

**School of Nursing and Midwifery**

**Evaluation of the Next Birth After Caesarean (NBAC) Clinic**

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To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made. This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

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Date:.....

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## ABSTRACT

**Background:** Developing models of care that reduce the caesarean section (CS) rate has been a health care priority in Australia since the 1990's. Research around vaginal birth after caesarean (VBAC) focuses on maternal and neonatal morbidity and mortality, and the psychological impact on women. Minimal evidence examines models of care that aim to nurture women's emotional well-being after CS; as well as providing consistent evidence-based information and promoting safe and successful vaginal birth in the subsequent pregnancy. Furthermore the experiences of midwives working in these models have been overlooked.

**Aim:** The aim of the study was to evaluate the Next Birth After Caesarean (NBAC) service at King Edward Memorial Hospital (KEMH). The service provides continuity of care by a small midwifery team within a supportive collaborative network.

**Design:** The study used a multi-phased mixed methods approach. A comparative descriptive study design (pre / post-test) was used to evaluate the NBAC service postnatally following a CS and antenatally in a subsequent pregnancy in terms of childbirth fear, childbirth self-efficacy and confidence, knowledge of birth options, intention to VBAC and satisfaction with care. Simple descriptive statistics and chi square analysis was used test a number of formulated hypotheses relevant to both care delivery points. In addition, a small qualitative phase was undertaken to explore the midwives experiences of working within the service. Thematic analysis was used to analysis the data set. Given the complexity of the design this thesis has been constructed around the three individual phases of the study.

**Postnatal Phase:** The NBAC postnatal group included 50 women who were visited by the NBAC midwives and a comparison group of 53 women who also experienced their first birth as a CS and received standard postnatal care. The hypothesis that women who received a visit from the NBAC midwives would have increased intention to birth vaginally in a subsequent pregnancy was not supported ( $p = 0.373$ ) even though more women in the NBAC group indicated they intended to have a vaginal birth after caesarean (VBAC) in their next pregnancy ( $n = 33, 71.7\%$ ) compared to the comparison group ( $n = 25, 54.3\%$ ). The hypothesis that women who received a visit from the NBAC midwives would have reduced childbirth fear was not supported as the 12 week postnatal mean fear scores remained high for the comparison (86.27) and NBAC group (84.67). The hypothesis that women who

received a visit from the NBAC midwives would have increased self-efficacy was not supported. The comparison group had slightly higher mean self-efficacy scores (33.23) compared with the NBAC group (32.78) at three to five days following the birth and at 12 weeks postnatal (33.67 and 33.63 respectively).

**Antenatal Phase:** The NBAC antenatal group consisted of 47 women who attended the NBAC service for their antenatal care and a comparison group of 45 women who attended the main hospital clinic. The hypothesis that the NBAC group would have lower childbirth fear scores was not supported. There were no differences in childbirth fear across three time points between the NBAC group and the comparison group, with both groups having high mean childbirth fear scores. The hypothesis that the NBAC antenatal service would increase women's childbirth self-efficacy (confidence) was supported ( $p = 0.011$ ). The hypothesis that the NBAC group would have increased childbirth knowledge was supported ( $p = 0.012$ ), however the numbers were very small and limits any conclusions being drawn from these findings. Whilst women from the NBAC group reported greater satisfaction with care than the women from the comparison group the fourth hypothesis was not supported. The hypothesis that there would be increased intention to birth vaginally in the current pregnancy amongst the NBAC group was also not supported ( $p = 0.097$ ). Finally, there was no significant difference between the two groups in relation to the hypothesis that women who attended the NBAC clinic would achieve a vaginal birth.

**Qualitative Phase:** Thematic analysis was used to investigate how the midwives felt about working in the service. The findings revealed that the six midwives working in the NBAC service found the experience personally and professionally satisfying. Four key themes emerged from the data: Getting to Know the Women; Layers of Support; Under Scrutiny and Facing the Challenges. A number of sub themes were also identified under the key themes: Valuing the relationship; Valuing Choice; Valuing collegial support and Future challenges.

**Conclusion:** Although there were a number of limitations to the evaluation the findings do suggest that providing women with evidenced based information about birth mode in a subsequent pregnancy increased women's knowledge about birth following caesarean section but did not increase women's intention to pursue a vaginal birth. Having continuity of care in the antenatal period was valued by both the women and the midwives.

## CHAPTER ONE: INTRODUCTION

Australia has a high caesarean section (CS) rate; approximately one third of babies are born by CS annually (Australian Bureau of Statistics, 2008). A significant contributor to this rate is the number of women planning a repeat elective caesarean section in a subsequent pregnancy following a first caesarean. This is despite the considerable body of evidence that demonstrates that between 70 to 80% of women who have had a previous lower segment caesarean should be able to give birth vaginally in their subsequent pregnancy (Davies, Hahn and McGrath, 1996; Druzin, 2006; Flamm, Newman, Thomas, Fallon and Yoshida, 1988; Ghaffari, Bener and Ahmed 2006; Hamilton, 2011; Landon, Leidecker, Spong, Hauth, Bloom, Varner, et al 2005; Loebel, Zelop, Egan and Wax, 2004; McGrath and Ray-Barruel, 2009; Pare, Quinones and Macones, 2007; Stamilio and Shanks, 2008; Tan, Subramaniam and Omar, 2006). In Western Australia (WA) the repeat caesarean section rate is high at 86.3%, and is inversely related to the low rate of vaginal birth after a previous caesarean (VBAC) which is 13.6% (Le and Tran, 2008).

Research suggests that women delivering by caesarean section (CS) are more likely to be disappointed, distressed and/or dissatisfied with this mode of birth (Fenwick, Gamble and Hauck, 2006; Humenick, 2006; Lobel and DeLuca, 2007). Caesarean section is also known to pose greater complication risks to both the baby and the mother which include for example infection, injury to organs, haemorrhage and death in women; respiratory distress and injuries in babies (Albers, 2005; Ecker, 2004; Lobel and Deluca, 2007; MacDorman, DeClercq, Menacker, and Malloy, 2006; O'leary, de Klerk, Keogh, Pennell, de Groot, York, Mulroy and Stanley, 2007; Sullivan and King, 2006). These complications can have significant impact on the emotional and psychological well-being of the mother which has implications for the transition to parenthood, family functioning and childhood development. In addition, the financial cost of unnecessary childbirth intervention to families, communities and the health system in Australia is unsustainable (Druzin, 2006).

## 1.1 Background

As the CS rate has increased so too has the level of consumer concern around intervention. Over the past decade there has been a significant consumer demand for quality, evidence based information and services for women who have had a previous caesarean section. In Western Australia (WA) the consumer group known as Birthrites: Healing After Caesarean Incorporated has been particularly active in driving a maternity reform agenda that supports better care options for women who have experienced a caesarean. Formed in 1997 the group's main aim is to provide information and support to women who have had or need to have a caesarean section, which includes giving evidence based information about the choice of birth after caesarean section. The group also aims to provide a support network for women who have had a previous CS and to increase the awareness of these women needs to maternity health professionals (*Birthrites Inc.: Healing after Caesarean*, established in 1997). In 2006 on National Caesarean Awareness Day, Birthrites organised and facilitated a forum that brought together an array of maternity health service providers, WA health representatives and consumers. The aim was to openly debate, discuss and strategically plan how the needs of this group of childbearing women could be better addressed within the health system. What was clearly identified during the forum was an ever-increasing social acceptance of caesarean as a normal way to give birth to a baby in line with an erosion of a culture where childbirth is considered a normal but significant life event. Lack of appropriate services and information, medicalisation of childbirth and media hype around birth mode were all considered to play a part in the reframing of birth. The outcomes from this day formed the basis of a governmental report (Health Department of Western Australia, 2006). This report also made a significant contribution to the state government's *Improving Maternity services: Working Together Across Western Australia Policy Framework* (2007). The document introduced a number of initiatives to reduce the caesarean section rate, and in particular the planned repeat caesarean section rate. The overall goals of the policy framework included improving women's experience of pregnancy and childbirth; improving safety and accountability in all maternity services; improving the sustainability of the maternity care workforce and promoting clinical leadership and collaboration to progress quality maternity care provision in WA.

In response to the local consumer and governmental concern about the rising caesarean section rate and the lack of services for women wanting a vaginal birth after a caesarean an innovative new clinical practice initiative, the *Next Birth after Caesarean* (NBAC) service was developed. The new service commenced at King Edward Memorial Hospital (KEMH) on 4th July 2008.

## **1.2 The Development of the Service**

A Steering Committee had carriage of the development and implementation of the service. The group consisted of key stakeholders including midwives, consumers, medical practitioners and representatives of the local consumer support group, Birthrites. Over a two year period the steering committee met on regular basis drawing on the available literature and resources to design the clinical service. A project manager was appointed to assist with implement the committee's decisions. The information resources used by the NBAC service were developed by the Steering Committee in close consultation with the consumer organisation 'Birthrites'. This organisation had already produced a number of resources specifically designed for women who had experienced a previous CS. The resources aimed to provide women with the best evidence available around birth mode in a subsequent pregnancy after a caesarean. The booklet was designed to support women regardless of what they might choice. Community supports also featured heavily.

Likewise the tailored antenatal education sessions, proposed for the new service, drew on previous work of the consumer support group Birthrites where midwives that had been offering specifically design classes to this group of women for some time. There was a class for women who wanted a VBAC as well as one for women who chose to have a repeat planned CS. The aim was to make the experience better for women regardless of their birth mode choice. The resource package included information on birth after CS, contact information of the midwives working in the NBAC clinic and community resource information.

## **1.3 The NBAC Service**

The NBAC service draws on the concept of continuity of care with a small skilled, expert midwifery team embedded within a supportive collaborative network to

improve care to women who have experienced a previous CS. The midwifery-led service integrates a number of specific interventions (continuity of midwifery care, evidenced based information and the opportunity for women to revisit/talk through their caesarean section experience with a midwife) provided at the following two critical intervention points:

- In the postnatal period immediately after a woman's first CS;
- In the antenatal period of a woman's subsequent pregnancy after a first CS.

The overall goal of the clinic was to improve the quality of care offered to women and their families that have experienced one previous CS by:

- Providing increased emotional support to women who have experienced a CS;
- Providing consistent evidence-based information;
- Promoting vaginal birth after CS where assessed as appropriate ; and
- Working collaboratively with other staff involved in the woman's care to provide a supportive birthing environment that maximised her chance of either a successful vaginal birth or a positive repeat CS.

### **1.3.1 NBAC Postnatal Service**

The midwives working on the antenatal NBAC service visit women who had experienced a first CS on the postnatal wards. Obviously these women did not attend the NBAC clinic during their pregnancy. Midwives introduce the service and what it offers; provide the women with an opportunity to share their birth experience, distribute an evidence based information package about birth after CS and provide women with a telephone number should they wish to discuss any aspect of their birth experience at a later date. A key aim of the NBAC postnatal service is to facilitate awareness that vaginal birth after a caesarean (VBAC) is an option that women should discuss with their family and primary care provider in a subsequent pregnancy. It is also anticipated that providing women with a specific visit at this time may reduce childbirth fear associated with surgical birth and increase confidence (self-efficacy) around birth decisions in future pregnancies.

### **1.3.2 NBAC Antenatal Service**

All women referred to KEMH whose last pregnancy ended with a CS are booked into the NBAC clinic at 14 - 16 weeks of pregnancy. Their antenatal care is provided within a collaborative model; however the service features continuity of midwifery care throughout pregnancy. Research indicates that many women become fearful of childbirth after a caesarean section, and that they reconstruct vaginal birth as unachievable and unsafe (Fenwick et al, 2006; Fisher, 1995; Fisher, Astbury and Smith, 1997; Kirk, Doyle, Leigh and Garrard, 1990; Lobel and DeLuca, 2007; Melander, 2002). At their initial booking visit, women are encouraged to talk through their last birth experience and to freely express their feelings, thoughts and concerns. Events and experiences that have a direct relevance to the fear of birth are focused on and processed, and best practice, evidence-based information that clarifies or dispels perceptions about pregnancy and birth. Women are encouraged to talk about their childbirth expectations for the current pregnancy and their preferred mode of birth. Information and resources about birthing vaginally are also provided to all women and discussed according to individual needs. Women are encouraged to take the information home and discuss their options with their partner and/or family members. Regardless of whether women decide to have a repeat elective CS or to pursue a vaginal birth, women continue their routine antenatal care in the NBAC clinic unless on-going specialist medical care is indicated. On occasion it was possible to negotiate a 'shared care' arrangement. If a woman had a designated general practitioner (GP) she/he is contacted and information is provided about the clinic. If a woman wants to share her antenatal care with her GP the NBAC clinic midwife organises this and ensures that lines of communication are established. If a woman does not wish to utilise the service after booking or is found to be inappropriate for NBAC service antenatal care, other care options are discussed and the woman is referred on.

## **1.4 The Study**

The purpose of the study outlined in this thesis was to evaluate the Next Birth After Caesarean (NBAC) service in order to determine whether the service was meeting its goals and improving the quality of care offered to women and their families who had

experienced a caesarean section (CS) when compared with standard antenatal and postnatal care.

A mixed methods approach was used. A comparative descriptive study design (pre / post-test) was used to evaluate the NBAC service in terms of childbirth fear, childbirth self-efficacy and confidence, knowledge of birth options in a subsequent pregnancy, intention to VBAC and satisfaction with care. In addition a small descriptive qualitative phase was used to describe the experiences of the midwives working in the NBAC service.

#### **1.4.1 Primary research hypotheses**

Two research hypotheses were proposed.

1. Women who received an intervention visit from midwives in the NBAC postnatal service compared to women who did not receive a visit would have:
  - Reduced childbirth fear; and
  - Increased self-efficacy (confidence)
  - Increased intention to birth vaginally in a subsequent pregnancy
2. Women who received care provided by the NBAC antenatal service compared to women who received standard antenatal care (i.e. comparison group) would have:-
  - Reduced childbirth fear
  - Increased self-efficacy (confidence)
  - Increased childbirth knowledge
  - Increased satisfaction with antenatal care
  - Increased number of vaginal births

In addition to the hypotheses, one objective was stipulated to determine if there was an association between current childbirth fear and birth intention for a subsequent pregnancy. The outcome variables from the proposed hypotheses are summarised in Table 1.1.

Table 1.1

*Outcome variables*

<b>The <i>postnatal intervention</i> will be evaluated in terms of:</b>	<b>The <i>antenatal intervention</i> will be evaluated in terms of:</b>
<ul style="list-style-type: none"> <li>• childbirth fear</li> <li>• knowledge of birthing options in a subsequent pregnancy</li> <li>• intention to birth vaginal in a subsequent pregnancy</li> <li>• perceived usefulness of resource package</li> </ul>	<ul style="list-style-type: none"> <li>• childbirth confidence and knowledge</li> <li>• childbirth fear</li> <li>• obstetric outcomes</li> <li>• maternal satisfaction</li> <li>• number of women requesting a vaginal birth after a previous CS (VBAC)</li> <li>• number of women achieving a VBAC</li> </ul>

The small qualitative component of the study aimed to describe the experiences of six midwives working in the NBAC clinic. Data from personal interviews were analysed. Significant statements were extracted from data transcriptions and were clustered into appropriate themes and sub themes.

### 1.5 Definition of Terms

Caesarean Section (CS) - a surgical procedure in which an incision is made through a woman's abdomen and uterus to deliver one or more babies.

Continuity of care - care provided to an individual by one health care provider or a team of health care providers, generally no more than four healthcare providers.

EPDS – Edinburgh Postnatal Depression Scale - a validated 10 item questionnaire developed to identify depression in postnatal women. The scale has been validated for use in the antenatal period.

NBAC – Next Birth After Caesarean – relates to the birth mode following a previous CS.

Placenta accreta – an abnormal attachment of the placenta through the endometrium and into the myometrium.

Placenta percreta – the placenta penetrates the entire myometrium and the uterine wall affecting rectum and bladder.

PND – Postnatal Depression – a form of clinical depression which can affect women after childbirth.

Private Practice Midwives – midwives who are self-employed practitioners providing all aspects of pregnancy, labour and birth and postnatal care.

PTSD – Post Traumatic Stress Disorder – a severe anxiety disorder that can develop after exposure to an event that results in psychological trauma.

TOL – Trial of Labour – a situation where women plan to labour and give birth vaginally after a previous CS.

VBAC – Vaginal Birth after Caesarean - the practice of birthing a baby after a previous baby has been delivered through CS.

## **1.6 Overview of Subsequent Chapters**

This first chapter has outlined the research topic and discussed the background and significance of the study. The NBAC service has been described together with the purpose of the study and the research questions. The definition of terms was also outlined. Given that the intervention services offered postnatally and antenatally were quite different the methods, findings and discussion related to each intervention will be presented together but in separate chapters.

In Chapter Two the history of CS and VBAC is reviewed and a critical analysis of both international and Australian studies incorporating the physical and emotional effects of CS and VBAC plus the safety of VBAC and financial considerations is presented. Based upon the evidence, influences on women's choice of birth mode following CS, what women say is important when pursuing VBAC and what midwifery care can offer is also introduced.

The NBAC postnatal and antenatal service interventions offered different care packages. The NBAC study incorporated an evaluation of both services therefore; the methods, findings and discussion related to each service will be combined and presented separate chapters.

Chapter Three provides general overview of the research design and characteristics general to the evaluation of both the antenatal and postnatal services. The majority of Chapter Three then describes the evaluation of the NBAC Postnatal service intervention as well as the aims of this service. The characteristics of the two samples, setting, research design, instruments and procedure are described. The

findings of the study are detailed and the strengths and limitations of the current study are presented. Lastly discussion of the findings in relation to existing literature is offered.

Chapter Four is presented in a similar format to Chapter Three and provides the methods, findings and discussion from the NBAC antenatal service evaluation.

Chapter Five provides an overview of the small embedded qualitative component describing the experiences of the NBAC midwives. The format of this chapter is the same as the two previous chapters incorporating the methods, findings and discussion.

Chapter Six provides an overview of the findings from Chapters three, four and five; and an outline of recommendations for clinical practice and implications for future research. This is presented in three sections education and opportunities for continuing professional development, clinical practice and future research. The chapter concludes the study.

## CHAPTER TWO: REVIEW OF THE LITERATURE

The literature was reviewed and eight key concepts were identified and are presented in this chapter under the following headings: – the history and definition of caesarean section and VBAC, vaginal birth after caesarean, the safety of VBAC, birth mode and psychological wellbeing, financial considerations, influences on women's choices for mode of birth following caesarean section (CS), what women say is important when wanting to VBAC and what midwifery care can offer. The literature review highlighted a gap in knowledge around the experiences of women who had a previous CS being cared for in an antenatal continuity of care model that supported informed decision making about birth options for current and subsequent pregnancies. In order to research and discuss VBAC, it must be remembered that there must also be discussion around CS as well. VBAC as a concept would therefore not exist without CS. The search of the literature commenced by using terms "caesarean section", "VBAC", and midwifery care to search the Medline, OVID and CINAHL plus databases. The search was further refined to include the history of CS and VBAC, the risks of CS and VBAC, the safety of CS and VBAC and women's birth choices, and fear of birth. Over 200 articles were reviewed, with half being excluded because of the age and the relevance of the article. However, a number of older articles were used to set the scene around the history of CS and VBAC.

### **2.1 History and Definition of CS and VBAC: The two headed coin**

Caesarean Section is defined as the delivery of a fetus by surgical incision through the abdominal wall and uterus (from the belief that Julius Caesar was born that way) (Todman, 2007, p.357). Not surprisingly the indications for the use of surgery during the childbirth experience have changed dramatically from ancient to modern times. Despite rare references to the operation on living women, the initial purpose was essentially to retrieve the baby from a dead or dying mother (Todman, 2007). American College of Obstetrics and Gynaecology (ACOG), (1993) is renowned for the historical perspectives of obstetrics. Caesarean section, as it became termed in the 15<sup>th</sup> century, was conducted in the hope of saving the baby's life, or as commonly required by religious decrees, so the baby might be buried separately from the

mother (ACOG, 1993). Above all it was a measure of last resort, and the operation was not intended to preserve the mother's life (ACOG, 1993).

It was not until the nineteenth century that the possibility of saving the mother's life really came within the grasp of the medical profession. The advent of a wide range of technological innovations enabled surgeons to revolutionize their practice (ACOG, 1993). For example anaesthetics permitted surgeons to take the time to operate with precision, to cleanse the peritoneal cavity, to record the details of their procedures, and to learn from their experiences (ACOG, 1993).

As many doctors discovered, anaesthesia allowed them to use CS as an alternate to performing craniotomy, which had been practiced for hundreds of years. The procedure involved the destruction (by instruments such as the crotchet) of the fetal skull and the extraction of the fetus from the vagina. Although this was a gruesome operation, it entailed far lower risk to the mother than attempts to remove the fetus through an abdominal incision (ACOG 1993). Whilst doctors and patients alike were encouraged by the use of anaesthesia to allow CS rather than craniotomy, it was not routinely performed as there was still some considerable risk to the mother and the fetus – more often than not the final outcome being death (ACOG, 1993; Sachs 1986).

In the early twentieth century the transverse incision, rather than the classical incision became widely used by surgeons performing CS (Todman, 2007). The advantages of using a transverse incision were less haemorrhage (bleeding), improved healing and less risk of uterine rupture during subsequent trial of vaginal birth (Todman, 2007). Through the twentieth century, improvement in the care of women undergoing a CS has made the procedure safer (ACOG, 1993; Todman, 2007). The use of antibiotics decreased infection rates whilst the use of blood transfusions and ergot alkaloids for uterine contraction reduced the maternal death rate secondary to haemorrhage (Todman, 2007). The widespread use of epidural anaesthesia in the 1950's countered the problems experienced by mother and baby as a result of general anaesthetic (Todman, 2007). The use of epidural anaesthesia also allowed women to be awake during the surgery and therefore be part of the birth experience.

### **2.1.1 Vaginal Birth after Caesarean Section**

Giving birth vaginally after a CS, as a mode of birth, has only attracted attention in the later part of the nineteenth century as more women have survived the operation and gone on to have subsequent pregnancies. Although the first recorded VBAC is reported to have occurred in the sixteenth century when the wife of a pig farmer went on to give birth to five children after her husband performed a CS following several days of labour during her first pregnancy (Davies, et al, 1996).

In the later part of the nineteenth century the term 'Trial of Labour' (TOL) was used to refer to the situation where a pregnant woman would undertake a trial of labour after a previous CS without the certainty that the labour would result in a vaginal birth (Roberts, Deutchman, King, Fryer and Miyoshi, 2007). Shifting attitudes around birth mode after CS however have seen the evolution of language that aims to reflect a more woman centred approach. From a woman's perspective 'Trial' was considered an inappropriate term that was devoid of respect for the woman's ability and capacity to birth (Roberts, et al, 2007). So while vaginal birth after CS (VBAC) refers specifically to women who birth vaginally after a previous CS it has been taken up as the term that represents, and encapsulates, the distinction between a choosing a repeat planned CS and planning to birth vaginally.

## **2.2 Rates of CS and VBAC over the Last Three Decades**

The rate of CS in most developed countries has risen over the last 30 years. Stamilio and Shanks (2008), indicate that between 1970 and 1988 the CS rate in the United States (US) rose dramatically from 5% to nearly 25%. In the United Kingdom (UK) rates rose from 4% to 20% during the same time period (Savage and Francome, 1993). Similarly Australia recorded a CS rate of 3% in the mid 1960's which rose to 18% by the early 1990's (Fisher 1995). The national CS rate is currently 27.6% (Australian Institute of Health and Welfare, 2011).

While the literature of the last two decades of the twentieth century started to debate the issues and investigate the reasons for the increase, it was clear that there was a growing recognition that policies around subsequent births after a CS needed

attention. For example Sachs (1986) argued one of the commonest medical causes contributing to the increase in CS rates in England at the time was the routine repeat caesareans rate and endorsement of obstetric policy '*once a CS always a CS*' (p. 32). Unfortunately this has been applied widely in many resource rich countries including Australia.

In the 1980's concerns about the rising rate of CS in the United States (US), prompted a National Institutes of Health conference (1980), which led to the widespread promotion of 'Trial of Labour' (TOL) (Roberts, et al, 2007). During the late 1980's and early 1990's there was growing interest from women and their maternity health care professionals in giving birth vaginally after a CS which led to the development of policies to promote and support VBAC (Roberts et al, 2007). For example the American College of Obstetricians and Gynaecologists (ACOG) 1995 guidelines supported vaginal birth after caesarean section by stating that repeat planned CS should only be undertaken where medically indicated. The widespread promotion of VBAC in some states in the US led to the implementation of policy that required eligible women to undergo TOL in order for institutions to receive funding (Harer, 2002). Similarly the Society of Obstetricians and Gynaecologists of Canada (SOGC), (2005) guideline supported TOL and VBAC. As a result the number of women having a vaginal birth after a CS increased. This was reflected in a drop in the US CS rate to 20.7% in the early 1990's (Harer 2002; Roberts et al, 2007). In Australia during the same time period it was difficult to determine the VBAC rate because of the way births were reported; however, the CS rate was 15% according to the Select Committee on Intervention in Childbirth Report (1995).

Towards the end of the 1990's there were increasing reports in the literature of adverse outcomes associated with TOL/VBAC (Flamm, 2007; Greene, 2001; McMahon, Luther, Bowes and Olshan, 1996). As a consequence the ACOG revised its existing guideline. ACOG (1996) recommended and strongly advocated that TOL should only be performed if there was a physician on site capable of immediately performing an emergency CS, because of the risk of uterine rupture. The College's new guideline while stating that it was reasonable for women to choose a vaginal birth in a safe setting qualified this statement by saying that complications of vaginal

birth should be thoroughly discussed and documented (Goer, 2001). The risks of caesarean section were rarely mentioned.

Far from supporting TOL/VBAC the US guideline effectively sounded the death knell for VBAC not only in the US but also in Australia. Many hospitals closed their doors to women pursuing VBAC because they could not meet the policy recommendations (Greene, 2001). In effect this gave women little choice but to give birth by repeat CS. Goer (2001) argues that the real motivation behind the change in policy was to reduce liability stemming from uterine rupture during labour. A study by Yeh, Wactawski-Wende, Shelton and Reschke (2006) lends credence to this view. Data from 135,833 live births in upstate New York from 1998 – 2002 was used to determine whether the decline in VBAC rate was due to temporal changes in TOL rates or in the VBAC success rate. They found that there was a major decrease in the TOL and VBAC rates in low risk women during this time. There was however no change in the VBAC success rate in those women who attempted VBAC (72.9%). These results suggest that the rapid change was due to the change in policy and the perceived lower legal risk for repeat planned CS. A number of authors argue that this situation has contributed significantly to escalating CS rates in both the US and Australia (Roberts et al 2007; Wilf, 2002; Zweiffler, Garza, Hughes, Stanich, Heirholzer and Lau, 2006).

Today the US CS rate is 32% and the Australian rate is 31% (National Centre for Health Statistics, 2010; Australian Institute for Health and Welfare (AIHW), 2011). Both countries have inversely related VBAC rates; 9% and 18% respectively (NCHS, 2010; AIHW 2010). In Western Australia the Midwives Perinatal Dataset indicates that the 2007/2008 CS rate was 32.9% with 87.3% of women who had a previous CS in their last pregnancy having a repeat CS in their subsequent pregnancy (Le and Tran, 2008).

### **2.3 Birth after Caesarean Section**

Over the last 20 years research investigating maternal and neonatal outcomes associated with CS, repeat planned CS and VBAC has increased exponentially. In terms of VBAC two distinct foci are evident, uterine rupture and VBAC success

rates. These will be examined in more detail followed by a discussion on the safety of VBAC as opposed to repeat planned CS.

### **2.3.1 Uterine Rupture**

Uterine rupture is a rare event, it is defined as a defect that involves the entire wall of the uterus, is symptomatic and requires operative intervention (Turner, 2002). As previously eluded to, it is the 'risk' of this event occurring that appeared in the literature in the 1990's that has almost single handedly driven change in clinical practice and thus been responsible for the changes in patterns of VBAC uptake among women (Roberts et al 2007; Wilf, 2002; Zweiffler et al, 2006). Researchers such as Goer (2001) have spent considerable time critiquing some of this work and argue that the methodological quality of these studies is poor. The major problems are the retrospective nature of many of the studies, problems with accurately defining and categorising uterine rupture from medical case notes and a focus on the event of rupture outside the context of outcomes. An example is the work of McMahon et al, (1996) who conducted a population-based, longitudinal study of 6 138 Nova Scotia women who had previously undergone CS and had delivered a singleton live infant in the period from 1986 through 1992. The results indicated that a total of 3 249 women attempted VBAC, and 2 889 women chose to undergo a repeat CS. The authors concluded that elective CS was best practice based on the rupture rates of 10 per 3 249 for the VBAC group as opposed to 1 in 1 986 for elective CS group. Goer (2001) takes issue with how the authors defined rupture and categorised complications. She stated, "The study's grouping of major and minor complications indicates that major complications occur in a bit less than 1% in the planned caesarean group and a bit more than 1% in the VBAC group" (p.31). The differences between the groups were not statistically significant.

Some five years later Lydon-Rochelle, Holt, Easterling and Martin (2001) published the results of a population-based, retrospective cohort analysis totalling 20 095 women with a previous CS. The study was used to extensively espouse the benefits of repeat CS. Uterine rupture was reported as occurring at a rate of 1.6 per 1000 among women with repeated caesarean delivery without labour (n = 11), 5.2 per 1000 among women with spontaneous onset of labour (n = 56), 7.7 per 1000 among

women whose labour was induced without prostaglandins ( $n = 15$ ), and 24.5 per 1000 among women with prostaglandin-induced labour ( $n = 9$ ). Goer (2001) argues that this study proves nothing about the merits of planned CS versus VBAC because it only considered uterine rupture and the only legitimate conclusion is to reserve induction of labour in women with previous CS for those women where the benefits clearly outweigh the risks and to avoid using prostaglandins. Goer (2001) argued that among 30 studies totalling 56 300 VBACs, the rate of uterine rupture was 0.4%.

Over the last six years there have been a number of large studies that have provided good evidence around uterine rupture rates demonstrating that the relative risk of uterine rupture is very low. Macones, Peipert, Nelson, Odibo, Stevens, Stamilio, Pare, Elovitz, Sciscione, Sammel and Ratcliffe (2005) performed a case-control study within a retrospective cohort to assess maternal outcomes among women with a previous CS. The medical records of 25 005 United States women who had previous CS were reviewed. Almost 54% ( $n = 13 706$ ) underwent a VBAC attempt. The results indicated that the overall incidence of uterine rupture in those women attempting VBAC was less than 1%.

Similarly a study by Spong, Landon, Gilbert, Rouse, Leveno, Varner, et al (2007), of 39 117 women from 19 centres in the US with a previous CS indicated that the uterine rupture rate was 0.32% ( $n = 125$ ). A smaller retrospective cohort study undertaken by Cahill, Stamillo, Odibo, Peipert, Ratcliffe, Stevens, Sammel and Macones, (2006) using data from 17 centres in the US found that there was no significant difference in uterine rupture or bladder injury between the women who attempted a VBAC compared to those who had repeat planned CS. The study consisted of 6 619 women, 5 041 who attempted VBAC and 1 578 that had repeat elective CS. There were 20 women from the VBAC group and 1 woman from the elective CS that experienced uterine rupture. While maternal and neonatal outcomes of VBAC will be discussed later in this section what is important to note here is that although uterine rupture can be a catastrophic event it is not necessarily associated with adverse outcomes. It is also worth noting that uterine rupture is not confined to women who have had a previous CS. In fact 75% of uterine ruptures occur in women without a uterine scar and outcomes for these women are usually much worse (Guise, Berlin, McDonagh, Osterweil, Chan and Helfand, 2003).

The most recent research conducted in the United Kingdom on uterine rupture by Fitzpatrick, Kurinczuk, Alfirevic, Spark, Brocklehurst and Knight (2012) suggests that although uterine rupture was associated with significant mortality and morbidity, it was a rare occurrence and demonstrates that the incidence of uterine rupture has changed little over the last 30 years. The authors undertook a case control study over twelve months in the UK. The participants comprised of 159 women with uterine rupture and 448 control women with a previous CS. The estimated incidence of uterine rupture was 0.2 per 1000 births overall and 0.3 per 1000 in women with a previous CS planning VBAC or repeat CS.

### **2.3.2 VBAC Success Rates**

Evidence about VBAC success rates features extensively in recent literature with the majority of the research being undertaken with women giving birth in tertiary hospital settings. Findings demonstrated that between 70 to 80% of women who have had a previous lower segment CS should be able to give birth vaginally in their subsequent pregnancy.

One of the most well published researchers in this field is Flamm, who since the early 1980's, has been researching VBAC success rates. One of the first publications on this topic was by Flamm et al (1988) which reported the success rate of 1,776 women attempting a VBAC as 74%. Nearly 10 years later a study conducted in Canada by Davies, et al (1996) reported similar results quoting a success rate of 76.6%. The study examined the birth records of 2 451 women at a teaching hospital in Ontario, Canada over a twelve month period. Just over 9% (n = 224) of the women had had at least one previous CS and were eligible for VBAC. Of this group 124 women pursued VBAC, with 95 being successful.

In the early part of this century there have been a number of studies with sample sizes of approximately 1000 - 1500 women that have all reported VBAC success rates of between 71 – 87% (Ghaffari et al, 2006; Loebel et al, 2004; Tan et al, 2006). Landon, et al's (2005) four year prospective study of 29 661 women with one previous CS, indicated a 73.6% VBAC success rate. Almost 50% (n = 14 529) of the women pursued VBAC and almost 74% (n = 10 690) achieved successful VBAC.

This multi-centre, four year prospective observational study (1999 – 2002) looked at all women with previous CS undergoing TOL across 19 centres in the US. These success rates have been more recently confirmed in very large methodologically sound studies exploring uterine rupture rates mentioned in the above section. Both Macones, et al (2005) and Spong et al (2007) studies demonstrated a successful vaginal birth rate of 75.5% (n= 10 348) and 73.3 %.( n = 11 226) respectively.

