294 (100.0)

4.3.3 Lead Maternity Carer

Sixty percent of the women interviewed had an independent midwife as their LMC. Of the women who began labour spontaneously a similar percentage were cared for by a midwife LMC. The biggest difference occurred for the private specialists and General Practitioners (GP). A much higher percentage of women in the induction group (21.1%)

compared to the spontaneous group (14.6%) was cared for by private specialists. The GPs were much less represented in the induction group (3.7%) compared to the spontaneous group (9.2%).

Public care refers to women whose named LMC at the time of birth was a hospital employed midwife or obstetrician. This included women who had their care handed over to secondary care (for example because of Gestational Proteinuric Hypertension (GPH)) and women booked under the care of a midwife in the Know Your Midwife scheme.

Table 4 Type of Lead Maternity Carer

LMC Type	Induction of labour (excluding prelabour rupture of membranes)				Spontaneous labour
	Women interviewed n (%)	Women not interviewed n (%)	Women who declined n (%)	Total N (%)	Total N (%)
Public care	12 (15.2)	4 (17.4)	1 (14.3)	17 (15.6)	51 (17.4)
Private specialist	16 (20.3)	5 (21.7)	2 (28.6)	23 (21.1)	43 (14.6)
Independent midwife	48 (60.7)	13 (56.5)	3 (42.9)	64 (58.7)	172 (58.5)
General Practitioner	3 (3.8)	1 (4.4)	0	4 (3.7)	27 (9.2)
Unknown	0	0	1 (14.3)	1 (0.9)	1 (0.3)
Total	79 (100.0)	23 (100.0)	7 (100.0)	109 (100.0)	294 (100.0)

4.4 Reasons for Induction

The women and LMCs were asked to state the main reason for induction at the time of the interview. The reasons are listed in Table 5. In most situations the reason given by the LMC and the woman were similar except for when social factors were involved. Women were less likely to see the main reason for induction to be due to social reasons, compared to the LMC, and would attribute it to medical reasons. All eight situations where the reason differed between LMC and the woman are discussed in detail.

Table 5 Main reasons for induction

Main reasons for induction	LMC	Women
Post-dates [†]	45	47
Gestational Proteinuric Hypertension (GPH) /Hypertension	12	12
Social	5	1
Reduced liquor	4	4
Large baby	3	3
Intrauterine Growth Restriction (IUGR)	2	2
Diabetes	3	3
Age	1	1
Increased liquor	1	0
In-Vitro Fertilisation (IVF) /precious baby	1	1
Booking system	0	1
Lichen sclerosis	1	1
Previous myocardial infarction	1	1
History of previous miscarriages	0	1
Contractions but not dilating	0	1
Total	79*	79

[†] Post-dates refers to the reason stated by the LMCs or women rather than according to a clinical definition of post-dates.

*Although previously stated that only 74 LMCs were interviewed, those that were not interviewed told me the main reason for induction.

Generally the reason given by the LMC and women were similar. However some differences were noted. The stated main reason for induction was different in 8 situations.

- Five LMCs stated the main reason to be maternal choice or for social reasons but 4 of the woman said it was for other reasons; post-dates 2 (*W 1, LMC 1; W 41, LMC 41*)*, raised blood pressure 1 (*W 3, LMC 3*), and previous miscarriages 1 (*W 84, LMC 84*). For the latter situation, the practitioner I interviewed was caring for the woman on behalf of the woman's LMC. She said she thought the woman was being induced for post-dates but observed in the notes that she was only 4 days past her due date of delivery. The practitioner then looked in the booking book, which said 'maternal request'. Maternal request was the final answer given to me however the woman had just explained to me that she had asked if she could wait another week but the specialist had recommended induction now due to a past history of miscarriages.
- Another woman considered the main reason to be due to her raised blood pressure but the LMC said she had requested an induction and that her blood pressure was only mildly raised.
- One woman said the main reason was post-dates and the LMC said it was increased liquor, however the woman did mention increased liquor later in the discussion (*W 51, LMC 51*).
- Blood pressure was said to be the main reason according to one LMC, while the woman told me she was overdue. The registrar later said it had nothing to do with blood pressure but was because she was overdue with a large baby (*W 8, LMC 8*).
- The woman who felt the booking system was the main reason for induction was said to be post-dates by her LMC (*W 26, LMC 26*).

*1 refers to the data provided by either the woman or LMC who was coded as one.

W or *LMC* differentiates whether the data relates to the woman or LMC respectively.

- Another woman said the reason for induction was because she was having regular contractions but her cervix was not dilating. The LMC said she was post-dates (*W 54, LMC 54*).

Descriptive results relating specifically to post-dates as a reason for induction are presented in section 4.4.1 and 4.5.1. Most women and LMCs also gave other reasons that contributed to the decision to induce at the time of interview. These are shown in Table 6. The induction book was perceived to affect the decision to induce at the time of interview for 12 LMCs and 5 women. One woman, who was cross about the system of booking inductions and the high intervention at the facility, received some relief from the interview and concluded the interview by saying it was good to get it off her chest (*W 26*).

Table 6 Second reason that contributed to decision to induce labour

Second Reason	LMC	Women
Post-dates	2	2
Gestational Proteinuric Hypertension /Hypertension	4	5
Social	5	6
Reduced liquor	0	0
Large baby	1	4
Intrauterine Growth Restriction (IUGR)	1	3
Diabetes	0	0
Age	1	2
Increased liquor	0	1
In-Vitro Fertilisation (IVF) /precious baby	0	1
Booking system	12	5
Specialist advice	11	4
LMC on call	2	2
Cultural (e.g. Christmas)	2	2

4.4.1 Post-Dates

When a woman was being induced for post-dates, according to the LMC, the LMC was asked exactly how many days they were past the due date and how the dating was

decided, either by using last menstrual period (LMP) or ultrasound scan. Figure 3 shows the gestation at time of induction. Two women were being induced prior to 1-week post-dates. The LMC of the woman who was induced at 16 days post-dates had been using the LMP date but when they saw the obstetrician at the clinic she was told she should have used the scan date (the LMP date would have made her 9 days past her estimated date of delivery). The woman induced at 19 days post-dates (according to a scan) said she was 12 days overdue (according to her LMP). The LMC said she had “wanted to give her a fair go” so had let her go this far overdue (*LMC 7*).

Twenty-eight LMCs stated when they thought a pregnancy should be considered post dates and these are shown in Table 7. Only two LMCs (7%) stated induction at 41 weeks was acceptable but 9 women (20%) were actually induced at 1 week or less past their expected date of birth. Eleven LMCs (39%) said 12 days or more post-dates was acceptable however only 5 women (11%) were induced at 12 days or more past their due date.

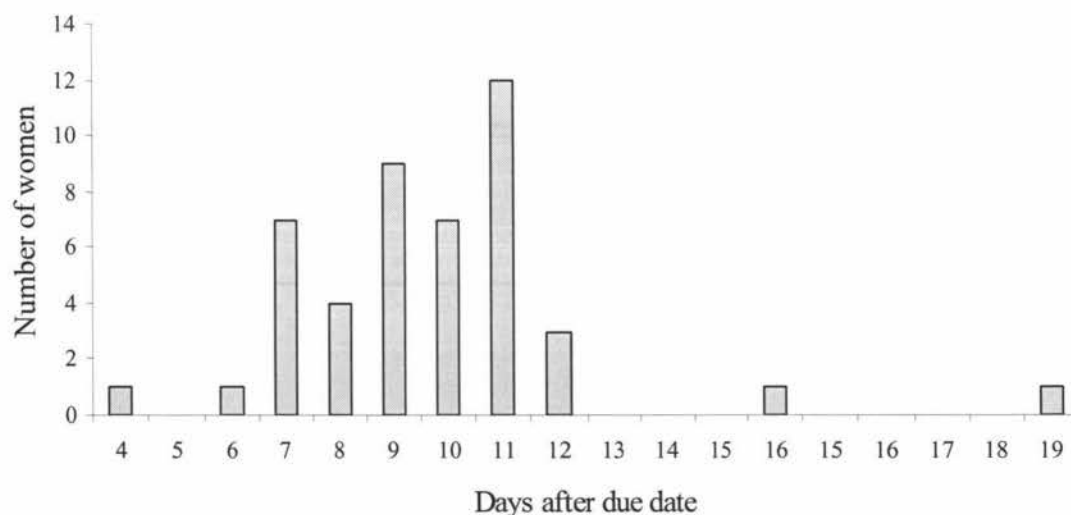


Figure 3 Days after due date for women whose LMC stated the reason for induction of labour was post-dates

Table 7 Preferred time after due date for post-dates induction as stated by Lead Maternity Carer

Time	Number of LMCs
1 week	2
After 1 week	3
7-10 days	2
10 days	8
10-12 days	1
12 days	6
13 days	1
12-14 days	3
41-42 weeks	1
Leave alone and use more monitoring	1

4.5 Gestation

In this section consideration is given to gestation at the time of delivery and how it was determined by the LMCs in the study. The inclusion criteria for the study required women to be at least 37 weeks gestation. The gestation at induction, for women for whom the reason stated by their LMC was post-dates, is shown in Figure 3 on the previous page.

4.5.1 Method Used for Assessing Gestation

For most women the Last Menstrual Period (LMP) and ultrasound dates were in agreement (Table 8). Only a small number (13.6%) used the LMP rather than the scan date. One of these was discussed previously in section 4.4.1. Two further women had initially been assessed overseas and a LMP date was all that was available. One LMC said she had used the ultrasound date as it assisted in requesting an induction for the particular woman. The method was not known for 2 women, as there was no interview with the LMC.

Table 8 Dating method used for post-dates

Dating method	Number of women	Percentage
LMP	6	13.6
Ultrasound	10	22.7
LMP and Ultrasound in agreement	29	63.6
Total	45	100.0

For those women where the ultrasound was used, most had had the scan between 6 and 12 weeks (inclusive) as shown in Table 9. The accuracy at this stage is plus or minus 2-4 days (Harman, 1999). Thirty four percent had used a scan of 13 weeks or greater to assess gestation where the variation increases 3-4 times that of the early scan (Harman, 1999).

Table 9 Gestation of dating ultrasound (n=39)

Gestation of dating ultrasound (for women it was used for)	Number of women	Percentage
< 6 weeks	0	0
6-12 weeks	23	60.5
13-20	11	28.9
>20	2	5.3
Not known	3	5.3
Total	39*	100.0

*This is the total number of women who had an induction for post-dates (according to their LMC) minus the 6 women who did not use an ultrasound for dating.

4.6 Information About Induction

In the following section the information women had about induction and from whom they received this information is presented.

4.6.1 Source of Information About Induction

Women were asked how they had heard about the positive and negative effects of induction. The answers to this question, for which they often gave more than one, are

presented in Table 10. Of the 30 women (38%) who said they had heard about induction during childbirth education classes, 13 said it was only covered briefly, methods only were talked about or they couldn't remember much about it.

“Can't remember from antenatal” (*W 83*).

“Didn't really talk about it –brushed over briefly” (*W 84*).

Another woman said she received a booklet from antenatal class but had not read the information in depth.

“Skimmed over it as negative list always outweighed positive” (*W 31*).

Others said they had read information received from antenatal classes either for the first time or reread it prior to induction.

Table 10 Source of information for women prior to induction of labour

Source	Number	Percentage
Verbal discussion with LMC	59	74
Written material	51	64
Friend/family	40	50
Childbirth education	30	38
Specialist	7	9
Internet	2	3
Hospital registrar	1	1

4.6.2 Women's Understanding of Risks and Benefits

Each woman was asked what she understood to be the positive and negative aspects of being formally induced, which at this facility involved the use of prostaglandin, syntocinon or artificial rupture of membranes. Some of the risks mentioned could also apply to other methods of induction. Most women gave more than one response to the question. The responses were grouped into similar categories and are recorded in Table 11 indicating the number of women who mentioned that effect. Ending the pregnancy and issues around having more control were the most common positive reasons.

Table 11 Positive effects of being induced (from women)

	Reason	Number	Percentage
1.	Pregnancy comes to an end, sick of being pregnant, get baby out	31	39
2.	More control about when having baby, able to plan, know the date, certainty	30	38
3.	Less risk/stress for baby, safe	21	27
4.	Controlled environment, safe, monitoring pain relief	12	15
5.	Baby out before placenta stops functioning, less O ₂	10	13
6.	Baby doesn't get any bigger, avoid LSCS	9	11
7.	Less risk for Mum	6	8
8.	Stress of waiting and wondering is over	5	6
9.	Might be quicker, speed up process	4	5
10.	None	4	5
11.	Don't know much	3	4
12.	Baby not overcooked, burnt	2	3
13.	No accidents, waters breaking in public	2	3
14.	Husband/family member has more time off	2	3
15.	Prevent head hardening post-dates which can split vagina	1	1

The most common negative effect women said they were aware of was contractions following induction were more painful and difficult. The negative effects were given letters as opposed to numbers as in the previous chart so quick comparisons could be made of women who knew of only positive effects or only negative effects (Table 12). The numbers or letters were put next to each woman's coded identifier. This information was helpful in the development of the theme *minimal evidence of women as informed decision makers* (Theme 2a), which is presented in chapter 5.

Table 12 Negative effects of being induced (from women)

Reason	Number	Percentage
A. Contractions more painful, stressful	32	41
B. Artificial, not natural	25	32
C. More likely to need more intervention	16	20
D. Longer labour	15	19
E. None	13	16
F. Stressful for baby, baby/mum not ready	11	14
G. Increased risk of caesarean	10	13
H. More time in hospital, clinical environment	7	9
I. Tension about not having any choice, plans changed, disappointed, loss of control	6	8
J. Not able to have a water birth/ deliver in a rural birthing unit/ homebirth	5	6
K. No spontaneity, mystery	3	4
L. More unknown, scary, nervous	3	4
M. Shorter labour	3	4
N. No idea	2	3
O. Side effects of prostaglandin gel, syntocinon	2	3
P. Blood pressure can go up	1	1
Q. Did not want to know	1	1
R. Need injection for third stage	1	1

4.7. Associated Interventions

Interventions associated with induction of labour were measured in this study, namely epidural use, instrumental delivery and caesarean section and these are reported in the following sections.

4.7.1 Epidural Preference

Women were asked prior to induction commencing to rate their preference for using epidural anaesthesia as pain relief during labour and the responses are presented in Figure 4. The data was grouped into those women who preferred not to have an epidural

(scores below 5), those who had no preference or were undecided (score of 5) and those who preferred to have an epidural (scores above 5). Eight percent more women wanted an epidural than those who did not.

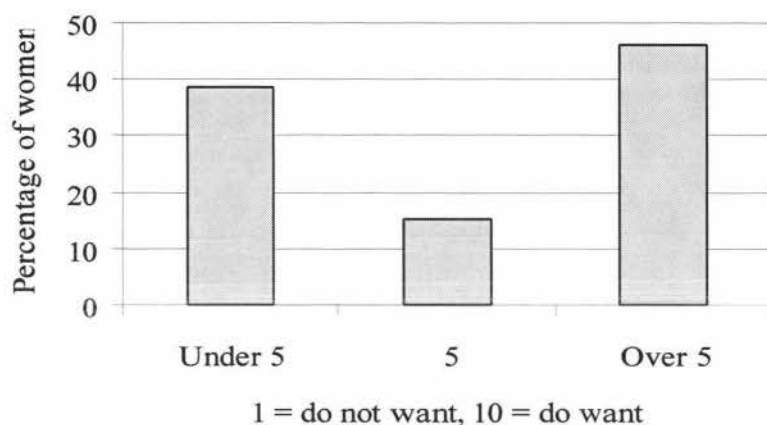


Figure 4 Preference for use of epidural in labour on a scale of 1-10

The preference for epidural was compared to actual use in labour. Figure 5 below shows the preference for epidural prior to induction for the 24 women who did not have an epidural inserted in labour. Among the women who did not use an epidural in labour there was a similar number of women who had stated prior to labour that they had wanted to have an epidural as those who had stated they did not.