As discussed there is substantial evidence regarding the success of VBAC in hospital settings. There is however, limited data on VBAC success rates in birth centres or at home where midwives are the primary carers. What information there is however seems to suggest that when women have midwives as their lead care professional the rates of success are higher. Harrington, Miller, McClain and Paul (1997) conducted a five year study of women with one previous CS attending a birth centre in Los Angeles, California. The study looked at 303 women who attended the birth centre pursuing VBAC. The success rate was 98.3% (n = 293), with 91.3% (n = 272) having unassisted vaginal births. Another study by Albers (2005), examined the outcomes of 1 453 who presented to one of 52 birthing centres in the US that offered VBAC. Eighty seven percent (n = 1 264) achieved a VBAC, suggesting that VBAC is achievable in environments other than those dominated by the medical model and where midwives are the primary carers.

In Australia the publicly funded Darwin Home Birth program supports VBAC at home with midwives as the primary carer. In 2005, 16 women with one previous CS were booked with the program. Eleven women achieved VBAC at home, five were transferred into the hospital with four achieving VBAC and one needing a repeat CS (Northern Territory Government, 2005).

## **2.4 The Safety of VBAC versus repeat CS**

The focus on the ‘risk’ of uterine rupture occurring in a woman attempting a vaginal birth has driven clinical practice and decision making over the last 10 years. The absolute risk of adverse outcomes occurring however remains statistically small (less than 1%) (Albers, 2005; Fitzpatrick et al, 2012; Macones, et al 2005; Spong et al, 2007). Therefore most women with one previous low transverse CS are considered good candidates for VBAC (Landon et al, 2005).

The previously mentioned retrospective cohort study by Cahill, et al (2006) conducted in 17 centres in the US identified that women who attempted VBAC have decreased risk for overall major maternal morbidities as well as maternal fever and transfusion requirements compared with women who elect repeat CS. Flamm et al (1988) also indicated that VBAC was safe with no reported maternal death as a result of uterine rupture in 11 000 VBAC attempts. However the relative risk of a maternal death remains two to 11 times greater with CS than with vaginal birth (Flamm et al 1988).

In a recent study by Stamilio and Shanks (2008) to determine the safety of multiple VBAC, the authors found that the rate of uterine rupture decreased by 50% after the initial successful VBAC and did not increase with increasing number of VBACs; with rates recorded between 0.2% - 0.35%. In addition, other maternal morbidities such as hysterectomy, thromboembolism, surgical complications and endometritis were noted to decrease after the initial successful VBAC. This same study found that neonatal morbidity rates also did not increase with increasing VBAC number. The VBAC success rate also rose incrementally from 63% to almost 92% in women who had from one to four or more prior successful VBACs.

#### **2.4.1 Maternal Morbidity**

It is estimated that risks such as infection, injury to organs and haemorrhage are five to ten times more likely for women having a CS than that with vaginal birth (Lobel and Deluca, 2007; Villar, Carroli, Zavaleta, Donner, Wojdyla, Fagundes, et al, 2007). In Cahill et al's (2006) study 1.1% (n = 54) VBAC women experienced bladder injury, bowel injury or broad ligament injury compared with 1.3% (n=21) women who planned a repeat CS. This study also found there was a decreased maternal fever rate and need for blood transfusion in women who had a VBAC compared to those who elected a repeat CS. Furthermore, according to Villar, Valladares Wojdyla and Zavaleta (2006), women undergoing either emergency or elective CS, independent of demographic and clinical characteristics or experience of pregnancy had double the risk for severe maternal morbidity and mortality (including death, hysterectomy, blood transfusion, and admission to intensive care) and up to five times the risk of a postpartum infection compared with women undergoing vaginal delivery. Villar and

associates (2008) prospective cohort study of 97 095 women randomly selected from 410 health facilities in eight Latin American countries determined that women were twice as likely to experience severe maternal morbidity and mortality when having a CS compared with vaginal birth.

These complications increase the likelihood of a longer hospital stay, hysterectomy, readmission to hospital and maternal death (Ecker, 2004; O'leary et al, 2007; Sullivan and King, 2006). For example in a study of 1408 births by Loebel, et al (2004) the average length of stay for women following CS was 3.14 days compared with two days for VBAC. This had changed little in fifteen years as purported by Flamm et al (1988) where the average length of stay for women who had CS was 4.3 compared with 2.2 days for VBAC. These rates are comparable to maternity services in Western Australia. In Western Australia in 2008 the accommodation fee in public hospitals was \$1 117 AUD per day; this equates to over \$4 800 AUD for CS compared with \$2 457 AUD for VBAC (AIHW, 2008).

One of the emerging areas of investigation relates to rates of hysterectomy after childbirth. The aetiology of this complication in women who have had a previous CS, involves the increased risk of having the placenta embed abnormally; this is known as placenta previa or placenta accreta (Villar et al 2008). Regardless of the mode of birth women choose, this situation has the potential to result in severe morbidity and/or mortality as a result of uncontrollable haemorrhage. In a study of 1000 women in Malaysia, by Tan, et al (2006) two cases of hysterectomy were reported, both in women who had attempted VBAC but proceeded to emergency CS because of intrapartum haemorrhage. Undiagnosed placenta previa was identified as the cause of haemorrhage and uterine atony as the reason for hysterectomy.

The rising rate of childbirth hysterectomy has been directly linked to the increased CS rate. A longitudinal study of Greek women was performed over a seven year period to determine the extent of post partum hysterectomy. During that period there were 32 338 births and 29.7% (n = 9 601) of them were by CS. In this period, 45 emergency hysterectomies were performed, with an incidence of 1 in 2 526 vaginal births and 1 in 267 CS. All of them were due to postpartum haemorrhage directly attributable to placenta accreta (51.1%) and placenta praevia (26.7%) (Daskalakis,

Anastasakis, Papantoniou, Mesogitis, Theodora, and Antsaklis, 2007). Furthermore, the results of a meta-analysis of over 26 000 attempted VBAC and over 17 000 repeat CS indicates that the hysterectomy rate for elective CS was 4.1 per 1000 compared with 1.6 per 1 000 for VBAC (Albers, 2005).

McMahon, et al (1996) conducted a population-based, longitudinal study of 6138 women in Nova Scotia who had previously undergone caesarean section and had delivered a singleton live infant in the period from 1986 through 1992. The results indicated that a total of 3 249 women elected to labour and 2 889 women chose to undergo a second caesarean section. There were no maternal deaths. The overall rate of maternal morbidity was 8.1% (n = 257) with 1.3% women classified as having had major complications (a need for hysterectomy, uterine rupture, or operative injury).

Although the overall rate of maternal complications did not differ significantly between the women who chose to labour and the women who elected CS, major complications were nearly twice as likely among women who laboured but subsequently required a CS. Goer (2001) argues that the excess risk is less than 1% in the major complication group 0.6% for elective CS versus 1.3% VBAC. She also argues that the studies coding of major and minor complications was flawed, with wound infection and transfusion being coded as minor complications.

Flamm et al (1988) supports the argument that the relative risk for maternal morbidity related to VBAC is very small. Their two year study looked at 57 553 live births in nine hospitals in California. Nearly 9% (n = 4 929) of women had one previous CS. Thirty six percent (n = 1 776) pursued VBAC with a 74% success rate (n = 1 314). Among this group there were no maternal deaths, but there were two hysterectomies reported; one due to scar dehiscence and the other for placenta accreta after a successful vaginal birth.

Although surgical birth in resource rich countries is now considered safe there remains overwhelming evidence that it has serious implications for a woman's future reproductive life regardless of the mode of birth she chooses. In a subsequent pregnancy a woman who has had a previous CS has a 25% greater risk of miscarriage (Goer, 2001) and is 4.5 times more likely to have a placenta praevia

(Lydon-Rochelle et al, 2001). There is also considerable evidence that rates of voluntary infertility are high in this group of women (Clarkson and Newburn, 2006; Hemminki 1996). This concept is discussed at length later in this chapter.

#### **2.4.2 Maternal Mortality**

The evidence pertaining to rates of maternal mortality in women attempting a VBAC versus a planned repeat CS in developed countries remains limited and mixed. However what does seem evident is that VBAC is safer than repeat CS. Certainly in numerous studies reviewed surrounding the safety of VBAC, there were no maternal deaths related to VBAC (Cahill et al, 2006; Lobel and Deluca, 2007; McMahon, et al 1996; Tan, et al 2006). In a retrospective cohort of 308 755 pregnant Canadian women who had previously had a CS between 1988 and 2000, the in hospital maternal death rate was higher in the planned repeat CS group (5.6 per 100 000) than in planned VBAC group (1.6 per 100 000) (Clarkson and Newburn, 2006).

Guisse et al, (2003) conducted a review of 20 studies that reported data for maternal or infant outcomes in women with previous CS. The aim of the review was to evaluate the benefits and harms of VBAC compared with repeat CS. Six studies were identified which specifically reported maternal death rates. One study of 6 138 women found no maternal deaths in either VBAC or repeat CS (McMahon et al 1996). In the other five prospective cohort studies involving 19 000 women there were two deaths among the women having VBAC and two among women having planned repeat CS (Flamm, Goings, Liu and Wolde-Tsadik, 1994; Flamm et al, 1988; Phelan, Clark, Diaz and Paul, 1987; Stovall, Shaver, Solomon and Anderson, 1987). These deaths were related to amniotic fluid embolism, haemorrhage and undiagnosed cardiac condition.

Furthermore Spong et al (2007) determined from their study that the rate of maternal death was seven per 100 000 for planned VBAC as opposed to 28 per 100 000 for planned repeat CS. As previously mentioned this study looked at over 39 000 women in 19 centres in US over a four year period. The major cause of death in the VBAC group was haemorrhage whilst in the CS group deaths were caused by amniotic fluid embolism, haemorrhage and anaesthetic complications.

Poor outcomes and risks of CS have also been highlighted in a major World Health Organization publication (Villar, et al, 2006). A global survey of some 97 000 CS births found that hospitals with the highest rates of CS also had the highest rates of maternal death and illness and the highest rates of neonatal death and intensive care admission.

Data collected in Australia has identified no increase in the maternal mortality rate following CS in the 2003 – 2005 reporting period despite the high rate of CS (Sullivan and King, 2006). However, reporting of classifications of the data has changed from previous reports. Data that was previously related to CS have been separated into a different classification category which has made it difficult to determine outcomes relating specifically to CS. This was also the case for the latest triennial data 2005 – 2008, which highlights no increase in maternal mortality associated with CS (Le and Tan, 2008).

### **2.4.3 Neonatal Morbidity**

Birthing vaginally after a CS is associated with low rates of neonatal mortality and morbidity. In Albers (2005) study of 1 453 VBAC's occurring in birth centres in the US, neonatal outcomes in relation to low Apgar scores (less than seven at five minutes) and perinatal deaths were recorded. The study indicated that 1% (n = 14.5) of newborns had low Apgar scores and this was comparable to women who had achieved vaginal birth without prior CS. Flamm et al (1988) also recorded similar results with less than 0.6% (n = 12) newborns of 1 776 births recording Apgar score of less than six at five minutes.

Infants born vaginally after CS are more likely to be gestationally mature and have less respiratory complications. In a study by Loebel and associates (2004) neonatal respiratory complications were noted in 1.9% (n = 18/927) of infants born vaginally and 4% (n = 19/481) for infants born by repeat CS. The mean gestational age of infants at birth was 278.4 days for the VBAC group and 273.7 days for the CS group. The decision to perform CS earlier than term, could possibly explain the increase in respiratory distress and neonatal intensive care admissions. The rate of neonatal intensive care admission was 4.2% (n = 39) for VBAC infants as opposed to 5.6% (n

= 27) for infants born by planned repeat CS. The suspected sepsis rates was 2.7% (n = 25) for VBAC infants and 3.5% (n = 17) for repeat CS infants. These findings are supported by Clarkson and Newburn (2006) who reported that in the UK in 2006, 18% of babies admitted to two major intensive care units for oxygen therapy were born by planned repeat CS. These findings suggest that the incidence of neonatal morbidity is higher in infants born by planned repeat CS than vaginally requiring admission to a neonatal unit.

A population-based study by Tracy, Tracy and Sullivan (2007) examined the birth records of over one million women who gave birth in Australia between 1999 and 2002. The authors calculated the adjusted odds of babies admitted to neonatal intensive care for low risk women, comparing primiparous women with multiparous women. The authors also calculated the odds of admission to neonatal intensive care in association with CS before and after onset of labour, instrumental birth and unassisted vaginal birth at 40 weeks gestation. What the study revealed was that when an elective CS was performed, the odds of admission to a neonatal intensive care unit or special care nursery were significantly increased weeks regardless of parity. The rate of admission after CS was 7.7% (n = 1 396) for primiparous and 9% (n = 3 686) for multiparous at 40 weeks gestation. The rate of admission for unassisted vaginal birth was 5.7% (n = 44 390) for primiparous and 4.1% (n = 96 673) for multiparous at 40 weeks gestation. Unfortunately this study did not identify why babies were admitted to the neonatal intensive care unit.

The incidence of fetal injury has also been reported in a number of large studies. This outcome is important as there is often a perception that vaginal birth is more dangerous for the baby and conversely safer in a CS (Clarkson and Newburn, 2006). Alexander, Leveno, Hauth, Landon, Thom, Spong, et al, (2006) conducted a prospective cohort study 37 110 CS in 13 hospitals across the US, to describe the type and incidence of fetal injury associated with CS. In just over 1% (n = 418) of the births an identifiable fetal injury was reported. The most common injury was skin laceration (n = 272, 0.7%). Other injuries included cephalhaematoma (n = 88), clavicular fracture (n = 11), brachial plexus damage (n = 9), skull fracture (n = 6) and facial nerve palsy (n = 11). The authors argue that certain injuries, including those listed above, appear to be unrelated to the mode of birth and can be seen with CS as

well as vaginal birth; highlighting that fetal injuries commonly attributed to vaginal birth can also occur with CS.

#### **2.4.4 Neonatal Mortality**

Over the last five years there has been an increasing attempt to examine the risk of neonatal mortality after CS. A study by MacDorman et al (2006) examined infant and neonatal mortality risks associated with primary CS compared with vaginal birth for singleton full-term women with no indicated medical risks or complications. The study analysed the US national linked birth and infant death data for the period between 1998 and 2001 (5 762 037 live births and 11, 897 infant deaths). The results indicated that neonatal mortality rates were 2.9 times higher among infants delivered by CS (1.77 per CS 1000 births versus 0.62 per vaginal 1000 births). In a more recent publication by the same authors (MacDorman, Declercq, Menacker, and Malloy 2008) but incorporating data from 2002, the overall neonatal mortality rate was 2.4 times higher among CS with no labour complications or procedures compared with planned vaginal births.

Loebel et al (2004) reported no difference in neonatal deaths among women planning VBAC or those planning repeat CS. In the three year study of 1 408 women, 481 elective CS and 927 VBAC, there were two neonatal deaths – one from each group. Both infants were diagnosed pre-natally with a lethal anomaly.

There is evidence from the literature to suggest that neonatal deaths seem to be significantly more frequent among babies born to women who plan VBAC than those who have a planned repeat CS. A population-based, retrospective cohort study by Smith, Pell, Cameron and Dobbie (2002) looked at data from the linked Scottish Morbidity Record and Stillbirth and Neonatal Death Enquiry encompassing births in Scotland over a five year period from January 1992 - December 1997. This data determined the risk of intrapartum stillbirth or neonatal death not related to congenital abnormality among women with uncomplicated term pregnancies who had a planned VBAC, compared with women having a planned repeat CS. There were a total of 313 238 singleton births between 37 and 43 weeks' gestational age in which the fetus was in a cephalic presentation. Among women who had a planned

VBAC (n = 15 515), the overall rate of birth-related perinatal death was 12.9 per 10 000 women. This was approximately 11 times greater than the risk associated with planned repeat CS (n = 9 014), more than twice the risk associated with other multiparous women in labour (n = 151 549), and similar to the risk among nulliparous women in labour (n = 137). This finding was due to an increased risk of death due to mechanical causes, including uterine rupture and death due to intrapartum anoxia not related to uterine rupture. However, the overall rate of birth-related perinatal death among women planning VBAC was not significantly greater than nulliparous women in labour.

Mozurkewich and Hutton (2000) conducted an analysis of 52 studies from developed countries which compared planned VBAC with repeat CS. Only 15 studies were accepted and reviewed. There were eleven studies that included 39 525 women and compared the effects of planned VBAC and elective repeat CS on fetal or neonatal mortality rate. In the planned VBAC group there were 136 fetal or neonatal deaths among 23 286 labour trials (0.6%); in the elective repeat CS group there were 56 fetal or neonatal deaths among 16 239 CS (0.3%). When perinatal deaths attributable to intrauterine death before the onset of labour, lethal anomalies, and prematurity were excluded, there were 38 deaths among 19 842 labour trials (0.2%) and 10 deaths among 13 292 elective CS (0.1%). Nine studies were included in this comparison, which found that fetal or neonatal deaths remained significantly more frequent among infants born to women undergoing a planned VBAC than among those with elective repeat CS. Whilst planned VBAC may result in small increases in fetal and neonatal deaths with respect to elective repeat CS, even when ante partum deaths and deaths that were attributable to prematurity and lethal anomalies are excluded, the absolute risk of perinatal death associated with planned VBAC remains extremely small at 0.1% (Clarkson and Newburn, 2006).

Flamm et al (1988) reported seven neonatal deaths out of 1 776 planned VBAC, giving a perinatal mortality rate of 4/1000. Five deaths occurred antenatally before 36 weeks with no evidence of uterine rupture and probably would not have been prevented by elective CS at term. There was one intrapartum fetal death related to a vacuum birth and the other death was attributable to extreme prematurity. In Flamm

et al's (1988) study which looked at outcomes of VBAC across nine centres in the US, the overall perinatal mortality rate, regardless of mode of birth, was 11 per 1000.

#### **2.4.5 Effects of Multiple CS**

Earlier in this chapter a considerable body of evidence was presented around the safety and appropriateness of VBAC and the benefits of multiple VBAC. To date there is limited research in literature surrounding the safety and appropriateness of multiple CS and the benefits of multiple CS. In fact there appear to be few benefits associated with multiple CS (Kitzinger 2005), as maternal morbidity increases continually with each successive CS. A study by Makoha, Felimban, Fathuddien, Roomi and Ghabra (2004) of 3 191 women who had birthed by CS in Jeddah Saudi Arabia, determined that incidence of placenta praevia increased from 3.9% (n = 34) in the second pregnancy following CS to 5.1% (n = 45) in the third pregnancy, 6.9% (n=31) in the fourth pregnancy, 9.4% (n = 16) in the fifth pregnancy and almost 17% (n = 13) in the sixth pregnancy. The authors also found that placenta accreta coexisted in 50% of the women who were undergoing their fifth CS. In this study 0.4% of women (n= 14) had a hysterectomy during CS because of haemorrhage secondary to placenta praevia. The risk of hysterectomy increased with each subsequent CS (0.7% - 3.9%) as did bladder injury (0.3% - 3.9%) and the presence and severity of adhesions (0.2% - 50.6%).

Women with two or more previous CS have increased risk of dense adhesions, uterine wound dehiscence and blood loss. Uygur, Gun, Kelekci, Ozturk, Ugur and Mungan's (2004) reviewed the outcomes of 301 Turkish women who had two or more previous CS. Almost 4% (n = 11) of the women had dense adhesions and 1.6% (n= 5) had uterine scar dehiscence. Despite this evidence the women's hospital where this study was undertaken remained committed to a policy to routinely perform a repeat CS on all women who have had a previous CS. Likewise Israeli researchers Nisenblat, Barak, Grines, Degani, Ohel and Gonen, (2006) compared the maternal complications of 277 women who had three or more CS with 491 women who had two CS in a teaching hospital in Haifa. Excessive blood loss 7.9% (n = 22) vs 3.3% (n = 16); difficult delivery of the baby 5.1% (n = 14) vs 0.2% (n = 1); and dense

adhesions 46.1% (n = 124) vs 25.6% (n = 124), were significantly more common in the multiple CS group.

Multiple CS also poses a risk to the baby. In a case control study by Seidman, Paz, Nadu, Dollberg, Stevenson, Gale, et al (1994) of 154 women having a fourth CS and 148 women having a second or third CS at two university hospitals in Israel, the results indicated increased maternal morbidity as indicated in previous literature but also increased neonatal morbidity. Babies from the high order CS group had significantly lower mean birth weight (3 050g vs 3 166g), gestational age, less than 37 weeks [16.2% (n = 25) vs 11.5% (n = 17)] and Apgar scores less than seven [18.2% (n = 28) vs 12.2% (n = 18)]. Just over 7% (n = 10) of the babies required neonatal intensive care which was due to respiratory distress related to prematurity.

## **2.5 Birth Mode and Psychological Wellbeing**

The birth of a child has an enormous lifelong impact on a woman. Pregnancy, birth and early parenting are normal physiological processes that have significant impact on emotional and social wellbeing (Simkin, 1991). Research has demonstrated that a satisfying birth experience is linked to important influences in a woman's life: self-efficacy, self-esteem, a sense of mastery and competency and a peak experience in life (Gamble and Creedy, 2001). The literature consistently describes the childbirth experience as a significant event of great psychological importance in a woman's life. The experience of childbirth determines women's thoughts of themselves and may positively affect their relationships with other family members (Humenick, 2006). Many women choose VBAC to fulfil a desire for a vaginal birth (Gamble and Creedy, 2001).

### **2.5.1 Psychological Impacts of CS on Women and Families**

While there is limited research directly comparing the psychological sequale of CS and VBAC there is an increasingly body of work that demonstrates poor emotional outcomes are associated with surgical birth. Women who birth by CS are consistently less satisfied, worry more about the baby's condition and experience increased fear during and after birth (Lobel and DeLuca, 2007). Loss of body image, lowered self-

esteem, and feelings of failure and self-blame have been reported to be higher in women experiencing CS (Fenwick et al, 2006).

In a prospective longitudinal study of 272 nulliparous women in Victoria, Australia, to determine the impact of obstetric interventions, women were given self-report questionnaires late in pregnancy and early in the postpartum period. The results indicate the women who had given birth by CS (n = 46) were significantly more likely to suffer symptoms of depression, irritability, diminished clarity of thinking and low self-esteem when compared with women who experienced vaginal birth (n= 136) (Fisher, Astbury and Smith, 1997). The implications of this for first time mothers have far reaching effects of grief, depression and post-traumatic stress disorder (PTSD). Likewise, Ryding, Wijma and Wijma (1998), suggest that Swedish women who wanted to have a natural birth that resulted in a CS would experience internal conflict, guilt, shame, fear and anxiety because they could not achieve a natural birth. As a means of coping the women changed the focus from their birth experience to having a live, healthy baby.

In early 2000, Koo, Lynch and Cooper (2003) reported postnatal depression (PND) was twice as likely in women who had an unplanned CS compared to vaginal birth. In a retrospective comparative cohort study of 250 women, 25.5% of women who had an emergency CS were identified with an Edinburgh Postnatal depression Scale (EPDS) score of 13 or above compared to 14.1% who had non emergency birth. The study identified increased risk of PND at six weeks postpartum and there were similar findings reported cross-culturally.

While less is known about the mental health effects of planned CS, preliminary analysis of Western Australia's largest longitudinal data set known as the Raine study, has identified some significant differences in the levels of self-reported PND between women who birthed vaginally and the group of women who birthed either by planned or unplanned CS (Kendell and Li, 2005). These findings however contrast with those of Patel, Murphy and Peters (2005) who conducted a relatively large prospective population based cohort study of almost 13 000 women with singleton, live born infants and term pregnancies, in Bristol, UK. They recruited women antenatally who were given a questionnaire at eight weeks postpartum, which included the EPDS. The researchers found that there was no association between

postnatal depression at eight weeks with an elective CS or emergency CS compared with planned vaginal birth.

Whilst PND may be considered one outcome of CS, the more significant psychological risk of PTSD has been linked with operative obstetric interventions (Fisher et al, 1996). Several studies have demonstrated that women, who birth by CS, particularly where it is unplanned, are more likely to develop symptoms of PTSD. In a small study by Ryding et al, (1998), 53 Swedish women who experienced emergency CS were interviewed. Fifty five percent (n = 29) experienced intense fear during at least one phase of the birth process fulfilling the criterion for developing PTSD. This was further evidenced in a study by Soet, Brack and Dilorio, (2003). In their study of 103 women from Atlanta, US, 34% (n = 35) reported the birth as traumatic, with 1.9% (n = 2) going on to develop all the symptoms of PTSD. This supports the Australian work of Gamble and Creedy, (2004), whose study of 499 women identified that one third (n = 164) had a traumatic birthing experience and reported the presence of at least three trauma symptoms. Nearly 6% (n = 30) met the criteria for PTSD. The presence of trauma symptoms was significantly associated with childbirth intervention and surgical birth.

Differences in parenting perceptions and behaviour have also been noted between women birthing by CS and vaginal birth. For example, women who birth by CS evaluate their baby less favourably. In the early 1990's Simons, Ritchie and Mullet (1992) undertook a prospective cohort study of 140 parents and their babies, to examine how parents rated the temperament of their babies at four and eight months of age, to determine the relationship between temperament, infant risk status and birth mode. Low risk infants born by CS were rated less optimally on three of the four temperament factor scores. Leiferman (2002) suggests that maternal depression not only negatively affects the health of the mother, but may also affect parenting practices and the health and development of her children. In a longitudinal study of 7 330 women who gave birth in 1988 from forty eight states in the US, 8.5% (n = 623) indicated depressive symptomatology at the time of the birth of their child and at two years post birth. Between 25% and 45% of the women indicated adverse parenting behaviours – smoking, failure to administer vitamins and failure to use child restraint in vehicles. Leiferman (2002) suggests that depressed women often display feelings

of lethargy and hopelessness for the future which influences the likelihood of engaging in health promoting behaviours that affect the women themselves and their children. Rowe-Murray and Fisher (2001) demonstrated that women who birthed by CS provided less tactile stimulation, caretaking, and intimate play with their babies at five months than women birthing vaginally. In a longitudinal, prospective study of 203 women the researchers found that CS birth had a negative effect on the first postnatal contact between the mother and her baby and the mother's emotional well-being. Women who have CS birth often wait many hours to see and touch their babies for the first time, whilst women who birth vaginally see and touch their babies almost immediately.

Women who birth by CS are also less likely to breastfeed and/or feed for a shorter duration. Limited mobility after CS often hinders a woman's ability to attach her baby. Pressure on the wound causes pain and establishment of lactation may be delayed after the birth (Cakmak and Kuguoglu, 2007). A retrospective cohort study of 400 women by Shawky and Abalkhail, (2003) from six medical centres in Jeddah Saudi Arabia, determined the rates of breast feeding at birth and at 12 months postpartum. Thirteen percent of women ( $n = 52$ ) had a CS, and were almost twice as likely to stop breast feeding within four months of the birth. Only three women from the CS group were still breast feeding at 12 months compared with 40% of women who birth vaginally ( $n=160$ ). It was suggested that babies born by CS do not start suckling until much later after the birth, which is further compounded by the separation of mother and baby following a CS. Babies thus miss out on the benefits of exclusive breastfeeding (Rowe-Murray and Fisher, 2001).

Whilst the impact of poor maternal mental health on the health and development of children within the family can be devastating and is of particular concern (Kendall and Li, 2005), suboptimal individual and family functioning and resilience has a considerable impact on the wider community, as the economic costs to society are significant (Williams, 2002). Webster, Pritchard, Linnane, Roberts, Hinson and Starrenburg, (2001) conducted a study on health care use and satisfaction with health care providers between depressed and not depressed post natal women, who attended the antenatal clinic at a women's hospital in Brisbane, Australia. Of the 574 women surveyed 11% ( $n = 55$ ) indicated they sought care for depression. The study also

identified that women with PND (n = 118) had more health care provider contacts more frequently (59%) than women without PND. These results are supported in research by Dennis (2004) as part of a population-based postpartum depression study in British Columbia. Five hundred and ninety four women were surveyed at one, four and eight weeks postpartum. Over 40% (n = 214) had contact with a health service on more than four occasions during the first four weeks postnatally and sought care for symptoms of depression. Thirteen percent (n = 77) were identified as having PND.

Sufferers of any form of emotional distress also require extended health care for both their psychological condition and for subsequent physical illness that may arise as a result (Dennis, 2004). In the UK in 2002, the economic cost of caring for a woman with PND was equivalent to at least \$1 000 AUD more than the cost of caring for a psychologically well mother, with expenditure increasing in proportion to the severity of the illness (Petrou, Cooper, Murray and Davidson, 2002).

In Canada, the total health and social service costs in the first four weeks postpartum differs significantly between women who have depression (EPDS  $\geq$  12) than those who have lower EPDS scores, doubling from \$512 AUD to \$1 047 AUD (Roberts, Sword, Watt, Gafni, Krueger, Sheehan and Soon-Lee; 2001).

## **2.6 Financial Considerations**

From a financial perspective, the cost of CS far outweighs the cost of vaginal birth. The high rate of CS has been identified as an obvious drain on resources in the health system in particular the longer hospital stay and higher rates of re-hospitalisation (Dennis, 2004).

Chung, Marcario, El-Sayed, Riley, Duncan and Druzin (2001), determined that in the US, women with one previous low transverse CS, VBAC was the most cost effective option based on a 74% probability of a successful vaginal birth. Using a computer analysis model to determine cost-effectiveness ratio per health related quality of life measures, the researchers found that the cost effective ratio for planned CS (\$147 711 AUD) was more than double that of the cost effectiveness ratio threshold of \$65

929 AUD for normal uncomplicated vaginal birth. Added to this is the cost of addressing the post natal mental health needs of women, who have a higher rate of anxiety and depression than among women who birth vaginally. The long term costs of healing families who have been disrupted by mental health problems in the postnatal period has also been identified as being a significant health burden (Dennis, 2004).

What we do know is that the increasing CS rate adds an economic burden to an already under resourced health system (Druzin, 2006). For example the latest *Trendstar Clinical Costing* results for 08/09 at KEMH demonstrated that the cost of a CS classified as having no complications was \$9 458 AUD (rising to \$12 852 with complications) as opposed to \$2 375 for a woman having a normal vaginal birth (rising to \$3 638 with resource use such as epidurals, augmentation). The direct cost of care provided to 1 000 women who had CS was equivalent to the cost of providing care to 4 500 women who birthed vaginally.

### **2.7 Influences on Women's Decision on Mode of Birth in a Subsequent Pregnancy after a CS**

As the CS rate continues to rise, the number of women facing the decision of VBAC or repeat CS will also increase. Eden, Hashima, Osterweil, Nygen and Guise (2004) determined that a woman's choice for mode of delivery appeared related to several individual factors including: desire for a vaginal birth, previous vaginal birth, avoidance of labour, and feelings about previous CS. There is also the relationship between childbirth expectation and fear and mode of delivery, which will define women's attitudes to mode of birth. Gamble and Creedy (2001) determined that women choosing VBAC had lower levels of anxiety and felt better prepared than women choosing planned CS. In their study of 310 women 6.4% (n = 20) preferred a CS which in part may be due to both internal and external factors influencing their decision. These factors are discussed further in the following section.

### **2.7.1 Women's Perceptions of their Previous CS Experience**

One of the major influencing factors on a women's decision of birth mode in a subsequent pregnancy was their perceptions of their previous CS experience. A study of 107 WA childbearing women who experienced CS highlighted that many women describe their CS as distressing, depressing and/or traumatic regardless of whether it was a planned or non-elective procedure (Fenwick et al, 2006). These findings were in line with the results of an earlier but smaller qualitative study by two of the same authors. In their on line survey, distributed through the Birthrites website, Fenwick, Gamble and Mawson (2003) reported that a number of the participating women described their CS birth as traumatic. Seventy eight percent (n = 43 of the 59) of the women indicated that their CS was traumatic, both emotionally and physically. Six major factors were identified that impacted on the women's perceptions of their birth experience and affected decision making. Five were negative; violated birth experiences; loss of control, health professionals' language, attitudes and care practices; the labour experience and the cascade of intervention; and surgical birth and separation from the baby. Being supported was the only positive theme identified. These findings support those elicited in the earlier work of Ryding et al, (1998). In their phenomenological study of 53 women who underwent emergency CS, Ryding et al found that over 50% (n = 29) of the women experienced intense fear at some point during the birth process. Likewise, in a qualitative study by Farnworth and Pearson (2007) which explored the decision making experience of 11 women from the northeast of England who have had a previous CS. The women identified their past CS experience as being associated with feelings of fear, unhappiness, blame and regret. CS was perceived however to reduce uncertainty about the birth.

While for some women these past experiences reinforce their belief in vaginal birth and drive their decision to seek out and work towards a vaginal birth this is not the case of the large majority (Fenwick et al, 2006; Fenwick, Gamble and Hauck, 2007). Women who had a CS as the result of an emergency – commonly failure to progress or fetal distress – usually did so after a long and difficult labour. Their choice for a repeat CS was one way for them to gain control over the birth experience and avoid another potentially traumatic experience and suggests that many women perceive

vaginal birth as being unsafe, and consider CS as being a safer option for them and their babies, particularly following a traumatic experience (Fenwick et al, 2006). Furthermore, an exceedingly medicalised model of obstetric care in WA was the most predominant model of care offered to women. Information available to women for alternative models of care was deemed to be insufficient and not supported adequately by the Western Australian Department of Health (Fenwick et al, 2003). There was a general lack of physical, psychological and emotional support offered to birthing women within the medicalised model of care and women were not adequately counseled in relation to pregnancy and birth outcomes (Gamble and Creedy, 2001). The emotional effects of a caesarean section include feelings of disempowerment and loss of control during the birth which in turn leads to feelings of self-worthlessness and low self-esteem, ultimately influencing a woman's confidence with early parenting (Fisher et al, 1997). In Farnworth and Pearson's (2007) study, women reported problems in bonding with their babies, which may have long term consequences for those children. This resulted in higher rates of post natal depression, and sometimes symptoms of trauma. Women also felt isolated and alone, because it seemed to them that nobody understood their feelings, or was willing to listen (Fenwick et al 2006). Women sometimes felt ashamed or guilty about the birth outcome, and the impact it had on their mental health, and would isolate themselves so as not to be seen as 'ungrateful' (Fisher, Hauck and Fenwick, 2006, p. 68). Marriage and relationship difficulties occurred as partners found it difficult to understand the woman's reaction to the birth. Women may develop an inherent distrust of the maternity system if they believed their CS was unnecessary or could have been avoided. This caused them to be highly anxious and fearful during subsequent pregnancies (Gamble and Creedy, 2001).

Of course some women do indeed have a positive CS experience. Clarkson, Derrick and Newburn (2006) review of the UK National Sentinel Caesarean Section Audit suggested that women, who had a positive first CS and medically justified reasons for a CS, were more likely to seek a repeat CS for the next birth because of the positive experience and perceived security.

Early work by Lau, Wong and Li (1996) which studied the attitudes of 99 women from Hong Kong who had had both a CS and previous vaginal birth found that

having the experience of a vaginal birth was associated with greater acceptance of VBAC. For those women who refused VBAC the convenience of repeat CS and fear of vaginal birth were the commonest reasons for choosing repeat CS according to the authors. Additionally, once a woman has had a caesarean section, her birth options for subsequent pregnancies are limited. If she chooses to birth vaginally in subsequent births she faces challenges in trying to find a care provider that will support her and faces restrictive policies/procedures when choosing a natural birth (Brown and Lumley, 1998; Roberts et al, 2007).

### **2.7.2 Professional Discourses around VBAC and CS**

Women's decisions around birth mode in a subsequent pregnancy after a CS are also heavily influenced by professional discourses. The previously mentioned qualitative study exploring the experiences of 11 women from the UK who had a previous CS demonstrated that health care professionals such as general practitioners (GP), midwives and obstetricians were highly influential in the decision making process (Farnworth and Pearson (2007). The authors noted, however, that obstetrician's discourses were particularly powerful in persuading women to have a repeat CS. Similar findings were also elicited by Fenwick et al (2006). These authors reported that obstetricians either recommended a CS, gave women no option (VBAC was never mentioned) or used such strong negative language around VBAC that women were convinced that CS was safer. Likewise, Clarkson et al (2006) reported that terminology such as: 'Failure to progress, Failed induction, Trial of labour, Trial of scar' was negative and judgemental. They argued that such language can conjure up images of shame and failure and can prompt women to not even attempt VBAC (Clarkson et al, 2006).

Further confirmation is also evident in another qualitative study exploring the decision making of 22 UK women in a next pregnancy after a CS. Here the authors, Emmet, et al (2006), found that obstetricians provided information about the procedure rather than information about the risk and benefits of CS. In addition information on VBAC was not presented positively to the women. Two women in the study also reported feeling forced into a mode of birth choice because of the

obstetricians' stance on the legal consequences. A prevalent risk discourse around vaginal birth and obstetrician's fear of litigation were prominent in all these studies.

There is now an extensive body of work that suggests obstetrician attitudes on mode of delivery can significantly influence women's choice and ultimately their decision (Emmett, Shaw, Montgomery and Murphy 2006; Gamble and Creedy, 2001; Habiba, Kaminski, Da Fre, Marsal, Blecker, Librere, et al 2006; Lupton, 1999; Quinlivan, Petersen and Nichols, 1999). Hopkins (2000) when exploring the high rates of CS in Brazil wrote, "Doctors clearly have more decision-making power in the hospital birthing situation, and their medical expertise and authority is often marshalled to convince a woman to "choose" a caesarean" (p. 725). Similarly Gamble and Creedy (2001) identified that the way in which obstetricians relayed information and the language they used also compelled women to heed their recommendations (Gamble and Creedy, 2001).

Perhaps this is not surprising given the research that demonstrates many female obstetricians seem to have little faith in their own ability to give birth vaginally, whilst male obstetricians held the same belief about their partners ability. In a cross-sectional study of 105 maternity units in eight European countries, 1 530 obstetricians were surveyed to determine their willingness to perform CS on demand (Habiba et al, 2006). Over 50% (n = 780) indicated that they considered this a preventive strategy against the possibility of legal consequences linked to complications of vaginal birth. Also of note was the finding that between one third and one half of obstetricians in the study indicated they would prefer a CS for themselves or their partner in an uncomplicated low risk pregnancy (Habiba et al, 2006).

In an Australian study Dodd and Crowther (2003) surveyed 1 091 obstetricians to determine the current care of pregnant women who had experienced one previous CS. The results indicated that only 40% (n= 328) of the obstetricians agreed that VBAC was the safest option for the mother, and would actively promote VBAC. However, only 20% (n = 166) agreed that VBAC was the safest option for the baby. Obstetrician attitudes on mode of delivery can significantly influence women's choice and ultimate decision. Little appears to have changed when we consider what

is referenced in the literature (Emmett et al, 2006; Gamble and Creedy, 2001; Habiba, et al 2006; Lupton, 1999; Quinlivan et al, 1999).

The choices women make about mode of birth after a previous CS is influenced by a number of factors, including the women's reflection about the previous experience and information from other trusted sources. The qualitative work by Farnworth and Pearson (2007), suggest that obstetricians were very influential because of their respected position, knowledge and expertise. Husbands, partners, GP's and midwives, however, were perceived in a supportive role rather than an influential role. Similarly, Habiba et al (2006) argues that this level of influence can persuade women to make decisions which are not necessarily right for them, because they were influenced by the "Obstetrician's own point of view of the perceived risk of VBAC and fear of litigation" (p. 652).

Obstetricians argue that women are requesting CS and that they are merely supporting this choice (Edwards and Davies, 2001; Kirk et al, 1990; Leeman and Plante, 2006; Quinlivan et al, 1999). Hopkins (2000) argues this is not the case and suggests the way in which Obstetricians relayed information and the language they used compelled women to heed their recommendations. Hopkin's phenomenological study looked at whether women in Brazil were choosing to birth by CS. In a country where the CS rate in private hospitals is now between 85- 90%, there was a lot of misconception around women's choice. The author interviewed 41 women at a number of time points throughout their pregnancy. Women indicated they expected and wanted a vaginal birth. However, by the time women were term there was a noticeable shift in their expectations and their choice. The level of influence from the doctor's was perceived as the reason for the change of decision, "Doctors clearly have more decision-making power in the hospital birthing situation, and their medical expertise and authority is often marshalled to convince a woman to "choose" a caesarean" (p. 725). Many of the women in Hopkin's study feared childbirth, in particular the pain associated with labour and concerns for the baby. The Obstetrician's involved in the women's care were believed to have used this fear to persuade women to make a choice which favoured CS.

### **2.7.3 The Private Discourses of Family and Friends**

There is also evidence that the private discourses of family and friends influence a woman's decisions around birth mode in a subsequent pregnancy (Farnworth and Pearson 2007; Fenwick et al, 2006; York, Briscoe, Walkinshaw and Lavender, 2005). The large qualitative study undertaken by Australian researchers Fenwick et al (2006) demonstrated that after health care professionals the opinions, attitudes and beliefs of family members and friends were most significant. Women looked to these people for reinforcement of the decision they had made. In contrast to the study outlined above York and associates (2005) found that women relied on discussions with relatives, friends or women who had similar experiences rather than relying on discussions with health professionals. This supports previous research by Gamble and Creedy (2001) who suggested that the women became distrustful of the maternity care system and turned to family and friends for advice and support.

### **2.7.4 Public Discourses**

The public discourses displayed in the popular media are also likely to influence women's decision making around birth mode. Social trends and peer pressure may result in the increase in CS rate (Christilaw, 2006). Media has also had a huge impact on displaying CS as the preferred birth option. In nearly every glossy magazine there is story featuring a celebrity or sports star that has had a CS birth – it has become a social norm. The media appears to promote CS whilst depicting vaginal birth as unsafe, archaic, disfiguring and ultimately socially unacceptable (Christilaw, 2006, p. 267). CS is viewed by many as the preferred option because it prevents pelvic dysfunction, urinary incontinence and complications relating to sexual function. However, there is limited evidenced based information for women to support this notion (Williams and Avery, 2006).

## **2.8 What Women say is Important When Wanting to Birth Vaginally after a CS**

Women's personal experiences, the amount of support they receive from caregivers, the quality of the caregiver-woman relationship and the involvement in the decision-making process are the main factors with which women evaluate their childbirth

experience (Salomonsson, Wijma and Alehagan, 2010). Pregnancy and birth has become increasingly influenced by medical technology and medical intervention is perceived as the norm in most developed countries (Johanson, Newburn and Macfarlane, 2002).

### **2.8.1 Non Biased Information**

Medical advice remains a key factor for women when making choices for childbirth. The amount and type of information maternity health care professionals provide to pregnant women, and their style of practice can significantly impact on decision making and ultimately the CS rate (McGrath, Phillips and Vaughan, 2010). Edozien (2007) argues that there is an unmet need for maternity care providers to provide sufficient information to women choosing repeat CS or VBAC, so that the woman's decision can be an informed one. In situations where the woman experiences high levels of uncertainty and anxiety, maternity care providers need to provide consistent information and support. Inconsistencies in information provided by different maternity care providers only add confusion and anxiety (Emmett et al 2006).

York et al (2005) support these findings indicating that there appeared to be a lack of both written information and professional opinion regarding repeat CS vs VBAC. The results of their study of 10 UK women indicated the lack of information led the women to base their knowledge on a mixture of professional, personal and media related sources, which were often quite biased. Women in this study felt that information was not routinely provided by maternity care providers, but was available on request. In reality this means that women are unlikely to get the information they need because they often do not know what questions to ask. Women would also only focus on information they felt was relevant to them and ignore all other information. A clear consistent approach to information provision and decision support would be welcomed by many women as would more consistent written and verbal information.

Emmett, et al (2006) argue that decision making is not just influenced by the amount and type of information received; but also the time at which the information is provided to the women plays a significant role in the decision making process.

Emmett et al (2006) conducted a qualitative study of 21 women in two maternity units in the United Kingdom who had recently birthed following a previous CS. The findings suggested that it was common for women to decide soon after giving birth, how they anticipate any subsequent birth. Similarly Clarkson et al (2006) suggest that many women are not given the opportunity in the early postnatal period to discuss the reasons for their CS and they are left to form their own conclusions. Often discussions about another birth do not take place until late in a subsequent pregnancy, leaving the women little time to prepare.

Shorten, Shorten, Keogh, West and Morris, (2005) conducted a prospective multi-centre randomized control trial of 227 pregnant women within three antenatal clinics and three private obstetric practices in New South Wales, Australia. Women who had one previous CS and were eligible for VBAC were recruited at 12 - 18 weeks of pregnancy and were randomised into an intervention group or a control group. At 28 weeks gestation, the intervention group were provided with a decision-aid booklet which described the benefits and the risks of elective repeat CS and VBAC. The results indicated that women who received the decision-aid booklet had significantly greater increase in knowledge and a reduction in decisional conflict at 36 to 38 weeks gestation than those who did not.

Montgomery, Emmett, Fahey, Jones, Ricketts, Patel, Peters and Murphy, (2007) suggests that the intervention trialled by Shorten et al, was left too late in the pregnancy and needed to be offered earlier. As a result these researchers conducted a similar randomised control trial of 742 women with one previous CS from three maternity units in England and Scotland. The women were recruited at 14 weeks gestation and were allocated to either the usual care group or the intervention group. The intervention was a computer based decision-aid which provided women with information about the risks and benefits of repeat CS and VBAC. Unlike Shorten et al's intervention that was provided at 28 weeks gestation, this intervention was delivered early in the pregnancy. The results suggested that twice as many women from the intervention group had a preference for VBAC over CS. However, one third of the women remained uncertain about their birth mode and the authors suggested that using the decision-aid alone was not enough to increase intention to VBAC, but needed to be supported by information from health professionals providing antenatal care.

Further to this, Meddings, MacVane Phipps, Haith-Cooper and Haigh, (2007), in a phenomenological study of eight pregnant women from a hospital in the north of England; found that all eight women thought that gaining information during their pregnancy about what options and choices were available to them, helped them to feel more prepared and more confident. The women stated that the information helped give them a sense of control and power in a situation where they did not know what to expect. For many of the women, being given a choice about mode of birth was very important and most indicated that trying for a vaginal birth was their preference. A clear sharing of information and knowledge between a woman and her carer is essential to ensure that decisions are informed by accurate evidenced-based information, particularly about the risks and benefits of modes of birth following CS.

### **2.8.2 Supportive Practitioners**

Research demonstrates that women who receive midwifery care and support during pregnancy and childbirth have better outcomes, including less instrumental births and reduced rates of CS. Midwifery led care has also been found to increase overall satisfaction for the woman (Clarkson, Derrick and Newburn 2006; Farnworth and Pearson 2007; Kitzinger, 2005). Early research by Butler, Abrams, Parker, Roberts and Laros, (1993) of 4 607 women in California was undertaken to examine whether care by a certified nurse-midwife was associated with reduced risk of CS. Three thousand five hundred and fifty one women received care by obstetricians and 1 056 women were cared for by nurse-midwives. The results indicated that women cared for by nurse-midwives had a lower incidence of CS, 9.75% (n = 103) compared with 12.3% (n = 437) for those cared for by obstetricians. The results also indicated reduced rates of augmentation of labour, analgesia requests and neonatal intensive care admissions for babies of women who had pregnancy and labour support from a nurse-midwife. A decade later, research by Bodner- Adler, Bodner, Kimberger, Lozanov, Husslein and Mayerhofer (2004) suggest this trend has continued. They argued that the reason women have better outcomes is that the midwifery care and support women receive during pregnancy and labour enables them to cope more successfully.

Women want to make informed decisions regarding their care and they want to be supported in those decisions. An early Australian study by Brown and Lumley (1998) investigated the views and experiences of care in labour and birth of 1 336 women in Victoria and found that over 96% (n = 1 282) of women wanted to be involved in the decision making processes surrounding labour and birth and expected to be supported in the decisions made. In a prospective cohort study of 3 061 Swedish women to investigate women's views of antenatal care, the results indicated that over 51% (n = 1 564) of women felt it was very important to them to receive consistent support from carers they trust, whilst the remaining women felt it was more important to have continuity of care with a known midwife (Hildingsson, Waldenstrom and Radestad, 2002).

## **2.9 What Antenatal Midwifery Care can Offer?**

In Australia, midwives are the main providers of maternity care regardless of the model of care. The primary role of the midwife during the antenatal period is to help and assist pregnant women through teaching, guidance, support and encouragement (McCrea, 1993). Midwives are registered practitioners that can provide care to women across the childbirth continuum. They are recognised as responsible and accountable professionals who work in partnership with women to give the necessary support, care and advice during pregnancy, labour and the postpartum period, to conduct births on the midwife's own responsibility and to provide care for the newborn and the infant (International Confederation of Midwives , 2011).

Continuity of carer is seen as being one of the fundamental principles underpinning woman-centred care (Page and McCandlish, 2006). Continuity of care ensures there is a shared philosophy and approach to the care that a woman receives. This is an important consideration in women's decision making regarding mode of delivery. Knowing your midwife prior to labour is known to decrease CS rates (Wen, Rusen, Walker, Liston, Kramer and Baskett, 2004) and anecdotally this is true for VBAC (West Gippsland Health Care Group, 2000).

There is limited research about continuity of care which looks at the antenatal period specifically. Much of the research focuses on midwifery care across the continuum of

pregnancy, labour and birth and the postnatal period. Furthermore, there is no research that concentrates specifically on continuity of antenatal care for women who have experienced a previous CS. What research does exist looks at overall antenatal care. For example Davey, Brown and Bruinsma (2005) conducted a population-based survey of 1 616 women who birthed in a 14 day period in September 1999 in Victoria, Australia. The authors examined a number of issues including how well the women thought the antenatal caregivers got to know them and the impact of continuity of care on the overall rating of antenatal care. The results indicated that women who experienced care by the same midwife felt they were kept well informed, had their concerns and worries taken seriously and were never rushed through the appointment. Despite this, the women were less concerned about having the same midwife when rating care, than they were about having emotional support, information provision and being involved in decision making process.

### **2.9.1 Benefits for Midwives Providing Antenatal Continuity of Care**

Although there is little research in relation to midwives views on continuity of care models, what does exist suggests there are positive benefits for midwifery practice. The research suggests that midwives' beliefs concerning the importance of continuity of care during pregnancy are similar to those of pregnant women (Freeman, Adair, Timperley and West, 2006; Proctor, 1998; Stevens and McCourt, 2002; Walker, Moore and Eaton, 2004). Midwives who provide continuity of care expressed greater job satisfaction. Stevens and McCourt, (2002) interviewed 20 midwives who provided care in a case load model in Cambridge, London. Midwives in the study expressed feeling like real midwives in their ability to provide holistic care to women. They were able to develop relationships with women which was described as a major source of satisfaction and an important reward of the job "knowing women who I provide care for makes the job fulfilling and meaningful" (Stevens and McCourt, 2002, p. 113).

The view that the midwife-client relationship is a key factor in midwife satisfaction is supported by Walker et al (2004) qualitative study of 22 midwives from North Queensland employed in continuity or care or team midwifery models. The authors

found that the midwives identified an increase in autonomy, job satisfaction and relationship with the women in their care.

Recruitment and retention is also a major issue for midwifery practice. It was estimated in 2007, the cost of recruiting, orientating and mentoring a midwife was approximately A\$64 000 (Homer, Brodie and Leap, 2008). Midwives who worked in models which had varying degrees of continuity of carer found it difficult to develop a relationship with the woman. This led to frustration and decreased job satisfaction, which may ultimately make the midwives seek alternative employment where they could achieve a continuity of carer model. Job satisfaction is one factor that reduces turnover and increases retention thereby reducing costs (Homer et al, 2008).

### **2.9.2 Financial Benefits of Antenatal Midwifery Continuity of Care**

There is evidence to suggest that continuity of midwifery carer may cost less than standard or traditional models with fragmented care (Homer et al, 2008). It may be in part due to the reduced costs as a result of decreased intervention rates, length of stay and readmission rates. As previously discussed the more intervention a woman has the higher the cost to the service. Petrou et al (2002) demonstrated that uncomplicated normal birth costs significantly less than CS, not only in the immediate sense but also in terms of community care and readmissions. Furthermore, Sandall, Devane, Soltani, Hatem and Gates (2010) review of 11 continuity of care models, involving 12 276 women across four countries, found that midwife-led models were generally cheaper, and women and babies spent much less time in hospital. More significantly, however, was that there was no increased likelihood for any adverse outcome for women or their babies associated with receiving midwife-led care.

### **2.10 Conclusion**

The literature reviewed in this chapter demonstrates that the time taken to recover from a CS is generally longer than for a vaginal birth, that adverse physical and psychological outcomes are more pronounced and that there is significant risk to the baby. Women entering a pregnancy following a previous CS are faced with a number

of complex dilemmas, notwithstanding the physical and psychological issues. Women are heavily influenced by their previous experiences of pregnancy and birth care, the experiences of their friends and family and the public discourses about childbirth. To further add to the quandary of making a decision in relation to birth mode, women are assailed with a barrage of information which is confusing and conflicting and does not address their specific needs. Moreover, the majority of women who have experienced CS are being ushered into a medical model of care that prevents them from building relationships and trust with their care providers. The model provides no opportunity for partnership, for the women to be the primary decision-maker or for them to have control over their pregnancy and birth experience. In addition, the financial cost of unnecessary childbirth intervention to families, communities and the health system is unsustainable.

In contrast, midwifery managed models of care, such as the NBAC service are woman-centred, giving the women control of their experience. Midwives and women establish a collaborative relationship where the women are involved in the decision-making process, are given unbiased advice about pregnancy and childbirth and are supported in their decisions. Midwifery models of care are also cost-effective, which in an environment of economic constraint is a health priority. Initiatives that reduce the CS rate and in particular the repeat CS rate are critical in revitalizing a culture of natural birth, reducing fear of childbirth, empowering women and increasing job satisfaction for midwives. The evidence from the literature highlights an imperative for Governments and health services to support more midwifery models of care for women with a previous CS; if there is to be any reduction in the spiraling CS rate. The NBAC service is one such model that was established to address the concerns of one health service about the increasing CS rate. The NBAC service provides woman-centred, midwifery led, antenatal continuity of care for women with a history of previous CS, regardless of their birth intention.

Furthermore it is crucial that the outcomes of these models are evaluated to inform the future direction for maternity services in Australia. The following chapters outline the evaluation of the NBAC service's two intervention points and describes the experiences of the midwives who worked in the NBAC model.

## **CHAPTER THREE: THE NBAC POSTNATAL SERVICE: Method, Findings and Discussion**

### **3.1 Introduction**

The aim of this study was to evaluate a new model of care in Australia designed and implemented to improve the care provided to pregnant women who had experienced a previous caesarean section (CS). As described in Chapter One the Next Birth After Caesarean section Clinic (NBAC) provided a postnatal and antenatal service that consisted of a 'package' of care items that targeted these two specific points in time.

The clinic was designed to service all women with a history of one previous CS, regardless of their birth mode preference. The NBAC clinic is a service available to all women who have had a previous caesarean birth. Even pregnant women with complicating medical conditions are able to access some NBAC services whilst being managed by their specialist obstetric team. When the NBAC antenatal service was developed all women who had one previous CS were referred to the service.

The NBAC service sought to provide care at two critical intervention points; in the postnatal period immediately after a woman's first CS; and in the antenatal period of a woman's subsequent pregnancy after a first CS.

**Postnatal service:** The postnatal arm of the service targeted women who had experienced their first caesarean section. The service included an early hospital postnatal visit from the Next Birth After Caesarean (NBAC) midwives where by women were given an opportunity to share their experiences. Women were subsequently given an evidence based resource on birth after caesarean as well as the midwives contact details should they wish to contact them at any time for further information and/or support.

**Antenatal Service:** The antenatal service provided continuity of midwifery care during early pregnancy at approximately 14 - 16 weeks, evidence based information about choice for either a planned CS or VBAC, birth preparation classes (VBAC preparation class or planning a positive CS class) and assistance with writing a birth plan according to individual choices. The service was about promoting choice and

not just VBAC. Although a secondary goal of the service was to increase the VBAC rate, this was not the message communicated to the women who were provided information to make an informed choice. Their decision around their preferred birth mode was strongly supported. As previously stated the information package given to women was developed by the committee.

The Positive caesarean birth class runs for 2 hours, was offered once a month and was available to all women having an elective caesarean birth. The purpose of the class is to prepare women for their caesarean – to inform them and give them a forum to ask questions. A midwife presents indications for caesarean and takes the women through each stage of the day, where they will go, and the order of how things happen on the day from admission to transfer to operating theatre and back to the postnatal ward. Anaesthetic options are also discussed. The women and their partners are shown photos of women in theatre during and after their caesarean. They are also taken on a tour through the admission area, operating theatre and anaesthetic room and recovery.

A Scheduled Caesarean Section Birth Plan (MR 290.01) (Appendix A) is also completed with the woman to ensure she is able to outline her preferences for her care during the birth and in the immediate postnatal period.

The NBAC postnatal and antenatal service interventions offered different care packages. As previously noted, this study incorporated an evaluation of both services and as such, the methods, findings and discussion related to each service will be combined and presented separate chapters.

In this chapter the overall research design, relevant to both antenatal and postnatal services will be described. This will include a discussion on the importance of evaluating services and a rationale for using a comparative descriptive approach. This will be followed by outlining the generic elements of the research design such as study setting and ethical considerations. The remaining sections of Chapter Three will be dedicated to presenting the evaluation of the NBAC postnatal service. Firstly the aim and methods relevant to the NBAC postnatal service will be outlined and three proposed hypotheses will be presented, immediately followed by the

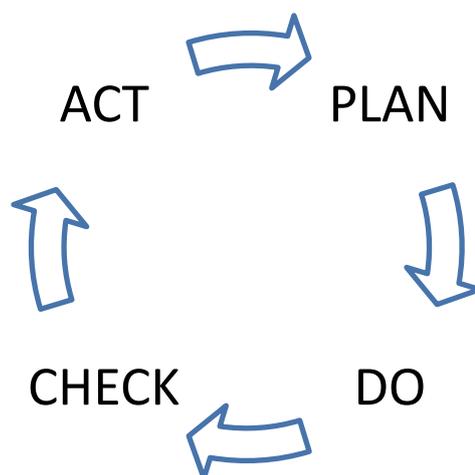
presentation of results. The chapter will conclude with a discussion of these findings within the context of relevant literature plus relevant limitations for this NBAC postnatal evaluation. Chapter Four will present all aspects relevant to the evaluation of the NBAC antenatal service along with the presentation of six hypotheses. Finally, findings from the qualitative component of the study, designed to elicit the midwives experiences of working within the new NBAC services model, will be presented in Chapter Five.

### **3.2 Defining Evaluation Research**

As discussed in Chapter One, this study aimed to evaluate a new service, the Next Birth After Caesarean (NBAC) service. Evaluation is the process of determining the worth or value of something (Hawe, Degeling and Hall, 2007) by comparing evidence against specified criteria. A systematic, comprehensive approach is needed to evaluate the effectiveness of programs within healthcare. Healthcare providers must justify programs to agency, institutional and organisational decision-makers as the competition for health care dollars increases and choices for future funding options are being made (Hoggarth and Comfort 2010; Ruzicki, 1987). Evaluation of programs is an essential part of the quality cycle, which forms the foundation of healthcare improvement in Australia (Royal Australian College of General Practitioners, 2009).

A quality improvement cycle can be typically defined into four steps – Plan, Do, Check and Act (Royal Melbourne Institute of Technology (RMIT), 2000) as outlined in Figure 3.1. Application of the quality improvement cycle will be discussed in relation to the overall study which evaluated both NBAC antenatal and postnatal services.

The following figure illustrates the quality cycle.



*Figure 3.1* The Quality Cycle (RMIT, 2000 p 4).

The quality improvement cycle can be described as a planned sequence of systematic and documented activities aimed at improving a process. The aim of the NBAC service is to improve the quality of care offered to childbearing women and their families who have experienced a CS. This is expected to be achieved in two ways, firstly by improving the way antenatal care is provided (the process) and/or secondly by improving how postnatal care is provided to women (the outcome of the process) (Tague, 2004).

The *Plan* step for this study was to identify how women with one previous CS received routine antenatal care. This included identification of the need to implement the change, reflect on and interpret relevant information concerning the existing process, define the current process and the opportunities for improvement, plan how to monitor the progress and the effectiveness of the change and then document the goals and objectives. The *Do* step was the establishment of the NBAC service including documentation of how the service was implemented. The *Check* step was to monitor and review the NBAC antenatal and postnatal service, which included recording of observations and results (planned and unexpected) between comparison and NBAC groups to measure the outcome variables such as fear of childbirth and self-efficacy, for example. Finally the *Act* step was to revise and plan how to use the results in making recommendations and further refining the service (RMIT Planning and Quality Unit, 2000; Tague 2004).

Evaluation is therefore incorporated within the 'check' and 'act' steps of the quality improvement cycle as the purpose is to produce information about the performance of a program in achieving its objectives. The information gained then informs the 'plan' and 'do' steps. Most evaluations are conducted to answer two basic questions: - Is the program working as intended? Why is this the case? (Hawe et al, 2007). Evaluation of a program or service also adds to the existing knowledge base, promotes evidence-based practice and ensures programs are reviewed so they will be more effective and enable health care providers to develop and evaluate innovative interventions that are responsive to feedback from a Quality cycle process (Owen, 2006; Ruzicki, 1987).

Ruzicki (1987), a well cited authority on health care evaluation, suggests there are three types of evaluation process. Despite articulating these processes over 30 years ago they still remain relevant and useful to understanding evaluation (Hawe et al, 2007; Owen, 2006; Ruzicki, 1987). The first is called 'targets' of evaluation, which includes individual progress or program/service function. Individual evaluation is conducted to determine the progress of an individual patient in achieving established outcomes. This is important not only for determining the progress of the individual towards the goal, but also for evaluating a total program or service where data from a group of participants is examined. Target evaluation also determines if a program or service is functioning effectively and if the overall group of participants achieved desired objectives. For example this study was formulated to determine if the NBAC service is meeting its overall objectives.

Secondly, researchers need to consider the purpose of the evaluation which may be undertaken for differing reasons. Determining the purpose will assist with identifying the evaluation techniques to be used. In this context 'purpose' can include needs assessment, formative evaluation and summative evaluation. Needs assessment is an analysis of a current situation to determine if a program is necessary or feasible (Dehar, Casswell and Duignan, 1993; Steckler and Linnan, 2002). The establishment of the NBAC service was in response to the high repeat CS rate in Western Australia; which was 86.3% in 2010 (Joyce and Hutchinson, 2012) and a needs assessment that standard maternity services were not adequately addressing the needs of women who had experienced a CS (Health Department of Western Australia, 2007). Formative

evaluation seeks to strengthen or improve a program or intervention by examining the delivery of the program, the quality of its implementation and the organisational context, personnel, structures and procedures across the time period the service was being developed.

Summative evaluation looks at the effectiveness of a program or service that has been in place for a period of time (Smith and Brandenburgh, 1991; Trochim, 1999), and examines the effects or outcomes of an intervention or program and was the focus of this study. Summative evaluation describes what happens subsequent to delivery of the program and assesses whether the program can be associated with the outcomes produced. In this case the study involved a comparison between a group of women with a previous CS receiving standard antenatal and postnatal care and a group of women with a previous CS receiving antenatal and postnatal care through the NBAC service. This type of evaluation also determines the overall impact of the associations beyond the immediate target outcomes, which in the case of this NBAC postnatal service evaluation is the birth intention for the next pregnancy. Finally, summative evaluation can estimate the relative costs associated with the program; however this study was not designed to assess health care costs (Ruzicki, 1987).

Whilst there is a process for evaluating programs as outlined previously, Hawe et al (2007) suggest there is also an order for evaluating programs. Firstly, 'process evaluation' will determine the assessment of reach, quality, implementation and satisfaction. This type of evaluation will help develop and (re)form new programs (formative evaluation) and should be used routinely to see if programs remain on track (quality control). Secondly, 'impact evaluation' is said to assess the immediate effect of the program or service on outcomes. Thirdly, 'outcome evaluation' is longer term and looks at the subsequent effect on health outcomes as a result of a program that has been in place for a number of years rather than the process of evaluation (summative evaluation).

### **3.3 Comparative Descriptive Evaluation Design**

This study employed a comparative descriptive approach to evaluation using a pre / post-test design for both the NBAC antenatal and postnatal services. A comparative

descriptive design can be used to examine and describe differences in variables in two or more groups. Descriptive statistics and inferential statistical analysis are commonly used to examine differences between or among groups (Cresswell and Plano Clark, 2007). In comparative descriptive studies such as this one, an intervention is developed that is anticipated to result in positive differences between those who receive the intervention compared to those that do not. Generally the intervention is designed to maximise the differences between the groups. In this study women in the pre-test groups were those who received standard care (either in the postnatal or antenatal period). To recruit an unbiased comparison group that was not influenced by the NBAC service, sequential sampling was employed and these women were recruited 6 – 8 months prior to the establishment of the new service. The post-test groups included women who received care from the NBAC postnatal or antenatal services. Data from this group of women commenced four months after the establishment of the service and continued for a period of five months.

### **3.4 Setting**

King Edward Memorial Hospital (KEMH) is Western Australia's only tertiary referral centre for obstetrics, gynaecology and neonatology. The CS rate at KEMH was 34.2% in 2009 which was higher than the overall CS rate across WA (33.3%). From January 2009 to December 2009, 66.3% (n = 1224) of CS were classified as emergency or non-elective and 33.6% (n = 621) as elective. Fifteen percent of CS were performed at less than 34 weeks gestation. On average, there were 144 women over 34 weeks of pregnancy giving birth by CS per month with approximately 30% (n= 44) of these being first time mothers (KEMH Safe Tracking Obstetric Record Keeping (STORK) Database 2009). In any 12-month period there were approximately 2258 pregnant women booked at KEMH who had experienced a CS. Seventy five percent (n = 984) of KEMH women chose a repeat CS in 2009. Of the women planning to labour and birth vaginally only 43.5% (n = 246) had a successful VBAC (STORK Database 2009). In real terms this means that the overall number of women choosing to VBAC is only 25% of the total number of women who had a previous CS.

### **3.5 Ethical Issues**

Permission to conduct the study was granted from KEMH Ethics Committee (1469/EW) and the Human Research Ethics Committee at Curtin University. As the midwifery manager of the antenatal clinic at the time of the study, the researcher was directly involved in the antenatal care of women who had experienced one CS. In light of this, a research assistant was engaged to assist with recruitment and data collection. At the time of recruitment all participants were provided with a plain English information sheet (see Appendix A) detailing the nature and purpose of the study, use of information and an assurance of confidentiality by the use of a number-coding system. An opportunity for participants to ask questions of the research assistant was provided. Women who agreed to participate were asked to sign a consent form (see appendices B and C). Participants were assured of the voluntary nature of their participation in the research and that they were free to withdraw from the project at any time without penalty. The master computer file containing personal details, completed questionnaires and the transcribed-data computer files were password-protected, and located separately to stored de-identified raw data. The researcher, research assistant and the researcher's principal supervisor were the only people to have access to the files. Raw data is being securely stored in a locked filing cabinet at KEMH for a period of five years beyond publication of the results. No identifying information will be used in written reports, presentations or publications. All data was managed in accordance with the National Health and Medical Research Council's guidelines (2007).

### **3.6 Evaluation of the NBAC Postnatal Service**

As outlined in the introduction the next section of this chapter is dedicated to presenting all the relevant material pertaining to the evaluation of the postnatal component of the NBAC service. This includes the aims, methods, outline of the NBAC postnatal service (intervention), results, discussion and limitations. The section commences with an outline of the specific aims of the evaluation of the NBAC postnatal service.

### **3.6.1 Aim**

The aim of this phase of the study was to evaluate the NBAC postnatal service at two time points (in hospital prior to discharge and 12 weeks postnatal) to determine if women who accessed the service experience a change in childbirth fear, childbirth confidence, and intention to pursue VBAC in a subsequent pregnancy; in comparison to women who received standard postnatal care. The overall purpose of the NBAC postnatal service was to inform women, who had experienced a first CS, of their birthing options for a subsequent pregnancy. An aim of the service was to increase the intention of these women to seek a vaginal birth in a subsequent pregnancy. It was also anticipated that due to the service, the level of childbirth fear may be reduced and self-efficacy (confidence) increased for the next pregnancy and birth. Therefore, the evaluation thus proposed the following hypotheses:

Women who received an intervention visit from midwives in the NBAC postnatal service compared to women who did not receive a visit would have:

- Increased intention to birth vaginally in a subsequent pregnancy;
- Reduced childbirth fear; and
- Increased self-efficacy (confidence).