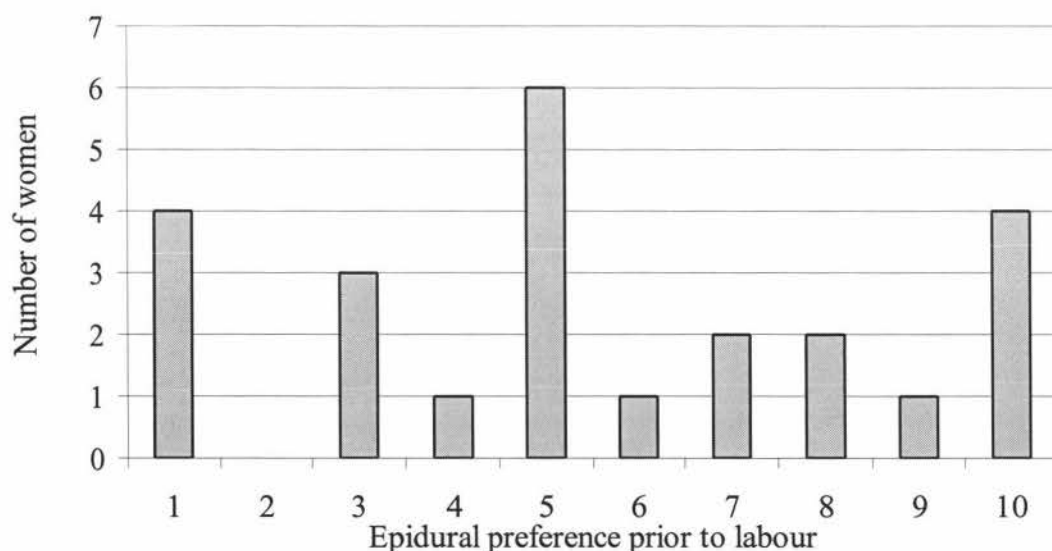


Figure 5 Preference for epidural prior to induction for women who had no epidural in labour (n=24).

4.7.2 Mode of Birth

The mode of birth for women whose labour was induced and for those who began spontaneously during the same time frame has been compared in Table 13 and Figure 6.

Table 13 Mode of birth

Mode of Delivery	Induction of labour (excluding prelabour rupture of membranes)			Spontaneous labour	
	Women interviewed n (%)	Women not interviewed n (%)	Women who declined n (%)	Total N (%)	Total N (%)
Normal vaginal	36 (46.2)	7 (30.4)	4 (57.1)	47 (43.5)	181 (61.6)
Forceps	5 (6.4)	3 (13.1)	0 (0.0)	8 (7.4)	28 (9.5)
Ventouse	9 (11.5)	2 (8.7)	1 (14.3)	12 (11.1)	31 (10.5)
Emergency caesarean	28 (35.9)	11 (47.8)	2 (28.6)	41 (38.0)	54 (18.4)
Total	78* (100.0)	23 (100.0)	7 (100.0)	108 (100.0)	294 (100.0)

*One woman was removed from the mode of birth analysis as her baby was found to be breech after the induction had been initiated and the baby was delivered by caesarean section.

The bar graph in Figure 6 shows the mode of birth of all nulliparous women who had an induction compared to spontaneous labour for the study time frame. The larger study showed the difference between modes of delivery for the two groups to be statistically significant for normal vaginal delivery and caesarean section.

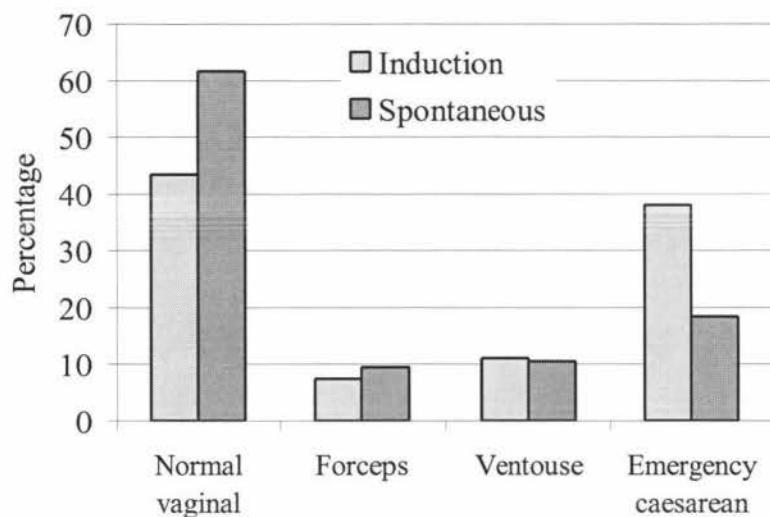


Figure 6 Mode of birth for women having an induction compared with spontaneous labour

4.7.3 Birth Predictions

The question the LMCs were asked at the end of the interview was “how did they think the induction would go for this particular woman?” Fifty-two LMCs (70%) made a prediction. Of those who made a prediction, 31 (59.6%) predicted a normal vaginal birth and 21 (40.4%) predicted a caesarean section. The actual mode of birth for these two groups is shown in Figures 7 and 8.

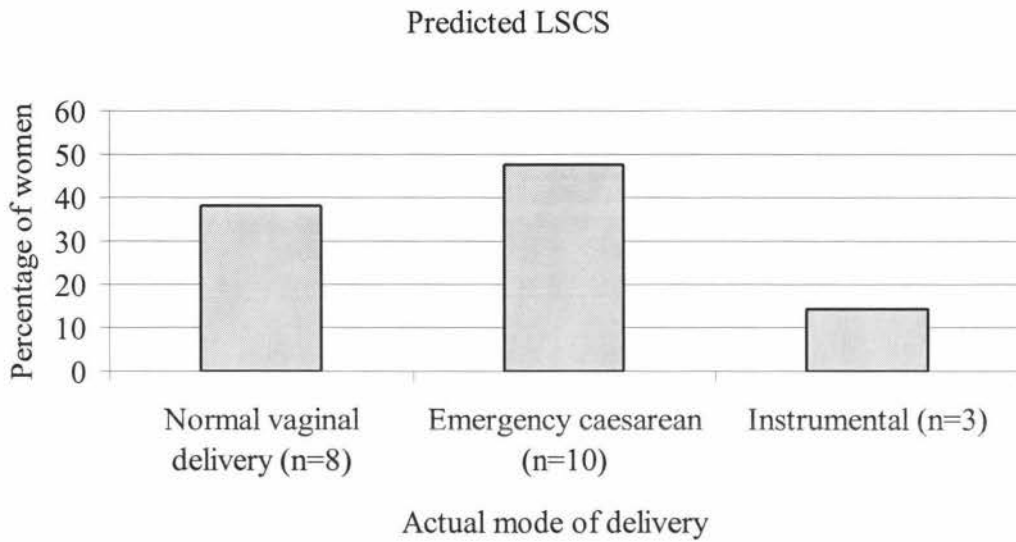


Figure 7 Mode of birth for women predicted to have a caesarean section (n=21)

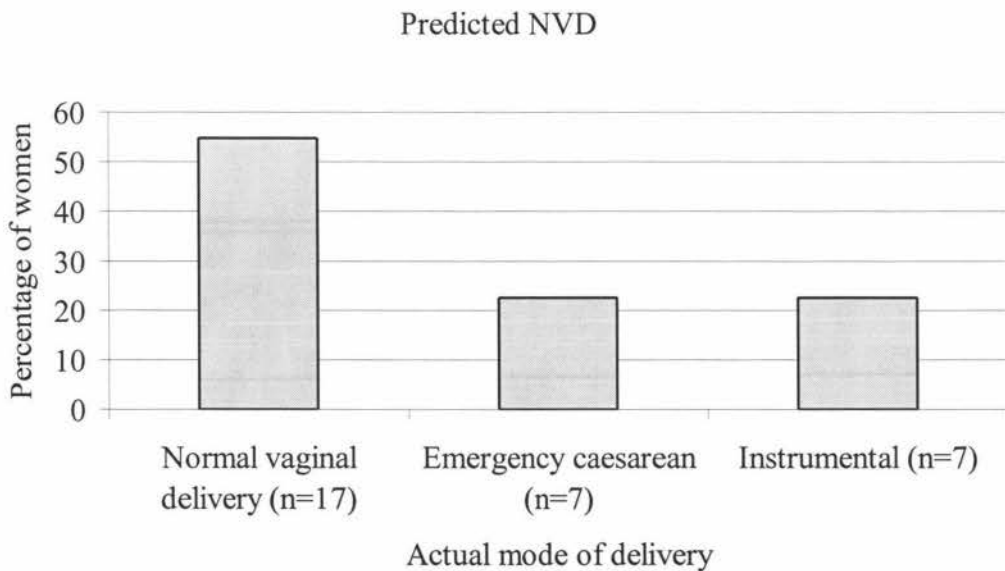


Figure 8 Mode of birth for women predicted to have a vaginal birth (n=31)

4.8 Other Methods Used to Induce Labour

Women were asked if they or their LMC had tried any other methods to bring on labour. The responses are shown in Figure 9. Twenty-seven women (34%) said they had not tried any other methods before coming into hospital for a formal induction. For those who tried other methods, sex came out as the most common method. Two women knew

of methods that could be tried but said they couldn't be bothered. One woman had been told by their LMC not to worry about it and 2 women said they had no time to try other methods prior to knowing they needed to be induced. One LMC made the comment to me that she had not told the woman about any other methods to try as the last woman who was being induced under her care she had told everything to and nothing worked "so this time I didn't bother" (LMC 37). Relatives had suggested castor oil but when women asked their LMC they were told not to use it (LMC 31).

One of the methods tried, the eggplant dish, refers to a recipe heard by the woman on the radio, from an American restaurant that claimed 300 women had gone into labour after eating it. The recipe cost \$60 to make but made the woman feel sick so her husband ate most of it.

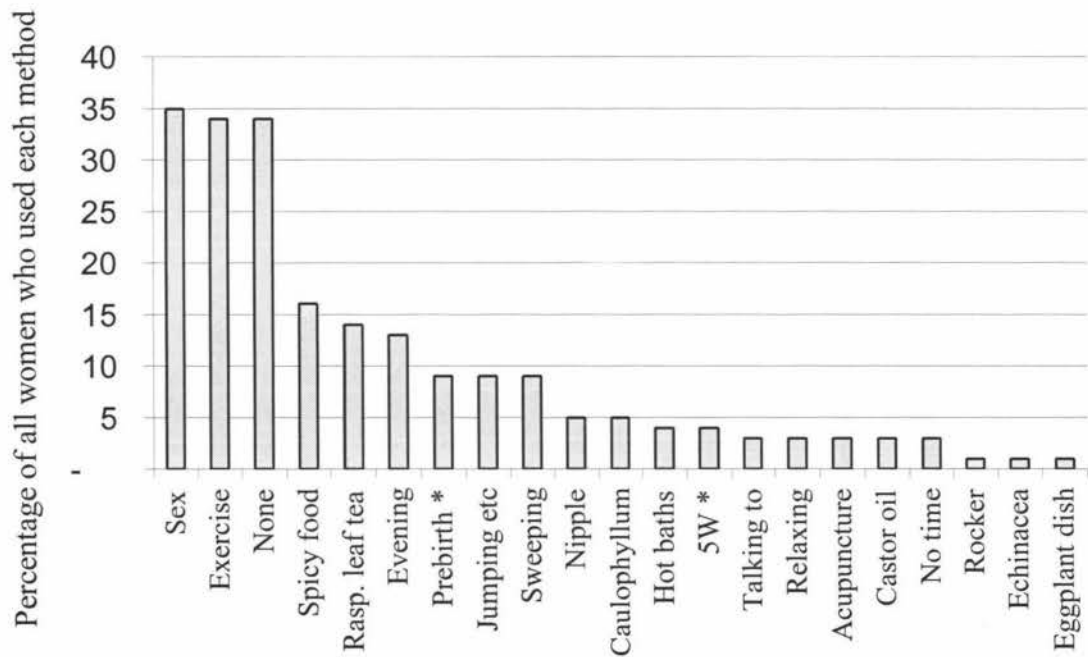


Figure 9 Methods for induction used prior to admission for formal induction

* 5W is a herbal preparation containing Black Cohosh root, Squaw Vine herb, Dong Ouai root, Butcher's Broom and Red Raspberry leaf

* Prebirth is a homeopathic preparation containing Caulophyllum Cimicifuga, Arnica, Pulsatilla and Gelsenium

4.9 Summary

In this chapter I have presented descriptive statistics pertaining to demographics, reasons for induction and other quantifiable data relating to induction from the interviews. In the current study the average age of women having an induction of labour was higher than in the spontaneous group. European women were over represented compared to women whose labour began spontaneously. Post-dates was the most common reason given for induction, however many of these women began induction at 41 weeks gestation or less. There were a variety of positive and negative effects of induction that were identified by the women with the most common positive reason being that the pregnancy would come to an end and the most common negative reason being that the contractions would be more painful.

A higher rate of caesarean section was found for the induction group compared to the spontaneous labour group. A high proportion of LMCs predicted that the women they were caring for would have a caesarean. Within the group of women who had not used an epidural there was a similar number who had stated a preference to use an epidural for pain relief prior to labour as those who had stated they did not want to.

Sex was the most common method used by women in the community in an attempt to avoid formal induction. A similar percentage of women however had not tried anything to initiate labour prior to arriving at the maternity facility.

The results presented in this chapter are examined in more detail in relation to the current literature in chapter 6. The following chapter describes the process of qualitative data analysis using examples from the data to illustrate each stage. The resulting code and associated themes are presented and discussed.

Chapter 5: Results-Thematic Analysis / Code Development

5.1 Introduction

In this chapter the process used to analyse the qualitative data from the interviews and subsequent code development is described in detail. Boyatzis' method of thematic analysis and code development was used to make sense of the data. Examples are given at each stage of the development to clearly outline the steps undertaken in coming to the ten themes that make up the code. The themes are presented under the following six headings; who makes the decision about induction, informing women, risk and litigation, booking system, reasons for induction and impressions of/attitudes to induction. Each theme identified is discussed in detail with exclusion and inclusion criteria and examples of each.

5.2 Code Development

Developing a code inductively (a data-driven code) involves five steps as identified by Boyatzis (1998, p. 44). The five steps are:

1. Reducing the raw information
2. Identifying themes within sub samples
3. Comparing themes across sub samples
4. Creating a code
5. Determining reliability

Each step is discussed to illustrate the analysis which led to the identified themes.

According to Boyatzis (1998, p. 161), a theme is “a pattern found in the information that at the minimum describes and organizes the possible observations or at the maximum interprets aspects of the phenomenon.” A code “may be a list of themes; a complex model with themes, indicators, and qualifications that are casually related; or something in between these two forms.”

1. “Reducing the raw information”

This process required reading and rereading the raw data, making notes, underlining and highlighting as I went. An outline of paraphrased items was then made for each interview.

The following examples show how this was done.

Example 1

To the question ‘How did the woman’s attitude to induction affect your decision to induce?’ the LMC in interview 4 stated, “[She] asked for it. [She] asked for it earlier but was waiting till [I] was happier with time [gestation]. She is 37 weeks now.” In this response it appeared the woman had put pressure on the health professional to have an induction. The raw information was paraphrased as, ‘pressure put on LMC by women.’

Example 2

The LMC in interview 6 said in reply to the question ‘What sort of non-medical factors influenced your decision?’ “the woman was keen to have an induction, [she] has been asking for weeks. I have delayed her a week.” This was also paraphrased as ‘pressure put on LMC by women.’

Example 3

To the same question as the example above the LMC in interview 8 who was commencing an induction early, stated, “the weekend is coming up. I am already covering a colleague this weekend so it would have been too much to have had an induction as well.” The comment was paraphrased ‘convenience for the LMC.’

2. “Identifying themes within sub samples”

The list of paraphrased terms, that were identified as shown above, were then inputted into a table on the computer with a column for women and a column for LMCs. Phrases that showed a similar theme were recorded together. For example the phrase ‘pressure put on LMC by women’ was combined with the phrase ‘pressure put on obstetrician by women’ to develop the theme ‘pressure put on LMC and obstetrician by women’. Using the computer it was then easy to move around the phrases until all similar topics were together. A heading was then given for each group of themes that most closely depicted the content of the phrases. These headings indicated the broad areas of influence on decision making identified from the interviews. All themes in the column headed ‘LMC’ were stated by the LMC during their interview and the column headed ‘women’

contained data obtained through the women. Within the interviews the LMC and women would make comments referring to the women / LMC, the consulting obstetrician or themselves. For clarity these are listed as sub headings under each heading. Table 14 below gives an example of one group of themes and its heading. The complete table is in Appendix F.