In addition to the hypotheses, one objective was stipulated to determine if there was an association between current childbirth fear and birth intention for a subsequent pregnancy.

### **3.6.2 Method**

As broadly outlined earlier in this chapter, evaluation of the NBAC postnatal service involved use of a comparative descriptive design. The study compared two groups of women who had experienced a first CS, focussing on two time points in the postnatal period. One group of women received standard postnatal care (Comparison group), whilst the other group received the postnatal service intervention from the NBAC midwives (NBAC group). In addition, socio-demographic variables, childbirth fear, self-efficacy and birth intention for the subsequent pregnancy were also compared. An overview of the study design is presented in Table 3.1.

Table 3.1

*NBAC Postnatal Service Study Design*

<b>NBAC Postnatal Service Intervention Evaluation for women who had experienced their first caesarean section</b>	
<b>February to May 2008</b>	<p><b>Comparison group</b></p> <p><i>3 to 5 days in hospital postnatal (Time One)</i></p> <ul style="list-style-type: none"> <li>• Demographic data, model of care, antenatal education and expectations of having a CS</li> <li>• Childbirth fear and self-efficacy</li> </ul> <p><i>12 weeks postnatal (Time Two)</i></p> <ul style="list-style-type: none"> <li>• Childbirth fear, self-efficacy, and intended / preferred birth mode for subsequent pregnancy</li> </ul>
<b>November 2008 to March 2009</b>	<p><b>NBAC group</b></p> <p><i>3 to 5 days in hospital postnatal (Time One)</i></p> <ul style="list-style-type: none"> <li>• Demographic data, model of care, antenatal education and expectations of having a CS</li> <li>• Childbirth fear and self-efficacy</li> <li>• Visit by NBAC midwife (<b>NBAC Service Intervention</b>)</li> </ul> <p><i>12 weeks postnatal (Time Two)</i></p> <ul style="list-style-type: none"> <li>• Childbirth fear, self-efficacy, and intended / preferred birth mode for subsequent pregnancy</li> </ul>

**3.6.3 Sample**

Women were invited to participate in the NBAC postnatal service evaluation if they met the following inclusion criteria:

- aged 18 years and over at the time of the study;
- had just experienced a CS for their first birth;
- were admitted as public patients; and
- had sufficient comprehension of English to enable them to understand the purpose of the study, the content of the questionnaire and provide informed consent.

The pre NBAC service antenatal and postnatal samples were drawn from all women who had experienced a previous CS and the post NBAC service establishment antenatal and postnatal samples were also drawn from all women who had a previous CS and were referred to this new clinic. Pregnant women not attending the NBAC antenatal service were the exception and may have accounted for a small number of private women or women with very complex issues who attended a specialised such as the drug and alcohol clinic.

### **3.6.4 Sample Size**

Prior to the commencement of the NBAC service, 75% of KEMH women were choosing a repeat CS despite evidence suggesting VBAC could be a feasible birth option for 60 to 80% of women (Guisse, et al., 2010). The NBAC service aimed to provide quality care to women who have experienced a previous CS by providing emotional support and consistent evidence-based information. The rationale behind our sample size calculation focused upon whether the emotional and information support provided through the NBAC service could better inform women of all birth options thereby increasing the percentage of women considering a VBAC option. To determine a 25% point increase in the number of women identifying an intention to consider vaginal birth in a subsequent pregnancy, which may be optimistic; a sample size of 58 women per group was recommended (2 sided test, alpha of 0.05, desired power of 0.80) (Brent; no date; [www.stat.ubc.ca/~rollin/stats/ssize/b2.html](http://www.stat.ubc.ca/~rollin/stats/ssize/b2.html)). We accounted for up to 20% for loss to follow-up and therefore aimed for 70 per group. Achieving these numbers was deemed to be feasible based upon the study design (pre / post), whereby the comparison groups had to be recruited prior to the commencement of NBAC services (within a six month period).

### **3.6.5 Standard Care**

Women in the comparison group received standard postnatal care from midwives who worked on the postnatal ward according the KEMH Routine Postpartum Care guidelines (see Appendix D). Standard care is care that is provided by rostered midwives on any given eight hour shift in a 24 hour period. During their hospital stay

women may see as many as ten different midwives. One midwife may care for the woman on two consecutive days, but this is the exception rather than the norm. Women receiving standard care were provided with information in relation to birth after CS (see Appendix F), postnatal depression and anxiety (see Appendix G).

### **3.6.6 NBAC Postnatal Intervention**

Midwives from the NBAC Clinic visited women who had experienced their first CS between 3 and 5 days postnatally. After discussion with the ward coordinator, the midwives identified women who met the inclusion criteria for a postnatal visit. Inclusion criteria included all public women who had experienced a CS at term for a live birth and had not experienced a previous VBAC. Women who experienced a pre-term birth, stillbirth or neonatal death, were private obstetric patients and had experienced a previous vaginal birth were not visited. The NBAC midwives read the woman's medical record to ascertain the reason for and to determine if medical officers had provided information, feedback or had a discussion about the labour and resultant CS. This was to assist them in providing information appropriate to each woman's circumstance. After introducing themselves to the women, the NBAC midwives provided a brief overview of the NBAC service, an evidence based post caesarean information package containing information about the NBAC service, including contact details of the NBAC clinic(see Appendix E), CS, VBAC (see Appendix F), postnatal depression and anxiety(see Appendix G), and caesarean support group (see Appendix H). The women were advised they could contact the service at any time for any information relating to a future pregnancy and birth.

### **3.6.7 Recruitment**

Recruitment and data collection for the comparison group occurred in the six to eight month period prior to the commencement of the NBAC Clinic. Recruitment and data collection for the NBAC postnatal intervention group commenced four months after the clinic had commenced. Women who had experienced a CS for their first birth and met the inclusion criteria were conveniently recruited between the third and fifth postnatal day. Women were provided with a written information sheet and given an opportunity to ask questions. If interested, women were asked to sign consent where

upon they were provided with researcher contact details. As discussed earlier, the researcher was also the manager of the NBAC clinic and director of antenatal services therefore a research assistant was engaged to assist with the recruitment and data collection to reduce the potential for coercion.

### **3.6.8 Data Collection**

The first data collection point (Time One) was at recruitment and consent; three to five days postnatal. At this time women received a self-administered questionnaire package which included a baseline social and demographic sheet and a number of validated measures for childbirth fear and self-efficacy. The package also included an addressed postage paid envelope so the participant could complete the questionnaire package in their own time prior to or after discharge from the hospital. If completed prior to discharge the envelope was returned to the research assistant or placed in a locked box in the midwifery handover room on the wards.

The second data collection point (Time Two) was at 12 weeks postpartum with the same questionnaire package being administered over the telephone. At this time point women were asked their intended/preferred birth mode for a subsequent pregnancy. Fifty three women who received standard care (comparison group) consented and completed the Time One questionnaire package in hospital. Forty five of these women (84.9% response rate) completed the Time Two questionnaire package. In the NBAC postnatal intervention group 50 women who had received care from the NBAC midwives consented to the study and completed the Time One questionnaire package with 46 (92% response rate) completing the Time Two questionnaire package. Figure 3.2 illustrates the recruitment process for the postnatal comparison and NBAC groups.

**3.6.8.1 Instruments in questionnaire package.** A number of validated instruments were used in the NBAC study and they are listed below.

1. **Demographic Questionnaire:** The demographic questionnaire collected information such as participants' age, educational level, ethnicity, language spoken at home, income and marital status. In addition, to these demographic variables, a number of questions were asked around the model of pregnancy care, attendance at

antenatal education sessions, usefulness of these sessions and expectations regarding their recent birth (see Appendix I).

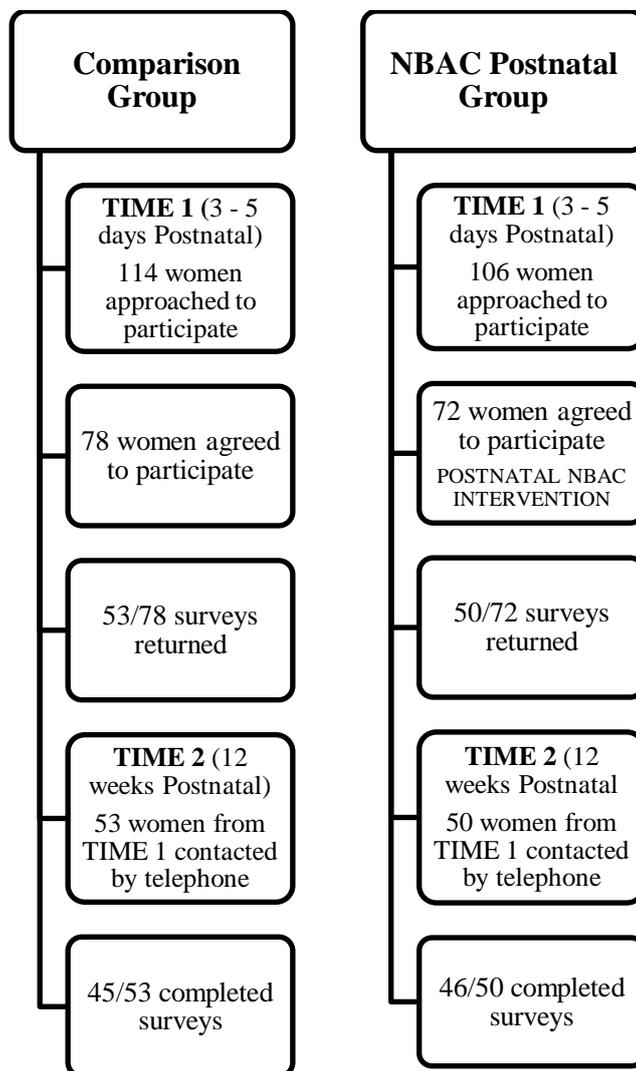


Figure 3.2 Postnatal Recruitment Process

2. **Childbirth Fear: The Childbirth Experience and Expectations Questionnaire (WDEQ) Version B** was used to measure women's level of childbirth fear in the postnatal period. The version B is a 33-item questionnaire that asks women about their birth experience. A 6-point Likert scale from "not at all" to "extremely" was used to rate experiences. The minimum score is 0, and the maximum score 165. The higher the score, the greater the fear of childbirth manifested (Wijma, Wijma and Zar, 1998). Scoring of childbirth fear was calculated as follows: a score equal to or lower than 37 is considered to mean low fear, a score between 38 and 65 equates to moderate fear and a score equal to or higher than 66 represents high levels of fear.

Internal reliability in a population of Australian pregnant women was high (Cronbach's alpha = 0.92) (Nunally, 1978) and compares favourably with the original Swedish version (Cronbach's alpha = 0.93) (Lowe, 1993) (see Appendix J).

**3. Self-efficacy (Confidence):** The New General Self-Efficacy Scale (NGSE) is an 8 item uni-dimensional tool that assesses an individual's general confidence to perform tasks in an array of different situations. The NGSE questionnaire asked women to indicate the extent to which magnitude and strength of beliefs generalize across tasks and situations (Chen, Gully and Eden, 2002). Participants were asked to score each item from 1 (strongly disagree) to 5 (strongly agree). The scale has been tested and demonstrated a high internal consistent rating (Cronbach's alpha between 0.85 and 0.9) (Chen et al, 2002; Scherbaum, Cohen-Charash and Kern, 2006) (see Appendix K). Although there is a Childbirth Self-Efficacy Inventory (CBSEI) (Lowe, 1993), it has not been tested on postnatal women. Drummond and Rickwood (1997) validated the tool for use in the Australian birthing population and reported reliability coefficients for all the subscales above 0.90 in antenatal women. Therefore, for the purpose of this study the NGSE Scale was considered to be more appropriate for NBAC postnatal evaluation.

**4.** At 12 weeks postpartum women were asked for their intended/ preferred type of birth for a subsequent pregnancy (see appendix L).

### **3.6.9 Data Analysis**

Descriptive statistics were computed for continuous data, such as age, whilst employment, models of care and other categorical data were expressed as percentages and counts within each category. Continuous post intervention variables, such as childbirth fear, childbirth confidence and childbirth knowledge were compared using the Chi-Square Test. Where expected frequency of variables (e.g. in at least one cell for a 2x2 contingency table were less than 5, Yates correction was used. Descriptive statistics were used for the birth intention and birth outcomes. Statistical significance for this study was determined to be a p value of < 0.05. As previously discussed in chapter three, errors in data entry and validity of tests

employed were minimized by checking the data after computer entry for any coding or entry errors.

### **3.7 Findings**

In this section of the chapter the findings of the NBAC postnatal service evaluation are presented. As mentioned previously, the hypotheses for this component of the study were:

Women who received an intervention visit from midwives in the NBAC postnatal service compared to women who did not received a visit would have:

- Increased intention to birth vaginally in a subsequent pregnancy
- Reduced childbirth fear; and
- Increased self-efficacy (confidence)

#### **3.7.1 Demographic Characteristics of the Participants**

Demographic characteristics between the comparison and NBAC groups were similar. For example, the age of all participants in the comparison and NBAC groups ranged from 18 to 45 years with the majority of women being between 26 and 35 years of age. Over 90% of women in both groups identified themselves as being married or in a de-facto relationship (94.3% in the comparison group and 92% in the NBAC group). The level of educational achievement was also similar between the two groups with 49.1% of the comparison group having a diploma or degree qualifications compared to 42% in the NBAC group. In terms of employment status slightly fewer women in the comparison group (85%) were employed, compared with the NBAC group (86.8%). These differences were not statistically significant. There were no statistically significant differences between the two groups on partners' employment status (92.5% in the comparison group versus 84.9% in the NBAC group) or household income (54.7% versus 62.3%).

The majority of women from both groups indicated their place of birth was Australia. There were slightly less women born in Australia in the comparison group 50.9% (n = 27) compared with 56.6% (n = 30) from the NBAC group. This difference however was not statistically significant (p = 0.959). In addition, there was no significant

difference between the main language spoken at home ( $p = 0.901$ ). Similar numbers of the comparison women spoke English at home, 90.6% ( $n = 48$ ) compared with the NBAC group, 96% ( $n = 48$ ) who spoke English at home. Please refer to Table 3.2 for a full comparison of the demographic profile between the comparison and NBAC groups.

### **3.7.2 Comparison of Key Variables between Groups**

Data on four key variables were also collected at Time One along with the demographic information and compared between both groups due to their potential to influence a woman's understanding/ decision making of birth options after a CS section (Johnson and Slade, 2002). These variables were model of care received during pregnancy, experience with antenatal education (including attendance, number of sessions, place of class, helpfulness) and birth mode expectations in the immediate past pregnancy.

**3.7.2.1 Models of care in the immediate past pregnancy.** Women were asked to record the model of care they accessed for this immediate recent birth. The type of care a woman received was considered to be a possible confounding variable in terms of decision making in a subsequent pregnancy after a history of CS (Fisher et al, 2006; Moffat, Bell, Porter, Lawton, Hundley, Danielian and Bhattacharya, 2007). The responses obtained confirmed that women in both groups accessed a range of different models of antenatal (AN) care during their pregnancies. These included midwifery led models, doctor led models or a combination of midwife and doctor shared care models. A shared care model is one where the woman alternates her antenatal visits with the hospital clinic and her general practitioner (GP). This is a model of care that large Australian maternity hospitals like KEMH encourage as it reduces health care costs, and provides the woman an opportunity to have continuity of care with her GP closer to her home.

In this study, a larger percentage of women from the comparison group [32.1% ( $n = 17$ )] received antenatal shared care than the women receiving the NBAC postnatal service [18% ( $n = 9$ )]. Conversely, fewer women from the comparison group [6% ( $n = 3$ )] received antenatal care from other sources compared with the NBAC group

[1.9% (n = 1)]. These numbers were too small to be able to make any meaningful statistical significance comparisons.

In terms of the other models accessed and reported on (see Table 3.3) there were no significant differences between the comparison group and the women who had received the NBAC postnatal service. The models included birth centre care and team midwifery (midwives delivering care across the continuum of pregnancy, labour and birth and the postnatal period either in pairs or groups), pregnancy care delivered in an antenatal clinic situation by midwives and/or doctors and private medical care.

**3.7.2.2 Antenatal education.** A woman's attendance at structured antenatal education sessions was also considered a potential influence on her knowledge and understanding of birth options and thus her decision making in a subsequent pregnancy. There was no statistically significant difference ( $p = 0.521$ ) in the number of women attending antenatal education sessions between the comparison group 56% (n = 28) and the NBAC group (62.3%; (n = 33)). There were also no statistically significant differences in how many antenatal education sessions the women attended ( $p = 0.405$ ). A comparable number of women from each group attended up to six sessions, 46% (n = 23) from the comparison group and 55% (n = 29) from the NBAC group. However it must be noted that a large number of women from both groups did not respond to the question (n = 27, n = 24 respectively).

Table 3.2

*Demographic profile of participants*

	<b>Comparison group n (%)</b>	<b>NBAC group n (%)</b>
<b>Age (years)</b>	<b>N = 53</b>	<b>N = 48</b>
18 – 20	2 (3.8)	1 (2.1)
21 – 25	7 (13.2)	5 (10.4)
26 – 30	20 (37.7)	12 (25.0)
31 – 35	15 (28.3)	20 (41.7)
36 – 40	8 (15.1)	8 (16.7)
41 – 45	1 (1.9)	2 (3.8)
Chi-square = 3.127; d.f. = 3; p-value = 0.372 (combining first two and last two age groups)		
<b>Education Level</b>	<b>N = 53</b>	<b>N = 50</b>
Secondary School < year 12	5 (9.6)	6 (12)
Secondary School Year 12	10 (18.9)	13 (26)
Apprenticeship	1 (1.9)	1 (2)
Diploma/Degree	26 (49.1)	21 (42)
Post-graduate Qualifications	6 (11.3)	7 (14)
Other	5 (9.4)	2 (4)
Chi-square = 2.005; d.f. = 4; p-value = 0.735 (combining 'Apprenticeship' with 'other')		
<b>Income</b>	<b>N = 53</b>	<b>N = 50</b>
Prefer not to Answer	7 (13.2)	2 (3.8)
< 20,000	1 (1.9)	4 (7.5)
20,001 – 40,000	7 (13.2)	5 (9.4)
40,001 – 60,000	9 (17.0)	6 (11.3)
60,001 – 80,000	12 (22.6)	11 (20.8)
>80,001	17 (32.1)	22 (41.5)
Chi-square = 1.301; d.f. = 3; p-value = 0.729 (combining 2 <sup>nd</sup> and 3 <sup>rd</sup> categories and excluding 1 <sup>st</sup> )		
<b>Place of Birth</b>	<b>N = 53</b>	<b>N = 50</b>
Australia	27 (50.9)	30 (56.6)
Europe	2 (3.8)	1 (1.9)
United Kingdom	10 (18.9)	8 (15.1)
Asia	6 (11.3)	7 (13.2)
Africa	3 (5.7)	4 (7.5)
Other	5 (9.4)	0
Chi-square = 0.302; d.f. = 3; p-value = 0.959 (combining 2 <sup>nd</sup> and 3 <sup>rd</sup> categories and excluding other using Yates Chi correction)		

Table 3.3  
*Comparison of Models of Antenatal Care*

<b>Models of AN Care</b>	<b>Comparison group (N = 53) n (%)</b>	<b>NBAC group (N = 50) n (%)</b>
Birth Centre Midwife	9 (17.0)	10( 20.0)
Shared Care GP/Hospital	17 (32.1)	9 (18.0)
Midwife Clinic	13(24.5)	14( 26.0)
Doctor Clinic	4 (7.5)	6 (12.0)
Doctor Private Rooms	3 (5.7)	3 (6.0)
Team Midwifery	6 (11.3)	6 (12.0)
Private Practice Midwife	1 (1.9)	2 (4.0)

Chi-square = 2.845; d.f. = 4; p-value = 0.584  
(combining categories 4 and 5; and 1 and 7)

Differences were noted between the groups in terms of ‘where’ they attended antenatal education. Of the women who did respond, a higher percentage of women from the comparison group attended antenatal sessions at the hospital than the NBAC group, 59.0% (n = 23) and 39.1% (n = 18) respectively (p = >0.05). More women from the NBAC group attended antenatal education sessions provided by a Privately Practising Midwife (PPM) [6.5% (n = 3)] than the comparison group (0%) [p = 0.083] but this was not statistically significant. Finally, when rating how confident the sessions made them feel, 26% (n = 13) of the comparison group indicated the sessions were helpful in increasing their level of confidence compared with 34% (n = 18) of the NBAC group. This was not significant at p < 0.05.

**3.7.2.3 Expectations related to birth mode in the immediate past pregnancy.** A woman’s expectation about birth mode in the immediate past pregnancy is important as a request for a caesarean section in a first pregnancy is considered likely to influence any decision in a subsequent pregnancy (Eden et al, 2004; Karlstrom, Nystedt, Johansson and Hildingsson, 2011; Meddings et al, 2007). The analysis revealed no significant differences between the two groups. Eighty one percent (n = 43) of the comparison group and 78% (n = 39) of NBAC group indicated they had expected to have a vaginal birth. The remaining ten women from the comparison

group and eleven women from the NBAC group expected a CS for this immediate past pregnancy due to a low lying placenta.

In summary, the two groups were very similar with no significant differences identified.

### **3.8 Results of Hypothesis Testing**

The hypotheses in this study predicted that the NBAC postnatal service would increase the woman's intention to birth vaginally in a subsequent pregnancy, reduce childbirth fear and increase general self-efficacy (confidence) compared to the comparison group. The results for each of these hypotheses will now be presented.

#### **3.8.1 Birth Intention Next Pregnancy**

The first hypothesis stated that women who received the NBAC postnatal service would have an increased intention to birth vaginally in a subsequent pregnancy. This hypothesis was not supported ( $p = 0.272$ ) even though more women in the NBAC group indicated they intended to have a vaginal birth after caesarean (VBAC) in their next pregnancy ( $n = 33, 71.7\%$ ) compared to the comparison group ( $n = 25, 54.3\%$ ). This is a percentage point difference of 17.4 for the intention to VBAC between the groups. Conversely, more women in the comparison group ( $n = 11, 23.9\%$ ) indicated their intention to have a repeat CS in their next pregnancy compared to the NBAC group ( $n = 6, 12\%$ ). Eight women (17.4%) from the comparison group and seven (16%) from the NBAC group indicated they were unsure what their intention would be for their next birth. One woman from the comparison group did not respond. Table 3.4 presents a comparison between the NBAC and comparison groups birth mode intention for their next pregnancy.

Table 3.4

*Birth mode intention next pregnancy*

<b>Birth mode intention next pregnancy</b>	<b>Comparison group N = 44 n (%)</b>	<b>NBAC group N = 46 n (%)</b>
VBAC	25 (54.3)	33 (71.7)
CS	11 (23.9)	6 (12)
Unsure	8 (17.4)	7 (16)

Chi-square = 2.598: d.f. = 2: p-value = 0.272

### 3.8.2 Childbirth Fear

It was hypothesised that the NBAC postnatal service would reduce current childbirth fear for those women who received this service compared with the comparison group who received standard care. The variable of childbirth fear was measured using the Childbirth Experience and Expectations Questionnaire (WDEQ) Version B. Women from both groups reported high levels of child birth fear during Time One (three to five days postnatal) and again at Time Two (12 weeks postnatal). As indicated previously, scoring of childbirth fear was calculated as follows: a score equal to or lower than 37 is considered to mean low fear, a score between 38 and 65 equates to moderate fear and a score equal to or higher than 66 represents high levels of fear. The hypothesis was not supported as there was no significant differences between the fear scores in either group (see Table 3.5). Women who received a postnatal visit from the NBAC midwives show no difference in level of fear than those women who do not receive a visit from the NBAC midwives. The mean scores were 89.64 for the comparison group and 86.44 for the NBAC group during the Time One. At Time Two the mean fear scores were 86.27 for the comparison group and 84.67 for the NBAC group. Whilst the mean scores for both groups decreased and the NBAC groups are slightly lower, this is not statistically significant [(p = 0.563) and (p = 0.572) respectively].

**3.8.2.1 Childbirth fear and birth intention.** In addition to the hypotheses, one objective was included. To determine if there was an association between current childbirth fear and birth intention for a subsequent pregnancy, childbirth fear scores

Table 3.5

*Comparison of Childbirth Fear Scores*

	<b>Level of Fear</b>	<b>Comparison group N = 53 n (%)</b>	<b>NBAC group N = 50 n (%)</b>
	High	48 (90.6)	43 (86.0)
<b>Time One</b>	Medium/Low	5 (9.4)	7 (14.0)

Chi-square = 0.521, d.f = 1, p value = 0.470

	<b>Level of Fear</b>	<b>Comparison group N = 44 n (%)</b>	<b>NBAC group N = 46 n (%)</b>
	High	39 (88.6)	40 (87.0)
<b>Time Two</b>	Medium/Low	5 (11.4)	6 (13.0)

Chi-square = 0.059, d.f. = 1, p value = 0.808

were correlated with birth intention. No significant relationships were identified at Time One or Time Two in the comparison group or the NBAC group ( $p > 0.05$ ).

### 3.8.3 Self-efficacy

The final hypothesis proposed that the NBAC postnatal service would increase a woman's general self-efficacy or confidence compared to those receiving standard care. The variable of self-efficacy was measured using the New General Self-Efficacy Scale, which is an eight item uni-dimensional tool that assesses an individual's general confidence to perform tasks in an array of different situations. The comparison group had slighter higher mean Time One self-efficacy scores (33.23) compared with the NBAC group (32.78) ( $p = 0.956$ ). The comparison group also had slightly higher mean Time Two self-efficacy scores (33.67) compared with the NBAC group (33.63) ( $p = 1.00$ ). Table 3.6 provides details on each individual item in the Self-Efficacy Scale.

When the self-efficacy sub-scale items were compared using Chi-square analysis, significant results were found in one of the variables in Time One. More women in the Time One comparison group indicated they were able to do tasks well compared to the NBAC women ( $p = 0.010$ ). By Time Two more NBAC women indicated they were able to do tasks well compared to the comparison group (0.031). However, overall, women who received a postnatal visit from the NBAC midwives showed little difference in self-efficacy than those women who did not receive a postnatal visit from the NBAC midwives.

### **3.9 Summary of Results**

The demographic characteristics of the two groups were similar in respect of age, marital status, education, income, place of birth, and language spoken at home. Other social demographic characteristics between the two groups were also similar. For example there was no difference between the groups in relation to number of classes and attendance at antenatal education and expectations for birth mode, indicating that for these variables the two groups were comparable. Additionally, the groups were comparable in relation to models of care accessed and the perceived helpfulness of antenatal education.

In relation to hypotheses testing, there was no statistically significant association between intention to pursue a vaginal birth after caesarean (VBAC) in the next pregnancy for women who received the NBAC postnatal service in the early postpartum period after a CS compared to those women who did not receive this service. There was also no significant difference in the levels of childbirth fear between the groups or associations between childbirth fear and the woman's decision for her birth intention for the next pregnancy.

Finally, there was no significant difference overall in relation to general self-efficacy between the comparison and the NBAC groups, except in relation to the variable of being able to perform tasks well in comparison to others.

Table 3.6

*Comparison of Self- efficacy scale individual eight items between groups*

<b>Items in the Self Efficacy Scale</b>	<b>Comparison</b>	<b>NBAC group</b>	<b>X<sup>2</sup></b>	<b>P value</b>
	<b>N = 53</b>	<b>N = 50</b>		
<b>Time One</b>	<b>n (%)</b>	<b>n (%)</b>		
Able to achieve goals	27 (52.4)	27 (55)	0.096	0.756
Able to accomplish difficult tasks	15 (29.4)	15 (31)	0.036	0.849
Able to obtain important outcomes	34 (65.3)	23 (46)	3.430	0.064
Able to succeed at endeavours	6 (11.1)	5 (10)	0.047	0.828
Able to overcome challenges	12 (22.2)	13 (25)	0.158	0.691
Able to perform effectively on different tasks	14 (27.5)	14 (28)	0.033	0.855
Able to do tasks well compared to others	23 (44.4)	10 (20)	6.468	0.010*
When things are tough able to perform well	14 (26.7)	11 (23)	0.273	0.601
<b>Time Two</b>	<b>N = 44<sup>^</sup></b>	<b>N = 46</b>		
	<b>n (%)</b>	<b>n (%)</b>		
Able to achieve goals	24 (55)	22 (52.4)	0.406	0.524
Able to accomplish difficult tasks	24 (53.6)	27 (60)	0.158	0.691
Able to obtain important outcomes	25 (58.3)	23 (50)	0.420	0.516
Able to succeed at endeavours	24 (54.5)	25 (55)	0	1
Able to overcome Challenges	26 (60)	26 (63.2)	0.061	0.805
Able to perform effectively on different tasks	18 (40.9)	17 (37.5)	0.148	0.700
Able to do tasks well compared to others	14 (32.4)	25 (55)	4.649	0.031*
When things are tough able to perform well	17 (39.3)	21 (45.8)	0.454	0.500

Chi-square test applied for each item, to a 2x2, Yes/No, contingency table. <sup>^</sup> one response missing \* P < 0.05

### 3.10 Discussion

In this study, even though not statistically significant, more women who experienced care from the NBAC postnatal service indicated an intention to pursue VBAC in a subsequent pregnancy, but the NBAC service did not appear to have any impact on reducing childbirth fear or increasing overall self-efficacy. The small follow up sample size may have contributed to inadequate statistical power. This is highlighted as one of the limitations of the study. The design of the study meant having to recruit an unbiased comparison group during a set time period prior to establishing the service, which meant that recruiting sufficient numbers was a challenge. However, the loss to follow up rate was quite small with an 83% retention rate in the comparison group and a 92% retention rate in the NBAC group, which was one of the strengths of the study.

The postnatal comparison group and the postnatal NBAC group were comparable in terms of socio-demographic characteristics, and in relation to place and perceived helpfulness of antenatal education sessions attended. This finding does not support the expectation of achieving a VBAC and the decision-making process around it is which is well described in the literature and will now be discussed (Davey et al, 2005; Hicks, Spurgeon and Barwell, 2003; Karlstrom et al 2011; Meddings et al, 2007; Moffat et al 2007).

Davey et al (2005) suggested that women who experienced continuity of care in the antenatal period were more likely to be well informed and more likely to be involved in the decision-making process. This is suggestive for the women who were seen by the NBAC midwives and had indicated that they had continuity of care in the antenatal period and found the antenatal education to be very helpful. Additionally, Meddings et al's (2007) phenomenological study of eight women from a northern area in the UK explored women's reasons for choosing VBAC as a mode of birth after a previous CS noted similar findings. Informed choice was the largest theme identified by the authors, with many women indicating that they felt involved in the decision making process and were confident about their choice. The women were quite clear about the idea of pursuing VBAC because they felt they had received all the information from their caregivers to make an informed choice.

Conversely, in Moffat et al's (2007) prospective qualitative study of 26 women in Scotland who experienced CS, the authors found that women who have had a previous CS did not have any firm ideas about future mode of birth, which aligns more with the findings from this NBAC study. These women wanted information to be tailored to their needs and looked for this targeted information and guidance from health practitioners. Similarly, in Karlstrom et al's (2011) mixed methods study from three Swedish hospitals found the women (n = 1 212) were not able to make a decision about their birth mode because they lacked knowledge about the positives and negatives of CS compared to VBAC. The decision about whether to pursue VBAC or CS was further influenced by the trust the woman had in her health care providers. If the woman felt unable to develop a relationship with the health care provider, she remained ambivalent about her birth choice.

### **3.10.1 Making a Difference to the Uptake of VBAC**

One of the aims of the NBAC postnatal service was to implement an intervention that could provide information about birth choices in a subsequent pregnancy to women with a history of a previous CS. The NBAC postnatal intervention consisted of a visit from a midwife, before the woman was discharged from the hospital. The NBAC midwives had time to listen to the woman's story and provided an evidence based information package on birth after CS. The women were also afforded the opportunity to contact a NBAC midwife in the 12 weeks after birth. Adherence to birth intention was not tested as part of this NBAC study and further research is required.

Research suggests that women experiencing a traumatic birth are more vulnerable in the postnatal period and extra support and counselling should be made available to them (Dennis and Creedy, 2004). The woman's anxieties and fears about childbirth are likely to have an effect on their family planning, future pregnancies and mode of birth (Wiklund, Edman, Ryding and Andolf, 2008). As outlined in Chapter Two the number of women attempting a VBAC has fallen dramatically in Australia over the last 15 years for a number of reasons. However, women's fear of childbirth and negative expectations for achieving a vaginal birth seem to be influential (Bryant, Porter, Tracy and Sullivan, 2007; Dodd, Pearce and Crowther, 2004; Fenwick et al,

2007). Women have access to a wealth of information originating from a number of sources, such as social media (blogs, chat rooms, Facebook), magazines and television, that are filled with horror stories about births that have failed, catastrophic uterine ruptures that have ended in hysterectomy and babies that have died. The woman's anxieties and fears are further compounded by friends and family who have had negative experiences in childbirth and feel compelled to share these stories. Any discussion a woman has with her partner, friends, family and health professionals has the potential to influence her decision about future pregnancies and birth. This is evident from the NBAC evaluation which suggests that women who have the opportunity to talk through their labour and birth experiences with a midwife and are provided with information in the postnatal period are more likely to indicate an intention to pursue a VBAC in a subsequent pregnancy. This is despite the high levels of childbirth fear that the women in the study expressed and no apparent influence by the NBAC midwives on reducing childbirth fear.

The NBAC postnatal evaluation adds to the growing body of knowledge that women may be influenced by the information they receive from health care professionals (Farnworth and Pearson, 2007; Farnworth, Robson, Thomson, Burges Watson and Murtagh, 2007; Kamala, Dixon-Woods, Kurinczuk, Oppenheimer, Squire and Waugh, 2005; Shorten et al, 2005). For example, Dodd et al's (2004) qualitative study of 208 women from a tertiary hospital in Adelaide, South Australia; who had a primary CS, demonstrated similar findings to the postnatal element of the study. They found that 41% of women indicated they would have a VBAC, 23% would choose CS and 35% remained unsure about the birth choice for the next pregnancy. The authors concluded that whilst providing information was important, the timing of the information in relation to birth mode for the next pregnancy influenced their results. They suggested that the ideal time to provide women with information may be prior to discharge home from hospital. This was not supported in the findings from the NBAC postnatal service. Early intervention after the first CS to ensure women are aware of their options did not appear to make a difference to subsequent intentions in relation to mode of birth.

### 3.10.2 Experiencing Confidence

The level of self-efficacy or confidence that a woman has in her ability can influence her desire to attempt birth vaginally (Dodd et al, 2004; Eden et al, 2004; Farnworth and Pearson 2007; Farnworth et al., 2007; Gamble and Creedy, 2004). However, the impact of a woman's birthing experience on her level of confidence (self-efficacy) has not been well researched. Much of the research centres on childbirth fear, with minimal reference made to confidence and satisfaction (Eden et al, 2004; Goodman, Mackey and Tavakoli, 2004; Lundgren, 2005; Nilsson and Lundgren, 2007). For example Nilsson and Lundgren's (2007) phenomenological study of eight women who experienced severe fear of childbirth suggested that women's confidence in giving birth can be lost because of their childbirth experience. The women felt the need to meet not only their own expectations but the expectations of other people. If the women could not meet the expectations of others, such as family and friends, they felt as though they had failed, lost confidence, felt "weaker and inferior" to other women (p. e6). For the multiparas in Nilsson and Lundgren's (2007) study, it was the previous birth experience that challenged their confidence, which is a concept that will be further explored in Chapter Four. Likewise, Goodman et al, (2004) suggested that a woman's satisfaction with her childbirth experience contributes to her self-esteem, sense of accomplishment and level of confidence in self.

Findings in this phase of the NBAC evaluation confirm that whilst the women in the comparison group immediately following birth had one higher self-efficacy sub-scale item than the women in the NBAC group these findings need to be interpreted with caution. The subscale item was the ability to perform tasks well compared to others. Early research by Callister, Vehvilainen-Julkunen and Lauri (2001) suggest that the confidence a woman has in her ability to cope with childbirth is influenced by her previous achievements, knowledge of other women's experiences, the amount of support she receives from others and the physiological responses during labour and birth. In Callister et al's (2001) study 20 Finnish women were interviewed two weeks following their birth and asked to share their perceptions of their childbirth experiences. One of the main themes to arise was a strong sense of maternal confidence. The authors believed that these women perceived pregnancy and birth as

“developmental tasks and wellness experiences” instead of processes that should be feared (Callister et al, 2001, p. 30). Moreover, research by Lundgren (2005), where ten Finnish women were interviewed two years following birth suggests that women perceive childbirth as an unavoidable situation involving something unknown, but their sense of self or confidence was influenced by having control over the environment, receiving positive affirmation, effective communication and having a trusting relationship with the midwife.

Intention to have a VBAC may be related to confidence which in turn is related to how much knowledge a woman has about VBAC, the information she has received and when that information was provided (Eden et al, 2004). Eden et al’s comprehensive review of eleven studies relating to preference for women with a previous CS highlighted that whilst women who were provided with education and support chose VBAC, in order to make a difference the education and support needed to commence following the birth or very early in the next pregnancy. The NBAC evaluation does not support Eden et al’s premise that women who received the postnatal intervention were more likely to pursue VBAC in a subsequent pregnancy. Furthermore, a randomised controlled trial of 179 women, by Fraser, Maunsell, Hodnett, Moutquin and Childbirth Alternatives Post-caesarean Study Group (1997) reported that there was no overall difference in the number of women choosing VBAC when they were given an information brochure at 21 weeks gestation (n = 86) compared with individualised VBAC education and support at the same gestation (n = 93). The researchers suggested that the intervention may have been delivered too late to influence the women’s choice. Several studies support this notion (Bastos, Bick, Rowan, Small and McKenzie-McHarg, 2009; Dodd et al, 2004; Eden et al 2004; Rees, Shaw, Bennert, Emmett and Montgomery 2009) with studies citing one quarter to almost one half of women had decided on VBAC as the birth for the next pregnancy prior to the next pregnancy, usually in the early postnatal period.

### **3.10.3 Debriefing Fear**

One of the hypotheses tested in the NBAC postnatal evaluation was to determine if a visit from the NBAC midwives in the early postnatal period reduced childbirth fear. There was no difference in the levels of fear between the comparison and the NBAC

group with both groups demonstrating medium and predominantly high levels of fear. None of the participants indicated low levels of fear. The findings from this study add to the debate about postnatal debriefing/counselling/discussions being inconclusive in reducing psychological morbidity, (Axe, 2000; Bastos et al 2009; Lavender and Walkinshaw, 1998; Melander, 2002; Nerum, Halvorsen, Sorlie and Oian, 2006; Small, Lumley, Donahue, Potter and Waldenstrom, 2000).

Childbirth fear has been recognised in numerous studies (Farnworth and Pearson, 2007; Fenwick et al, 2006; Fenwick et al, 2003; Gamble and Creedy, 2001; Lobel and DeLuca, 2007) as a consequence of a traumatic birth experience. Traumatic birth is commonly associated with interventions such as CS (Koo et al, 2003). Providing women an opportunity to share their experiences has been cited as a central aspect of quality postnatal care for women who have experienced a traumatic birth, a component of which is an increase in childbirth fear (Salomonsson et al, 2010). The aim of providing women with an opportunity to share their story was to let the woman and her partner express their experiences, thoughts and feelings and to help them understand what happened during the labour and birth (Gamble and Creedy, 2004). Gamble and Creedy's expansive review of 19 publications appraised the effectiveness of a single debriefing session or counselling session to reduce depression and trauma symptoms in women after birth. The review critiqued published papers describing and/or testing postnatal counselling for women who had a distressing birth experience. The analysis identified agreement about debriefing processes but variability in relation to timing and number of sessions. It was considered important to provide women with opportunities to talk about their birth experience, express feelings about what happened, have questions answered, and have gaps in knowledge or understanding of events addressed so that they could make sense of what happened and talk about expectations for future pregnancies. However, from the NBAC postnatal evaluation there was no decrease in the level of fear by 12 weeks postnatal, even though the women were provided with an opportunity to discuss their birth experience.

This may have been a result of the fact that midwives did not have in depth discussions with women and were not trained in appropriate techniques that could constitute postnatal debriefing (Bastos et al, 2009). In a UK based randomized

controlled trial by Lavender and Walkinshaw (1998), 114 primigravidae were allocated to either receive a debriefing intervention ( $n = 56$ ) or no debrief ( $n = 58$ ). The debriefing intervention included postnatal listening and discussion about the woman's birth experience and outcome with a midwife. The results indicated that those women who received the intervention were less likely to have anxiety, depression and other psychological sequelae. Similarly a randomised controlled trial by Gamble et al (2005); of 50 women who received face to face counselling within 72 hours of birth and follow up by telephone at 4 – 6 weeks postnatally, were compared with 53 women who did not receive the intervention. The intervention was delivered by a midwife and lasted between 40 and 60 minutes. Whilst the midwife did not require any special psychotherapeutic skills to conduct the counselling, they were taught specific debriefing and communication skills. The results suggested that whilst the intervention did not have an immediate effect on trauma symptoms immediately following birth, there was a beneficial effect over a longer period. These studies appear to support the notion that giving women an opportunity to reflect upon her labour and birth experience with a supportive listener can facilitate her understanding of the events and ability to work through them (Bastos et al, 2009).

Contrary to this, Small et al's (2000) randomised controlled trial of midwife led debriefing of 1041 women who experienced a traumatic birth suggested that the debriefing was ineffective in reducing psychological morbidity at six months postpartum. The women allocated to the intervention group were provided with an opportunity to discuss their labour, birth and post-birth events and experiences before being discharged from hospital. The authors determined there was no significant difference between the control group and the intervention group outcomes in relation to depression, guilt, regret, loss of self-esteem, fear, prolonged pain and discomfort, grief and dissatisfaction. The effectiveness of debriefing interventions in the prevention of fear following childbirth is not clear and certainly Gamble et al (2005) suggest that a follow up counselling session at four to six weeks as well as the initial session at three to four days appeared to be more beneficial than a single counselling session. Whilst the safety and value of postnatal debriefing has been increasingly evaluated over the last decade the results remain divisive and further research is needed (Rowan, Bick and Bastos, 2007; Saisto, Salmela-Aro, Nurmi, Knonen and

Halmesmaki, 2001; Selkirk, McLaren, Ollerenshaw, McLachlan and Moten, 2006; Steele and Beadle 2003).

### **3.11 Conclusion**

The findings from this study suggest that women who have experienced a first CS who received a specifically tailored evidence based information package did not demonstrate an increased intention to choose VBAC for their next birth. Nor did the study demonstrate that women, who experienced a first CS and received the NBAC postnatal service, had decreased levels of childbirth fear and increased overall self-efficacy (confidence) compared to women receiving standard care. The women receiving the postnatal intervention did not have any of the postnatal care provided by the NBAC midwives. Further evaluation of the NBAC service is required in the event of it becoming a continuity of care model across the antenatal, labour and birth and postnatal periods. This study highlights the need for one to one contact with women to talk through their birth experiences however, providing them with information about options for their next birth may not be enough to influence birth intention or reduce fear. In order to do this midwives need specific counselling and additional skills in being able to work through issues with the women individually.

## **CHAPTER FOUR: THE NBAC ANTENATAL SERVICE: Method, Findings and Discussion**

### **4.1 Introduction**

The focus of this chapter is to present the methods, findings and discussion around the NBAC antenatal service evaluation. The second intervention incorporated the NBAC antenatal service and targeted women in a subsequent pregnancy after one previous caesarean section. The NBAC antenatal service package of care delivered by the NBAC midwives provided continuity of midwifery care by a small team of midwives throughout pregnancy commencing at the first visit at 14 - 16 weeks gestation. Key features of the NBAC antenatal service involved the opportunity for women to share their previous birth experiences in a supportive and safe environment, midwives to provide an evidence based information package about birth after CS, which contained information about VBAC and repeat CS; and the women to attend specific antenatal education workshops (one focused on active birth for those women wanting to labour and birth and one focused on having a positive CS if planning a repeat CS). One of the primary aims of the service was to promote awareness of birth options and provide increased emotional support to women who have experienced a previous CS. Secondary aims include reducing childbirth fear, increasing confidence and knowledge, satisfaction with care, promoting vaginal birth after CS where assessed as appropriate, and working collaboratively with other staff involved in the woman's care to provide a supportive birthing environment that maximised her chance of either a successful vaginal birth or a positive repeat CS.

This chapter will describe the research design for evaluation of the NBAC antenatal service. The findings of the NBAC antenatal service evaluation will then be described followed by a discussion of the findings within the context of existing relevant literature in the area.

### **4.2 Comparative Descriptive Design**

An overview of evaluation research and the rationale for adopting the research design for evaluation of the NBAC services (postnatal and antenatal) was addressed

in Chapter Three. As discussed previously, a comparative descriptive design examines and describes differences in variables in two or more groups. Descriptive statistics and inferential statistical analysis are commonly used to examine differences in key variables between or among groups (Cresswell and Plano Clark, 2007).

In comparative descriptive studies, an intervention, such as the NBAC service in this study, was developed and evaluated in relation to key outcomes variables such as childbirth fear, self-efficacy, knowledge and intention to VBAC at 20 and 36 weeks gestation between the NBAC group and comparison group (standard care). At six weeks postnatal, childbirth fear, satisfaction and birth outcomes were also compared between groups. Although the study has three time points, the intervention was designed to maximise the differences between the groups. In this study, the NBAC antenatal service targeted pregnant women who had experienced a previous CS.

### **4.3 Evaluation of the NBAC Antenatal Service**

The design used to evaluate the NBAC antenatal service was similar to that utilised for the NBAC postnatal service and is outlined in Table 4.1 and differs from the NBAC postnatal service evaluation which had two time periods. This NBAC antenatal service evaluation considered data across three time periods (20 weeks gestation, 36 weeks gestation, and six weeks postnatal).

#### **4.3.1 Aim**

The aim of this phase of the study was to evaluate the NBAC antenatal service at three time points (booking visit, 36 weeks gestation and six weeks postnatal) to determine if women who accessed the service experience a change in childbirth fear, childbirth confidence, childbirth knowledge and intention to pursue VBAC in the current pregnancy; in comparison to women who received standard antenatal care. The overall purpose of the NBAC antenatal service was to inform women, who had experienced a first CS, of their birthing options for the current pregnancy. An aim of the service was to increase the intention of these women to seek a vaginal birth in the current pregnancy, specifically at 36 weeks. It was also anticipated that due to the

service, the level of childbirth fear may be reduced and self-efficacy (confidence) and childbirth knowledge increased for the current pregnancy and birth. Therefore, the evaluation thus proposed the following hypotheses:

Table 4.1

*NBAC Antenatal Service: Study Design*

<b>Antenatal Intervention Evaluation for pregnant women who had experienced a previous CS</b>	
<b>February to May 2008</b>	<p><b>Comparison group</b></p> <p><i>Antenatal Clinic ~ 20 weeks gestation (Time One)</i></p> <ul style="list-style-type: none"> <li>• Baseline data, childbirth fear, childbirth self-efficacy, childbirth knowledge birth intention and reason for choice data collected</li> <li>• Model of care in previous pregnancy, experience of antenatal education, place of previous CS and reason for previous CS variables collected</li> </ul> <p><i>36 weeks gestation (Time Two)</i></p> <ul style="list-style-type: none"> <li>• Childbirth fear, childbirth self-efficacy, childbirth knowledge, birth intention and reason for choice data collected</li> </ul> <p><i>6 weeks postnatal (Time Three)</i></p> <ul style="list-style-type: none"> <li>• Childbirth fear, satisfaction and birth outcome data collected</li> </ul>
<b>November 2008 to March 2010</b>	<p><b>NBAC group</b></p> <p><i>NBAC Clinic 14 – 16 weeks gestation (Time One)</i></p> <ul style="list-style-type: none"> <li>• Baseline data, childbirth fear, childbirth self-efficacy, childbirth knowledge data collected</li> <li>• Model of care in previous pregnancy, experience of antenatal education, place of previous CS and reason for previous CS variables collected</li> </ul> <p><i>36 weeks gestation (Time Two)</i></p> <ul style="list-style-type: none"> <li>• Childbirth fear, childbirth self-efficacy, childbirth knowledge, birth intention and reason for choice data collected</li> </ul> <p><i>6 weeks postnatal (Time Three)</i></p> <ul style="list-style-type: none"> <li>• Childbirth fear, satisfaction and birth outcome data collected</li> </ul>

Women who received care provided by the NBAC Antenatal Service compared to women who received standard antenatal care (i.e. comparison group) would have:-

- Reduced childbirth fear
- Increased self-efficacy (confidence)
- Increased childbirth knowledge
- Increased satisfaction with antenatal care
- Increased intention to birth vaginally at 36 weeks
- Increased number of vaginal births.

In addition to these hypotheses three additional objectives were presented to determine if there was an association between childbirth fear and birth intention; childbirth knowledge and birth intention; and why women chose their intended mode of birth. Four key variables:- models of care from a previous pregnancy; current experience with antenatal education; place of first CS and reason for first CS were also collected at recruitment (Time One) and compared between both groups due to their potential to influence a woman's perceptions of her birth experience and decisions about preferred birth mode in a subsequent pregnancy (Johnson and Slade, 2002). Adherence to birth intention/choice did not form part of this research project as a decision aid was not used.

#### **4.3.2 Method**

As described in Chapter Three the NBAC antenatal service used a comparative descriptive design approach to evaluation using a pre / post-test design for the NBAC antenatal service.

#### **4.3.3 Sample**

Women were invited to participate in the antenatal service evaluation if they:

- were aged 18 years and over at the time of the study;
- were pregnant following one previous caesarean section, regardless of the number of vaginal births
- had been referred to the public antenatal clinic and

- had sufficient comprehension of English to enable them to understand the purpose of the study, the content of the questionnaire and provide informed consent.

#### 4.3.4 Sample Size

A data analyst employed at the research institute co-located at the hospital was approached to provide advice to determine the sample size using power analysis (personal communication, Dorota Doherty, biostatistician, 23/11/2008). It was estimated that 560 women who had experienced one previous CS would attend the antenatal clinic at KEMH and approximately one quarter (25%) would not be suitable for midwifery led care (STORK, 2009). As with the postnatal phase, to determine a 25% point increase in the number of women identifying an intention to consider vaginal birth in a subsequent pregnancy, which may be optimistic; a sample size of 58 women per group was recommended (2 sided test, alpha of 0.05, desired power of .80) (Brent, n.d., [www.stat.ubc.ca/~rollin/stats/ssize/b2.html](http://www.stat.ubc.ca/~rollin/stats/ssize/b2.html)). Similar to the postnatal phase, we accounted for up to 20% for loss to follow-up and therefore aimed for 70 per group. Achieving these numbers was deemed to be feasible based upon the study design (pre / post).

In total 144 women were recruited to the NBAC antenatal component of this study (70 from the comparison group and 74 from the NBAC group). Fifteen women in the comparison group and 16 women in the NBAC group withdrew from the study after initial recruitment; which occurred at the booking visit at approximately 20 weeks gestation, citing time constraints as the reason for no longer being able to participate. Women from both groups consented to participate and were provided with a self-directed demographic survey, the Wijma Delivery Expectancy/Experience Questionnaire (WDEQ), the Childbirth Self-Efficacy Inventory (CBSEI) and Childbirth Knowledge Scale which made up the Time One study package to provide baseline data at booking to KEMH which is 20 weeks gestation. If the packages were not returned within four weeks the women were contacted by telephone. Ten women from the comparison group and 12 women from the NBAC group indicated they would return the survey, whilst the remaining women indicated their intention to withdraw from the study again citing time constraints. Further follow up by

telephone failed to ensure return of the study package. Five comparison group women and seven NBAC women had their care transferred from midwives clinic to doctor's clinic because of medical problems. A further five comparison group and four NBAC women withdrew from the study because of ongoing psycho-social issues.

As a result 45 women who received standard antenatal care (comparison group) consented and completed the baseline demographic survey, WDEQ, CBESI and Childbirth Knowledge Scale. Of these women 35 (77.7%) completed the Time Two (36 week gestation) data collection package (WDEQ; CBSEI; Childbirth Knowledge Scale; birth intention and reason for choice) and 18 women (40%) completed the Time Three (6 week postnatal) study package (WDEQ; satisfaction and birth outcome data). In the NBAC group, 47 women consented and completed the Time One data collection package as per the comparison group. Thirty three women (70.2%) completed the Time Two data collection package and 19 women (38.2%) completed the Time Three data collection package as per the comparison group. Figure 4.1 illustrates the recruitment process for the antenatal phase of this NBAC study.

#### **4.3.5 Standard Care**

Women recruited to the comparison group received standard care. Upon referral to the hospital the women receive an invitation to attend a booking visit with a midwife at approximately 18 – 22 weeks after which they are assigned to one of a number of antenatal clinics. While women attend the same clinic for the remainder of their pregnancy, unless needing specialist care, they do not see the same midwife (Appendix M). At 36 weeks women are reviewed by an Obstetrician to discuss birth mode and obtain written consent from the woman for either a VBAC or repeat elective CS. Information given to women in the comparison group at 36 weeks included a copy of the Royal Australian and New Zealand College of Obstetricians and Gynaecologists guidelines about VBAC and CS by the Obstetrician which is also standard care at KEMH (see Appendix N).

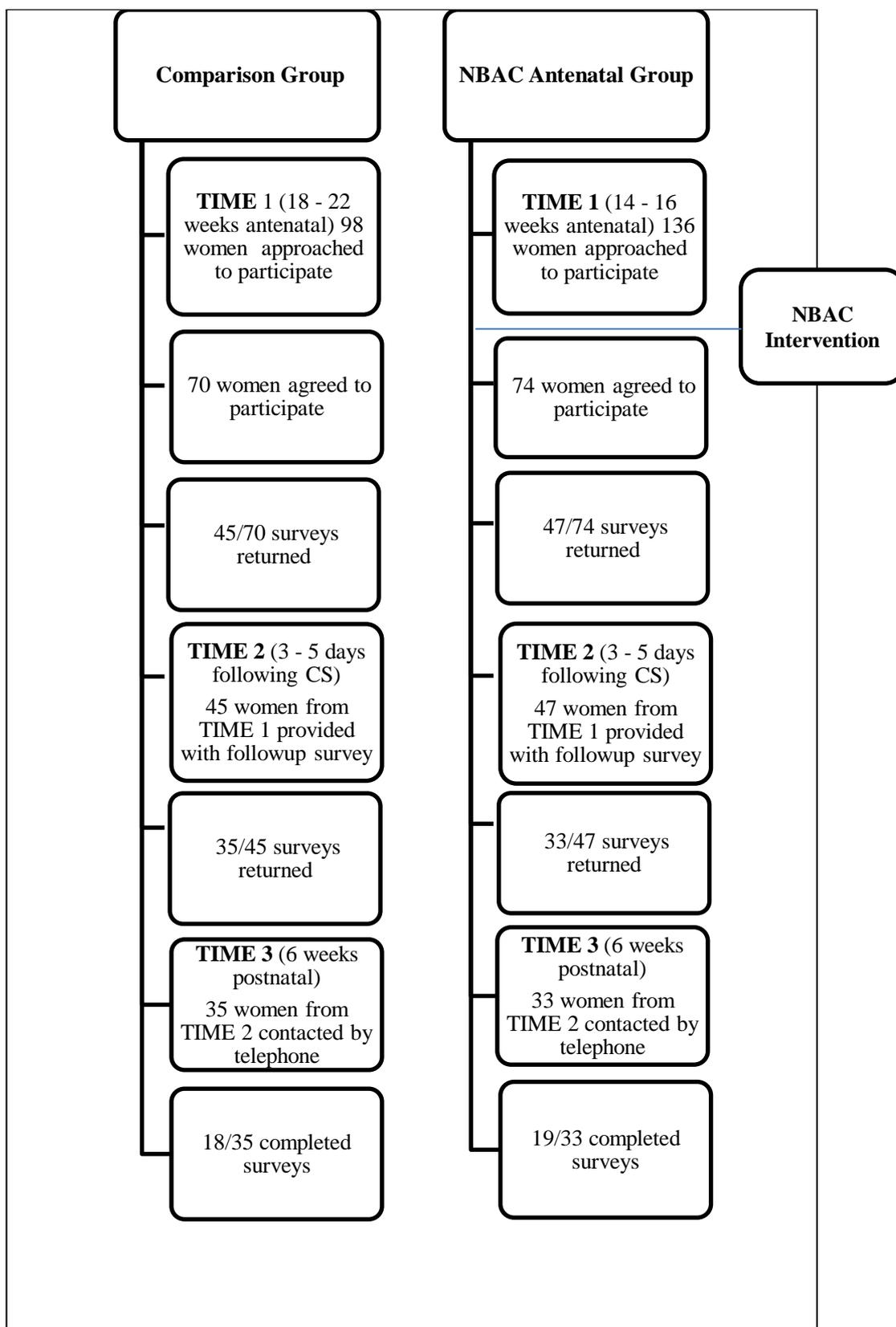


Figure 4.1 Antenatal Recruitment process

#### **4.3.5 NBAC Antenatal Intervention**

Women who received the NBAC antenatal service had experienced one previous CS regardless of the number of previous births and were referred to the NBAC clinic at 14 – 16 weeks gestation. The clinic is conducted two days per week and care is led by a team of six midwives. Three midwives are rostered on each of the clinic days. The women were reviewed by a medical officer twice during the pregnancy. The first medical review was at 24 weeks gestation, where birth options such as CS and VBAC were discussed. The second medical review was at 36 weeks gestation where decisions around birth choice were recorded and appropriate consent forms were completed. In order to promote and maintain continuity of carer the woman's appointments were scheduled so that she saw the same small team of 2 – 3 midwives for her all her antenatal care. At commencement of care women were provided with a specifically designed evidence based information package. As discussed previously in Chapter 3 the information resources used by the NBAC service were developed by the Steering Committee that consisted of key stakeholders including consumers, midwives and medical staff. A project manager coordinated the development of resources which drew heavily from the consumer organisation 'Birthrites'. This organisation had already produced a number of resources specifically designed for women who had experienced a previous CS.

The resources aimed to provide women with the best evidence available around birth mode in a subsequent pregnancy. The booklet was designed to support women regardless of what they might choose. Community supports also featured heavily. The antenatal education classes were developed again in consultation with the community, birthrites and midwives that had been offering specifically design classes to this group of women. There was a class for women who wanted an VBAC as well as one for women who chose to have a repeat planned CS. The aim was to make the experience better for women regardless of their birth mode choice.

The resource package included information which covered topics such as CS, VBAC, postnatal depression and anxiety; and information and resources pertaining to caesarean support groups (see Appendices F, G, H, N). Finally women received a brochure with contact details of the NBAC antenatal service (see Appendix E). The

women were advised they could contact the clinic at any time during day time hours Monday to Friday for any information relating to their pregnancy and birth.

#### **4.3.7 Recruitment and Data Collection**

Recruitment of the comparison group occurred 6 to 8 months before the establishment of the new service in order to recruit an unbiased comparison group that was not influenced by the NBAC service. Women in the comparison group received standard antenatal care. Whereas, recruitment of the NBAC group commenced four months after the establishment of the service to allow an initial settling in period for the service and continued for a period of 16 months. Data collection, using standardised and validated measures occurred at three time points (recruitment or booking at 20 weeks gestation, 36 weeks gestation and 6 weeks post birth). Although the comparison group were recruited 6 to 8 months prior to the intervention group, the process of recruitment and data collection for both the comparison group and NBAC group was identical. Eligible pregnant women who had experienced one previous CS were conveniently recruited on arrival at the hospital for their antenatal booking appointment. All women were given a written information sheet outlining the aims and objectives of the study (Appendix O). Women were provided with an opportunity to ask questions and seek clarification. Women interested in participating were asked to sign a consent form (Appendix P) where upon they were given the first data collection package that included the baseline demographic survey, WDEQ, CBESI and Childbirth Knowledge Scale. Women were asked to complete all sections of the study package and place it in the attached reply paid self-addressed envelope. In the majority of instances women completed their study package whilst waiting for their appointment and thus returned the envelope to the researcher or placed in a locked box at the clinic reception. Some women, however, took their study package home to complete and returned it via the mail. Whilst this was not encouraged, the researcher was mindful of the volume of information women would receive at their first antenatal visit and giving the women an opportunity to complete the survey in their own time was thought to mitigate the information overload. If the study package was not received within two weeks the women received a reminder telephone call.

The details of each woman were recorded in a log for the midwives. This process ensured that the researcher was notified of the woman's 36 week gestation (Time Two) appointment. The same process for administering the data collection package at 36 weeks gestation was followed at this visit.

At Time Three (six weeks postnatal) participating women were contacted by telephone and the data was collected verbally. During the telephone call the researcher made field notes and documented any comments made by women pertaining to the questionnaires or their care.

At recruitment, (Time One) baseline data (i.e. maternal age; education; employment status of self and partner; income; previous obstetric history and reason for CS; previous model of antenatal care; antenatal education; birth intention this pregnancy and reason why), childbirth fear, self-efficacy, childbirth knowledge data and birth intention and reason for choice was collected. At 36 weeks gestation (Time Two) childbirth fear, self-efficacy, childbirth knowledge, birth intention was collected. Finally, at 6 weeks post birth (Time Three), childbirth fear, satisfaction and birth outcome was collected. Data collection utilised a number of previously validated instruments.

**4.3.7.1 Instruments in questionnaire package.** A number of validated instruments were used during the NBAC study. These are listed below:-

1. Demographic Questionnaire: The demographic questionnaire collected information such as participants' age, educational level, ethnicity, language spoken at home, income and marital status. In addition to this a question pertaining to the model of care the woman had accessed in her previous pregnancy care and whether she attended antenatal education sessions was asked (see Appendix Q).

2. Birth Mode Preference or Intention: At Time One and Time Two women were asked to record their intended or preferred mode of birth by simply choosing from three options – VBAC, CS or unsure. This was accompanied by an open ended question asking women to state the reason for their preference (see Appendix Q).

**3. Childbirth Fear:** The Wijma Delivery Expectancy/Experience Questionnaire (WDEQ) was administered at all three time points. This is a 33-item self-assessment questionnaire that measures fear of childbirth by asking the woman, on a 6-point Likert scale, about her expectations and experiences before birth (version A) and after birth (version B). Internal reliability in a population of Australian pregnant women was high (Cronbach's  $\alpha = 0.92$ ) (Nunally, 1978) and compares favourably with the original Swedish version (Cronbach's  $\alpha = 0.93$ ) (Lowe, 1993) (see Appendix R).

**4. Childbirth Self-efficacy (confidence):** The Childbirth Self-Efficacy Inventory (CBSEI) was administered at Time One and Time Two. This is a 62-item scale that was developed by Lowe (1993) and is used specifically in the antenatal period. There are four subscales and participants respond on a 10-point Likert scale. A higher score indicates a higher level of self-efficacy (confidence) or outcome expectancy for birth (feeling of competence at being able to undertake the behaviour). Drummond and Rickwood (1997) validated the tool for use in the Australian birthing population and reported reliability coefficients for all the subscales above 0.90 (see Appendix S).

**5. Childbirth Knowledge:** Women were asked to complete the Childbirth Knowledge Scale at both Time One and Time Two. This is a 9-item scale that assesses knowledge of behavioural techniques which may assist during the labour and birth process, attendance at antenatal classes, vicarious experiences relating to viewing and reading about childbirth and perceived knowledge about childbirth. Drummond and Rickwood (1997) reported good internal consistency (Cronbach  $\alpha = 0.68$ ) in an Australian population of pregnant women (see Appendix T). This is a validated questionnaire about knowledge of childbirth with the intention of using being to increase women's knowledge base around normal birth even if they chose a repeat CS.

**6. Satisfaction with care:** The Satisfaction with Service Questionnaire was developed by the NBAC midwives and used to determine the frequency and level of midwifery care as well as women's satisfaction with antenatal midwifery care. The survey had not been previously validated, however a trial of the survey was conducted by the

NBAC midwives in the antenatal clinic and refinements were made based on feedback from the women (see Appendix U).

7. Obstetric data: Obstetric data relating to birth outcomes (mode of birth) was collected from the women's medical records.

#### **4.3.8 Data Analysis**

The antenatal phase of the NBAC evaluation analysed both quantitative and qualitative data.

**4.3.8.1 Quantitative analysis.** The same analysis of data was used as described in Chapter Three, in so much that descriptive statistics were computed for continuous data, such as age, whilst employment, models of care and other categorical data were expressed as percentages and counts within each category. Continuous post intervention variables, such as childbirth fear, childbirth confidence and childbirth knowledge were compared using the Chi-Square test. Where the expected frequency of variables e.g. in at least one cell for a 2x2 contingency table was less than 5, Yates correction was used. Descriptive statistics were used for the birth intention and birth outcomes. Statistical significance for this study was determined to be a p value of < 0.05. As previously discussed in chapter three, errors in data entry and validity of tests employed were minimized by checking the data after computer entry for any coding or entry errors.

**4.3.8.2 Qualitative analysis – reason for intended birth mode this pregnancy.** As previously stated an open ended question asking women to state their reasons for preference or intention of birth mode was included in the data collection package (Time One). Women (n=92) in both groups (intervention and comparison responded to this question in the baseline questionnaire at recruitment (Time One data collection). Latent content analysis was used to systematically analyse the text in order to identify the main themes that emerged from the responses (Kumar 2005). Firstly all the responses to the question were read. The response(s) were then typed verbatim into a separate word document and content analysis was conducted to extract themes. All 92 responses were used in the analysis until the responses were

being repeated and saturation of data was reached (Kumar, 2005). Each of the responses was examined by a team which included the researcher, the research assistant and a PhD candidate experienced in qualitative analysis to ascertain similarities and differences. Like concepts or words were combined under one category. The category was named that was descriptive of the responses.

**4.3.8.3 Qualitative analysis – the words of the women.** Twenty nine women (31.5%) chose to write unsolicited comments on the back of the data collection packages or in the margins next to the questionnaire items (14 women from the comparison group and 15 women from the NBAC group). A further 18 women made comments during the telephone administration of the Time Three data collection package (eight from the comparison group and ten from the NBAC group) and these comments were noted word for word in field notes. A similar process of latent content analysis was used as described previously (Kumar, 2005). This information was collected to identify words of potential interest so that the researcher could make inferences from the responses that would add value to the clinic evaluation. The comments written on the questionnaires were recorded verbatim into a separate table. The identification number and the question which the comment was made against were also recorded. The verbatim script was grouped into comparison and NBAC groups and the time points at which they were recorded (Time One, Time Two or Time Three).

#### **4.3.9 Ethical Consideration**

As stated in Chapter Three permission to conduct the study which was granted from KEMH Ethics Committee (1469/EW) and the Human Research Ethics Committee at Curtin University.

### **4.4 Findings**

In this section of the chapter the findings of the NBAC antenatal service evaluation are presented. Firstly the demographic data, including key variables such as models of care; place of first CS, reason for first CS, antenatal education and birth intention are described. Finally, results in relation to testing the six hypotheses are reported in

order of the hypotheses proposed in the methods and the results of the three objectives are presented. The qualitative findings are presented following hypotheses testing.

#### **4.4.1 Demographic Characteristics of the Sample**

Demographic data was collected at recruitment (Time One) confirming that the comparison and NBAC groups were comparable in terms of age, education; income level and place of birth (refer to Table 4.2). The age of the participants ranged from 18 to 45 years with the majority of women in both groups being 31 to 40 years of age. Most women reported being married or in a defacto relationship. Between 36 and 47% of women had a diploma or degree qualification; and 68% of women in both groups were employed. The majority of women from both groups indicated their place of birth was Australia and there was no difference between groups in term of language spoken at home. What is noted is that both the comparison and NBAC groups are not a diverse group in terms of income, education and homogeneity.