Table 14 Themes identified in the subsamples

LMC	Women
<p><i>Who makes the decision about induction?</i></p> <p><u>Women</u></p> <p>Women have different attitudes to birth and induction e.g. the woman did not ask for induction; would have pushed boundaries further if woman had different philosophy.</p> <p>Women have fixed ideas.</p> <p>Pressure put on LMC and consulting obstetricians by women.</p> <p>Women have a willingness to do what consulting obstetrician/LMC suggested.</p> <p><u>LMC</u></p> <p>LMCs expect the women to do as they are told.</p> <p>LMCs accept what medical people say or argue with it.</p> <p>Convenience for the LMC e.g. Workload, days off.</p> <p>LMCs refer women to consulting obstetricians with similar philosophies to their own.</p> <p><u>Consulting obstetrician</u></p> <p>Induction is the consulting obstetrician's decision not the LMCs.</p> <p>Consulting obstetricians give options to women such as induce now or later.</p> <p>LMC told of date and decision by consulting obstetrician, rather than asked if suited.</p>	<p><i>Who makes the decision about induction?</i></p> <p><u>Women</u></p> <p>Timing more suitable e.g. baby is born before Christmas, husband can have more time off, mother able to help.</p> <p><u>LMC</u></p> <p>LMC would not have suggested induction if not appropriate.</p> <p><u>Consulting obstetrician</u></p> <p>Some knew it was LMC's desired approach to wait.</p>

3. *“Comparing themes across sub samples”*

The two groups were not asked the same questions or in similar situations so the aim was not to look for similarities or differences between groups but to find themes that contributed to the decision making process from two perspectives. Boyatzis describes such deviations from the proposed method and the need to therefore use a hybrid approach that “forces the researcher into using his or her theories or prior research as a guide for articulation of meaningful themes” (1998, p. 52). Within the interviews with the LMCs and women there were themes that appeared to be related. After the themes were grouped the raw data was reread to ensure the list was complete. With the completed table each transcript for an interview was read to see if it contained the theme. With a coloured pencil I coloured the comments in the interviews that related to the themes. For example all comments relating to the booking system influencing the timing of induction such as “...would have been happy to go to 41 weeks [and] 3 days or 41 weeks [and] 4 days but no spaces available” (*W 11*) were coloured in blue. I was then able to easily see if blue markings occurred in the interviews with women as well as the LMCS.

4. *“Creating a code”*

Influences on decision making for induction of labour

A code has been developed that consists of a list of themes or set of statements that describe the influences for both LMCs and women to begin labour artificially. Through thematic analysis of the data obtained in this study 10 themes were developed. Each of the themes is discussed fully and has been presented in the format outlined by Boyatzis (1998, p. 90) which includes “ a label, a description or definition, indicators or flags, examples and exclusions, or special conditions.” This code format is also suggested by Denzin and Lincoln (2003). Each theme within the code is presented under the topic headings in sections 5.2.1 to 5.2.5; who makes the decision, informing women, risk and litigation, booking system and reasons for induction, as developed in step 3.

Table 15 Code with themes

Code	Influences on decision making for induction of labour.
Themes	<p>1a Giving over and taking over of responsibility.</p> <p>1b Participation of women in decision making is limited.</p> <p>2a Minimal evidence of women as informed decision makers.</p> <p>2b Women are influenced for or against induction.</p> <p>3a Multidimensional balancing of risk for the LMC.</p> <p>3b Focused risk for women.</p> <p>4 Hospital booking system has an iatrogenic, controlling effect.</p> <p>5 Induction of labour integrated into care as a routine practice.</p> <p>6a Induction perceived as both taking from and giving to the birth experience by women.</p> <p>6b Incongruence between LMC’s stated belief about induction and their current situation of induction.</p>

5.2.1 Who Makes the Decision About Induction?

A single person or a combination of LMC, woman and obstetrician can make the decision to induce labour. The following two themes have been developed to describe how the ownership of the decision appeared to be organised amongst participants in this study. The grouped data that led to the development of these themes is shown in Table 14 (p. 79).

Theme 1a

Label: *Giving over and taking over of responsibility*

Definition: Giving up of decision-making to the obstetricians by LMC and women. Decision made by the obstetrician and woman and the LMC then informed of the outcome.

Indicators: Coded when LMC says “specialist decision”, “specialist told me...,” “decision is taken out of hands”, “I was told the date and time by consultant” or when LMC or their work partner was not clear on the reason for induction. Or “woman happy to follow our lead, “does what I say.”

Coded when women says ‘trusted medical advice’

Exclusion: Not coded if woman, obstetrician and LMC made the decision to induce together and was agreeable to all parties.

The above theme was developed in relation to who makes the decision to induce. Some women stated they had handed over the responsibility to their LMC or the specialist with comments such as “my LMC would not have suggested it if not appropriate” (*W 18*) and “I trusted medical advice to be induced” (*W 72*). For this latter woman the registrar on call reviewed her situation and said induction was unnecessary and she was sent home. As she left she was quite embarrassed and upset. No record of the visit to the specialist accompanied the woman outlining the reasons induction was felt to be originally necessary. She returned for induction at a gestation of 41 weeks plus 1 day and had a caesarean section for failure to progress. Had the initial decision to induce been made following information that included more than one option in managing a labour with a large baby and jointly with her LMC and obstetrician she may have avoided such distress and been prepared for a differing opinion by another doctor.

In some cases the responsibility of care was ‘taken over’ by the LMC with comments such as “she [woman] does what I [LMC] say” (*LMC 21*), “supported my [LMC] decision” (*LMC 74*) and “[woman] was not given the option [re induction day]” (*LMC 83*).

LMCs also handed over responsibility to the specialists with many comments relating to induction being a “specialist decision” and it is “not a LMC’s decision”. This surprised me as it was sometimes said with an implication that asking why they were being induced should be asked of the specialist instead. I pointed out that the original referral to the obstetrician was by them so they in fact identified a potential concern. One LMC identified outside pressure as the reason for referral, “because of the woman’s age and current discussion about it [risks associated with age] I felt I had an obligation to refer to the consultant” (*LMC 25*). Although the resulting outcome to induce was not what she felt was necessary she accepted the woman’s and obstetrician’s decision.

The communication process in making a decision appeared on many occasions to be circular with the woman coming to her LMC who referred her to the obstetrician who made a decision with the woman that was then communicated back to the LMC. Being

“told” of the outcome of the obstetrician visit angered some LMCs while others accepted it as part of the process. One LMC was told the woman she was LMC for had been booked for an urgent induction for intrauterine growth restriction. She had important family events on and knew the induction was not urgent at all as the baby was not small (*LMC 53*). Another LMC was more accepting, “I was told the day and reason by the consultant so had to rearrange days to be here but that is part of the job. It was not convenient” (*LMC 40*).

The biggest concern that became apparent with the communication process was when the reason for induction was unclear to the LMC. On one occasion the LMC was explaining the reason to be high blood pressure. The registrar on call later said it was not blood pressure but was post-dates and a large baby. The LMC had been told by the obstetrician not to let the woman go 1 week past 40 weeks gestation, as he did not want her to “have an abruption” (*LMC 8*). Again as there was no documentation of the visit to the obstetrician and the LMC had not been present, the actual initial reason was not known. On another occasion the reason for induction as written in the booking book was ‘intrauterine growth restriction’ (IUGR) and this had been communicated to the hospital midwives by the obstetrician with a request that she be booked in earlier as urgent. On interviewing the LMC she was furious as she considered the baby to be large. With no documentation as to why the baby was considered IUGR by the obstetrician it was presumed only to be a tactic to ‘jump the queue,’ to get a place in the book when the woman wanted it. However if the reason truly had been IUGR the baby might have missed out on the closer monitoring required for this group of babies. The baby was born vaginally at a bonny 4795gms.

In another situation the interview with both the woman and LMC had suggested a medical condition not associated with pregnancy as the reason for induction. On reviewing the clinical notes I found that the hospital consulting obstetrician had documented age as the main reason. I discussed the main reason for induction with the consulting obstetrician concerned and she confirmed that age was the main reason although the medical condition was also important. Being 40 years old had not come up in either of the interviews.

Another occasion when the reason was unclear was when a LMC was unable to care for a woman and had requested their midwifery or obstetric partner to care for the woman instead. One caregiver, when asked the reason for induction, said she did not know and a staff member was sent to ask the woman. I then rang and talked to the LMC at home to clarify the details. As the reason in this case was developing gestational proteinuric hypertension (GPH) I was concerned that even once the reason was established that relevant information such as blood results was not immediately available. Another relieving colleague had presumed the reason was post-dates but when she saw that she was only 4 days past 40 weeks, she looked in the booking book and found the reason had been recorded as maternal request (as discussed in section 4.4). Maternal request was then considered the actual reason. My interview with the woman revealed that induction was due to other reasons and she had asked if she could wait a week longer and had never wanted to have an induction. I remained confused after that interview.

When presenting the above discussion to colleagues there was some disagreement that this could be possible. Their comments led me to review this aspect in the interviews numerous times. Unfortunately I had to accept that yes the actual reason was unclear or was inaccurately presumed.

Theme 1b

- Label: *Participation of women in decision making is limited*
- Definition: Women's attitudes to birth and induction (as perceived by the LMC) influence decision but the women may not always be aware of their influence or limits may have already been put on that influence.
- Indicators: Coded when LMC says, "may have gone to Term +12 if woman happy to go that far", "woman had not mentioned induction", "tell them at beginning that you will not think of induction till over 41 weeks," "tells them not to ask for induction" and "if woman had different philosophy may have pushed boundaries"
- Exclusion: Not coded if woman asked for induction.

All the LMCs were asked how the woman's attitude influenced the decision. Some commented that the woman had not asked for it but then later said they told them at the beginning of pregnancy "I will not think of induction till [your pregnancy is] over 41

weeks” (LMC 22) or “I tell them at booking not to ask for induction” (LMC 36). On other occasions the LMC said they would have been happy to let the pregnancy go longer if the woman had been the type who was happy to push boundaries. It was not apparent from the interviews with the corresponding women that the women were aware they had been given a range of options relating to their perceived philosophy.

5.2.2 Informing Women

The providing of information to women or evidence of women having relevant information relating to induction is an area of decision making in which two more themes were identified. The data from which they were developed are shown in Appendix F.

Theme 2a

Label: *Minimal evidence of women as informed decision makers.*

Definition: Information presented appeared to convince but not always to inform e.g. how information is presented affects the recipient’s reception of that information and therefore the decision making. Women’s knowledge of the negative effects of induction was limited.

Indicators: Coded when LMC speaks of information given to woman, “supported my decision -fetal safety was the only concern,” “agreed for the safety of the baby.”

Coded when woman talks about fear for baby’s safety but was not aware of any or less than 3 negative effects of being induced. Expresses fear of baby getting bigger and/or “splitting the vagina.”

Exclusion: Not coded when the woman is aware of three or more negative effects of being induced.

Tables 11 and 12 in chapter 4 (p. 69, 70) showed the amount of information women had about the positive and negative effects of being induced. Most women stated in some way that induction would reduce potential risk to themselves or their baby. Sixteen percent considered there to be no negative effects, another 3% said they did not know and 1% said they did not want to know. Sixty six percent of women were aware of less than 3 negative effects of being induced. I was surprised that the effects reported by the women were so limited when the LMCs knew the study was underway especially

towards the end when they were aware of the questions the women they were caring for were being asked. I was expecting a Hawthorn effect. A LMC acknowledged this lack of information sharing by stating “oops I didn’t prepare her very well”. When I asked a woman the question “what are the negative effects of being induced?” she said she asked her LMC the same question and was told “she would be in hospital for longer rather than the first bit at home” and that “there were no distractions walking up and down the hospital corridor” (*W 50*). Some women may have forgotten or chosen not to hear the negative effects as informed by their LMCs, as already mentioned.

Theme 2b

Label: *Women are influenced for or against induction*

Definition: A woman may be influenced during pregnancy about induction by the LMC’s approach.

Indicators: LMC “book two weeks in advance”, “tell about induction at 40weeks and then book in” or “tells them at beginning will not think of induction till over 40 weeks”.

Exclusion: Not coded when LMC and women did not mention talking about induction prior to induction being necessary.

Prior to induction being necessary many LMCs had already expressed their opinions to the woman. Some of this evidence has already been mentioned in the previous discussion such as “tells them at booking not to ask for [an] induction” (*LMC 36*). Other LMCs said they “tell them [the women] at 40 weeks about induction then book them in so [they] don’t miss out on a space” (*LMC 15*). The early booking for induction was identified as a problem “if [women are] booked in advance, it clogs [the booking] book up, women think induction – are programmed for induction” (*LMC 32*). During pregnancy women were influenced both for and against induction by the comments and actions of their LMC.

5.2.3 Risk and Litigation

The influence of risk and litigation in making the decision to induce is described by the following two themes. The data from which they were developed is shown in Appendix F.

Theme 3a

Label: *Multidimensional balancing of risk for the LMC*

- Definition: The balancing of risk factors for the LMC involves the perception of colleagues as well as risk to mother and baby.
- Indicators: Reference to research, judging of others e.g. in book, obliged to send to obstetrician, anxiety of women.
- Exclusion: Not coded when LMC was not influenced by the above in their decision-making.

The LMCs showed the expected concern for safety of the baby, mother and wishes of the family. About 10 women were said (by their LMC) to have put pressure on their LMC to induce and, if before term, the LMC expressed efforts to try and delay it. They also needed to follow the directive of the consulting obstetrician even when they disagreed with their decision. One LMC felt the woman she was caring for had “put pressure on the consultant” (*LMC 1*) and was therefore being induced earlier than was necessary. She had rung the consulting obstetrician to try and change the decision but they had still wanted it to go ahead. The LMC identified the main reason for induction to be convenience and the woman considered it to be because she was overdue.

An LMC, who normally worked in a rural practice, identified the differences compared to the hospital environment, “term and 10 days is recommended by specialists but we [midwives in her practice] would go to 42 weeks. We would do a CTG every 2 days – ring in the evening to monitor how she is” (*LMC 9*). Another said she had heard of women having large families and all pregnancies going to 42 weeks. “Some need to cook longer but have to meet the common denominator” (*LMC 35*). By common denominator she meant that although some babies do need a longer gestation it was considered that most do not.

There were comments about the inappropriateness of some of the indications in the induction book and I observed many times LMCs flicking through the book making comments about the ridiculous reasons for which women were being induced. “I go through the book and see all sorts of ridiculous reasons and I can’t get something urgent in” (*LMC 36*). The LMCs displayed open judgement of each other. However the one or two word reason was only part of the whole situation. When the interviews were done the ‘social inductions’ sometimes had more validity than the ‘developing hypertension’ or the ‘IUGR.’

Past experiences also influenced the management of potential risks. A LMC had recently dealt with a complaint in a similar situation so said she is now “trying to be cautious” and so this time had sent the woman to the consulting obstetrician to discuss her options (*LMC 34*). The LMC had attempted to reduce her risk of litigation by sending the woman to see the consulting obstetrician. However, when the woman was interviewed she knew of no negative effects of being induced. The LMC accepted the woman and consulting obstetrician’s decision to induce labour and began the process in hospital. At this point she had increased her risk of litigation as she was beginning an intervention on a woman who was not adequately informed, possibly thinking the consulting obstetrician would have done this.

Theme 3b

Label: *Focused risk for women*

Definition: Risk is focused on fear of harm to self and baby predominantly.

Indicators: “gets baby out safely”, “less risk for baby and me.”

Exclusion: Not coded when woman did not show concern for herself or baby (this did not occur).

All but one woman expressed some concern about their baby or themselves that would be reduced if their labour were induced. One woman who was being induced at a gestation of 41 weeks and 3 days felt it was unnecessary and would have been happy to wait till 42 weeks. However since the LMC had suggested it she felt she could not live with herself if something happened to her baby. “Taking over artificially bugs me a bit. I feel I don’t want to harm baby so will go with it. I know I could refuse but would not live with myself if something happened – LMC suggested induction” (*W 24*).

The woman who did not believe there was any risk to her baby at present and induction was unnecessary was very angry about her situation and felt she had been slotted in to the hospital system. She said she met the consulting obstetrician who told her the day available and there was no other option for days even though she would have preferred the following week. Following the interview she commented that she was pleased to “get it all off her chest” and had not been surprised a study was being done involving intervention in labour (*W 26*).

5.2.3 Booking System

To begin induction a space needs to be available within the daily allocation in the booking book. Two inductions could be started each day with one more space reserved for an urgent situation. The following theme describes the influence of the hospital booking system on the decision to induce labour. The data used in the development of the theme is shown in the table in Appendix F.

Theme 4

- Label: *Hospital booking system has an iatrogenic, controlling effect.*
- Definition: The current booking system is an iatrogenic cause of early inductions and is manipulated as practitioners try to overcome the control.
- Indicators: Coded when either woman or LMC said “wanted later in week but no spaces”, “only space available.” LMC books early so as not to miss out on space or indications for induction are exaggerated or made up to get a place in book.
- Exclusion: Not coded when LMC or women said there was no problem getting the day they requested for induction.

The idea that the booking system was an iatrogenic cause of early induction was suggested by an LMC early in the study. Numerous more complaints about the booking system followed confirming the notion. Some women also complained about the booking system. Inductions for post-dates were being done a couple of days earlier than the LMC considered necessary, as “apart from today there were no spaces available till next week when [the pregnancy] would have been 42 weeks” (LMC 36). For 19 women (24%) the booking system had influenced the day of induction. When there was a lack of space LMCs tended to go for the earlier date available rather than later. “Waiting for someone to ring with an available space is stressful for women and me, especially going to term plus 14 and waiting” (LMC 29). “I would have let her go a week, but this is when there was a vacancy, rather than wait a lot longer” (LMC 37).

Accepting a space in the booking book earlier than was indicated frequently appeared unnecessary in hindsight. When I interviewed the LMC they would explain that the woman was being induced earlier than they thought necessary. I, the researcher, would then see most of the inductions in the booking book, for the next few days, cancelled as they had gone into spontaneous labour. The day the LMC and woman would have

preferred to commence induction, as stated in the interviews, had become free and there was no need for the induction to have commenced early.

Christmas was approaching at the beginning of the study and it was important to women that they avoid this date as one LMC said “Christmas is a big thing – [women] go loony at Christmas” (LMC 9). Space in the booking book became more difficult and desperate to obtain.

To deal with the difficulties of the booking system many LMCs had developed ways of coping that perpetuated the difficulties and potentially increased risk. The book was clogged up with women who had been booked in at 40 weeks just in case they needed an induction later, “I tell them [the women] at 40 weeks about induction then book them in so they don’t miss out on a space” (LMC 15). When someone, who did not follow this method, had an urgent situation there were no spaces available.

Another method used to get a space in the book was to exaggerate the reason for induction and IUGR tended to be a popular one. As a reason second to post-dates “small baby” was given although the scan had said over 3000 grams and the LMC stated they had “used this as a reason to get further up in the induction book” (LMC 4). I observed pleading by LMCs and obstetricians to have their case considered important enough for a place in the induction book. The hospital system had considerable power over who was booked and when.

5.2.4 Reasons for Induction

A list of primary and contributing reasons for induction are displayed in tables 5 and 6 in chapter 4 (p 62, 64). The theme below is developed from the data that emerged relating to the importance of those reasons. The data is shown in the table in Appendix F.

Theme 5

Label: *Induction of labour integrated into care as a routine practice.*

Definition: The reason for induction sometimes appears to have become lost in the realm of it being a routine practice and merely an extension of normal birth.

Indicators: When a practitioner was initiating the induction of a woman under a colleague's care the reason for induction was not clear.

Exclusions: Not coded when reasons clear.

Situations where the reason for induction was not clear have been explained in section 5.2.1. Theme 5 indicates an observed possible reason why some LMCs feel they did not need to know exactly the reason prior to the induction commencing. It is a theme that is more difficult to validate concretely and may be an inaccurate leap in analysis. One LMC presumed the indication for induction stating "oh I thought it was just a routine post-dates" (LMC 84). Her presumption was incorrect and the need to understand clearly why the woman she was caring for was having an induction of labour appeared unimportant at the time of interview. A lack of preparation of some women by their LMC also made me think induction had become an extension of normal labour.

5.2.5 Impressions of/Attitudes to Induction

During the interviews with the LMCs I asked 'what are your general thoughts or opinions about induction of labour for nulliparous women?' Thoughts about induction were expressed by the women when they discussed the negative and positive factors. Themes emerged from this information that have been grouped under the heading of impressions of and attitudes to induction and are outlined in the table in Appendix F. The data has been developed into the following themes.

Theme 6a

Label: *Induction perceived as both taking from and giving to the birth experience by women.*

Definition: Many women were disappointed about losing the spontaneity of the onset of labour but were also able to state positive factors such as being prepared and pregnancy coming to an end.

Indicators: When able to state a positive and negative effect of being induced e.g. "Get baby earlier", "definite date", "stressed about waiting and wondering" or "not natural", "taken spontaneity out".

Exclusions: Not coded when a woman considered the induction to be all positive or all negative.

Most women could identify both positive and negative aspects of being induced. Even the woman who appeared quite angry about being induced stated as a positive effect that having a date allowed them to be organised, have a timetable to follow that provided more certainty. As a negative effect she felt the spontaneity had been taken away and that she was “missing out” on giving her husband an urgent phone call at work (*W 26*). It appeared that having a date had both taken away from and given to the birth experience.

Other women who were happy to have their labour induced often made statements such as “it would have been nicer to have been doing it naturally...” (*W 36*), “[induction] takes the mystery out” (*W 39*) and “[induction] is not natural, I was hoping it would be natural and not have to resort to this” (*W 47*). The giving and taking is expressed in the following woman’s comment “my preference is for it to be naturally but understand why [induction is occurring]” (*W 45*). The pregnancy complication of pre-eclampsia was going to be resolved for this particular woman.

Theme 6b

- Label: *Incongruence between LMC’s stated belief about induction and their current situation of induction.*
- Definition: The LMC expresses a view of induction that differs from how they are caring for the woman about whom they are currently being interviewed.
- Indicators: LMC’s recorded thoughts about induction are contradictory to the previously given indications.
- Exclusions: Not coded when the LMC’s stated belief about induction is congruent with the current situation.

One of the questions asked of the LMCs was what their general thoughts about induction were. Most LMCs said they considered inductions should be done for medical reasons only and for post-dates of at least 40 weeks plus 7-10 days. There were cases where the LMC stated their thoughts but were in a situation incongruent with that such as saying post-dates is 40 weeks and 10 days but they were performing an induction at 40 weeks and 7 days.

5. *“Determining reliability”*

Reliability, which is the last step in code development, is essential to ensure the developed code and research findings can be usable to change practice and be replicated in future studies. Boyatzis (1998, p. 144) describes reliability as “consistency of observation, labelling, or interpretation.”

Following the initial development of the code and themes, the code was applied to each of the interviews. Changes were then made to the themes as the code was found to not fully encompass all that was in the interviews. The code was then reapplied to see if they fitted better with the raw data.

The use of other people in coding is another method of attaining reliability. The initial person to assist in validation was my supervisor who read through a portion of the interviews and the themes that had been developed. One of the research assistants also read through the themes and gave feedback on whether she thought they encompassed what she had experienced during her own interviews with women and the other summarised interviews.

For the code to be usable it also needed to make sense to those who have not conducted or read the raw data from the interviews. The preliminary themes were presented to a group of fellow students within the School of Health Sciences at Massey University and to a group of work colleagues. Similar concerns were raised about a few of the words used to label the themes and these were discussed until a label was developed that was clearer and acceptable in its meaning. For example in theme 2b I had initially put ‘women are programmed for or against induction’. Both groups to whom the research was presented did not think it was acceptable to say one person was ‘programming’ another and the word was changed to ‘influence’.

5.3 Summary

In this chapter 10 themes have been developed using Boyatzis’ method of thematic analysis and code development that capture the influences on decision making for women and LMCs at the facility where the study took place. The process by which the code and associated themes have been developed has been described in detail with

examples to illustrate the process of each theme development within the code. In chapter 6 these themes and the results presented in chapter 4 are discussed in depth in relation to the current literature.

Chapter 6: Discussion

6.1 Introduction

This chapter presents the last stage of Boyatzis' (1998, p. 11) method of thematic analysis where the researcher "must interpret the information and themes in a way that contributes to the development of knowledge." Chapter 4 provided the context and added to the depth of the thematic analysis presented in chapter 5. These two chapters are brought together and examined in light of the research aims and current research literature. The first section describes how the research questions and aims were addressed in this study. In section 6.3 the indications for induction are discussed. The influences on coming to that decision are examined under the broad categories of the women, the health practitioners and the maternity system or organisation. The final section considers the informal methods of induction used by women in this study and the current literature relating to the topic.

6.2 Research Questions and Aims

The research questions that drove this study are:

- What are the reasons given for induction of labour by the Lead Maternity Carers and the nulliparous women having an induction of labour?
- What influenced the decision to induce for the stated reason?

The research literature discussed in chapter 2 provides some guidance as to what is considered best practice in the area of indications for induction of labour for nulliparous women. The current study clearly identified the reasons for induction for 80 women however the decision was not made in isolation from both the influences of individual beliefs and practices and the effect of organisational and national systems.

The aims of the study have been outlined below for clarity followed by a short description of how each was addressed in the study.

Aim One: To identify the reasons for inducing labour given by the LMC and women themselves.

For each woman in the study a main reason for induction was identified. For most a secondary indication was also stated. Interviewing both women and LMCs revealed discrepancies in the reasons between the two groups that relate to how the decision was made and by whom. Such discrepancies and their cause are missed in reports extracted from an electronic database. In section 6.3 there is an in depth discussion of how the indications given fit with the research literature critiqued and reviewed in chapter 2.

Aim 2: Determine the medical and non-medical factors that influenced the decision making.

Eighty women and 76 LMCs were interviewed providing rich data on the influences that led to the stated indication for induction. Through Boyatzis' thematic analysis the data was reduced to 10 themes that provided some insight into the influences on both women and LMCs when deciding whether or not to have an induction of labour. These are examined further in this chapter as they relate to women, the health practitioners and the organisation of the maternity system.

Aim 3: To identify the demographic characteristics of nulliparous women who are induced.

The ethnicity and age of women having an induction was collected via the clinical notes or the hospital electronic database. The data was compared with women in spontaneous labour in Tables 2 and 3 (p. 59, 60). Women in the induction group were slightly older and more likely to be European. Testing to identify whether these differences were statistically significant was only undertaken in the larger study. Ethnicity and age are discussed as influences in the decision making in the section relating to women.

Aim 4: To identify what information women have about induction prior to induction.

Women were asked during their interview what they understood to be the positive and negative effects of being induced. They were also asked how they received this information. The list of negative effects or risks of induction (Tables 11 & 12, p. 69, 70) was found to be very limited with 16% not aware of any. Thematic analysis of the data identified the following themes relating to how information influenced the decision making; *minimal evidence of women as informed decision makers* and *women are*

influenced for or against induction. These are discussed further in this chapter under women, health practitioner or system influences.

Aim 5: To determine the informal methods of induction used by women.

Women were asked if they had used any informal method(s) of induction in the community before coming to hospital. Sixty six percent of women had tried one or more informal method. The use of alternative methods provides some indication of women's preference to avoid a hospital induction of labour. A wide variety of methods were used, some of which are supported by research, some of which are not, and for others the research literature is sparse.

6.3 Reasons for Induction

The first aim of this study was to identify the reasons for inducing labour given by both the LMCs and the women. The most common primary reason given for induction was found to be post-dates with a range of secondary reasons also stated (Tables 5 & 6, p. 62, 64). This section discusses, in relation to the current literature, the reasons identified for induction of labour at the maternity facility in the study.

6.3.1 Post-Dates

The main reason for induction of labour identified in the study was post-dates which is consistent with other facilities in New Zealand and overseas (National Women's Hospital, 2000; Yeast et al., 1999). Only 2 women had a prolonged pregnancy that was consistent with the World Health Organization definition of 42 completed weeks gestation or more (Chua & Arulkumaran, 2002). In the research by Duff and Sinclair (2000) 33.2% of women whose labour was induced for post-dates were less than 41 weeks and 3 days compared with 49% of the women interviewed in the current study. Nine (20%) of the women were induced at 41 weeks or less. If the advice from the Cochrane review was being closely adhered to this is still earlier than the reviewers recommend: "...routine induction of labour after 41 weeks gestation appears to reduce perinatal mortality" (Crowley, 1999, p. 3).

As post-dates is the most common reason for induction a significant reduction in inductions could occur if women were induced after 41 weeks, if there are no other risk

factors. As discussed in the literature review there is concern that the recommended gestation for a post-dates induction in the Cochrane review is too early and that the risk has not yet been adequately measured (Menticoglou & Hall, 2002). Davies (2003, p. 10) states, in regard to her exploration of the post-dates issue, that it uncovers “a trail that is mired with imprecision, lack of consensus, uncertainty and incomplete knowledge.” However the current study showed that by adhering to the Cochrane recommendations the number of inductions could be reduced. When this has occurred debate could follow on whether the recommended gestation for induction for post-dates, as stated in the Cochrane review, was earlier than necessary. The fact that most LMCs indicated induction should occur after 41 weeks suggests that other factors are influencing the earlier inductions, influences that are discussed later in this chapter.

Estimation regarding dating gestation using ultrasound has been shown to reduce the rate of post-dates pregnancy in a study by Gardosi et al (1997) but for most women in the current study the last menstrual period (LMP) and ultrasound agreed or the ultrasound estimation was used. For the small number of women for whom the LMP only was used, the women had begun their pregnancy overseas. It appears the use of ultrasound, as a dating tool is well entrenched in practice for LMCs and women using the facility in the study.

One of the key components of informed consent outlined by Draper (2004) is voluntariness, that is making a decision without coercion. The lack of coercion is questioned in light of the data obtained in the study. Friends and family in the community had already put an expectation on women before coming to hospital that they should have delivered. Women, whose pregnancy was beyond their due date, stated they were confronted with comments implying they should have delivered such as, “you’re still around” and “shouldn’t you be...” (*W 7*). The women said they were sick of being pregnant and that the “long term stress of being pregnant would be reduced [by induction].” In the present study, thirty nine percent of women stated that getting the baby out and ending the pregnancy was a positive aspect of induction. Being overdue is common but women and members of society start getting impatient and soon begin to see it as abnormal. The practice of induction raises the following question: Does induction for post-dates return women to normality by starting the birthing process that

was already expected to have begun or does it start a process of intervention that tips the balance further to abnormal?

Rubin (1984), using her own observations, describes the dilemma women experience and how this affects the birthing process.

The increasing size of the pregnancy, at first very welcome, becomes burdensome and restrictive to motor and social activity late in pregnancy. The thinning abdominal wall, the indeterminable body boundaries, and the restriction in freedom of movement induces a heightened sense of vulnerability. Coupled with the increased level of binding-in to the child, the vulnerability is one of double jeopardy. The restrictive limitations and vulnerability promote readiness to separate out from the pregnancy. However, the juxtaposition of the delivery is inhibiting. There is a starting and a stopping of labor in a conflict between holding on and letting go for delivery” (p. 63).

Rubin (1984, p. 63) goes on to say, “It takes a strong ego or, more correctly, a strongly formed maternal identity to withstand the pressures for an early termination of the pregnancy.” In a consumer driven society where emphasis is on the now rather than the later, the “letting go” is becoming more popular albeit unnaturally. The increasing discomfort and exhaustion of an ongoing pregnancy coupled with a societal expectation that suffering has no meaning of its own and should be alleviated does not put women in a neutral position to negotiate risks and benefits of induction of labour for post-dates.

6.3.2 Large Baby

Three women were having an induction because their baby was considered large and an induction at or prior to 40 weeks gestation was intended to help avoid a caesarean section. However, all three did in fact have a caesarean. Continuing to induce for suspected macrosomia is flawed as scanning can be so inaccurate and the research does not support induction as a means of reducing the caesarean rate (Gonen et al., 1997). The outcomes for women in this study do not suggest otherwise. As preventing a caesarean because of a large baby was the reason labour was being induced they may as well have waited until labour started spontaneously.