In relation to partner's employment status (95.4% for the comparison group and 87.2% for the NBAC group), and household income (55.3% versus 63.9%) there was no significant difference. For the majority of women in both groups this was their first pregnancy following one previous CS [84.4% comparison group versus 83% NBAC ( $p = 0.909$ )]. The remaining women had experienced a vaginal birth before their CS ( $n = 7$  comparison group,  $n = 9$  NBAC). From the comparison group, 6.7% ( $n = 3$ ) women had two previous vaginal births and 8.9% ( $n = 4$ ) had three previous vaginal births. For the NBAC group 8.5% ( $n = 4$ ) women had two previous vaginal births and 8.5% ( $n = 5$ ) had three previous vaginal births. No women from either group had more than three previous births.

#### **4.4.2 Comparison of Key Variables between Groups**

Four key variables were also collected at recruitment (Time One) and compared between both groups due to their potential to influence a woman's perceptions of her birth experience and her decision about birth preference in a subsequent pregnancy (Johnson and Slade, 2002). These variables included model of antenatal care in the

Table 4.2

*Demographic profile of sample*

	Comparison group n (%)	NBAC group n (%)
<b>Age (years)</b>	<b>N = 45</b>	<b>N = 47</b>
18 – 20	1 (2.2)	1 (2.1)
21 – 25	3 (6.7)	6 (12.8)
26 – 30	10 (22.2)	8 (17.0)
31 – 35	21 (46.7)	20 (42.6)
36 – 40	10 (22.2)	11 (23.4)
41- 45	0	1 (2.1)
Chi-square = 0.421: d.f. = 3; p-value = 0.936 (combining first two and last two age groups); using Yates correction		
<b>Education Level</b>	<b>N = 45</b>	<b>N = 47</b>
Secondary School < year 12	10 (22.2)	3(6.4)
Secondary School Year 12	9 (20)	12 (25.5)
Apprenticeship	1 (2.2)	4 (8.5)
Diploma/Degree	16 (35.6)	22 (46.8)
Post-graduate Qualifications	7 (14.9)	6 (12.8)
Other	2 (4.3)	0
Chi-square = 3.619: df = 4: p-value = 0.460 (combining ‘Apprenticeship’ with ‘other’); using Yates correction		
<b>Income</b>	<b>N = 45</b>	<b>N = 47</b>
Prefer not to Answer	3 (6.7)	1 (2.1)
< 20,000	2 (4.4)	3 (6.4)
20,001 – 40,000	2 (4.4)	4 (8.5)
40,001 – 60,000	12 (26.7)	9 (19.1)
60,001 – 80,000	11 (23.4)	10 (21.3)
> 80,001	15 (31.9)	20 (42.6)
Chi-square = 0.831: d.f. = 3; p-value = 0.842 (combining 2 <sup>nd</sup> and 3 <sup>rd</sup> categories and excluding 1 <sup>st</sup> ); using Yates correction		
<b>Place of Birth</b>	<b>N = 45</b>	<b>N = 47</b>
Australia	27 (60)	33 (70.2)
Europe	2 (4.4)	1 (2.1)
United Kingdom	7 (15.6)	6 (12.8)
Asia	5 (11.1)	4 (8.5)
Africa	4 (8.9)	3 (6.4)
Chi-square = 0.349: d.f. = 3; p-value = 0.951, (combining 2 <sup>nd</sup> and 3 <sup>rd</sup> categories); using Yates correction		

previous pregnancy, antenatal education in the current pregnancy, place of first CS and reason for first CS.

**4.4.2.1 Models of antenatal care in the previous pregnancy.** Women indicated that they accessed a range of models of care in their previous pregnancy including midwifery-led models, doctor-led models or a combination of midwife and doctor shared care models. A shared care model is one where the woman alternates her antenatal visits with the hospital clinic and her family doctor, whilst the team midwifery model is one where all antenatal care is provided by a group of six midwives. The women's medical records were reviewed by an obstetrician allocated to the team to determine suitability for team midwifery care. No significant differences were identified between the two groups; even though less comparison group women (11.1%, n = 5) had accessed private obstetric care in their previous pregnancy than NBAC women, however numbers are small [(21.3%, n = 10) (p = 0.933)] (see Table 4.3).

**4.4.2.2 Place and reason for first CS.** In relation to place of their first CS, 71.1% (n = 32) of the comparison group had their CS at the study setting compared with 55.3% (n = 26) in the NBAC group (p = 0.430). Auditing the women's medical records revealed six main reasons for their first CS (see Table 4.4). No differences were noted between the two groups in terms of failure to progress, fetal distress, big baby and other (intra-uterine growth restriction, pre-eclampsia and ante partum haemorrhage). The groups did not differ in terms of breech presentation [comparison group 9% (n = 4) versus 20% (n = 9) NBAC (p = 0.812) and maternal request despite the higher numbers in the NBAC group and the comparison group respectively. Five comparison group women (11.1%) requested their first CS as opposed to only 1 woman (2.2%) in the NBAC group. Although these differences were not statically significant, again small numbers must be noted.

**4.4.2.3 Antenatal Education in current pregnancy.** Effective antenatal education is one of the complex factors that influence women's choices and decisions about the interventions they receive during childbirth. Antenatal education influences a woman's understanding about the benefits and consequences of interventions and

Table 4.3

*Comparison of Models of Antenatal Care Previous Pregnancy*

<b>Models of AN Care</b>	<b>Comparison group N = 45 n (%)</b>	<b>NBAC group N = 47 n (%)</b>
Birth Centre Midwife	3 (6.7)	6 (12.8)
Shared Care GP/Hospital	11 (24.4)	8 (17)
Midwife Clinic	15 (33.3)	12 (25.5)
Doctor Clinic	7 (15.6)	4 (8.5)
Doctor Private Rooms	5 (11.1)	10 ( 21.3)
Team Midwifery	4 (8.9)	5 (10.6)
Other	0	2 (4.3)

Chi-square = 0.842; d.f. = 4; p-value = 0.933, (combining 4<sup>th</sup> and 5<sup>th</sup> categories and omitting 'other') using Yates correction

Table 4.4

*Summary of reason for previous CS*

<b>Reason for Previous CS</b>	<b>Comparison group N = 45 n (%)</b>	<b>NBAC group N = 47 n (%)</b>
Failure to Progress – OP	12 (26.7)	12 (25.5)
Failure to Progress	6 (13.3)	8 (17.8)
Fetal Distress	9 (20)	9 (20)
Breech	4 (8.9)	9 (20)
Big Baby	2 (4.4)	2 (4.4)
Maternal Request	5 (11.1)	1 (2.2)
Other	7 (15.6)	6 (12.7)

Chi-square = 2.977; d.f. = 6; p-value = 0. 812; using Yates correction

about making informed choice which impacts childbirth decisions and outcomes (Svensson, 2005). It was therefore important to explore whether antenatal education influenced women's choice of birth mode. More women from the NBAC group 10.6% (n = 5), attended antenatal education in the current pregnancy compared with

the comparison group, 4.9 % (n = 2) (p = 0.449). Within the study setting, pregnant women are provided with information in a number of formats about pregnancy and birth; the information can be provided as video, DVD or books. At the recruitment visit (Time One) 95.1% (n = 39) of the comparison group had watched a video about birth, which was comparable to the NBAC group (89.4%; n = 42). Similar numbers from both groups at the time of recruitment indicated they had read a few books in the current pregnancy (36% versus 38%). Although less women in the comparison group, 36% (n = 16), indicated the books were very informative compared with 51% (n = 24) in the NBAC group, this was not statistically significant (p = 0.205). At Time One, one participant from each group did not read any books and one participant from each group indicated the books were only slightly informative.

At Time Two (36 weeks) more women in both groups indicated they had read books, however there were no significant differences (22.2% to 31.4% for comparison group and 29.8% to 36% for NBAC). Slightly more women in the comparison group felt the books were informative (48.6% versus 36.4%) whereas only one woman from each group had not read any books.

#### **4.5 Results of Hypothesis Testing**

Six hypotheses were proposed around the impact of the NBAC antenatal service on women's childbirth fear; childbirth self-efficacy (confidence); childbirth knowledge; satisfaction with antenatal care; intention to birth vaginally at 36 weeks; and number of women achieving a vaginal birth. The results for each of these hypotheses are now presented.

##### **4.5.1 Childbirth Fear**

It was hypothesised that the NBAC antenatal service would reduce childbirth fear for those women who received this service compared to the comparison group of women who did not. The variable of childbirth fear was measured using the Childbirth Experience and Expectations Questionnaire (WDEQ) Version A. Women from both groups reported high levels of child birth fear (defined as a score  $\geq 60$ ) at all three time points. Mean scores ranged between 70 and 81. Although there was a slight decrease in the fear scores of the NBAC group at Time Two this was not statistically

significant ( $p = 0.943$ ). See Table 4.5 for more detail. When fear scores were compared with other key variables such as age, place of birth, parity and birth intention using ANOVA, no significant relationships were found in either group ( $p > 0.05$ ). The hypothesis that the NBAC group would have lower childbirth fear scores was not supported. Women who received antenatal care from NBAC midwives show no difference in level of fear at booking and 36 weeks gestation than those women who do not receive care from the NBAC midwives.

#### **4.5.2 Childbirth Self-efficacy**

The second hypothesis was that the NBAC antenatal service would increase pregnant women's childbirth self-efficacy or confidence. The CBSEI questionnaire seeks to measure women's confidence for undertaking the process of childbirth as well as eliciting their expectation or belief that they will be able to carry out the behaviours needed to successfully manage their labour and birth. A higher sum score of the questionnaire indicates a higher level of self-efficacy and outcome expectancy for birth (see Table 4.6). While there were some slight differences between the two groups; total mean self-efficacy scores between groups and across time points revealed no significant differences. However within the groups there was a significant increase in confidence in the NBAC group ( $p = 0.011$ ) at time two compared to the comparison group ( $p = 0.147$ ). There was no difference within the groups in relation to outcome expectancy [( $p = 0.455$ ) comparison group versus ( $p = 0.459$ ) NBAC group]. Therefore the prediction that the NBAC group would have higher levels of confidence for labour and birth was supported. Women who received antenatal care from the NBAC midwives demonstrated an increase in self-efficacy compared to those women who do not receive care from the NBAC midwives.

#### **4.5.3 Childbirth Knowledge**

The third hypothesis predicted that the NBAC antenatal service would increase childbirth knowledge, which also included knowledge of behavioural techniques to help with the labour and birth, regardless of birth mode; ability to name the behavioural techniques and practise the behavioural techniques. At Time One, both

groups of women had similar perceptions of childbirth knowledge (refer to Table 4.7).

Table 4.5

*Comparison of Fear scores at the three time points*

	Level of Fear	Comparison group n (%)	NBAC group n (%)
<b>Time One (recruitment)</b>	High	42 (93.3)	44 (93.6)
	Medium/Low	3 (6.7)	3 (6.4)
Chi-square = 0.135; d.f. = 1; p-value = 0.713; using Yates correction			
Total		N=45	N=47
<b>Time Two (36 wk gestation)</b>	High	33 (94.3)	30 (90.9)
	Medium/Low	2 (5.7)	3 (9.1)
Chi-square = 0.005; d.f. =1; p-value = 0.943; using Yates correction			
Total		N=35	N=33
<b>Time Three (6 wk postnatal)</b>	High	17 (94.4)	16 (84.2)
	Medium/Low	1 (5.6)	3 (15.8)
Chi-square = 0.223; d.f. = 1; p-value = 0.637; using Yates correction			
Total		N=18	N=19

Table 4.6

*Mean Self-efficacy and Outcome scores*

	Comparison group score (n)	NBAC group score (n)
<b>Childbirth Self efficacy</b>		
Time One (recruitment)	205 (n = 45)	194 (n = 47)
Time Two (36 weeks)	222 (n = 35)	215 (n = 33)
Paired sample t-test: comparison group t (31 =1.071), p-value = 0.147 (1 tailed); NBAC t (31 = 2.414), p-value = 0.011* (1 tailed)		* p-value <0.05
<b>Outcome expectancy</b>		
Time One (recruitment)	231 (n = 45)	236 (n = 47)
Time Two (36 weeks)	233 (n = 35)	239 (n = 33)
Paired sample t-test: comparison group t (31 = 0.114), p-value = 0.455 (1 tailed); NBAC t (32 = 0.104), p-value = 0.459 (1 tailed)		

In addition, similarities were found in comparisons between how detailed women felt their knowledge was. By 36 weeks of pregnancy (Time Two) there was no difference between the NBAC women and the comparison group with no recorded change in childbirth knowledge perception over time. However significant differences were identified between the NBAC group and the comparison group in relation to knowledge of behavioural techniques and how often they were practiced, thereby supporting the hypothesis that women who received antenatal care from the NBAC midwives had an increase in child birth knowledge in relation to behavioural techniques than those women who do not receive care from the NBAC midwives.

**4.5.3.1 Knowledge of behavioural techniques.** As part of preparation for labour and birth, all women in this sample were taught a number of behavioural techniques during the antenatal education sessions as a coping support mechanism. Women expressing an intention to pursue VBAC were not targeted, nor were women expressing intention for repeat CS excluded. The behavioural techniques were felt to be of value for all women regardless of birth mode. There was no difference between the knowledge of behavioural techniques in the comparison and NBAC groups at Time One. However by Time Two only 50% ( $n = 17$ ) of women in the comparison group indicated they had any knowledge of behavioural techniques, compared with 81.8% ( $n = 27$ ) from the NBAC group ( $p = 0.004$ ). Even though the numbers are small, the results support the hypothesis that the NBAC antenatal service increased childbirth knowledge about behavioural techniques.

**4.5.3.2 Naming behavioural techniques.** The groups were asked to identify three behavioural techniques they could use during labour and birth. At Time One there was no significant difference between the groups in being able to identify one, two or three behavioural techniques (see Table 4.8). However, by Time Two, more women from the NBAC group 45.5% ( $n = 15$ ), were able to identify three behavioural techniques compared with the comparison group, [11.4% ( $n = 4$ ) ( $p = 0.011$ )], thereby supporting the hypothesis that the NBAC antenatal service increased childbirth knowledge albeit for a small number of women.

Table 4.7

*Comparison of childbirth knowledge*

<b>Variables</b>	<b>Comparison group N = 45 n (%)</b>	<b>NBAC group N = 47 n (%)</b>
<b>Time One (Recruitment)</b>		
Much less detailed	1 (2.2)	2 (4.3)
Less detailed	5 (11.1)	5 (10.6)
Same	23 (51.1)	26 (55.3)
More detailed	14 (31.1)	10 (21.3)
Much more detailed	2 (4.3)	4 (8.5)
Chi-square = 0.351; d.f. = 2; p-value = 0.839 (combining 1 <sup>st</sup> & 2 <sup>nd</sup> and 4 <sup>th</sup> & 5 <sup>th</sup> categories)		
<b>Time Two (36 Weeks Gestation)</b>		
Much less detailed	1 (2.9)	0
Less detailed	3 (8.6)	2 (6.1)
Same	21 (60.0)	20 (60.6)
More detailed	9 (25.7)	8 (24.2)
Much more detailed	1 (2.9)	3 (9.1)
Chi-square = 0.147; d.f. = 2; p-value = 0.929 (combining 1 <sup>st</sup> & 2 <sup>nd</sup> and 4 <sup>th</sup> & 5 <sup>th</sup> categories); using Yates correction		

**4.5.3.3 Practising behavioural techniques.** Finally, the last subscale items 'how often do you practice the techniques' involved determining the number of times per week the women practiced the behavioural techniques. There were no statistically significant differences in how often the women practised behavioural techniques at Time One. However, by Time Two fewer women in the comparison group, 3% (n = 1) practised behavioural techniques daily, compared with 12% (n = 4) of the NBAC group (p = 0.012). Again, although these results support the hypothesis that the NBAC antenatal service would increase childbirth knowledge about behavioural techniques to cope with labour and birth, the numbers are small. Table 4.8 provides an overview of the comparison of the three subscales from the childbirth knowledge scale. The Table compares responses at Time One and Time Two from the comparison and the NBAC groups.

#### 4.5.4 Satisfaction with the antenatal care

The fourth hypothesis was that women receiving care from the NBAC antenatal service would have greater satisfaction than those women receiving standard care in the comparison group. A satisfaction survey was developed by the NBAC midwives and trialled in the NBAC clinic and the antenatal clinic. The survey and its individual items have not been tested for validity and reliability and therefore results need to be interpreted with caution. The satisfaction with antenatal care questionnaire included two parts. In the first section women were asked to rate the level of reassurance, support, helpfulness and confidence they received from midwives. While there were no significant differences between groups on levels of midwifery reassurance, helpfulness or confidence provided, women in the NBAC consistently scored these items as more favourable [reassurance 72% comparison group versus 89% NBAC; very helpful 61% comparison group versus 94% NBAC; confidence 52% comparison group versus 68% NBAC]. Nor was statistical significance reached for the item pertaining to midwifery support as, 95% (n = 18) of NBAC women indicated that they felt very supported by the midwives compared with 66.6% (n = 12) of the comparison group (p = 0.273).

#### 4.5.5 Birth Intention

The fifth hypothesis proposed that the NBAC group would have an increased intention to birth vaginally at Time Two (36 weeks gestation). At Time One (recruitment) 72.3 % (n = 34) of the NBAC group indicated a preference for a VBAC compared to 55.6% (n = 25) in the comparison group. Conversely more women in the comparison group indicated their intention to have a repeat CS [26.7% (n = 12) comparison group versus 12.8% (n = 6) NBAC]. Equal numbers of women in both groups reported being unsure of their birth mode intention [17.7% (n = 8) comparison group versus 14.9 (n = 7) NBAC]. However this was not statistically significant (p = 0.182).

At Time Two (36 weeks gestation) there remained a difference between the groups on intention to birth vaginally. Eighty percent (n = 24) of the NBAC group compared with 56.3% (n = 18) of the comparison group wanted a VBAC at 36 weeks. At the same time, 34.4% (n = 11) of comparison group women wanted a repeat CS as

opposed to 12.9% (n = 4) of the NBAC women. Approximately 12% of women in both groups remained unsure of their preference or intention at 36 weeks. Again this was not statistically significant (p = 0.210). The hypothesis was thus not supported as similar numbers of women in the NBAC group indicated they intended or preferred to VBAC at Time Two (36 weeks gestation) as those in the comparison group. Therefore women who attended the NBAC Antenatal service have no increased intention to VBAC than those who do not.

**4.5.5.1 Reason for birth intention.** As previously noted an open-ended question asking the women to explain their reason for their birth preference or intention was included in the data collection package at recruitment (Time One). All of the women from the comparison group (n = 45) and all the women from the NBAC group responded (n = 47). Using content analysis nine defined reasons were identified that described women's reasons for their intended or preferred birth mode. These are illustrated in Table 4.10. For the comparison group the two main reasons for intending to VBAC were *rite of passage* (n = 10) and *quicker recovery* (n = 7). Four women mentioned fear of CS as their choice for VBAC, whilst only one woman indicated that she based her choice on the belief that vaginal birth was *safer*. Similarly one woman considered vaginal birth would afford her greater *control*. Likewise, the women from the NBAC group who indicated VBAC as their birth choice also cited *rite of passage* (n = 15) and *quicker recovery* (n = 12) as the main reasons for their choice. Four women from the NBAC group also highlighted fear of CS as the reason for their choice.

Women from the comparison group who intended to have a repeat CS indicated that *fear of vaginal birth* (n = 3) and having a *pre-existing condition* (n = 3) were the main reasons for their choice. Other reasons included the notion that CS was *safer* (n = 2) and facilitated *more control* over their birth experience (n = 2). One woman intended to have a repeat CS because she had a previous CS. The results were similar for the women from the NBAC group. *Fear of vaginal birth* was indicated as the main reasons for repeat elective CS (n = 2).

Table 4.8

*Comparison of knowledge of behavioural techniques and frequency of practice*

<b>Variables</b>	<b>Comparison N = 45 n (%)</b>	<b>NBAC N = 47 n (%)</b>
<b>Time One (Recruitment)</b>		
<b>Knowledge of Behavioural Techniques</b>	28 (54.5)	26 (55.3)
Chi-square = 0.452: d.f. = 1; p-value = 0.501; comparing Yes/No responses via a 2x2 contingency table		
<b>Naming Behavioural Techniques</b>		
Name 0 techniques	24 (53.3)	22 (46.8)
Name 1 techniques	0	1 (2.1)
Name 2 techniques	2 (4.4)	4 (8.5)
Name 3 techniques	19 (42.2)	20 (42.5)
Chi-square = 0.391: d.f. = 1; p-value = 0.532 (combining categories 2 – 4)		
<b>Practising Behavioural Techniques</b>		
Practice techniques daily	2 (4.4)	3 (6.4)
Practice techniques weekly	7 (15.5)	5 (10.6)
Practice techniques monthly	5 (11.1)	4 (8.5)
Never practice	21 (47)	28 (59.6)
Chi-square = 0.269: d.f. = 2; p-value = 0.874 (combining categories 1 and 2)		
<b>Time Two (36 Weeks Gestation)</b>		
	<b>N = 35 n (%)</b>	<b>N = 33 n (%)</b>
<b>Knowledge of Behavioural Techniques</b>	17 (50)	27 (81.8)
Chi-square = 8.221: d.f. = 1; p-value = 0.004*, comparing Yes/No responses via 2x2 contingency table		
<b>Naming Behavioural Techniques</b>		
Name 0 techniques	20 (57.1)	7 (21.2)
Name 1 techniques	5 (14.3)	4 (12.1)
Name 2 techniques	6 (17.1)	7 (21.2)
Name 3 techniques	4 (11.4)	15 (45.5)
Chi-square = 10.863: d.f. = 3; p-value = 0.012*, using Yates correction		
<b>Practising Behavioural Techniques</b>		

Practice techniques daily	1 (2.9)	4 (12.1)
Practice techniques weekly	16 (45.7)	14 (42.4)
Practice techniques monthly	4 (11.4)	5 (15.2)
Never practice	14 (40)	10 (30.3)

Chi-square = 0.258; d.f. = 2; p-value = 0.879 (combining categories 1 and 2); using Yates correction

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\* p - value < 0.05

Table 4. 9

*Birth intention this pregnancy*

<b>Birth intention this pregnancy</b>	<b>Comparison group</b>	<b>NBAC group</b>
<b>Time One (recruitment)</b>	<b>N = 45</b>	<b>N = 47</b>
	<b>n (%)</b>	<b>n (%)</b>
VBAC	25 (55.6)	34 (72.3)
CS	12 (26.7)	6 (12.8)
Unsure	8 (17.7)	7 (14.9)
Chi-square = 3.398; d.f. = 2; p-value = 0.182		
<b>Time Two (36 weeks gestation)</b>	<b>Comparison group</b>	<b>NBAC group</b>
	<b>N = 33</b>	<b>N = 30</b>
	<b>n (%)</b>	<b>n (%)</b>
VBAC	18 (40)	24 (80)
CS	11 (34.4)	4 (12.9)
Unsure	4 (12.1)	2 (6.5)
Chi-square = 3.121; d.f. = 2; p-value = 0.210; using Yates correction		

Finally, women from the comparison group who were unsure remained uncertain about birth intention (n = 3). For the women from the comparison group who were not clear about their birth intention, two had pre-existing medical condition i.e. gestational diabetes and two women indicated they would need to have another CS. Only one woman from the comparison indicated *fear* as being the reason for being unsure about birth intention. Conversely, the women from the NBAC group who were not certain about their birth intention indicated they were afraid of the birth experience (n = 3), whilst two women remained uncertain about their birth intention.

#### 4.5.6 Mode of Birth

The final hypothesis was that more women receiving antenatal care through the NBAC antenatal service would achieve a vaginal birth than women in the comparison group. The labour and birth outcomes were collected from the women's medical records. Information was collected from 45 women in the comparison group and 45 women in the NBAC group. Two women decided to engage a private midwife during their pregnancy and gave birth at home. These women have been excluded as it could not be determined they would have had a VBAC if they birthed in hospital.

Of the 25 women in the comparison group who wanted a VBAC 60% (n = 15) were successful. Likewise of the 34 women in the NBAC group who intended to have a VBAC more than half [n = 20, (58.8%)] achieved this goal, with 13 women having a spontaneous vaginal birth and the remainder having an assisted vaginal birth in hospital. The difference was not significant (p = 0.984). The hypothesis that attending the NBAC clinic would increase VBAC rates was not supported. Table 4.11 summarises a comparison of the birth mode.

There were 10 women in the comparison group who indicated their intent to VBAC but did not achieve a VBAC. Four of these women had an elective CS. One for elevated blood pressure and the remaining three changed their mind at 36 weeks gestation and requested a repeat CS. Six out of the ten women had a CS after labour commenced; three for failure to progress and three for fetal distress.

There were 14 NBAC women who wanted a VBAC but had a CS. Eight of these women had an elective CS. Two had a breech presentation and chose another CS; two were advised they had a "big baby" and opted for another CS. Four women changed their mind during pregnancy and requested a repeat CS after the 36 week gestation visit with the obstetrician. Six women had a non-elective CS after labour commenced; two for elevated blood pressure, two for fetal distress and one for failure to progress. Of the eight women in the comparison group who were unsure of their birth intention at 36 weeks all had an elective repeat CS. In contrast, of the

Table 4.10

*Reason for birth intention*

<b>Variables</b>	<b>Comparison group N = 45 n (%)</b>	<b>NBAC group N = 47 n (%)</b>
<b>VBAC</b>		
Rite of passage	10 (22.2)	15 (31.9)
Quicker recovery	7 (15.5)	12 (25.5)
Fear of CS	4 (4.4)	4 (11.8)
Safer	2 (4.4)	1 (2.9)
More control	1 (2.2)	1 (2.9)
Trauma	1 (2.2)	1 (2.9)
<b>Total</b>	<b>25</b>	<b>34</b>
<b>CAESAREAN SECTION</b>		
Fear of VBAC	3 (6.6)	2 (4.2)
Pre-existing condition	3 (6.6)	1 (2.9)
Safer	2 (4.4)	1 (2.9)
More control	2 (4.4)	1 (2.9)
Need another CS	1 (2.2)	1 (2.9)
Quicker recovery	1 (2.2)	0
<b>Total</b>	<b>12</b>	<b>6</b>
<b>UNSURE</b>		
Not sure	3 (6.6)	2 (4.2)
Need another CS	2 (4.4)	0
Pre-existing condition	2 (4.4)	0
Fear	1 (2.2)	3 (6.3)
More control	0	1 (2.9)
Trauma	0	1 (2.9)
<b>Total</b>	<b>8</b>	<b>7</b>

seven women in the NBAC group who were unsure at 36 weeks; three chose to have a repeat CS; three had a non-elective CS and one chose to labour and achieved a VBAC (see Figure 4.12).

Additionally, a comparison of birth intention and birth outcome was obtained for women from the comparison and the NBAC groups. This was achieved by

correlating the birth outcome from the woman's medical record with her birth intention at Time One. Table 4.12 provides an overview of the comparison between birth outcome and birth intention.

Table 4.11

*Comparison of mode of birth*

<b>Actual Mode of Birth</b>	<b>Comparison N = 45 n (%)</b>	<b>NBAC N = 45 n (%)</b>
SVD	10 (22.2)	13 (31.9)
Vacuum Ext	5 (11.1)	5 (10.6)
ELUSCS	21 (46.7)	19 (40.4)
NELUSCS	9 (20)	8 (17.0)

Chi-square = 0.161: d.f. = 3: p-value = 0.984

Interestingly, no women from either the comparison or NBAC groups changed intended birth preference from CS to VBAC from Time One (recruitment) to Time Two (36 weeks gestation). Three women from the comparison group who indicated VBAC changed their mind after the 36 week visit with the obstetrician compared with four women from the NBAC group. For the women who chose a repeat CS from the comparison group did so because of antepartum haemorrhage (n = 2) and for elevated blood pressure not treated with medication (n = 2). However, women from the NBAC group did so because of mal-presentation (n = 2) and a big baby (n = 2).

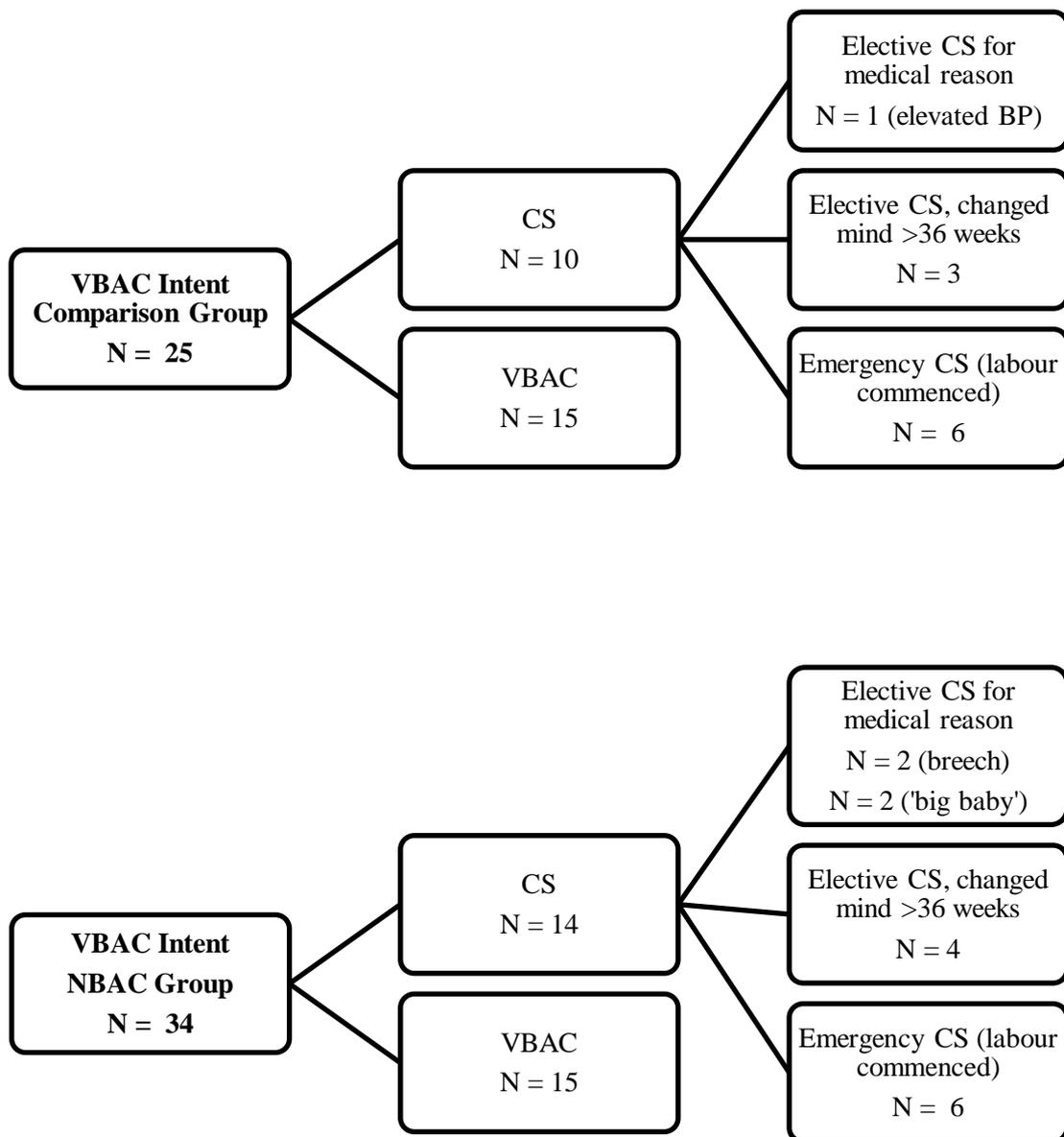


Figure 4.2 Outcomes for women who intended to VBAC at 36 weeks

Table 4.12

*Comparison of Birth intention and Birth Outcome*

<b>BIRTH OUTCOME</b>			
<b>Comparison group N=45</b>			
<b>n (%)</b>			
<b>BIRTH INTENTION</b>	VBAC	ELUSCS	NELUSCS
	n=15	n=23	n=7
VBAC	15 (60)	4 (16)	6 (24)
n=25			
CS	0	11 (91.6)	1 (8.3)
n=12			
UNSURE	0	8 (100)	0
n=8			
<b>NBAC group N = 47</b>			
<b>n (%)</b>			
<b>BIRTH INTENTION</b>	VBAC	ELUSCS	NELUSCS
	n=19 <sup>^</sup>	n=17	n=8
VBAC	18 (58.8)	8 (23.5)	5 (10.6)
n=34 <sup>^</sup>			
CS	0	6 (100)	0
n=6			
UNSURE	1 (14.2)	3 (42.8)	3 (42.8)
n=7			

<sup>^</sup>Note two records excluded as VBAC at home

## 4.6 The Words of the Women

Unexpected outcomes from the Time Two questionnaires were the comments some women recorded on their questionnaires or at Time Three expressed during their telephone interview. The comments were recorded against close-ended questions, or against the likert scales. This additional and unsolicited information provided insight into the two groups' experience of care during pregnancy and /or during the labour and birth of their baby. The analysis revealed a difference in the words and statements women used to describe their experiences.

At Time Two, 29 women (31.5%) chose to write comments on the back of the questionnaires in the data collection package or in the margins next to the questionnaire items (14 women from the comparison group and 15 women from the NBAC group). A further 18 women made comments to the researcher during the telephone administration of the Time Three study package (eight from the comparison group and ten from the NBAC group) which were immediately captured in field notes.

### 4.6.1 Comparison Group Perceptions of Care Revealed

Women from the comparison group at Time Two (n = 14) stated that they often felt '*ignored*' by care givers during pregnancy. Commonly women used phrases including '*not being listened to*', '*not being spoken to*' or '*not acknowledged*'. They noted how they struggled to understand what was happening to them or why certain decision being made. Perceptions of being afforded '*no choice*' or '*control*' featured in these women's stories with one woman writing that she felt '*dictated to*'. A positive comment was presented by one woman who indicated she was able to make her own choices and was offered support in those choices.

Statements regarding these women's labour and birth experience were generally negative. Women talked about being '*frightened*', '*scared*' '*anxious*' or being in a state of '*panic*'. Terms such as '*petrified*', '*unnerving*' and '*freaked out*' were also common in the data. Not surprisingly these types of experiences engendered feelings of '*isolation*' and '*abandonment*' as these women struggled to '*know what was going*

on'. Women talked about how distressing it was to be separated from their partner and/or baby if they had a CS. Feeling lonely and powerless was an overarching message.

At Time Three (six weeks post birth) when women from the comparison group (n = 8) reflected on their experience the majority used terms such as '*let down*', '*weak*' (for having a CS), '*a failure*', '*disappointed*', '*ambivalent*', '*ripped off*', '*guilty*' (for not succeeding at vaginal birth) and '*frustrated*'. One woman commented that '*felt as though I had nothing*'. Two women commented on feeling '*empowered*' and having a '*good experience*'. Two other women specifically commented on their birth outcome with one suggesting her '*CS was not too bad*' and would consider having another CS. The other woman indicated she would never have a CS again or recommend it to anyone.

Despite the concerning statements described above, six women commented on the care they received from midwives during birth in a positive light. Women used words such as '*fantastic*', '*great*', '*wonderful*' and '*brilliant*' to describe midwives and were '*grateful*' for their care. Two women, however, indicated they received poor care using words such as '*terrible*', '*nasty*', '*uncompassionate*' and '*horrible*' to describe the midwives.

#### **4.6.2 NBAC group perceptions of care revealed**

In contrast, feedback from the women in the NBAC group at Time Two (n = 15) suggested differences in their experience. Women talked about the NBAC midwives being encouraging of VBAC and how they were informed whilst, accessing the clinic (*having information and feeling positive*). Thirteen women also made comments about the midwives in the NBAC clinic and whilst similar positive terms were used as the comparison group, the women also used terms such as '*supportive*' and '*on the same page*' to describe the relationship they had with the NBAC midwives. Notwithstanding, there were no comments from the NBAC group about feeling isolated or lonely; afraid or scared; or not being listened too or not being in control.

At Time Three, 10 NBAC women commented about how they noticed a change when admitted to the labour and birth suite. The women felt that some midwives in

the labour and birth suite had no confidence in women's ability to achieve a VBAC and heard statements like '*not believing she could have a VBAC*' and '*will fail*'. Some women also felt they were being criticised and '*judged*' by the labour and birth suite midwives because they were attempting VBAC. For five women who achieved VBAC they expressed '*being proud*', '*feeling ecstatic*', having '*an amazing experience*' and '*feeling clever*'. Whilst three of the women who had to have another CS also felt positive about their experiences and used terms such as '*in control*' and '*having knowledge*'. One woman compared the experience of her VBAC to her previous CS and stated that she had a closer bond with this child and she was able to be '*a mother*' to him.

#### **4.7 Summary of Results**

The demographic characteristics of the two groups were similar in respect of age, marital status, education, income, place of birth and language spoken at home. Other social demographic characteristics between the two groups were also similar in relation to parity, models of care received in previous pregnancy, antenatal education and reason for birth intention. Birth intention at Time One and Time Two were also similar between the two groups.

In relation to hypotheses testing, there was no significant difference in the levels of childbirth fear between the groups and no significant associations between childbirth fear and the woman's decision for her birth intention for the current pregnancy. However, there appeared to be a significant association between the levels of childbirth knowledge relating to behavioural techniques for coping during labour and birth; and an increase in childbirth confidence and self-efficacy for the women who received antenatal care in the NBAC clinic compared to those women who received standard antenatal care. Similarly there was also a significant association between the levels of satisfaction for the women who received NBAC antenatal care compared to the women who received standard antenatal care. However, there was little difference between the groups in actually achieving VBAC, regardless of their intention. Three reasons were identified as to why women did not achieve VBAC and whilst two of these were medical reasons, one was because the women changed their mind.

## 4.8 Discussion

In this phase of the evaluation involving pregnant women with a history of one previous CS, care provided by the NBAC antenatal service there was an increase in childbirth knowledge; an increase in childbirth confidence and increased satisfaction with pregnancy care, when compared with women who received standard antenatal care. The study concluded that there was no reduction in childbirth fear, or increased in VBAC intent for those women who received care from the NBAC antenatal service.

### 4.8.1 Positively Influencing Birth Intention

The results of our study indicate that slightly more women in the NBAC group intended to have a VBAC, particularly those women who were unsure about their intended birth mode. Whilst the findings of the NBAC study could not categorically demonstrate that the NBAC antenatal service made a difference to the birth intention of women who were unsure of their birth mode early in the pregnancy; the findings support the research by Shorten et al (2005). These authors conducted a randomized controlled trial of 227 (control group n = 112 and intervention group n = 115) pregnant women conducted in New South Wales, Australia. The women in the intervention group were given a decision-aid booklet at 28 weeks gestation, describing the risks and benefits of elective repeat CS and VBAC. The results indicated that women in the control group who were unsure of their birth intention remained unsure at 36 weeks gestation in comparison to the intervention group, which had increased knowledge and less decisional conflict. However, despite the reduction in decisional conflict by the intervention group and the increased VBAC intent at 36 weeks, the women's birth intent was not consistent with actual birth outcomes for many women. This was reflected in the findings from the NBAC antenatal evaluation where there were a relatively equal number of women from the NBAC group and the comparison group achieving VBAC. For those women who intended to have a VBAC but had a subsequent CS there were a number of factors that would have, in all likelihood, prevented them from achieving VBAC; including breech presentation and high blood pressure.

The evaluation of the NBAC antenatal service also highlights other areas of influence on women's intention to pursue VBAC, particularly from the obstetricians. Whilst slightly more women in the NBAC group intended to have a VBAC, this study revealed that similar numbers of women from both the NBAC and the comparison groups changed their mind from VBAC or being unsure to CS after the 36 week visit with the obstetrician. Medical advice remains a key factor for many women in relation to childbirth choice. The amount and type of information doctors provide to pregnant women can significantly impact on the CS rate (Landon, 2008). According to Appleton, Target, Rasmussen, Readman, Sale and Permezel (2000) maternal anxiety, fear and lack of confidence at the beginning of pregnancy was a key issue in influencing women's choice in relation to attempting VBAC. Whilst McGrath, et al (2010) support this view and suggest that if the health professional providing care to the women is hesitant in recommending VBAC, the women will opt for repeat elective CS. McGrath et al's (2010) descriptive phenomenological study of 20 women who had a previous CS from a hospital in Queensland, Australia, reported that doctors informed them about the risk about VBAC in terms of possible death to themselves or the baby. Furthermore, 40% of women in a study by Dodd et al (2004), indicated they would make their decision about mode of birth after considering the opinion of their doctor, further highlighting the influence medical officers have birth decision. Women who lack knowledge about birth choices in a subsequent pregnancy following CS should be of concern to midwives during antenatal care. Midwives are pivotal in providing structured information to increase knowledge about birth options following a previous CS (Frost, Shaw, Montgomery and Murphy, 2009).

What was highlighted in the NBAC antenatal evaluation from the qualitative data was that women chose VBAC because it was an integral part of being a woman and a mother – it was a rite of passage. The finding from this study support the growing body of literature that suggest that women's expectations to birth naturally are reinforced by their first CS experience (Fenwick et al, 2007). In a qualitative descriptive explorative study of 157 women to explore the childbirth expectations and knowledge of women who had experienced a CS and would prefer VBAC in a subsequent pregnancy; the authors found that women had strong views about the importance of working with their bodies to achieve vaginal birth.

#### 4.8.2 Increasing Women's Knowledge about Birth

Women who attended the NBAC antenatal service had increased childbirth knowledge around behavioural techniques in coping with labour and birth (regardless of birth intent) at 36 weeks gestation compared with women who received standard antenatal care. These findings, albeit with small numbers at Time One lead us to suggest that women who are provided with consistent support and information about their birth choices may be more likely to attempt VBAC and supports the growing body of literature which state that women are significantly more informed and experience greater certainty when they are provided with knowledge about childbirth (Farnworth et al, 2007; Frost et al, 2009; McGrath et al, 2010; Shorten et al, 2005). Farnworth et al (2007) suggests that continuity in the provision of information was identified as being particularly valuable by women in their study of 32 women to examine the impact of a decision support intervention for women choosing mode of birth after one previous CS. The control group (n = 16) continued to receive standard antenatal care, whilst the intervention group (n= 16) received, in addition to the same educational material as the control group, a DVD at 12 weeks and a visit at home by a known midwife at 30 weeks gestation. The women from the intervention group felt they were able to work through their previous birth experiences with the midwife which increased their knowledge about birth choices. Women who received the intervention described positive effects on several aspects of their experience in relation to deciding upon mode of birth, particularly in terms of emotional support, knowledge and confidence. The findings of the NBAC study support this view. Further to this, Shorten et al (2005) study suggested that knowledge and information alone do not appear to influence women's final birth preference and that the role of the midwife in facilitating informed choice is vital in decision-making processes. Informed decision-making about birth options requires a partnership between the woman and her care providers in which clear non-biased information is discussed and in which women are encouraged and supported. One of the key aims of the NBAC antenatal service was to provide support to women who experienced a previous CS.

This difference may be because the women who accessed the NBAC antenatal service were more self-motivated in pursuing information and knowledge of how to

facilitate a vaginal birth. This concept is supported by the research of Kingston and Chalmers (2009) who suggest that women rely on learning from their previous birth experience. Women will obtain the majority of their information from health care providers in the first instance, confirming or negating the information received by reading books. The authors determined that primiparous women were the most avid information gatherers, followed by women who had an expectation for their birth experience based on previous experience (Kingston and Chalmers, 2009).

**4.8.2.1 Using knowledge to reduce fear.** One of the objectives of the NBAC evaluation was to determine if the NBAC antenatal service reduced childbirth fear. Whilst the NBAC antenatal service demonstrated an increase in childbirth knowledge and confidence, having the knowledge did not appear to decrease fear levels or increase confidence in the women who attended the service. In fact, results from both the NBAC and comparison group women revealed how both groups had high levels of fear based upon the Wijma Delivery Expectancy/Experience Questionnaire. Interestingly, no results from either group revealed low levels of childbirth fear which would suggest that knowledge alone would not reduce fear, but that women respond to individual attention and care tailored to their individual needs and desires. Childbirth fear has been recognised in numerous studies (Farnworth and Pearson, 2007; Fenwick et al, 2006; Lobel and DeLuca, 2007; Nilsson and Lundgren, 2007; Rouhe, Salmela-Aro, Halmesmaki, and Saisto, 2009; Ryding et al, 1998) as a consequence of a traumatic birth experience which includes emergency CS (Koo et al, 2003). According to Rouhe et al (2009), there is a strong association between previous birth experiences and fear of childbirth in subsequent pregnancies. In their study of 1 400 pregnant women in Sweden and Finland to determine how severe fear of childbirth is distributed in pregnant women; the researchers found that childbirth fear was significantly stronger in a subsequent pregnancies if mothers had previously gone through CS. Fear was milder in early pregnancy compared with late pregnancy and the authors recommended intervention between 22 and 26 weeks of gestation (Rouhe et al, 2009). Whilst this does not support the findings of the NBAC study, the knowledge a woman has in relation to her birth options may mitigate childbirth fear or provide her with different ways of coping.

One possible reason why the NBAC antenatal evaluation results differ from other evidence around childbirth fear interventions in the antenatal period, could be that

the midwives from the NBAC clinic did not have any training in how to assess or counsel women who were not only fearful of childbirth but may have had a previous traumatic birth experience. In a study by Nerum et al (2006) of 86 pregnant Norwegian women with fear of childbirth and associated request for CS, the authors suggested that the women did not really want to be delivered by CS, but rather wanted help to become mentally prepared to give birth vaginally. In this study, 86% of the women changed their mind from CS to vaginal birth following counselling and talking through their experiences with trained midwives and psychologists. The request for the CS by women who have fear of childbirth may be a crisis reaction to a previous unresolved traumatic experience and whilst the NBAC study did not reveal any difference in the levels of fear based on birth intention, further research is required in this area.

A further limitation to the evaluation study presented relates to the small numbers of women and the results need to be interpreted with caution. A larger sample may have provided differences in relation to the NBAC antenatal service reducing childbirth fear. What is apparent however is that midwives have the opportunity, with the appropriate training to provide counselling intervention in conjunction with antenatal care. Women with fear of childbirth need individualised care with a known care provider. In order to help and support women with fear of childbirth, the evidence suggests midwives need to extend their skills in assisting women to work through and integrate their previous experiences. The evidence also suggests specific strategies to do this; including listening and acknowledging the previous experience (Salomonsson et al, 2010).

**4.8.2.2 Confidence in knowledge.** A further objective of the evaluation of the antenatal NBAC service was to determine if women who received this service would have increased childbirth self-efficacy (confidence). The impact of a woman's birthing experience on her level of childbirth confidence has not been well researched. Much of the research centres on childbirth fear, with limited reference made to confidence and satisfaction (Eden et al, 2004; Goodman et al, 2004; Lundgren, 2005; Nilsson and Lundgren, 2007). For example, Nilsson and Lundgren's phenomenological study of eight women who experienced severe fear of childbirth suggest that women's confidence in giving birth is lost because of their

attitude to childbirth. The women felt the need to meet not only their own expectations but the expectations of other people. If the women could not meet the expectations they felt as though they had failed, lost confidence, felt weaker and inferior to other women. The results of the NBAC study revealed low levels of confidence in the comparison group, while the NBAC group demonstrated higher levels of childbirth confidence. These results may be related to the high levels of childbirth fear, which both groups indicated; with increased knowledge off-setting the fear and improving confidence in the NBAC group. However these results need to be interpreted with caution because of the small numbers. The benefit of midwifery continuity of care has been discussed extensively in Chapter Two, particularly in relation to care across the continuum of pregnancy, labour and birth and the postpartum period. However, the NBAC evaluation only took into account continuity of care for the antenatal period. What was not known was the amount of control, the level of support and the type of relationship the woman had during her labour and birth experience which may influence her level of confidence and satisfaction.

#### **4.8.3 Women's Satisfaction with Antenatal Care**

A number of factors are considered vital to achieve a subsequent positive spontaneous vaginal birth or repeat CS including the quality of care by a known caregiver, communication and information sharing and the women's degree of control. All of these factors will also increase women's confidence in their ability to achieve a positive birth (Thomson and Downe, 2010).

Continuity of antenatal care by a small group of midwives within a dedicated service increased women's satisfaction with their pregnancy care. The NBAC group reported higher levels of support from the midwives, more encouragement from the midwives to take an active part in their care and felt that the midwives were easily contactable. The findings of the NBAC support the growing body of research about women's perceptions of midwives. In a qualitative study by Homer, Passant, Brodie, Kildea, Leap, Pincombe and Thorogood (2009) exploring the views of 28 women from around Australia, about what women wanted from midwives a number of themes were identified. The themes included skilled care based on up to date evidence based

information; reassurance which included being available to the woman and supporting her with her decisions plus continuity of caregiver. These women also suggested that personal qualities such as encouraging them to speak up and advocacy were needed to promote a positive birth experience.

#### **4.9 Limitations**

The limitations of this phase of the study are that it was undertaken with a small group of women from the tertiary referral centre in Perth, Western Australia, and we cannot claim that the women in the study represent all women who have had previous CS in Australia or other western countries. A number of women withdrew from the study after initial recruitment for a number of reasons. The reasons included complications that developed during the pregnancy that would exclude them from midwifery only care and ongoing psychological issues as a result of their previous birth experience. Some women simply chose not to continue with the study in spite of a number of attempts to contact them. As a result of loss to follow up, the Time Three numbers are small and the findings must be interpreted with caution.

Retaining pregnant women in studies can be difficult. Research by Janson, Alioto and Boushey (2001) of 35 subjects who withdrew from a large multicentre randomised trial in the US, found that subjects who withdrew consent tended to be women. When compared with matched subjects that remained in the study, the ones that withdrew highlighted issues such as interference with work and lack of time. Some women initially may be motivated to participate in research because of the belief in benefitting future patients. Whilst others believe they will receive better treatment. In this study some women declined to participate in the study after initial recruitment because of inconvenience. Future researchers should consider participant burden such as the number of questionnaires women are asked to complete. The NBAC antenatal package consisted of multiple surveys which could have been overwhelming plus it may not have been convenient or practical for the women to complete them all. The Childbirth self-efficacy tool for example is very much geared toward vaginal birth rather than VBAC. There are also simpler tools that can be used to determine childbirth fear, which consist of two questions. The NBAC study was attempting to elicit a large amount of information within a defined timeframe. Even

though the numbers are small in the NBAC study, there are conclusions that can be drawn with caution from the findings that contribute to midwifery knowledge around our understanding of women's fear of childbirth, childbirth confidence and childbirth knowledge after CS.

Additionally in hindsight, the use of a decision aid during the antenatal phase may have been beneficial and is recognised as a limitation for this study. Future studies should take into consideration using such a tool to inform and support women in relation to their birth choices.

#### **4.10 Conclusion**

Women making a decision about mode of birth following previous CS benefit from consistent relevant information. The findings from this phase of the study may suggest that pregnant women who had experienced a previous CS and received care through the NBAC antenatal service demonstrated increased childbirth knowledge around behavioural coping techniques, increased self-efficacy and increased satisfaction with antenatal care compared to pregnant women who received standard care. What the study did not demonstrate however, was that pregnant women who received care through the NBAC antenatal service had levels of childbirth fear that were any different to the comparison group, nor had any increased intention to pursue VBAC. On the other hand, this study only evaluated a service where antenatal care was provided in a continuity of care model rather than care across the pregnancy and birthing continuum.

In the following chapter, the findings of the small qualitative component of the study designed to elicit the midwives experiences of working within the new NBAC model will be presented.

## **CHAPTER FIVE: MIDWIVES EXPERIENCES OF WORKING IN THE NBAC CLINIC: Method, Findings and Discussion**

### **5.1 Introduction**

In designing the evaluation of the new Next Birth After Caesarean (NBAC) clinic it was considered important to elicit the midwives perceptions and experiences of working within, what was at the time a fairly unique model of care at the study site. As described in Chapter Two offering women continuity of midwifery care throughout their pregnancy was proposed to be one of the components of the NBAC service. This was aimed at facilitating an increase in the uptake of vaginal birth after caesarean as well as improving women's satisfaction with their care regardless of subsequent birth mode (Wen et al, 2004). The evidence also suggests that midwives enjoy working in a continuity of care model (Homer et al, 2008; Stevens and McCourt, 2002). Work by Kirkham, Morgan and Davies (2006) suggests that providing continuity increases midwives satisfaction and retention, which reduces turnover.

The NBAC clinic is a midwifery-led innovative clinical practice initiative that was designed to improve the quality of care offered to childbearing women and their families who experienced a previous CS. The service aims to promote care based on best practice, meet women's individual needs and preferences, and reduce the repeat CS rate. In addition, the service aimed to deliver considerable cost savings to the WA public health system and community as a whole. It was hoped the model of care offered in the NBAC clinic would have positive benefits for women and also increase job satisfaction for midwives. Midwives who are satisfied with their jobs are more likely to remain in the current employment model, thereby delivering further cost savings to the health system (Stevens and McCourt, 2002). Midwives want to work in models of care that enable them to establish relationships with women, provide continuity of care, and value them professionally (Stevens and McCourt, 2002).

This small qualitative phase of the evaluation aimed to describe midwives experiences of working in the new NBAC clinic based at King Edward Memorial Hospital. It was anticipated that the evidence gained would increase our knowledge

and understanding of how midwives adapt to working in models that seek to decrease fragmented care, increase women's access to continuity of care and ultimately work to keep birth normal.

In line with the structure of the thesis and the presentation of each previous phase of the evaluation as a stand-alone chapter, this chapter incorporates all aspects of the research process. Thus in the first section the researcher outlines the design used under the traditional headings of aim, method, setting and participants, recruitment and data collection, data analysis. Issues of rigour, ethical considerations and researcher bias are also addressed in the data analysis section. The researcher then moves on to present the qualitative findings in the form of a number of themes and subthemes, which emerged from the data. Finally the researcher situates the findings within the relevant literature.

An exploratory descriptive research methodology was chosen for this phase of the study as the researcher was seeking to describe and analyse midwives experiences of working in the NBAC clinic. It was the intention of this researcher to add to the body of midwifery literature examining the human experience of working in a continuity of antenatal care model for women who had experienced a previous caesarean section. Qualitative research provides insight into the "how" and the "why" of human behaviour (Morse and Richards, 2002) through the analysis of unstructured information such as interview transcripts, open ended survey responses, emails, notes, feedback forms, photos and videos; which help make sense of people's experiences and lives. Human behavior cannot be evaluated using true/false or Likert scale responses to a questionnaire which are the domain of quantitative research but is interested in subjective meanings (Taylor, Kermode and Roberts 2006).

## **5.2 Research Design**

### **5.2.1 Aim**

As previously stated the aim of this small qualitative phase was to describe the midwives experiences of working in the new NBAC clinic.

### 5.2.2 Method

The research approach selected to address the aim of this phase of the study was a descriptive qualitative design. By its very nature qualitative research is applicable to nursing and midwifery practice (Streubert and Carpenter, 2007). Qualitative researchers adopt a person-centered and holistic perspective. The approach helps develop an understanding of human experiences, which is important for health professionals who focus on caring, communication and interaction. Through this perspective nursing and midwifery researchers gain knowledge and insight about human beings (Pope and Mays, 2006). Burns and Grove, (2007) believe that through description, relationships between behaviours, individuals or events can be seen and relationships between variables better understood. Gaining insight into what people think facilitates our understanding of why they behave in ways that they do (Minichiello, Aroni, Timewell and Alexander 1995, Strauss and Corbin 2006). This type of research does not produce findings by statistical procedures or any other means of quantification, but by identifying themes that emerge from the observations, conversations and readings and allows the researcher to explore selected issues in depth and detail (Polit and Beck, 2010). Pope and Mays (2006) indicate that the descriptive mode of qualitative enquiry allows for understanding of a life situation and is relevant to any study that aims to discover and recognize the richness of human experiences. Moreover, Lewicki and Hill (2006) suggest that qualitative methodology is also useful in the exploration of change or conflict. Obtaining rich contextual data was considered the best way to explore and describe the midwives experiences, of working in the new NBAC clinic. This type of data provided valuable insight into the experience of midwives involved in implementing a new service for Western Australian women who had undergone a caesarean section (C/S) during a previous pregnancy (Morse and Richards, 2002).

This design was most appropriate for this phase of the research because of the exploratory nature required in this under researched area. There is existing evidence about women's experiences and perceptions of continuity of care, but not in relation to midwives experiences of working in a unique model that provides continuity of care within a small team for a specific group of women.

### **5.2.3 Setting and Participants**

As discussed in Chapter Three, the NBAC service was developed over a 12 month period in the only tertiary obstetrics, gynaecology and neonatal hospital in Perth, Western Australia (WA). The service design draws on the concept of continuity and the skills and expertise of the midwife, within a supportive collaborative network.

The NBAC clinic was established with a core group of six midwives including a coordinator. The NBAC clinic operated on two days and was staffed by three midwives per day who worked between 6 and 8 hours on each of the clinic days. Midwifery students and graduate midwives were offered an opportunity to rotate through the clinic. The midwives visited women on the postnatal wards that had experienced a first CS (as presented in Chapter Three) as well as providing continuity of antenatal care to women during a first pregnancy after one previous caesarean (as presented in Chapter Four).

### **5.2.4 Recruitment and Data Collection**

According to Schneider, Whitehead and Elliot (2007), persons who are selected as research participants should be those who serve the research purpose. Selection should involve the inclusion of those whose voices need to be heard (Schneider et al, 2007). Therefore, it was appropriate for the researcher to choose midwives who were currently working in the NBAC Clinic to address the aim of this study.

The six midwives who had worked in the NBAC Clinic since its establishment were invited to participate in a face to face tape recorded interview. All were keen to participate and consented to the study. A mutually agreed upon time and place was organised for the interview. The researcher knew all the participants in the capacity of clinic manager. The researcher conducted the first interview with one of the midwives who had resigned and was moving out of the country. This interview provided a wealth of information and the midwife being interviewed appeared relaxed and spoke freely on reflection. However, after discussion with the research team, it was decided that to ensure midwives did not feel any sense of coercion and/or challenged in any way by the manager/clinician relationship, which may be perceived as unequal, that a non – midwife research associate would conduct the interviews. It was also determined that collecting data in this manner would afford

the researcher a degree of distance to enhance analysis and the interpretation of the findings (Pope and Mays, 2006).

During the recruitment phase, while midwives were assured that their data would be treated with the utmost respect and de-identified, the researcher also considered the possibility that the midwives contribution may be recognised given the small number of participants and unique nature of the service. All the midwives were aware of this and remained committed to participate.

Before the second interview was conducted the researcher and non-midwife research associate who conducted subsequent interviews reviewed the first interview and the prompting questions for the semi structured interviews. As suggested the non-midwife associate adopted an open conversational style that facilitated two-way communication (Di-Cicco-Bloom and Crabtree, 2006). Boyce and Neale (2006) indicate that in depth interviews assumes repeated encounters between informant and researcher will provide greater understanding, and build rapport to elicit in-depth information. Unlike a questionnaire framework, where detailed questions are formulated ahead of time, the promoting questions used in this study were general and broad providing a framework for the interview (Miles and Gilbert, 2005; Whiting, 2008). The questions were simple and aimed to capture the midwives experience of working in the NBAC clinic: -

- Why did you want to work in the NBAC clinic?
- What was your experience of working in the NBAC clinic?
- What were the challenges of working in the NBAC clinic?

Probing techniques, such as echoing, where the interviewer repeats the participants response encouraging them to elicit further information; and verbal agreement, where the interviewer expressed interest using terms such as “uh-huh” and “yes okay” were used to gain more insight into the participants experiences (Whiting, 2008). The interviews were held in the staff lounge away from the clinic with the non-midwife research associate. The interviews were scheduled so that there were no women in the clinic at the same time. Burns and Grove (2007) suggested that interviews should be conducted in an environment that is quiet and free of distractions and preferable away from the work place. At the commencement of the interview the purpose of the study was clarified, any questions the participant had were answered and the midwife

was asked to reaffirm her willingness to continue. The interview commenced with the research associate and midwife discussing the midwife's previous clinical experience prior to being employed at King Edward Memorial Hospital. This facilitated rapport and enabled the research associate to demonstrate their willingness and ability to be a receptive listener. Once the background information was collected and permission obtained to record the interview, the audio tape recorder was activated and recording commenced. Rubin and Rubin (2005) suggested that reliability is increased by the use of a tape recorder to record interviews as it allows an accurate transcription of the interview. The research associate then commenced with, 'tell me why you wanted to work in the NBAC clinic'. Each interview lasted approximately 45 minutes and concluded with the research associate thanking the midwife for participating.

### **5.2.5 Data Analysis**

Thematic analysis was used to analyse the interview data. Although a number of procedures exist for the analysis of qualitative data (Crabtree and Miller, 1999; Creswell and Plano Clark, 2007; Pope and Mays, 2006) the thematic data analysis process followed in this study reflected what Polit and Beck (2010) describe as 'editing analysis style'. This commenced with listening and reading the verbatim transcripts and then editing them for flow. The complete tapes were transcribed and the transcripts contained not only the words spoken, but also the identification of who spoke and any laughter, long pauses or silence that was heard on the tape. The researcher chose thematic analysis because doing this facilitated a level of immersion in the data which was aimed at increasing understanding of what was said and to commence the identification of meaningful narrative that were pivotal to the midwives stories.

Each transcribed conversation ranged from 26 to 45 pages in length. The format for the transcribed interviews was double-spaced, single-sided documents. The six interview transcripts comprised a total of 30, 860 words over 250 pages. Field notes about the setting and the interaction with the midwives were recorded by the research associate immediately after each interview. The researcher read the first data document, scanning at first then rereading the text line by line. Anything useful about

any of the text was recorded into a separate document, such as - *'It was frustrating the way we give the care'*; the researcher asked herself why this was interesting and recorded the answer next to the statement. Line by line coding was then used to reduce the data into concepts (Polit and Beck, 2010). Once the data was effectively 'pulled apart' a process of grouping like concepts was commenced (Creswell and Plano Clark, 2007). This process was used to sort and organize the data. The concepts were grouped and the meaning formulated into significant statements. Statements were clustered into themes and organized in a coherent pattern (Streubert and Carpenter, 2007). These concepts were then compared with other responses and once again common or similar statements were linked to form distinct themes. It was important that the developed concept system was true to the analysed data and that each concept came from the transcriptions and offered a true summary of the interview data (Polit and Beck, 2010). The author analysed all the transcript data but to ensure credibility and trustworthiness of the data analysis, the emerging themes were discussed and debated with the author, research assistant and supervisors as the analysis process progressed. Disagreements on interpretation were negotiated by referring back to the interview transcripts. The purpose of this process was to ensure that bias was not introduced during data analysis (Graneheim and Lundman, 2004). An example, in the form of an audit trail, is provided in Appendix V. The midwife participants were afforded the opportunity to review the transcripts. Despite the limited uptake the midwives were provided with a summary of the themes that emerged from the analysis.

#### **5.2.6 Steps to Address Qualitative Research Rigour**

Several highly regarded authors (Gillis and Jackson, 2002, p. 216; Guba and Lincoln, 2005) have outlined a number of measures to address the issue of rigour in qualitative research; particularly, the issues of fittingness (transferability); credibility (authenticity); auditability (dependability); and, consistency (confirmability). Guba and Lincoln suggest the use of: triangulation, peer de-briefing and member checking to establish credibility; 'thick description' to facilitate transferability; and, auditing to establish dependability and confirmability" (1985, p.219).

**5.2.6.1 Credibility.** The participants agreed to a tape recorder being used for one-on-one interviews. This ensures credibility unless individuals objected strongly which was not the case in this study.

**5.2.6.2 Fittingness.** Fittingness is concerned with transferability or generalisability of study findings to other settings, populations and contexts (Gillis and Jackson 2002, p216). While the study explored experiences that are context bound, the information obtained from participants provided a sense of fittingness or transferability of findings for midwives sharing similar conditions and contexts. While the qualitative data was not intended to form generalisations about the population as a whole, it provided a depth of data that can inform resources, guidelines, program content and protocols as well as future research.

**5.2.6.3 Auditability.** The findings were described in ways that enable relevant stakeholders, staff and women to have confidence in the findings. The transcriptions of interviews provided what Guba and Lincoln describe as an 'audit trail' (1989).

**5.2.6.4 Consistency.** According to Guba and Lincoln (1989) it is the consumer of qualitative research findings that affirms the confirmability of the data and whether the experiences described and findings and recommendations are accurate and have relevance for other situations. According to Byrne (2001, p. 2) the use of thick description provides research consumers 'with enough information to judge the appropriateness of applying the findings to other settings'. Likewise, both Morse and Richards (2002) and Tuckett (2005) suggest that it is the new knowledge and understanding gained from the descriptions about the participant's experiences and the difference contexts in the study that is generalisable and transferable to others settings.

## **5.3 Findings**

### **5.3.1 Participant Profile**

The six midwives were aged between 30 and 52. Their midwifery experience ranged from three years to 30 years. The least experienced midwife had three years post qualification experience, whilst the most experienced midwife had 30 years of experience. Three of the midwives completed their midwifery education in Australia; two as a certificate qualification and one as a graduate diploma qualification. Three

midwives completed their midwifery education overseas, two in the UK and one in Europe. Two of the midwives were born overseas and migrated to Australia where they intended to work in midwifery. Three of the midwives were permanent part time employees of the hospital; the remaining three were casual employees. All the midwives had worked previously, both within Australia and overseas, in continuity of care models across the continuum of pregnancy, labour and birth and the postnatal period.

### 5.3.2 Overview of Findings

As previously described thematic analysis of six midwives interview data was undertaken to capture their experience of working in the NBAC clinic. Four themes were identified. Please see figure 5.1.

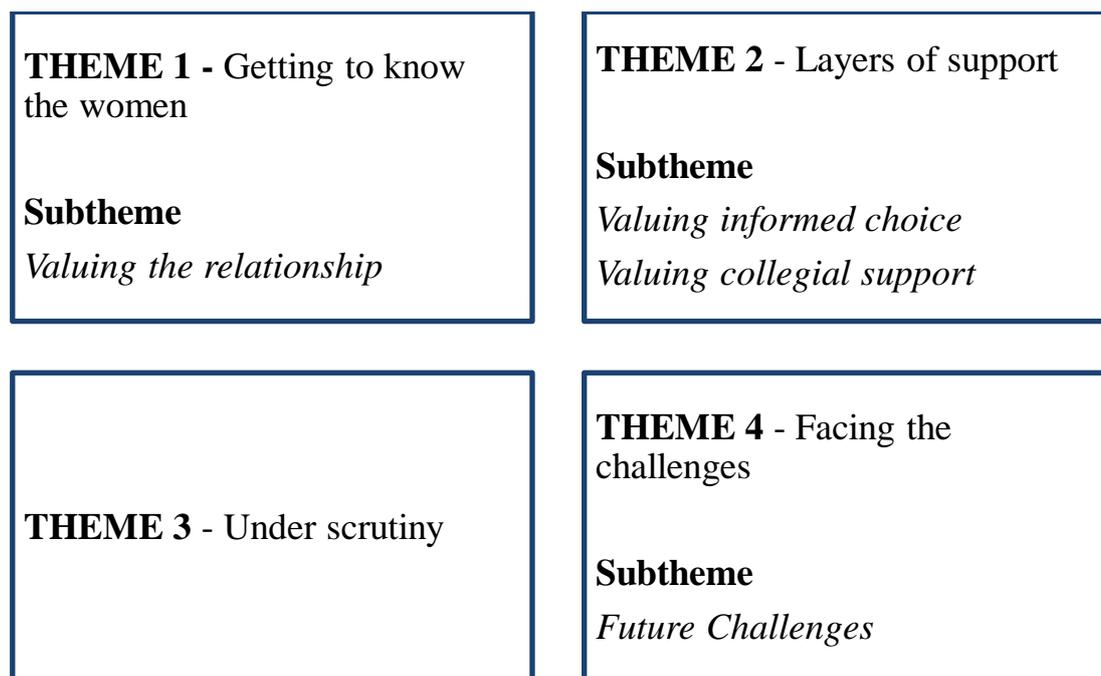


Figure 5.1. The Four Themes identified from the data analysis.