6.3.3 Suspected Growth Restriction

The use of the indication ,growth restriction, to manipulate the booking system is both dangerous and trivialises the significance of such an indication. Ending the pregnancy where the baby has suspected growth restriction (small-for-gestational age or IUGR) appears to be the indication for induction most supported by research (Clausson et al., 1999; Royal College of Obstetrics and Gynaecologists, 2001). These babies are over represented in the stillbirth rates for both pre and post-dates pregnancies (Clausson et al., 1999). In my quality role as Quality and Research Midwife at the facility I am aware that cases of ‘missed IUGR’, due to a lack of assessment skills by the practitioner or a lack understanding of its significance, are discussed regularly at our morbidity and mortality meetings. It is essential these babies be identified if an increased tolerance for post-dates occurs.

6.3.4 Maternal Age

The issue of age as a risk factor will need to continue to be debated. Although the increase in stillbirth rate post-dates is very small (Huang et al., 2000; Jolly et al., 2000) the opportunity for an older woman to conceive again is decreased. Women need to be aware of and balance all their options, risks and benefits including an increased risk of caesarean section with induction. It is possible that such knowledge may increase the elective caesarean rate or rate of caesarean on demand.

6.3.5 Maternal Request

As discussed in the background to the study, a commonly heard argument in the facility in support of inductions is that the women were asking for them. In this study 5 LMCs (6.3%) considered the woman was being induced for social reasons. Only 1 woman (1.3%) considered the indication was social. The remaining 4 attributed it to a medical condition. From the study I am unable to tell if the consulting obstetricians had led them to believe it was medically indicated or they had justified it in this way themselves. LMCs talked of women putting pressure on the specialists using methods such as tears (*LMC 1, LMC 53*). The LMC was then left caring for a woman for whom she did not agree that an induction was needed at that time. As the consulting obstetricians (unless in LMC capacity) were not questioned about their decision making process it is not known whether a true medical indication was identified or whether this was the woman’s interpretation. However it identifies a gap in the decision making, a gap that

should be bridged by the LMC with their knowledge of the intrinsic values and social environment of the woman they are caring for. There should not be any wondering why or how the woman managed to have an induction.

From the interviews with the women maternal choice did come out as an influencing factor on the decision to induce however it was rarely acknowledged as the primary factor. Women may have felt reluctant to express all the social issues involved or it could be a case of LMCs giving over the responsibility to women for the high induction rate.

There was a negative attitude to LMCs who undertook inductions for social reasons. Several LMCs said that inductions should not be undertaken for social reasons and many others said they should only be for medical indications. The negative attitude does not reflect a holistic view of women's situations in which ending the pregnancy can have social and emotional benefits rather than purely physical ones. If women have accurate information about the risks should they be allowed to proceed with a social induction free of judgement if they value highly the benefits they perceive they will obtain? This is a similar dilemma to that identified by Homer and Davis (1999) when they proposed a study to look at the outcomes of elective induction of labour.

The main limitation to this part of the study was that the consulting obstetricians with whom the women made the final decision to be induced were not interviewed. If information about the indications had been obtained from the consulting obstetricians this would have provided a more complete picture.

The first aim of the study was to identify the reasons for induction of labour as given by the LMC and the women. Discrepancies were found between what the women perceived to be the reasons and what the LMCs identified as the indications. These differences indicate the need for improved communication between the LMC, the consulting obstetrician and the woman regarding the reason why induction is indicated. A more accurate yet more complex picture of why women were being induced was established than that which can be obtained from the hospital database.

6.4 Influences on Decision Making

This section addresses the second research question of the study; what influenced the decision to induce for the stated reason? The aims covered are; to determine the medical and non-medical factors that influenced the decision-making in coming to the stated reason for induction, to identify the demographic characteristics of nulliparous women who are induced and to identify what information women have about induction prior to induction. These aims are addressed considering the findings from this study and the current literature as they relate to the women, the health professionals and the organisational system.

6.4.1 The Women

The influences on the decision to induce labour as they relate to the women in this study and the current literature are discussed in this section. Both the descriptive data of chapter 4 and the themes, *giving over and taking over of responsibility (1a)*, *induction perceived as both taking from and giving to the birth experience by women (6a)* and *focused risk for women (3b)* developed through the thematic analysis in chapter 5, are used to explain the influences.

Ethnicity

The higher representation of European women being induced is similar to the finding by Parry et al. (1998) and the Ministry of Health data for 2000 and 2001 (Ministry of Health, 2003). Parry et al. also compared smoking, poor obstetric history and reduced education but these were not found to increase the rate of induction. "This appears to be contrary to medical indications for induction of labour. One would expect that women who smoke, have a poor obstetric history or are older would be more likely to suffer complications of post term pregnancy and therefore be offered induction of labour" (Parry et al., 1998, p. 279). It could be that influences other than clinical indications are affecting European women. Possible influences are discussed further in this section and the following sections. There may be women in other ethnic groups who may have benefited from induction but due to their situation did not seek it or it was not offered to them. This is an area that requires further investigation.

Age

The average age of women having an induction of labour in this study was 1.2 years higher than those in the spontaneous labour group. This is consistent with the national

trend of older women being more likely to have their labour induced (Ministry of Health, 2003). Age was discussed in the literature review as a contributing factor to stillbirth with the possibility that an early induction would reduce this. However in the current study age was indicated as a reason for induction for only one woman. Practitioner concern with older women having their first baby may cause them to act more cautiously when age is combined with other possible indications for induction (Ecker et al., 2001). The larger study, not reported here, will closely examine age as a variable for induction, related interventions and outcomes.

Giving over and taking over responsibility

The theme *giving over and taking over of responsibility* (Theme 1a) describes an observed influence on who makes the decision to induce labour. For women, giving over the responsibility to either LMCs or the consulting obstetrician occurred more frequently than taking over the responsibility. One woman acknowledged that she could take over the responsibility, “I know I could refuse but I would not live with myself if something happened” (*W 24*). The fear of being responsible for a negative outcome prevented her from taking over the responsibility.

The woman who chose to have an induction for social reasons or maternal choice had been booked for an elective caesarean for a breech presentation but the baby had turned to a cephalic presentation. As she had been anticipating delivery prior to her due date she felt she could now not go beyond 40 weeks gestation. Her partner and mother emphasised the importance for her of delivery at that time. This woman was not aware of any negative effects of induction apart from more than one attempt at induction may be required.

Some women had been given information but had chosen not to take on the responsibility of deciding to have an induction. One woman said she had been given an information sheet about induction of labour but had been too busy to read it, but also said she didn't want to know (*W 33*). By insisting on choice we may in fact be taking away a woman's right to choose not to know all the details. However, should the health professional then take on the responsibility? Not providing women with information

must only be decided on in a partnership with equal power balance and a willingness on both sides to carry the risk of not knowing.

However if women do have all the information on risks and benefits of induction is it then acceptable for them to choose induction as raised in section 6.3.5? The effect of consumerism within health care is that some women are receiving expensive services based on want rather than need. When extra resources are used for one group, less is going to be available to others. This may affect maternity care available for other women but it will definitely affect the distribution of the finite health budget in New Zealand. This study has shown that European women and those cared for by a private obstetrician are over represented in the induction group. As a nation we need to decide whether this is acceptable.

The shared decision making or enhanced autonomy model discussed in chapter 2 is relationship centered with the responsibility being on both the woman and the health professional (Quill & Brody, 1996). Taking over or giving over responsibility become unnecessary and unwanted in such a relationship. “A shared decision-making process is based on the axiom that a woman’s care needs to be considered in the social and cultural context of her life” (Harding, 2000, p. 77). Quill and Brody (1996, p. 4) describe it as a model that includes “active listening, honest sharing of perspectives, suspension of judgement, and genuine concern about the patient’s best interest”. This type of relationship creates and maintains accountability (Harding, 2000). For practitioners and women the shared decision making model may be new and require a paradigm shift.

Taking from and giving to the birth experience

Induction of labour, was stated by women in this study, to have influenced the birth experience. For most women *induction of labour was perceived as both taking from and giving to the birthing experience* (Theme 6a). When induction of labour was unwanted by women they acknowledged benefits in knowing the date to plan and organise for. For others there was a loss such as when the birth place had changed from a small birthing unit to a secondary care facility. Although many women were fearful of continuing the pregnancy due to a perceived risk to their baby they were aware that induction was taking away an aspect of the birth experience.

Focused risk

A *focused risk for women* (Theme 3b) was identified from the interviews. The biggest concern for most pregnant women is the well-being of her baby and herself. As Rubin, (1984, p. 55) in her detailed analysis of the maternal experience, states, “in the third trimester, the concern is for both self and baby. There is no separation: what endangers one endangers the other.” Any use of language that implies they are putting their baby at risk by not adhering to the intervention available or recommended strips even the most assertive women of the power to object (Boswell & Poland, 2003; Draper, 2004).

Some women understood that continuing the pregnancy would put their baby at risk when in fact this was not necessarily the case. Women expressed concern about their babies dying, being at risk and the placental function decreasing when the pregnancy had progressed beyond 40 weeks gestation. These risks were not balanced with the potential risks of complications with induction of labour. Health practitioners appeared to have used the women’s focused risk to influence her decision making. Draper (2004, p. 26) describes “the most effective form of subtle coercion is the suggestion, in the face of a patient’s reluctance to agree, that harm might come to the baby if advice is ignored.”

6.4.2 The Health Professionals

The influences discussed in this section relate to the practices of health professionals; the LMCs, consulting obstetricians and the hospital obstetricians. The descriptive data in chapter 4, and the themes *participation of women in decision making* (Theme 1b), *minimal evidence of women as informed decision makers* (Theme 2a) and *women are influenced for and against induction* (Theme 2b), identified through the thematic analysis in chapter 5, are examined as to how they have influenced the decision to induce labour.

LMC type

Women having an induction of labour were more likely to have a private specialist and less likely to have a general practitioner caring for them than women in the spontaneous labour group. There have been other studies showing a link between increased intervention and private specialists (Roberts, Tracy, & Peat, 2000). Possible reasons for

the increased intervention indicated in the Roberts et al. (2000) study include the presence of other risk factors, fear of malpractice and a greater expectation for more intervention to be available because the women are paying. This latter influence was confirmed following the presentation of the results when a practitioner expressed concern at the changes to the booking system as they felt it was important to be able to provide what was wanted by the women they cared for and *when* they wanted it. This raises concerns about some women using more maternity services' resources based on practitioner type rather than need, a finding similar to that of Roberts et al. (2000).

Participation of women in decision making is limited

Limits appeared to have been placed on women in relation to their participation in decision making. Some women were told at the first LMC encounter not to ask for induction of labour. Underlying such instructions was an attitude of paternalism², which appeared to have been accepted as good practice by some LMCs. The initial findings of the interviews were presented to a group of midwives employed by the service. One was an LMC and her reaction to this theme was "well what's wrong with that?" Paternalism is behaviour midwives have tended to attribute to doctors however it appears to have been justified by some midwives in their own practice. Telling a woman an induction is not an option until at least 41 weeks is considered appropriate as induction earlier than this has been regarded as unnecessary and such a statement will protect her from later wanting something she 'shouldn't have.' Not only has the LMC made an ideological choice for her, but has attempted to protect her from something the LMC has considered inappropriate. This type of behaviour by LMCs may assist in reducing women's expectation of induction however, although limits may be helpful to women and LMCs it is important to remember that an element of choice has been taken away. As Donnelly (2002, p. 28) states "...the difficult task is to draw the line between advice and control..." A LMC needs to ensure that such a removal of choice does not disempower women so they feel they cannot question such a choice.

² Paternalism is defined in this discussion as "... where health-care professionals make choices about the treatment of patients or clients which they deem to be in those clients' best interests" (Melia cited in Jones, 1996).

In other situations paternalism had been used to support induction. There were times when women had made attempts to gather information, “I asked my LMC this question [about the negative effects of being induced] and she said that you are in hospital for longer, rather than the first bit at home” (*W 50*). The woman was told that as there were no distractions she would be left walking up and down the corridor. Although this is correct it is an example of paternalism where an event is minimised. The reply by the LMC, “no, she does what I say”, when asked if the woman’s attitude had influenced the decision to induce, was a more obvious example of paternalism (*LMC 21*).

Withholding of information by health professionals is another example of paternalism (Jones, 1996) with the effect of limiting women’s participation in decision making. There may be assumptions that women do not want to know or are incapable of understanding the complexities of the situation (Coney, 1993; Jones, 1996). Some statements by women in the present study showed the former assumption to be true. On the day of induction some colleagues of a woman attempted to fill in the knowledge gaps for her by explaining that contractions can come on more suddenly and she was more likely to need a caesarean. “They probably thought they were being helpful but it wasn’t” (*W 31*). Her LMC had told her it would be a long haul so had not belittled the event. However, the LMC had not told her all the details. Maybe in such a situation paternalistic protection in a partnership relationship is acceptable. Kleing (cited in Blokland, 1997, p. 169), although not an advocate of paternalism, argues that weak paternalism is permissible if an action “threatens to form a disproportionate burden for the more permanent, long-term goals which the relevant individual has set himself in life.” However he says it should not be used as a substitute for persuasion or education but as a last resort and based on “maximal linkage with the values and goals of the subject” (cited in Blokland, 1997, p. 170).

Minimal evidence of women as informed decision makers

Both midwives and doctors have been criticised for not providing real choice. Hobbs states in Symon (1998, p. 119) “although lip service is paid to the concepts of informed consent and continuity of care, I believe all that has really improved is the social skill required to persuade women to accept those interventions which make the system easier to administer...”. The results of the present study show that 16% of women were unable

to state any negative effects associated with induction of labour and 66% knew of less than 3 negative effects. Although the risk of caesarean section with induction of labour is inconclusive within the current research literature LMCs had been previously informed of the increased occurrence of caesarean section following induction of labour at the facility in which the current study occurred (Austin & Belgrave, 2002). Only 9 women (11%) in this study mentioned there might be an increased risk of caesarean with induction despite 18 LMCs predicting a caesarean section would be required for the woman they were caring for. Such limited information does not meet the standard set out in the Code of Health and Disability Services Consumers' Rights that women should be informed of the expected risks and side effects (Health and Disability Commissioner Act, 1994).

Informed consent is required as a bare minimum before a procedure is carried out. Women should not only receive the information, they should understand its significance for the situation they are currently in. Informed choice involves women having "enough relevant information to make a considered judgement" (Draper, 2004, p. 26). Many of the women participating in the study had a limited knowledge of positive and negative effects of induction indicating that the principle of autonomy may not have been upheld. The lack of knowledge may be due to the women not retaining the information given to them by the LMC and consulting obstetrician or they had not received the information. The latter would indicate they had not had their right to be fully informed met. This is of particular concern as a Hawthorn effect had been anticipated, especially after the study was well under way and the LMCs had become aware of the questions the women were being asked.

The lack of information said to be received by women from the consulting obstetrician (7%) was unexpected as knowledge sharing is essential in decision making. As some consulting obstetricians were also LMCs the actual number may have been more. More women learnt about induction from their family and friends than through the 'expert' recommending the induction. One woman said she had learnt about induction from the obstetrician "in the grand sense, you know specialists –never in copious detail" (*W 39*). Most comments relating to antenatal classes stated women had learnt more about methods and reasons than pros and cons and the information was brief. Although this type of information is useful, risks and benefits of a treatment are required for decision

making. Childbirth educators need to effectively provide information that is useful in decision making or provide tools to assist women and their support people in accessing that information at a later date (Nolan, 1997).

The strength and pain of contractions was identified as a negative factor for 41% of women in the present study. Women stated the increased intensity of contractions would make the labour more unpleasant but no woman interviewed suggested that this could be potentially dangerous for her or the baby. Stress to the baby was considered a negative effect of induction by 13% of women and in a broad sense could incorporate the effects of hyperstimulation. A review of babies with hypoxic ischaemic encephalopathy (HIE) at birth in 1998 within the District Health Board under study found an increased rate with induction of labour (Belgrave, 2000). Such findings are consistent with those of other studies (Westgate, Gunn, & Gunn, 1999). This information had been presented to staff and LMCs working in the unit. The audit, that identified a need for this study, was also presented to LMCs in 2002 (Austin & Belgrave, 2002). The concern about induction is therefore not new at this facility however women had limited information about the risks of the intervention they were undertaking. One LMC said she had “heard we have a 50% caesarean rate for induction here so I tell my women that” (LMC 9). Greater efforts need to be made by the unit under study to disseminate information about induction to women and not rely on LMCs only to do this. As hospital obstetricians are responsible for the care of women having an induction it seems reasonable to expect this as a responsibility of the hospital.

The information leaflet handed out to women who came to the hospital clinic is of poor print quality, having been photocopied numerous times. As discussed in the literature review the leaflet does not state or imply there are any risks with induction. The process and methods used for induction are briefly discussed, including one method that is no longer used. The leaflet was developed in 2000 and states on it that it should be reviewed in 2001. It needs to be updated and developed into an effective tool for assisting women in deciding whether or not to have an induction. The literature does not support the use of information leaflets alone as being effective but rather as a tool in decision making.

A decision making tool developed by the Ottawa Health Research Institute identifies five steps in making a decision (O'Connor, Jacobsen, & Stacey, 2002). Step 2 is for the consumer to identify their role in decision making. They are asked to tick one of three options which are; the woman wants to make her own decision after considering the opinions of others, the woman wants to share the decision with a health professional, or that the woman prefers the health professional to decide what is appropriate for her. Further questions help the woman to examine her information needs relating to a specific topic. It allows the woman to begin to identify the type of information sharing she would usually like in a health practitioner–woman relationship. The difficulty with a woman stating how much information she would want is that she may have a change of mind at a different time or in a different situation. As Calvert (1998) identified in her study about women and decision making in pregnancy and labour, women did change their mind and chose to hand over the decision making to health professionals in certain situations. Studies have shown that women who hold their own records found it easier to ask questions and gather information they required (Rowe et al., 2002). A woman-held decision making tool, developed using the principles outlined in the Ottawa Health Research Institute tool, may assist in decision making (O'Connor et al., 2002).

The New Zealand survey of women's satisfaction with maternity services indicated that of those who responded, most either agreed or strongly agreed that they had received adequate information and were involved in decision making (Brown et al., 2003). However, from the findings of the current study there appears to be a gap between what women have accepted as adequate information and what is set out as a basic requirement by the Ministry of Health (Health and Disability Commissioner Act, 1994). This raises the question of why this gap is occurring.

Women may not be aware that they have not received all the information and have assumed no serious risks accompany the intervention of induction. Some women expressed clearly in the interviews that they did not want to know any risk factors and those who tried to inform her were in fact being unhelpful. In giving information practitioners need to be aware of the woman's perspective on decision making. How much information to give is a difficult dilemma for the health professional as "too much information can paralyse a patient into indecision and anxiety, but then again this is an excuse readily offered by those who prefer to make decisions for their patients" (Draper,

2004, p. 26). The right amount of information, Draper (2004, p. 26) states, is “a matter of professional judgement and balance made in good faith.” The act of judging how much information a particular woman needs is an act of paternalism in itself so such advice does not resolve the issue. The balance is dynamic; the “right” amount of information will have changed if a woman suffers a particular outcome that she had not been told about because it was so rare or unlikely. Although there is also no legal consensus on the right amount of information (Draper, 2004), neglecting the values of individual women in identifying relevant information required for consent “fails to grant patient values their proper role in the decision-making process” (May, 2002, p. 18).

Informing women about the risks of increasing intervention with induction of labour is difficult for practitioners when there is conflicting information. The literature both supports and rejects the notion that caesarean and epidural rates increase with induction. The Cochrane systematic reviews are held in high esteem as the pinnacle of ‘research truth’. However it is important to acknowledge the underlying ideology the review appears to be based upon. An intervention is considered acceptable unless it is found to produce more harm than good. However if a health professional chooses to practice contrary to the recommendations of the Cochrane review they may find themselves unsupported by other health professionals if an adverse event occurs. Evidence in a case of law is usually sought from other similar health professionals to verify whether standard clinical practice was used and “requires that a substantial body of his or her profession would have done the same thing” (Draper, 1996, p. 23). A safer legal option for LMCs, when faced with conflicting information to present to women, may appear to be that of following the practice of obstetricians or those who base their practice on the Cochrane reviews and other ‘elite’ research viewpoints.

To understand the idiosyncratic values of every woman will be difficult for consulting obstetricians during a brief visit. However within the LMC - woman relationship that has developed over several months there is the opportunity to do so. This relationship, unique to maternity care in New Zealand, provides the most advantageous position, of any health professional-patient relationship in the health setting, for providing information in line with women’s values. The LMC could improve the quality of informed decision making by assisting women to communicate their values and wishes

to the consulting obstetrician before or during the consultation where induction of labour is to be discussed.

Women are influenced for or against induction

In the study there was evidence of women being influenced for or against induction (Theme 2b) rather than being informed of risks and benefits. Imagine the visual effect in the mind of the woman who was told induction would prevent the hardened head of her baby splitting open her vagina; the specialist likened it to “a tennis ball turning into a cricket ball and splitting the vagina” (W 85). The woman said this information was what eventually convinced her. The same LMC is unlikely to describe a caesarean in such a horrific and graphic way despite it involving the opening of the abdomen. Stapleton et al. (2002, p. 76) conclude their discussion on rhetoric in antenatal consultations with; “in this study midwives and obstetricians spoke of ‘informed choice’, yet behaved so as to gain informed compliance. They gave information as they judged appropriate in order to achieve informed consent.”

Stereotypes held by health professionals can influence the type of options and information offered to women. The study revealed that LMCs had used stereotypes to influence the care they gave. A comment such as “she has caesarean section written all over her face” (LMC 8) indicates a preconceived idea by the LMC about the type of woman she was caring for and how that type of woman would perform in labour. The assumption was incorrect and the woman had a rapid vaginal delivery. Figures 7 and 8 (p. 74) showed the predictions LMCs made about delivery type and the actual outcomes. Although there was some accuracy in the predictions, of the women whose LMCs predicted a caesarean delivery, 38.1% had a vaginal delivery. The LMCs who made a prediction included obstetricians, midwives and GPs. Based on the evidence that stereotypes held by health professionals affect the treatment women receive (Kirkham et al., 1992) it is possible such negative attitudes held by the LMCs in this study could be affecting the way labour is managed and further perpetuate the rising caesarean rate.

Attitudes held by the LMCs may also have influenced whether a woman used an epidural for anaesthesia in labour. One LMC, when asked how they thought the labour would go, stated, “she will probably have syntocinon, pain relief, epidural and

instrumental delivery” (LMC 43). I questioned the LMC as to why they thought this and the reply was, “because she is spoilt” (LMC 43).

Women were influenced for and against induction in this study due to stereotypes and attitudes held by the health professional rather than balanced information sharing. Health professionals need to examine their attitudes and the language they use to communicate information to women in relation to induction of labour.

6.4.3 Organisational systems

In the previous section influences on the decision to induce that related to the women and health practitioners were discussed. Individuals do not exist in isolation and organisational systems at both local and national levels may have influenced behaviours or added further influences to the decision making. These included the hospital booking system, fear of litigation, pressure from colleagues and the current organisation of maternity services in New Zealand and are described using the following themes developed through thematic analysis, *giving over and taking over of responsibility* (Theme 1a), *multidimensional balancing of risk for the LMC* (Theme 3a), *hospital booking system has an iatrogenic, controlling effect* (Theme 4), *induction of labour is integrated into care as a routine practice* (Theme 5) and *incongruence between LMC’s stated belief about induction and their current situation of induction* (Theme 6b).

Giving over and taking over of responsibility

Lead Maternity Carers were observed to give over the responsibility for decision making to consulting obstetricians or the consulting obstetrician would take it over from the LMC which is incorporated in the theme, *giving over and taking over of responsibility* (Theme 1b). This theme was discussed in relation to the women in the study in section 6.4.1 but was also noted to occur at an organisational level. The maternity climate that has evolved in New Zealand is confusing as far as boundaries of responsibility are concerned in some situations. Although Section 88 outlines that the LMC is responsible for care of the woman and gives guidelines for referral the reality is unclear in the case of induction. The current guidelines at the facility in the study require that the decision to induce labour be made in consultation with an obstetric and gynaecology consultant (Women's Health Services, 2001). Most women who used the facility in the current study see a specialist in the community, and when they come into

the unit they are under the care of the obstetrician on call for the day, who may express their agreement or disagreement with the reason given for induction. The LMC discusses the woman's situation with the obstetrician or registrar and commences the induction provided the obstetrician approves. When labour commences or another assessment is required the LMC returns to the birthing suite. The LMC made the decision to refer the woman to the consulting obstetrician for advice on the management of her care, the consulting obstetrician made a decision to induce, the on-call registrar or obstetrician at the hospital needs to agree that induction is appropriate and then an inducing agent can be given to the woman. The three decision points could be thought of, as ensuring unnecessary inductions do not occur, or it could create a situation where it is 'everyone else's' responsibility. This was illustrated in the theme *giving over and taking over of responsibility* (Theme 1a). As previously stated many LMCs felt it was not their decision to recommend a woman have an induction of labour although they had suggested there was an issue of concern when they referred to a consulting obstetrician. If they had not referred when it was necessary they would have been held responsible if later an induction was found to have been necessary. The consulting obstetrician makes the decision, hopefully in consultation with the woman, but as the obstetrician on-call at the hospital legally takes on responsibility for the actual induction on the day does the responsibility of the consulting obstetrician carry on? Some hospital obstetricians (mostly it is the same obstetrician concerned but in different roles) did not want to take on the responsibility of the decision. One obstetrician working at the hospital was heard to say to the LMC I had interviewed, "The choice is yours. I'm not going to go in and tell her she can't have it. It's your [the LMC] decision" (On-call obstetrician for woman in interview 34). In another situation the hospital registrar took on the responsibility for induction of labour not being medically indicated and the woman was sent home (*W 72*).

The confusion was added to when LMCs handed over care to a colleague to initiate the induction in the evening. The LMC, in these situations, was to resume caring for the woman again in the morning. The practitioner, filling in on behalf of the LMC, was busy but they were helping their colleague out. However it is of concern these practitioners, who were relieving for the LMC, did not appear to have a clear understanding of the indication for induction. They were administering a medication against which they were then going to sign their name and according to hospital policy

they are expected to understand the reasons the medication is required and explain the risks and benefits to the woman. As there was no documentation from the consulting obstetrician or LMC, the on-call registrar/obstetricians were also accepting responsibility for the induction without a letter of referral stating the indication for induction.

The lack of clarity for LMCs, hospital staff and women in the above situations highlights the need for communication to be improved between the LMCs, consulting obstetricians, hospital staff and women. With an increased occupancy at the maternity facility where the study took place there will be times when inductions will need to be delayed. All parties concerned need to be aware of the true risks of continuing the pregnancy to avoid the wrong women being triaged to wait.

Hospital booking system

Lead Maternity Carers and women identified the hospital system for booking inductions to be a contributor to early inductions and having an iatrogenic, controlling effect (Theme 4). When this issue was initially discussed with the leaders of the unit I was told it was necessary to reduce the risk of having inadequate resources. However the hospital staff readily criticised LMCs and obstetricians who tried to manipulate the system and pressure them into accepting inductions when the book was full.

It is common in health facilities for errors to be blamed on individuals but “it is often the result of the way the system is set up that underpins the cause of error” (Misson, 2001, p. 132). The booking method led to earlier inductions for women who may have laboured spontaneously had they been able to wait another couple of days. Women who are induced generally stay much longer in the birthing suite. The potential was for more resources to be needed with inductions being commenced earlier (Tracy & Tracy, 2003). The study has identified the booking system as a risk for unnecessary inductions and the complications and associated interventions that may follow.

Litigation and risk

The issue of risk was of concern to both LMC and women shown by a ‘*multidimensional balancing of risk for the LMC*’ and a ‘*focused risk for women*’

(Themes 3a and 3b). An increased awareness and expectation of women of what can be achieved within the health system is perceived to be the reason for an increase in litigation within maternity services (Symon, 1998). With most women having only two children and the tendency to start a family at an increased age there is less available time and opportunity to take risks in childbirth.

The fear of litigation appears to have affected practitioners in several ways. Cases taken to the court tend to involve claims of an intervention not being done when it should have rather than using the intervention unnecessarily (Symon, 1998). Evidence of obstetricians using the language of risk to convince women to have an intervention was apparent when talking to both women and LMCs. For example “She did not want to be induced at all but in consultation with medical staff has agreed for [the] safety of the baby” (*LMC 73*) and “The woman supported my [LMC] decision – concern over fetal safety was the only factor influencing the decision” (*LMC 74*).

Health professionals have a fear of litigation hanging over them (Symon, 2000b). Draper (1996, p. 21) states, “practitioners ought not to be forced to compromise or prostitute their skills and judgements to whim, but how is whim to be determined in this context?” If the woman does refuse induction and all the risk factors of continuing the pregnancy have not been outlined, a negative outcome is likely to be followed by litigation. There is even the possibility that telling women all the risks may not be enough to excuse the practitioner of blame if it is not documented. The Royal College of Obstetricians and Gynecologists have developed information sheets with spaces at the bottom for women to sign as proof they have been fully informed of the risks. The fear of litigation does not justify a language of risk. The risks of continuing the pregnancy were often not balanced with the risks and associated interventions that accompany induction in this study. Sixteen percent of women were not aware of any negative effects of induction while believing they were reducing risk for their baby.

Managing risk appears to be a significant motivator for health professionals to obtain informed consent, with the slim risk of stillbirth weighing heavier than the most likely risk of further intervention. There needs to be balance in the decision making. Forcing women to have interventions they do not want for the sake of their unborn baby flies “in the face of patient autonomy and the shared decision-making that characterizes

medicine today. But if we give up our professional training and merely act as a technician performing surgery at the behest of the woman, without questioning her reasons, we will lose our right to be considered a profession” (Savage, 2002).

Induction of labour was stated as the 5th most common example of an intervention used in general defensive practice in a study by Symon (2000b) involving 2000 midwives and obstetricians in the United Kingdom. In Symon’s study both doctors and midwives stated they believed inductions were done to avoid litigation. However a much smaller sample admitted to doing so in their practice. “...Compared with the proportion of midwives and obstetricians who believed clinical practice to be becoming defensive, a smaller proportion of each group admitted to reacting in this way themselves” (Symon, 2000b, p.13). For example 1.3% of midwives admitted to using continuous monitoring defensively compared to 8% who cited it as general defensive practice.

Practitioners also appeared to be concerned about what their colleagues would think of the indications they documented in the booking book and from what I heard and observed in the current study this was probably justified. One LMC said, “I go through the book and see all sorts of ridiculous reasons and I can’t get something urgent in” (LMC 36). Others criticised those who documented the reason for induction as social. This attitude possibly contributed to practitioners writing the indication as growth restriction as this was regarded as an acceptable indication.

Induction of labour is integrated into care as a routine practice

There are two competing paradigms of birth in the literature, the ‘social model’ and the so called ‘medical model’ (Rogers-Clarke & Smith, 1998). From the interviews there appeared to be some evidence that induction had become an extension of normal childbirth and a routine practice for both midwifery and medical LMCs.

The boundaries become blurred as to what is part of the normal birth process and what are the risks and benefits of induction. The blurred boundaries may have contributed to the limited information many women seemed to have been given relating to induction. In the theme relating to this issue the words “routine care” have been used, care that is ordinary, familiar or typical, as one person cannot define what another person considers

normal. Induction of labour is an invasive intervention that does not fit into the realm of normal labour (Enkin et al., 2000).

Midwives claim to be experts in normal childbirth (Downe, 2004; Guilliland & Pairman, 1994). “This pronouncement goes largely unchallenged and is seen as a matter of some pride, even as a fundamental statement of identity” (Downe, 2004, p. 91). It is presumed normality is a known entity but in reality it is transient and differs from person to person. Both midwives and obstetricians previously delivered babies in a breech position, but the current recommendations suggest delivery by caesarean is necessary (Su et al., 2003). No longer are they considered to be within the scope of midwifery practice. Induction of labour requires referral to secondary care but not transfer of care (New Zealand Public Health & Disability Act 2000, 2002). The policy in the hospital where the study took place, states that the responsibility for the induction is with the obstetrician but due to the confused roles previously discussed, in reality the LMC cares for the woman with regular reporting to the hospital registrar (if the LMC is a midwife or GP) as labour progresses. Women would lose the benefits of continuity of care if LMCs were not able to continue caring for women during induction (although a few did think the hospital staff should initiate the induction and call them when they were in labour). However, the current system perpetuates a sense that induction is a type of normal labour.

Aiming to normalise the birth experience following induction was only openly expressed by one LMC. This may be because the questions used in the interviews did not lead to this. The LMC stated “we need to normalise [the labour process] all the time” (LMC 68) and suggested women should go home overnight to encourage the perception that the birth process is normal despite the labour being initiated by an artificial process. As discussed in the results, comments such as “oh I thought it was just a routine post-dates” which was incorporated within the theme *‘induction of labour is integrated into care as a routine practice’* (Theme 5) helped confirm a growing impression that some LMCs had become desensitised to induction as a significant intervention that had the potential to increase risks for women and babies.

Incongruence between beliefs and practice

The influences on the decision to induce labour relating to the women, the health professionals and the organisation all provide an explanation for the *incongruence between the LMC's stated belief about induction and their current situation of induction* (Theme 6b), the final theme developed. Many LMCs stated what they considered to be appropriate indications for induction yet found themselves in positions contrary to this. The taking over of the decision making by the consulting obstetricians, women's choice and the booking system contributed to the incongruent situation they were in. They made comments that suggested they were unable to change the situation such as "induction is not the LMC's decision" (LMC 1) and "decision taken out of my hands" (LMC 27). However, despite the outside restraints to practice as each LMC believed appropriate, the LMCs were criticised as individuals when the indication documented in the induction book did not appear appropriate to others. Anecdotal complaints about the system were able to be quantified and validated through interviewing women and LMCs. This study has hopefully uncovered the multifactorial influences that shape the decision to induce a woman's labour in this facility. An individual and a systems approach is required to address the issues raised.

The study has successfully identified influences on the decision to induce from women's perspectives and those of the LMCs, as recalled once they reached the hospital setting. It is possible other factors had an influence prior to this that were not recalled once the decision to induce had been made. The study was also not able to capture the influences on women and LMCs where the decision to induce had been resisted or they had delivered prior to their booked day for induction. If this group could have been interviewed comparative themes and codes would have been obtained.

6.5 Methods Used to Induce Labour in the Community

A wide variety of activities were undertaken in the community in an attempt to start labour and avoid a formal medical or surgical induction. A review of the literature indicated that sweeping of the membranes was the only method that had been proved to be effective and safe. Only 9% of women had had this procedure done prior to coming into hospital. A wide variety of other methods such as exercise (34%), raspberry leaf tea (14%) and evening primrose oil (13%) had been used more frequently than sweeping of

the membranes. These methods were not effective according to the research literature although there is a lack of large studies for most of the methods.

Some LMCs appeared to give information to women about alternative methods in an ad hoc manner. A LMC who had heard I was asking about methods to initiate labour at home said that “last time I suggested everything [to the woman] but it didn’t work so this time I didn’t bother” (*LMC 37*). Another in a similar situation said she could not remember what she told them but thought she said, “to have a good bonk” (*LMC 19*). Further research is required to establish the effectiveness and safety of other methods used by women as many are seeking alternative therapies to formal induction.

6.6 Summary

The study has provided an in-depth view of the reasons for induction, the influences on coming to those reasons and some data on the methods used by women in the community in an attempt to begin labour through interviewing women and the LMCs caring for them. Through the interviews occasions were identified where induction of labour occurred for reasons not supported by the literature. Post-dates was the most common indication for induction but many were at 41 weeks gestation or less. Many significant influences on the decision to induce have been identified at an individual and a systems level. Information sharing could be improved by a decision making tool, improving communication skills in the woman-health professional relationship and enhanced communication between women, LMC, consulting obstetricians and the maternity facility staff. Maternity care is in an advantageous position to excel and exemplify decision making with women as active, informed participants, as compared with other health settings. It is a vital responsibility of LMCs to communicate clearly and adequately the values and knowledge they have gained from women through the woman-LMC relationship, to other health professionals that women encounter during the childbirth experience. The final chapter outlines the limitations of the study and recommendations for practice, education and future research.

Chapter 7: Conclusions and Recommendations

7.1 Introduction

This study has addressed the research question relating to the reasons for induction and the influences on coming to the decision to induce. The final chapter of this report provides a conclusion to the study and outlines the limitations followed by recommendations for practice, education and further research.

7.2 Limitations of the Study

This study was undertaken in a secondary care maternity facility in Auckland and the results cannot be generalised to other maternity settings in New Zealand. Other secondary hospitals that have a similar system of booking and way of organising care for women having an induction of labour, may be able to apply that particular finding to their situation. Areas of concern identified and the themes developed in the study can be used by other facilities to see if they remain valid in their situation.

The following list outlines the main limitations of this study.

- A limited range of characteristics of women was identified in the study to provide the context in which to examine the qualitative data.
- The woman's perspective or attitude towards intervention at birth was not considered in the study as a factor that could be influential in the decision to have labour induced.
- The consulting obstetricians were not included in the study unless in a LMC capacity.
- Women who did not have an induction of labour either because they chose not to or went into labour prior to their booked date were not interviewed.
- Some women were not invited to be part of the study due to poor communication between the maternity staff and myself or no researcher being available to interview them at the time of induction.

7.3 Conclusions

This study was initiated through a concern at the study facility that induction of labour was contributing to an increase in the caesarean rate. A detailed study was undertaken to examine the reasons for induction and what was influencing the decision making about that reason. A list of indications for induction of labour was identified for the 79 women interviewed however there were some discrepancies found between the reason stated by the LMC and by the woman. Poor communication between women, LMCs, consulting obstetricians and the staff working in the maternity facility along with a lack of documented evidence of a woman's visit to the consulting obstetrician outlining the indication for induction was found to contribute to the discrepancies.

Post-dates was the most common indication for induction. There is debate in the literature as to the level of risk and when that risk occurs for women and their babies once pregnancy has reached 40 weeks or more gestation. However this study revealed that inductions for post-dates were occurring at or prior to 41 weeks gestation which is earlier than that recommended by Crowley (1999) in the Cochrane systematic review relating to improving outcomes for prolonged pregnancy. Through thematic analysis of the rich qualitative data obtained by interviewing both LMCs and women, influences other than clinical reasons were identified that were influencing both inductions for post-dates and other indications.

There was a giving over and taking over of responsibility for the decision to induce labour between women, LMCs and the consulting obstetricians due to the type of women-health professional relationships they worked within. The lack of clarity of roles within the current maternity system in New Zealand meant there was also a giving over and taking over of responsibility at an organisational level between the health professionals who work primarily in the community and those working within the maternity facility. The need for a shared decision making model for the woman-health professional relationship is promoted alongside a decision making tool that enhances communication and provides some documented evidence of the factors that led to the indication for induction for that woman.

Women were limited in their participation in decision making with evidence of paternalism by LMCs to either support or discourage induction for the woman they were caring for. Stereotypes, attitudes and a language of risk were used by LMCs to influence women for or against induction rather than providing them with information. A multidimensional balancing of risk for the LMCs was apparent with some expressing a concern about litigation or a fear of judgement from colleagues, factors that may have contributed to LMCs influencing women for or against induction of labour.

Many women were found to have limited information of risk factors relating to induction of labour. This can be attributed to the factors discussed previously, the poor quality of information provided by the maternity facility and the values of some women that led them to choose to remain uninformed. This latter choice of women presents a dilemma for health professionals as to who is accountable for the decision making in such a situation.

The hospital booking system was organised in a way that contributed to inductions occurring earlier than was necessary for some women. It promoted the use of indications for induction that were inaccurate but would ensure a place in the book. Changes to the system are recommended as discussed in section 7.4.

The wide range of methods used by women in the community in an attempt to initiate labour indicates an attempt by some women and their LMCs to avoid formal induction of labour. The information about methods appeared to have been given in an *ad hoc* manner with the research literature being sparse to support many of these. Further research is required in relation to some of the alternative methods of induction being tried.

The research questions and aims have been successfully addressed in this study. The following sections provide an overview of the recommendations from the findings for practice, education and future research.

7.4 Recommendations for Practice

Recommendations are listed below that are based on the findings discussed in chapter 6 and can be implemented to improve practice relating to induction of labour at the facility in which the study took place.

Reasons for induction

Through clearly identifying the indications for induction and critiquing these alongside the current research literature the following recommendations are made:

- The induction rate could be decreased through a reduction in the number of inductions at 41 weeks or less for post-dates pregnancy and developing an increased tolerance for pregnancy termination closer to 42 weeks for well women and babies.
- There is a need to appreciate the risks for growth restricted babies rather than using the label as a method to get a place in the induction book.
- Health professionals need to be discouraged from using macrosomia as an indication for induction of labour as the research does not support early induction as a means of decreasing the risk of caesarean section. All the women identified as having a large baby in the current study had a caesarean section.

Influences on decision making

When health professionals are working with women to consider the option of an induction of labour they need to:

- Promote a shared decision making process where either giving over or taking over responsibility is unnecessary.
- Improve the quality of informed decision making by assisting women to communicate their values and wishes to the consulting obstetrician before or during the consultation where induction of labour is to be discussed.
- Acknowledge that induction of labour both gives to and takes away from the birthing experience.
- Acknowledge that women have a focused risk on the safety of their baby and themselves and to use language to inform rather than convince.
- Identify stereotypes and attitudes they have that may be influencing options that are offered to women rather than an identified need influencing the options offered.

- Identify stereotypes and attitudes they have that may be influencing options that are offered to women rather than an identified need influencing the options offered.
- Identify any limits placed on the role of women in decision making and whether that prevents women raising questions about options of care relating to induction of labour.

The maternity facility could make changes such as:

- Developing guidelines that assist health professionals understand their responsibilities in regard to induction of labour.
- Developing and using a decision making tool that coordinates the information sharing between women, LMCs, obstetricians and staff working in the maternity facility. The women should keep their own copy of this tool to facilitate communication.
- Improving the quality of the information provided to women through information leaflets and childbirth education classes. Information should include positive and negative effects of induction as well as methods.
- Modifying the booking system needs to allow bookings close to the preferred/required day and prevent early unnecessary inductions especially for women with post-dates pregnancies.
- Encouraging clear, detailed recording of indications for induction in the booking book.

Methods used to induce labour in the community

Health professionals need to inform women of the research evidence to support ‘sweeping of the membranes’ as an effective method of induction. ‘Sweeping of the membranes’ could be included in the hospital guidelines for practice and the information leaflets given to women.

7.5 Recommendations for Education

Education can improve practice and the following areas have been identified from the study that have the potential to improve practice in relation to induction of labour.

Reasons for induction

In relation to the reasons for induction of labour, identified in this study, education is needed to:

- Encourage further debate on the acceptability of the use of induction for want rather than need and its implications for resource management.
- Encourage all health professionals to critique the literature relating to reasons for induction of labour and evaluate their practice in line with the best available evidence.

Influences on decision making

Health professionals could improve their practice in relation to how they influence decision making through education in the following areas:

- Communication skills in decision making situations for all health professionals and students involved in caring for women prior to an induction.
- Developing skills in how best to communicate the knowledge they have. As new knowledge about induction of labour is imparted through education and training programmes, the facilitators of these programmes also need to teach skills on how best to communicate the new information to women.
- Ensuring Childbirth Educators receive ongoing education on risks and benefits of induction of labour as well as information on evidence-based methods of induction to communicate to women.

Methods used to induce labour in the community

Despite evidence-based practice being widely promoted, health professionals need to be encouraged to actively seek evidence to support or refute what they do or advise women to do. For example LMCs need to be encouraged to assess the evidence on which they base recommendations relating to alternative methods of induction. There is limited evidence to support some methods used by women in this study in an attempt to initiate labour in the community.

7.6 Recommendations for Future Research

From the study areas where future research would benefit women and LMCs in relation to induction of labour were identified and these are listed below.

Reasons for induction

Further research is required on the effect of women choosing an induction of labour in the absence of any medical indication on both outcomes for mother and baby and the cost of that choice for the health service.

Influences on decision making

From the study areas were identified relating to influences on the decision making that need to be explored further such as:

- The attitudes of women in ethnic groups other than European that may contribute to them not requesting or being offered an induction of labour.
- Exploring the influences on the consulting obstetricians when making the decision to recommend induction of labour for women.
- The satisfaction of women following induction of labour.
- Measuring other variables that may be linked to induction such as women's anxiety levels and their perception of intervention in childbirth.

Methods of induction used in the community

Further research on alternative methods of induction that are commonly used by women in the study population such as raspberry leaf tea, evening primrose oil and caulophyllum are needed to be able to guide women.

7.7 Summary

The study has provided clarity into the reasons for induction and aspects of the decision making process at the facility under study. It provides invaluable local data and contributes to the wider knowledge base that LMCs, obstetricians and hospital staff can use to improve processes and stimulate a critique of their own practice in relation to

induction of labour. Specific and achievable recommendations from the study have been identified for practice, education and research.

Postscript

The results of this study were presented at an open meeting of LMCs and hospital staff in September 2003. In the discussion following this meeting it was decided to change the booking system for inductions. The manager of the birthing suite gave a guarantee that women who were post-dates would be able to get a space on the day that they required. To achieve this a space was to be kept each day that could only be used for an induction for women with a post-dates pregnancy. To get this space however the women needed to have a gestation of at least 41 weeks and 3 days.

The recommendations from the study and the changes decided at the meeting were posted out to all LMCs with the next newsletter sent out by the facility. The reaction that followed was interesting. Consulting obstetricians who tried to book women for a post-dates induction at less than the specified gestation were instructed by the staff that this was not possible. The reaction from some was not positive. There was a feeling expressed of being 'let down.' After supporting the study they were now not able to book women in for inductions when they wanted to. Some LMC's support for the study appeared to have developed due to empathy on my part during the interviews, which led to a feeling of being deceived when the results were presented - a potential predicament that was acknowledged in section 3.9. An LMC said women come to them crying, desperately wanting an induction and it is important that they be able to give it to them. I was not aware that the system had been changed to restrict anyone having an induction but rather to reorganise it. The clinician had to admit that the real reason was social and not post-dates. I explained the importance, in light of the study, that women be booked under the true indication for risk management for both the woman's and facility's safety. Reports from other LMCs and the hospital staff said the change to the booking system was working well.

Appendix A
Information Sheet For Women

Information Sheet For Women

Induction of Labour Study

Introduction

You are invited to take part in a study thatDistrict Health Board Maternity Services atHospital is planning to undertake about induction of labour for women having their first baby. An invitation to participate is being extended to all women having their first baby atHospital from October 2002 to March 2003 and who are

- having their labour induced,
- are planning a vaginal delivery,
- are 37 or more weeks pregnant.

You are under no obligation to participate.

Diana Austin, a midwife working in research and quality atHospital and Dr Sue Belgrave, Clinical Director for Women's Health Services, are coordinating the study. Jenny Westgate, Associate Professor in Obstetrics and Gynaecology at Auckland University, is the research supervisor. A portion of the study will be used for the completion of Diana's Master of Arts and Dr. Cheryl Benn; Associate Professor at Massey University is providing supervision for that aspect.

About the study

Over the last decade there has been a gradual increase in the use of intervention in labour and birth in New Zealand and you may have heard media discussion about this. We are aiming to obtain some more detailed information about women who are having an induction of labour. We are aiming to obtain some more detailed information about women who are having an induction of labour atHospital.

Information will be collected about why you are having an induction, the methods used to manage your induction and what information you have received before your induction. **Your treatment or care will not change in any way.**

If you agree to participate you will be asked to answer some questions when you come to the maternity unit atHospital so we can gain some information about induction from your perspective. We will ask you the questions before your labour begins and it will take about 10 minutes. We will ask for your written consent at this time. With your consent, your Lead Maternity Carer will also be asked some questions.

We will be collecting data from 100 consecutive women who are having an induction of labour atHospital. We expect this to take 6 months. If you do agree to take part you are free to withdraw from the study at any time, without having to give a reason and this will in no way affect your continuing or future health care.

Benefits and Risks

By being part of the study you will provide information that may assist in better preparing and informing women for induction in the future. There is no potential risk to you or your baby by participating in the study. Your care will not change in any way. If

after answering the questions with a researcher you feel you want to know more about induction of labour you could then talk to your Lead Maternity Carer.

Compensation

In the unlikely event of a physical injury as a result of your participation in this study, you may be covered by ACC under the Injury Prevention, Rehabilitation and Compensation Act. ACC cover is not automatic and your case will need to be assessed by ACC according to the provisions of the 2002 Injury Prevention Rehabilitation and Compensation Act. If your claim is accepted by ACC, you still might not get any compensation. This depends on a number of factors such as whether you are an earner or non-earner. ACC usually provides only partial reimbursement of costs and expenses and there may be no lump sum compensation payable. There is no cover for mental injury unless it is a result of physical injury. If you have ACC cover, generally this will affect your right to sue the investigators.

If you have any questions about ACC, contact your nearest ACC office or the investigator.

Results

The information will be collated and presented together. There will be no information presented that would identify you personally. If you would like a copy of the results please let the researchers know or they will be available from Maternity Services after the completion of the study. As it will take time to collate and analyse the data it is not anticipated they will be available for 2-3 months after the data has been collected.

Confidentiality and Anonymity

No material, which could personally identify you, will be used in any reports on this study. Data collected will be kept in a locked cabinet in a locked office and will be available only to the researchers and data analyst.

You have the right to:

- Decline to participate;
- Refuse to answer a particular question;
- Withdraw from the study up until the time of data analysis;
- Ask any questions at any time;
- Provide information knowing that your name will not be used;
- A summary of the findings after the conclusion of the study.

You will be required to read and provide a signed Consent Form when you come for your induction. Please take as much time as you need to make a decision about being involved in the study.

If you have any questions or would like more information please contact:

Diana Austin	Co-researcher at facility	Associate professor providing supervision for research at facility	Dr Cheryl Benn
Contact details	Contact details	Contact details	Contact details

If you have any queries or concerns regarding your rights as a participant in this study you may wish to contact a Health and Disability Advocate, telephone

- Northland to Franklin

0800 555 050

Thank you for taking the time to read this information.

This research study has received ethical approval from the Auckland Ethics Committee.

This project has also been reviewed and approved by the Massey University Human Ethics committee, PN Protocol 02/135. If you have any concerns about the conduct of this project, please contact

Professor Sylvia V Rumball
Chair

Massey University Campus Human Ethics Committee:

Palmerston North

Phone: 06 350 5249

E-mail S.V.Rumball@massey.ac.nz

Appendix B

Information Sheet for Lead Maternity Carers

Information Sheet For Lead Maternity Carers

Induction of Labour Study

Introduction

You are invited to take part in a study thatDistrict Health Board Maternity Services atHospital is planning to undertake. An invitation to participate is being extended to Lead Maternity Carers of women having their first baby at Hospital from October 2002 to March 2003 and who are having their labour induced by means of Prostaglandin, Syntocinon or artificial rupture of the membranes, are planning a vaginal delivery and are 37 or more weeks pregnant. You are under no obligation to participate.

Diana Austin, a midwife working in research and quality atHospital and Dr, Clinical Director for Women's Health Services, are coordinating the study., Associate Professor in Obstetrics and Gynaecology at Auckland University, is the research supervisor. The quantitative and qualitative portions examining the decision making process to induce will be used for the completion of Diana's Master of Arts and Dr. Cheryl Benn, Associate Professor at Massey University is providing supervision for that aspect. Please feel free to contact Dr Benn if you have any queries about this portion of the study [REDACTED]

About the study

Over the last decade there has been a gradual increase in the use of intervention in labour and birth in New Zealand. We are particularly concerned about the high use of intervention atHospital after a short retrospective study showed a two-fold increase in caesarean section for nulliparous women having their labour induced. We are aiming to obtain some detailed information about the reasons women are having an induction of labour, the methods used to induce and the outcomes for women and babies.

If you agree to participate you will be asked some questions, through an interview by the primary researcher (Diana Austin) or an assistant researcher, about why the woman you are caring for is having an induction and what information you used to make this decision. Written notes will be taken during the interview to record the data. The interview will take place when you come in to the maternity suite to begin the induction for the woman you are caring for but will be before the induction begins. There will be structured and semi structured questions, which will take about fifteen minutes in total. We will ask for your written consent at this time and the woman you are caring for will also need to agree to you being interviewed.

The woman you are caring for will also be asked some questions just prior to induction commencing. They will receive an information sheet about the study when they are booked for an induction and will be asked to sign a consent form when they come into the maternity suite for induction.

We will be collecting data from 100 consecutive women who are having an induction of labour atand their Lead Maternity Carers. We expect this to take 6 months.

Data will also be collected retrospectively from the clinical notes and Terranova, the hospital database, of 400 women whose labour has started spontaneously as a comparison. If you do agree to take part you are free to withdraw from the study at any time, without having to give a reason and this will in no way affect your relationship with the hospital.

Benefits and Risks

By being part of the study you will provide information that may assist in understanding the reason for the increasing rate of induction of labour atHospital. The study will not be assessing the quality of care you are providing to women. In the unlikely situation that care or a process is identified to be unsafe the principles inherent in the Maternity Services pursuant to Section 88 of the Health and Disability Act 2000 will be followed. This section requires the facility, LMC and women to work together to resolve the issue. The LMC will be encouraged to involve their professional body in the discussions. This is the usual process atHospital when a difficult situation arises.

Compensation

In the unlikely event of a physical injury as a result of your participation in this study, you may be covered by ACC under the Injury Prevention, Rehabilitation and Compensation Act. ACC cover is not automatic and your case will need to be assessed by ACC according to the provisions of the 2002 Injury Prevention Rehabilitation and Compensation Act. If your claim is accepted by ACC, you still might not get any compensation. This depends on a number of factors such as whether you are an earner or non-earner. ACC usually provides only partial reimbursement of costs and expenses and there may be no lump sum compensation payable. There is no cover for mental injury unless it is a result of physical injury. If you have ACC cover, generally this will affect your right to sue the investigators.

If you have any questions about ACC, contact your nearest ACC office or the investigator.

Results

The information will be collated and presented together. There will be no information presented that would identify you personally. If you would like a copy of the results please let the researchers know or they will be available from Maternity Services after the completion of the study. As it will take time to collate and analyse the data it is not anticipated they will be available for 2-3 months after the data has been collected.

Confidentiality and Anonymity

No material, which could personally identify you, will be used in any reports on this study. Data collected will be kept in a locked cabinet in a locked office and will be available only to the researchers and data analyst.

You have the right to:

- Decline to participate;
- Refuse to answer a particular question;
- Withdraw from the study up until the time of data analysis;
- Ask any questions at any time;
- Provide information knowing that your name will not be used;
- A summary of the findings after the conclusion of the study.

You will be required to read and sign a consent form. Please take as much time as you need to make a decision about being involved in the study.

If you have any questions or would like more information please contact:

Diana Austin	Co-researcher at facility	Associate professor providing supervision for research at facility	Dr Cheryl Benn
Contact details	Contact details	Contact details	Contact details

If you have any queries or concerns regarding your rights as a participant in this study you may wish to contact a Health and Disability Advocate, telephone

- Northland to Franklin

0800 555 050

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This project has also been reviewed and approved by the Massey University Human Ethics committee, PN Protocol 02/135. If you have any concerns about the conduct of this project, please contact

Professor Sylvia V Rumball
Chair

Massey University Campus Human Ethics Committee: Palmerston North

Phone: 06 350 5249

E-mail S.V.Rumball@massey.ac.nz

Appendix C
Consent Form

Consent Form

Induction of Labour Study

- I have read and I understand the information sheet dated 9/11/02 for volunteers taking part in the study designed to investigate induction of labour for women having their first baby. I have had the opportunity to discuss this study . I am satisfied with the answers I have been given.
 - I have had the opportunity to use whanau support or a friend to help me ask questions and understand the study.
 - I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study at any time and this will in no way affect my continuing health care.
 - I understand that my participation in this study is confidential and that no material which could identify me will be used in any reports on this study.
 - I have had time to consider whether to take part.
 - I know who to contact if I have any questions or concerns about the study.
-
- I _____ (full name) hereby consent to take part in this study.

Date

Signature

Contact phone numbers for researchers

Diana Austin
Contact details

Co-researcher at facility
Contact details

Supervisor at facility
Contact details

Project explained by

Project role

Signature

Date

English	I wish to have an interpreter.
Maori	E hiahia ana ahau ki tetahi kaiwhakamaori/kaiwhaka pakeha korero.
Samoaan	Ou te mana'o ia i ai se fa'amatala upu.
Tongan	Oku ou fiema'u ha fakatonulea.
Cook Island	Ka inangaro au i tetai tangata uri reo.
Niuean	Fia manako au ke fakaaoga e taha tagata fakahokohoko kupu.

Korean

我需要一個翻譯

要 **yes**

不要 **no**

Appendix D
Confidentiality Agreement

Confidentiality Agreement to be completed by those midwives assisting in the collecting of the raw data for the induction of labour study.

I _____ agree to keep the information obtained while interviewing women and Lead Maternity Carers for the induction of labour study atHospital confidential. The information I collect will be shared with no other person other than the named researchers in the study as stated below.

Diana Austin: Principal investigator

Co-investigator at facility

Supervisor at facility

Cheryl Benn: Supervisor for aspects relating to completion of thesis at Massey University

Signed

Date

Appendix E
Questionnaires

Questionnaire for Women

Induction of Labour Study

By answering the following questions we can gain some information about induction from your perspective.

What do you understand is (are) the main reason(s) for your labour being induced today?

If more than one reason please write in the order of importance.

Do not worry if you don't know the medical terms.

.....
.....
.....

What are the positive and negative effects of being induced that you are aware of?

Positive

Negative

.....
.....
.....
.....

How have you found out about these effects?

- Written material
- Friend/family
- Verbal discussion with LMC
- Other (please describe)

Have you or your Lead Maternity Carer tried any other methods of induction before coming into hospital?

YES

NO

If yes please describe what these methods were.

.....
.....

What would be your preferred method of pain relief?

.....
.....

Has your LMC discussed any type of pain relief that may or may not be beneficial when having an induction?

YES..... NO

If yes what was the information you received?

.....
.....
.....
.....

What are your thoughts/feelings about having an epidural for pain relief? (Please rate your preference on the scale)

1	10
Definitely do not want	Definitely do want

Qualitative interview guide for Lead Maternity Carers

Induction of Labour Study

- We have discussed the medically indicated reason(s) for induction. Is there anything else that made you think it was important that this woman was induced today?
- What sort of non-medical factors influenced your decision?
- How did the woman's attitude to induction affect your decision to induce?
- What are your general thoughts or opinions about induction of labour for nulliparous women?
- How do you feel the induction will go for this woman?

Quantitative data collection tool for women

Induction of Labour Study

Only the first portion, involving the demographic data, of the quantitative data collection tool has been included in the thesis. The remaining portion was only relevant to the larger study.

Date of admission

Coded identifier

Demographics

Age

Ethnic group

- 1 European/Pakeha
- 2 NZ Maori
- 3 Pacific Islands
- 4 Chinese
- 5 Indian
- 6 Other

LMC type (initial booking)

- 1 Public care
Private Care:
- 2 specialist
- 3 midwife
- 4 GP
- 5 Unbooked
- 6 Initial booking unknown

Gestation (days)

Methods used to determine dates

by LMP

Y

N

by ultrasound

Y

N

Gestation at dating ultrasound

- 1 <6 weeks
- 2 6-12 weeks
- 3 13 - 20
- 4 >20

Reason for induction	1	Post dates
	2	Preeclampsia
	3	PROM
	4	IUGR
	5	Diabetes
	6	Decreased liquor
	7	Social
	8	APH
	9	Hydramnios
		Large for Gestational
	10	Age
	11	Other

Outcomes (all women)

Date

Coded identifier

Epidural

Dilatation epidural inserted 1-10

Mode of delivery

- 1 NVD
- 2 Forceps
- 3 Ventouse
- 4 Caesarean

Appendix F

Themes identified within code development

Data used to create themes

<p>Informing women</p> <p>Women’s attitude and views changed with time and information (content and presentation) given e.g. women agree with LMC decision when said for baby safety; baby will get bigger; large baby due to race of woman and size of husband.</p> <p>LMCs prepare women at beginning not to expect IOL till 41 weeks. Other LMCs tell women they are booking at term.</p>	<p>Women’s knowledge</p> <p>There are no negative effects or was all positive in their situation.</p> <p>Women did not want to know –given handout but did not read it.</p> <p>Women are told about methods.</p> <p>Women don’t feel they know much.</p>
<p>Risk and litigation</p> <p>Sometimes IOL seems the best thing to do.</p> <p>Obligation by LMCs to refer to obstetrician if have perceived risk factors –fear of litigation.</p> <p>LMCs have different limits on the maximum limit pregnancy should be, said to often be done too early but get nervous if too close to 42 weeks.</p> <p>Research says term +12 but natural inclination is that it could be longer.</p>	<p>Risk</p> <p>Women’s openness and willingness to accept risk has limits e.g. woman was happy to wait until reached 40 weeks.</p> <p>Reduced risk for mother and baby, longer pregnancy increases risk and worry.</p> <p>Mother -Prevents baby from getting any bigger e.g. may help avoid a caesarean, resolves a medical condition.</p> <p>Baby -Baby is delivered before placenta stops functioning adequately, baby not overcooked. Baby not stressed</p> <p>Safe method to get baby</p> <p>Know can refuse but could not live</p>

	<p>with self if something happened to baby.</p> <p>Increased risk of further intervention such as caesarean, managed third stage, forceps, close monitoring.</p> <p>There are side effects to the medications used e.g. prostaglandin gel</p> <p>No longer able to deliver at a small birthing unit or have a water birth.</p>
<p>Booking system</p> <p>No spaces in book for preferred day.</p> <p>Dates offered too far away or too early, LMCs choose earlier date.</p> <p>Filling up of inductions by early bookings.</p> <p>Manipulation of the system.</p> <p>Making up or exaggerating risk factors.</p> <p>Limit in booking book too small.</p> <p>LMCs refer women to obstetricians with similar philosophies.</p> <p>Should be able to book day LMC wants as look after own woman however some would like hospital staff to do more of the work.</p>	<p>Booking system</p> <p>No spaces in book for preferred day.</p> <p>Slotted into the hospital system.</p>
<p>Reasons for induction</p> <p>LMCs judged value and acceptability of other indications for induction put in the booking book by their colleagues.</p> <p>Inductions should only done for</p>	

<p>medical reasons although social sometimes OK if at term.</p> <p>The reason for induction sometimes seems irrelevant e.g. LMC or caregiver initiating the induction does not really know.</p>	
<p>Impressions of/attitudes to induction</p> <p><u>Positive</u></p> <p>Much better if start spontaneously.</p> <p><u>Negative</u></p> <p>Inductions are not liked by LMCs and they try hard to avoid due to them taking a long time and increased intervention rate.</p> <p><u>Other</u></p> <p>Manage high-risk women during the day.</p> <p>Normalisation of induction- one LMC said needs to be more so</p> <p>Should be doing more monitoring rather than early inductions.</p>	<p>Impressions of /attitudes to induction</p> <p><u>Positive</u></p> <p>Good to be able to choose induction.</p> <p>Knowing the dates allows the woman to be more in control, aware of what's happening, organised and prepared e.g. come calmly to hospital.</p> <p>The waiting for baby and discomfort can come to an end.</p> <p>Waiting is stressful.</p> <p>Environment is controlled e.g. waters don't break in supermarket, monitoring from beginning, pain relief available.</p> <p>Can be quicker.</p> <p><u>Negative</u></p> <p>Induction is artificial and not natural – concerns about whether baby or mother is ready.</p> <p>No longer any spontaneity in labour starting, mystery has been taken away e.g. no phone call at work.</p> <p>Need to come into hospital and spend more time in a clinical, unfamiliar</p>

	<p>area.</p> <p>Choice has been taken away and plans changed.</p> <p>Situation is now more unknown.</p> <p>Knowing the date makes the situation more frightening.</p> <p>Contractions stronger and more painful and labour may last longer.</p> <p>Distressing to mother and baby</p> <p>Can cause blood pressure to go up</p> <p>Contractions stronger and more painful and labour may last longer.</p> <p>Distressing to mother and baby</p> <p>May require more pain relief but are more limited in options e.g. No spa bath.</p>
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