The first theme, labelled ‘Getting to know the women’, sets the scene by providing insight into the midwives perceptions of working in a new midwifery-led model of care and the enhanced opportunity to truly get to know the women in their care at the NBAC clinic. The midwives also talked about what the women wanted in the context of seeing the same midwife at every visit. The subtheme of this ‘valuing the relationship’ described how midwives felt about working in the clinic with women

and their relationships with them and/or other midwives. The second theme, 'Layers of support', also illustrated through the two subthemes how the midwives value women's choice, respect their midwifery colleagues and appreciate having a common philosophy. The third theme, 'Under Scrutiny' reflected the midwives descriptions of the significant attention that was directed towards the clinic and their midwifery practice. The final theme, 'Facing the Challenges' described other key issues identified by the midwives working in a new service particularly around the day to day running of the clinic and the physical environment. The subtheme 'future challenges' considered the midwives views for the next phase of the NBAC service.

Direct quotes are presented in italics within single quotation marks. Midwives are identified as 1 to 6 however this is not the order in which they were interviewed. The page number of the cited transcript is provided at the end of the quote. Where words have been omitted from quotations '...' are used to indicate this. The participant's words are used to give voice to the themes and to provide examples that exemplify themes and subthemes.

### **5.3.3 Getting to Know the Women**

This first theme 'Getting to know the women' provides insight into the midwives perceptions of working in a new midwifery-led model of care. Unlike the standard model of antenatal care, the NBAC clinic provided midwives with the opportunity to get to know the women because they see the same women throughout the pregnancy. Midwives used words such as '*exciting*', '*fantastic*', '*wonderful*' and '*blessed*' to describe their perceptions of working in the clinic. One of the major reasons given for joining the clinic was the ability to get to know the women and provide continuity of care during their antenatal period. All the midwives interviewed expressed satisfaction at being able to get to know women and build trusting relationships by providing continuity of care. As midwife 1 said, '*There is the continuity as well, you see the ladies a few times during the antenatal visits and after a while we just sit and chat and that's really nice*' (p20).

Midwives considered that providing continuity of care was not only beneficial for women but also for themselves. They felt that they were not only able to better assist

women achieve their goal to have a safe and satisfying birth but also came to understand the individual needs of women to a much greater extent. The midwives used terms such as *'trust'*, *'believing in their ability'* and *'confident'*. The continued contact midwives had with the women in the provision of continuity of antenatal care helped them grow professionally as a midwife. For example midwife 5 commented *'It's fantastic to see the women a few weeks down to track and they're well...they do feel more empowered'* (p21). Likewise midwife 3 said, *'It's great to see the same women... as a professional it's really nice to see the women again and again..... I think it's' been good for me as a midwife to work with them again and again through their pregnancy...'* (p49).

**5.3.3.1 Valuing the relationship.** The participants felt that their role as midwives was valued by the women and this helped with the development of the relationship. They also felt that women valued seeing the same midwife. Midwife 3 described this as, *'they do quite like seeing the same practitioner and they feel cared for and also nurtured; that's what they are telling me'* (p28). For midwife 1, feeling professionally valued and supported by the women *'increased job satisfaction'* and made her feel like she was *'involved in something meaningful'*. She stated this type of care was much less *'frustrating'* and much *'more rewarding'* than her previous experience of working in a conventional antenatal clinic setting where she provided fragmented care.

Similarly midwife 4 described being part of the NBAC clinic as *'a step forward'* both professionally and personally; *'you know your women that, it's more what's the word, satisfying for you and for them'*. For midwife 6 it was about *'achieving something'* and *'feeling satisfied'*. Midwife 2's comment summed this up in the following way;

*'it's nice to talk to them as a professional - they would open up and I was able to listen and they want to know what is going to happen when they come in and that's really great for them and for me'* (p18).

The midwives also described the importance of feeling like they were truly supporting women and providing what they considered was quality care in achieving job satisfaction. For midwife 5 it was about providing *'support and information'*, whilst midwife 3 described *'help and support'* as being the most important factors in

providing care for the women. She stated, *'I find I think about how important it is to provide the emotional support'* (p25). Midwife 6 comments reflects the feeling of all the midwives: *'They want that support antenatally and that we are on their side – they've got to be supported and not judged...if I can do this I've done a good job'* (p7).

### **5.3.4 Layers of Support**

The theme entitled 'layers of support' described how midwives felt valued and supported by women and each other. As such the theme has two distinct subthemes. The first subtheme relates to supporting women and valuing choice and the second subtheme relates to midwives supporting each other; being on the same page; having the same focus and working with the same philosophy.

**5.3.4.1 Valuing informed choice.** For most of the midwives the concept of providing information to the women was to enable *'informed choice'*. The midwives described the philosophy of the clinic as providing information to women so they could make an informed choice about their birth option within a supportive environment. Midwife 5 stated *'it is an important part of the clinic to offer women choice, informed choice'*. This is also reflected in the following comment by midwife 3;

*'We're just aiming to achieve with them the best possible birth they can have at the time whether that be a VBAC or a repeat CS, you know with support and information that maybe they could improve on this time that they didn't have last time'* (p43).

Similarly, midwife 2 reiterated the concept of supporting women to make an informed choice when she said, *'My role as a midwife is to support woman and to encourage them to reach their full potential...you give them information and you can visibly see on their faces you know the stress goes'* (p40).

For many of the midwives it was also about *'talking with the women about their previous experience'* (midwife 3). Midwife 5 explained that, *'many women don't really understand why they had their previous section... they have no previous understanding at all; it's the first time that they actually heard'* (p5). Not

surprisingly, when the midwives were asked how they perceived women reacted after receiving the information they used words such as *'enlightened'* and *'informed'*. Midwife 4 described this response as; *'it's like a light bulb goes off in the woman's mind'* (p8). Likewise midwife 5 comments also highlighted this effect; *'I explain and they are completely dumbfounded a lot of the time'* (p4). To demonstrate the impact consistent information they provided had on empowering women's choices midwife 5 described the following: *'This woman actually decided to walk away and not have her C Section based on the information she received from me... it was like wow'* (p33). Two midwives also described how nice it was to work with women who came to the clinic armed with evidenced based information about VBAC. For example, midwife 1 said it was about reinforcing that information; *'the ladies would have already done their own research about VBAC before they came to the clinic and they would already know the information you give them and that's refreshing'* (p13).

**5.3.4.2 Valuing collegial support.** The second subtheme reflected the importance and satisfaction gained from midwives feeling supported by each other as well as senior staff. This was particularly evident in the early days of the clinic's operation. The clinic was a new and innovative midwifery model of care introduced into a tertiary setting. All the midwives *'liked being part of a very supportive and nurturing team'* (midwife 3). For three of the six midwives (midwives 4, 5, 6) the *'support for one another'* was an integral part of their experience in the clinic which contributed to their work satisfaction with the NBAC clinic. While this was the same for midwives 1, 2 and 3 support also came from further afield. They used words such as *'approachable'*, *'collegial'*, *'supportive'* and *'facilitative'* to describe the role the coordinator and the manager of the clinic played in their perceptions of satisfaction. Midwife 3's comment encapsulates how the midwives describe the support from within; *'I think the support that has come from the coordinator and from the manager has been superb'* (p3).

All of the midwives indicated that being supported and being able to provide support was an important factor as to why they enjoyed working in the clinic. They articulated that whilst they were working within the clinic it was a *'supportive environment'*. For one midwife having student midwives and graduates coming through the clinic and promoting the philosophy of the clinic was reassuring; *'We've*

*had students and graduate midwives who've come down here and given us really positive feedback and are really supportive what the clinic is about' (midwife 1).*

Working with other like-minded midwives provided the participants with an opportunity to discuss ideas and debrief about issues. The midwives used terms such as, *'collaborative'* and *'teamwork'* to describe how they all worked together within the clinic environment. All of the midwives described *'working within the team as a wonderful experience'* (p12). Midwife 3 described her experience as, *'Not only collegially, but professionally as well...working in the team has been absolutely great'* (p3).

The midwives also reiterated the benefits of being part of a cohesive team that was *'supportive and nurturing'* and one where they all *'helped each other'*. The monthly team meetings were also described as important in enabling them to *'keep focus'* and *'focus on the goal'*. For two of the midwives the team went beyond just the midwives they were working with and included other midwives, students and some medical practitioners; *'I often find the other midwives or even students we see are almost kindred spirits ...'* (p28). One midwife cited, in relation to a medical officer who was very supportive of the clinic that; *'The doctors' responses have always been very positive...the senior registrar was really fantastic about the information she gave the woman (midwife 5)'*. Finally, midwife 3 also shared that; *'the goals are very similar and it is a real feeling of teamwork'* (p49).

### **5.3.5 Under Scrutiny**

The third theme described midwives experiences of feeling somewhat *'targeted'* or *'under scrutiny'*. While this did not seemingly undermine the midwives sense of satisfaction it did initially create some tension and the team worked hard as a group to put it in perspective and support each other. Midwife 5 illustrated this during her interaction with other midwives, *'Many midwives don't understand the clinic and what we are trying to do and there are some midwives who hate us'* (p18).

Once the clinic officially started, it became clear to all the midwives that there was going to be significant attention directed towards those working in the new clinic and on their practice. For example, midwife 3 stated, *'Feeling really that the clinic was a new clinic, it was being heavily scrutinized...it was a new clinic; I was so wanting to*

*do the right thing*' (p10). Knowing that there was going to be constant surveillance of the clinic was *'unsettling'*, but perhaps not as disconcerting as the perceived level of lack of medical support from some colleagues. As midwife 2 expressed; *'the overall obstetric antagonism was very destructive...I found the obstetric people intimidating'* (p9).

As a result there was an escalating sense of animosity and *'negativity'*, with the midwives feeling increasingly anxious and afraid of doing something wrong. As midwife 3 explained; *'I must just be extremely mindful of women's situations and I read the special instructions sheet much, very, very carefully now'* (p17). This view is further supported by midwife 2;

*I remember feeling highly anxious because I was terrified of putting a foot wrong; because we just had that sense that if we put a foot wrong they were just going to come down on us like a tonne of bricks'* (p3).

These feelings were echoed by midwife 5 as well; *'I think one of the main issues facing the clinic was the antagonism specifically from doctors'* (p17).

The resultant effect on the midwives was one of hyper-vigilance. They talked about taking on additional administrative duties, so the clinic would not be jeopardised if something was missing from the woman's medical record. This added further to the stress and the tension, because it was another task they felt compelled to do. As a consequence midwife 2 described receiving feedback, *'that our documentation was too wordy or you know there was just silly things so we did feel that we were under scrutiny'* (p8).

There were also occasions when the midwives described feeling unsupported and undervalued, particularly in the early set up and operation of the clinic. Midwife 4 explained, *'it didn't feel we were starting something in a supportive environment at all'*. This was expressed as lack of feedback, lack of communication and lack of acknowledgement from some medical and midwifery colleagues. Midwife 2 summed it up as; *'this continued silence, negativity, you know lack of collaboration... midwifery initiatives are not accepted, recognised or included...'* (p24) and *'there would be comments like oh you know the NBAC clinic think they are so special'* (p9).

The midwives did try to reach out to their obstetric colleagues to engage with them to establish a collaborative relationship, but they were rebuffed by a number of the obstetricians. The midwives described being restrained and tried not to be too *'provocative'* because they did not want it to *'reflect badly on the clinic'*. Midwife 4 described difficulty engaging with medical colleagues *'I don't think the obstetrician was really interested in really hearing what I had to say'* (p24). Although this proved to be frustrating for the midwives, at the time of the interviews they did express a sense that things were beginning to change. The impetus to keep persevering with the work they are doing was described as the *'need to feel you're making a difference'* (p25) and that *'it's a real gift for the women'* (midwife 5, p49).

Despite the perceived negativity from some of their midwifery and medical colleagues, the midwives in the clinic continued to provide what they described as *'good clinical care'*, *'good documentation'* and *'good counselling'*. Eventually barriers began to be eroded, and as midwife 3 said *'They started to realise and see that what we're doing is actually really good...staff who come down here give us really positive feedback and that has been encouraging'* (p12).

### **5.3.6 Facing the Challenges**

This theme explores other issues the midwives experienced, particularly in relation to time management and the physical environment. The midwives working in the NBAC clinic identified some of challenges of working in the clinic. The key issues were *'the space'* and *'not enough time'*. The NBAC clinic was co-located in one of the older buildings in the hospital, separate from the mainstream antenatal clinic, but sharing the space with other outpatient clinics. On those days when there was more than one clinic running, space was at a premium. One midwife described the environment in the following way;

*'it's nice to be separate from the other antenatal clinics but you know it's old..... we'd wanted to try and have it a little bit different but it was very hard to maintain that because there's so many other different clinics'* (midwife 1, p56).

Midwife 5 added to this when she commented, *'we have to work around the other clinics that are working on the day and we often don't have rooms available'* (p49).

Similarly midwife 6 stated;

*'like the actual environment, like for example the birth centre has there, it's quite, it's very birthy and you know it's lovely and it would be nice to have like a place that was just dedicated for those women'* (p9).

As an expansion of this the midwives suggested the NBAC clinic belonged in the community rather than the hospital setting. The midwives perceived a need for their own space separate from the current setting.

Managing time was a significant issue for the midwives in the clinic. Many of the midwives describe not having enough time to work through the issues the women had. This caused frustration for the midwives. As midwife 3 explained: *'there is lots to talk about and lots to discuss and in a fifteen minute appointment it is really difficult to cover all of that'* (p37). Midwife 5 said; *'every woman I see wants to talk especially at the booking interview and I don't know forty, forty five minutes to an hour is often not enough'* (5p12). Midwife 4 put it like this: *'it's about trying to do that within that forty five minutes which is extremely challenging and difficult but then what else are we doing to do them for them'* (p43).

**5.3.6.1 Challenges for the future.** Whilst the NBAC clinic provided continuity of care in the antenatal period, midwives did not have the opportunity to follow women through to the labour, birth and the postnatal period. The midwives identified there was *'huge potential for this model to continue for women throughout their labour and birth'* (midwife 2). Surprisingly the midwives saw this as a challenge rather than an obstacle. For them it was about improving and refining the service. This sentiment was expressed by midwife 3 who shared that, *'we need to be a bit creative around how else we can provide the level of support for women'* (p38). Whilst midwife 2 suggested, *'The biggest improvement will be that this becomes a continuity of care [model] that extends into labour and birth ...we would follow the women through into labour ward and postnatally as well'* (p48).

Similar views were voiced by the other NBAC midwives who identified they would *'like to see more continuity of care in the clinic'*, but stated their belief that the

women '*wanted it as well*'. Discussions with women supported this view as women asked midwives about '*looking after them in labour*' and '*being with them*' during the birth. Midwife 3 describes the impression she received from the women – '*they really quite like coming here, they do quite like seeing the same practitioner*' (p50), whilst midwife 4 adds '*they always ask will I be there when they're in labour*' (p12).

Despite the challenges, the midwives felt the NBAC clinic was providing a service for women who needed it, and they were pleased to be a part of that service.

#### **5.4 Discussion**

The four themes identified in this phase of the evaluation demonstrated how working in the NBAC clinic was personally and professionally satisfying. All considered that the clinic was '*doing something worthwhile*' which underpinned their motivation for seeking employment in the clinic. All the midwives expressed their deep commitment to improving the quality of care provided to women who had experienced a previous CS. In the antenatal period they were able to develop and nurture the midwife-woman relationship and '*be with the women*'. The midwives identified that the multiple layers of support that enabled them provide quality care within a supportive environment. The midwives felt valued by the women, each other and their leadership team. In addition the midwives valued the opportunity to share time and information with women which they felt ensured women's decisions were based on informed choice; an underpinning principle of the clinic and an important aspect of helping women achieve a satisfying birth experience.

While the midwives reflected very positively on their experiences there were some aspects that were challenging and generated a level of discomfort, uncertainty and anxiety. In the most part this was related to feeling unsupported by some senior midwifery staff as well as a number of obstetric colleagues. All of the midwives expressed, that initially at least, they felt like they were constantly being scrutinised and as result had a degree of anxiety and/or fear that they may make a mistake that could jeopardise the operation of the new service. Perhaps most unsettling was the level of animosity they perceived from some obstetric colleagues.

As only six midwives were involved in this phase of the evaluation the findings cannot be generalised or transferred to other context or settings. However important issues were raised which provide insight on the provision of midwifery-led, woman-centred maternity care in a tertiary setting.

#### **5.4.1 Midwives Job Satisfaction**

**5.4.1.1 The importance of developing meaningful relationships with women.** The findings of this phase of the NBAC evaluation demonstrated that providing continuity of carer and developing a positive relationship with women, especially across the antenatal period, were key factors in promoting job satisfaction for the midwives. This finding supports the growing body of evidence on the benefits of continuity of carer models for not only women but also midwives (Freeman, 2006; Lavender and Chapple, 2004; Page, 2003; Van kelst, Spitz, Sermeus and Thomson, 2011; Watson, Turnbull and Mills, 2002; Walker et al, 2004). Early research done by McCrea (1993) indicated that midwives expressed satisfaction with their jobs as a result of the relationship they shared with the women they cared for. In this study 16 midwives from a maternity unit in Northern Ireland were asked to reflect on specific examples of both good and poor relationships with women. Midwives who described positive relationships with women were able to respond to women's needs which increased their confidence and value in their midwifery role. However, this relationship did not occur with the first meeting, but developed through several interactions, highlighting the importance of continuity of carer for both women and midwives.

Similarly Proctor (1998) identified that the relationship between the midwife and the women - which included continuity of carer as a key factor, was not only an important determinant in a woman-centred model, but also for midwife satisfaction and professional value. In this study, 47 midwives participated in a focus group to identify and compare the perceptions of women and midwives in relation to what constitutes quality maternity care. The midwives believed that the women valued continuity of care with a known midwife during the pregnancy. This view was supported by the women who were interviewed and demonstrated areas of shared understanding between women and midwives which added to the midwives job

satisfaction. Further to this, Stevens and McCourt (2002) conducted a study interviewing 20 midwives who worked within a case load model of care in England, conducting a focus group with current and past midwives of the case load model and reviewing a previous questionnaire completed by the midwives. The study identified that one of the themes - holistic practice/continuity of care and relationships with women was one of the main factors that influenced the midwife's experience of job satisfaction and was often quoted as an important reward for the job. For example a midwife interviewed in Stevens and McCourt (2002) study stated: *'Knowing the women I provide care for makes the job fulfilling and meaningful. I can follow pregnancies through and feel I am providing care which is more suited to the individual needs of the woman'* (p. 113).

The concept of job satisfaction resulting from a continuity of care model supports the research by Homer et al (2007) which involved interviewing 32 midwives from each state and territory in Australia. The midwives were asked to describe experiences that not only demonstrated midwifery practice, but were also significant to them or to the woman. Many of the midwives highlighted the importance of developing a trusting relationship and getting to know the woman to enhance woman-centred care.

**5.4.1.2 Women valuing midwives supporting women.** The midwives also indicated that another key factor in achieving job satisfaction was being valued in the relationship by the women; as such this study supports the body of literature which states midwives feel more valued working in continuity of care models than when they worked in routine, fragmented models of care (Sandall, 1997; Sandall 1998 and McCourt, Stevens, Sandall and Brodie, 2006). The early research by Sandall, (1997) suggests that providing continuity of care was a major source of satisfaction to all of the midwives while the inability to develop meaningful relationships with women was a source of frustration and stress. The 48 English and Welsh midwives who were interviewed in this study each had a personal caseload for which they were the named midwife. Each midwife was able to provide complete continuity of care and experienced immense satisfaction and received much support from the women in her caseload. This certainly aligns with the view of the NBAC midwives who shared how they felt valued because they were supporting the women and providing what they considered to be quality care, even it is was only for the antenatal period.

**5.4.1.3 Enhancing Practice.** The NBAC midwives indicated that they were able to practice to their full scope of practice in an antenatal continuity of care model and part of that scope was being able to provide consistent evidence based information and relate this to the woman's past experience. According to the midwives working in the NBAC Clinic the key philosophy of the clinic was to provide information to women so they could make an informed choice about their birth options within a supportive environment. Homer et al, (2008) suggest that midwives who work within a continuity of care model may gain a sense of authority in both their role and responsibility in the care they provide to women. By knowing the woman personally, knowing her history and experiences and being part of that relationship, the NBAC midwives were able to question and challenge decisions because they could see how those decisions affected the woman. The results of Watson et al (2002) study of 12 midwives from the Northern Territory, suggest that midwives who have that sense of autonomy and expanded scope of practice have the potential to deliver woman-centred continuity of care, have increased work satisfaction and to promote professional autonomy and responsibility in the workplace.

Choice and control are described as central concepts of woman-focused care (Carolan and Hodnett, 2007). The midwives in the NBAC clinic believed they supported choice by providing information that was contemporary, consistent and evidenced based. They felt they were able to provide the women with sufficient information to enable the women to make decisions about their care. This information was tailored specifically for each woman and started with a review of the woman's previous birth experience. This supports the work of Page (2004) who describes continuity of care as being multi-dimensional, with informational continuity being one of these dimensions. Informational continuity assumes the use of information on past events, personal experiences and current evidence to make care appropriate for each woman.

This phase of the NBAC evaluation also add to the evidence on the benefit of how midwives not only support women's decision making regarding mode of birth, but also enhance their own professional development. Certainly it was alluded to by some of the NBAC midwives that women came armed with information regarding their birth choices. The midwives were able to provide an evidence-based view on

the benefits and disadvantages of both CS and VBAC, able to provide evidence about VBAC success rates and confirmed or refuted information that women received from other sources. In Stevens and McCourt's (2002) study of 20 midwives working in a caseload model in the UK, the midwives highlighted not only the importance of having midwifery skills to care for women with high and low risk pregnancies and research based knowledge; but being able to apply those skills to meet the needs of the individual women. Equally as important was the feedback the midwives received and the ability to reflect on their practice which was pivotal in their own ongoing professional development and in enhancing job satisfaction.

#### **5.4.2 The Challenges of Change**

**5.4.2.1 The contested relationship – midwives, medicos and management.** What was evident from the findings of this study was that midwives perceived a level of negativity and resentment towards them as a direct result of them working in the clinic, particularly during the initial implementation. The NBAC clinic was a midwifery-led model that was, according to the midwives struggling to gain acceptance in a tertiary hospital setting that had only one sustainable continuity of care models. Homer et al, (2008) describe this phenomenon occurring with the introduction of new models which places the midwives working in that model in the spotlight.

An evaluation of the implementation of a team midwifery model in Queensland highlighted the challenges of setting up a midwifery led model of care. The 22 midwives working in this model identified situations where there was a pervasiveness of professional hierarchy, which included constant surveillance from management, midwives and obstetricians and being blamed for situations that already existed (Walker et al, 2004). They perceived their colleagues, who worked in standard models of care, thought of them as 'special' and 'different' and as a result looked to each other for support. Conversely midwives who provide standard care may feel resentful because the standard model is not seen in a positive light and by association they are also perceived in this context and may be resentful towards those midwives who are working in continuity type models (Homer et al 2008; Watson et al, 2002). Pollard (2011) found from her study involving interviews with 20

midwives and 20 other health professionals working in a maternity unit in England, that midwives professional identity was demonstrated by their area of care. Furthermore, midwives working in continuity of care models sensed the reluctance of their midwifery colleagues to engage with a new midwifery led model which created criticism and conflict. Few studies have evaluated the impact of continuity of midwifery care on the core midwives who are affected by the introduction of these models (Walker et al, 2004).

The NBAC evaluation also adds to a growing body of literature around midwifery professionalism, autonomy and responsibility. The medicalization of pregnancy and birth means that midwives are frequently placed in unenviable positions of relative powerlessness (Hollins Martin and Bull, 2006). Midwives are sometimes presented with conflict between a drive to agree with authority and supporting the safe, evidence-based choices of the women in their care. Hollins Martin and Bull's (2006) study of 20 midwives from seven maternity units in the north of England, assessed midwives views about their acquiescent behaviour. The authors suggest that midwives use actions and strategies to reinforce the power structure of medical dominance that impact and constrain the professional role and scope of practice (Homer et al, 2008). This was evident in the NBAC clinic where the midwives would constantly double check their work. They developed and initiated strategies which would ensure their processes would stand up to scrutiny.

During the initial establishment of the NBAC clinic, there also appeared to be limited collaboration between the midwives and the obstetricians. There appeared to be a one-sided relationship between the midwives and the doctors that empowered the doctors, but there was no evidence of a relationship that recognised or supported the knowledge, skills and experience of the midwives. This supports the work of Watson et al (2002) which illustrated the constraints under which midwives worked. Many of the midwives interviewed felt de-skilled, had lost confidence in their ability to make decisions and developed a reliance on and deference to obstetricians as the dominant profession to direct maternity care.

The philosophy of the NBAC clinic was to provide woman-centred care and this was to be a shared vision between midwives and obstetricians. What was clear was that

effective collaboration was limited both by tensions over role boundaries and power; and that the skills and qualities that form the basis of professional courtesy need to be recognised as essential to good collaborative practice (Skinner and Foureur, 2010). Having a shared commitment to continuity of care and effective relationships is well described in the literature (Hollins Martin and Bull, 2006; Homer, et al, 2008; Skinner and Foureur, 2010) particularly around the woman-midwife relationship. What is not well articulated nor perhaps understood is the commitment to women centred continuity of care between midwives and obstetricians. Collaboration with obstetricians is possible, but there needs to be further work to describe what successful collaboration is and how it might be fostered.

**5.4.2.2 A new service operating in an old system.** The major challenges the midwives describe related to the physical environment and time management. For many of the midwives the environment was one of the negative aspects of working in the clinic. Having to share space and resources and not have an area where they were able to provide specific pregnancy, birth and parenting resources or education was frustrating for the midwives. It is unclear whether this had impact on the provision of continuity of care. Much of the literature in relation to this emphasises continuity of care over time, pre-conception, pregnancy, labour and birth and the postnatal period (Hastem, Sandall, Soltani and Gates, 2009; Homer, Davis, Brodie, Sheehan, Barclay, Wills et al, 2001; Homer et al, 2008; Kerber, deGraft-Johnson, Bhutta, Okong, Starrs and Lawn, 2007), but there is very little information in the literature about the continuum of care in relation to place; which may include the home, a community facility or a hospital (Kerber et al, 2007). However, Homer et al (2008) suggests that midwives working in a group practice or continuity of care model need a place 'they can call home' (p. 9) and that ideally midwives working in this model should have premises in the community in order to increase accessibility for women. Certainly the midwives working in the NBAC clinic suggested that the provision of antenatal care for this group of women may be better in a community setting. Lavender and Chapple (2004) interviewed 120 midwives as part of 15 focus groups across 14 maternity sites in England. This study suggested that midwives working in a dedicated place, such as a free standing unit, had a better relationship with women and their families and greater job satisfaction than their counterparts who worked in a more conventional setting.

Time was another major issue for the midwives working in the NBAC clinic. Many of the midwives indicated they did not have enough time to meet the demands of the clinic and the needs of the women. The World Health Organisation (WHO) (2002) suggests that the first visit or booking visit for antenatal care should take approximately 40 minutes and that subsequent visits should take 20 minutes. However, these guidelines do not differentiate between women who require little or no counselling and education or those that require intensive counselling and education. What was not considered during the establishment of the NBAC clinic was that women who have had a traumatic birth experience and subsequent fear of childbirth require extra support and resources (Salomonsson et al, 2010). Identifying women who have fear of childbirth is time consuming and often requires extra assessment by the midwife. To help and support these women involves midwives offering enough time and opportunities for the women to talk through their experiences. Salomonsson et al (2010) suggests that especially during pregnancy, midwives should be available for extra visits and telephone calls. Conversely, other research suggests that twice as much time is needed for implementing a new model providing antenatal care, and with that comes an increase in resources (Von Both, Fleba, Makuwani, Mpembeni and Jahn 2006). Undoubtedly the NBAC midwives were of the opinion that more time was needed with the women so they could provide woman-centred care that was tailored to the needs of the individual woman.

## **5.5 Conclusion**

The midwives identified a number of key themes in their experience of working in the NBAC clinic. Their satisfaction of providing antenatal continuity of care to women who had experienced a previous CS was immensely rewarding. In particular their relationships with the women, the information and support they provided women, their relationships with each other and their growth professionally. As highlighted there were initially some real challenges around the professional discord between the midwives, obstetricians and other midwifery colleagues, which had an impact on their practice. They expressed anxiety and a need to conform to a system of maternity care that was medically driven, yet they wanted to change and redefine the care so that it was responsive to women's needs rather than that of the institution. As a consequence, when the NBAC service commenced they were left feeling

unsupported. What also emerged were the other challenges the midwives perceived. The midwives felt the environment was not adequate for the women's or for their needs and provided insights into what they felt the clinic should look like. The midwives were keen to see the antenatal service based in a community setting; it belonged there rather than in a hospital. The midwives also felt that the constraints of time were restrictive in providing woman-centred care.

Despite the challenges and the adversity, the midwives were optimistic and saw the NBAC clinic as an opportunity to enhance and promote woman-centred, midwifery-led continuity of care to women who had experienced a previous CS. Part of the evaluation process was to develop options and recommendations for policy and program changes in how maternity care is provided to women who have experienced a previous CS. The evaluation findings from this NBAC study were intended to provide direction for organisational change, which are discussed further in Chapter Six.

## **CHAPTER SIX: IMPLICATIONS FROM FINDINGS AND RECOMMENDATIONS**

The focus of this chapter is to bring together the three phases of the evaluation and present an overview of the findings, their implications and recommendations in relation to education, practice and future research.

### **6.1 Overview of Findings**

#### **6.1.1 Findings from the Postnatal Evaluation**

The evaluation of the postnatal component of the NBAC service identified that women who received a postnatal visit from the NBAC midwives were just as likely to state their intention for a VBAC in a subsequent pregnancy compared to women who had standard postnatal care. Midwives are best placed to support the emotional needs of women because they understand childbirth. They can talk with women about what happened and why the procedure may have been necessary to normalise a woman's response (Bastos et al, 2009; Gamble and Creedy 2004; Lavender and Walkinshaw, 1998; Salomonsson et al, 2010). Midwives also provide the majority of care to women in the postnatal period. However midwives need to be adequately prepared to both engage in the discussions with women and support the women to work through their experiences.

#### **6.1.2 Findings from the Antenatal Evaluation**

The evaluation of the antenatal component of the NBAC service identified that women who had their antenatal care in the NBAC clinic in a continuity of care model were more knowledgeable about childbirth, including coping mechanisms for labour and birth, by 36 weeks gestation than women who received standard antenatal care. Women who had NBAC antenatal care were more confident and satisfied with elements of midwifery care provided in the clinic than women who had standard antenatal care. Finally, there was no difference between the women in the NBAC group intending to pursue VBAC at booking or 36 weeks compared to those who received standard care. These results would again support the importance of

providing women with unbiased, evidence based information about birthing options and supporting women's choices. The results also highlight the significant role midwives play in supporting women to navigate the decision-making process, supporting their choice for birth mode; which provides women with a satisfying birth experience and increase child birth confidence.

### **6.1.3 Findings from the Midwives Experiences**

The midwives working in the NBAC clinic expressed increased job satisfaction because they were able to provide continuity of care to women in the antenatal period and work within their full scope of practice. The midwives suggested that the provision of information was vital to ensuring women made informed decisions about their care. The midwives were also aware that women needed to be able to discuss the information and have the information tailored to suit their individual needs. The NBAC midwives also highlighted the initial difficulties in establishing relationships with medical officers and some midwifery colleagues to ensure that the women were at the centre of the care. The NBAC midwives expressed anxiety in regards to the relationship with some of their medical and midwifery colleagues. This anxiety may have been countered if the midwives were adequately prepared to deal with situations where conflict may arise. Developing and promoting strategies that values midwifery knowledge, skill and practice is essential in the current changing maternity care climate.

## **6.2 Education and Opportunities for Continuing Professional Development**

The results of this study draw attention to the need to educate women about birthing options, making informed decisions and believing in their ability to birth naturally. Pregnant and birthing women, particularly those who have experienced a previous caesarean section may not have sufficient knowledge of birth options for their next birth or indeed where to find the information. Whilst the NBAC evaluation failed to demonstrate the best time to provide information to women about future birthing options was within six weeks following the birth, researchers support the notion that information provided any time in the postnatal or antenatal period would be beneficial (Frost et al 2009; Landon, 2008; Shorten et al, 2005). The confusion

however lies in the type of information provided to women and who provides the information. Obstetricians are often seen in the community as the experts in childbirth and can exert considerable influence on women's birth choices and options (McGrath et al, 2010;). However, midwives spend significantly more time with women during the labour and birth and in the postnatal period. Unlike obstetricians, midwives have time to build a trusting relationship with women. Any information provided by midwives during these times can be adjusted to suit the needs of the woman. The midwives in the NBAC clinic were not only the primary source of information, but were also the interpreters of information given to women by medical officers. Maternity units would be well placed to ensure that there is consistency in the information being provided to women so the midwives and obstetricians are reinforcing the same evidence based information.

Ongoing midwifery professional development is also required to support midwives in advocacy and counselling roles. There is an argument for these skills to be part of the initial midwifery registration course curriculum. However, providing ongoing education to registered midwives may be a better option than burdening students. Additionally, there is also a need to provide ongoing professional development for registered midwives to continue to enhance their skills.

The NBAC evaluation also highlights the need for midwives to be prepared to meet the challenges of changing the way they practice and the development of new systems of care to meet the changing needs of women. Midwifery knowledge and practice are subsumed within a birth culture that is medically and technology driven and valued (Cooper, 2011; Keating and Fleming, 2009). Currently in WA there are limited clinical opportunities where midwifery students or midwives are exposed to midwifery led models of care. Midwifery led models account for less than 2% of all maternity care models offered in WA, whilst private obstetric models account for over 40% (Joyce and Hutchinson, 2012).

The available evidence strongly advocates that women gain more satisfaction when they have continuity of care. Women want a midwife to be with them through their childbirth experience. Women believe that one to one care can create a positive difference to their experience. The majority of these studies have investigated one

specific model or care environment and there is limited evidence comparing views of women receiving care led by different professionals or comparing women's views who have had different experiences of maternity services (Boon, 2004; Cooper 2011; Homer et al, 2008).

Further recommendations include midwives facilitating consumer group interviews with women to ascertain the women's views on the services available; ensuring there is consumer representation on any committees formed to address maternity service provision; that strategies be introduced to increase women's knowledge of the models of maternity care available in their community; and that midwives more strongly advocate services for midwifery-led models of care.

### **6.3 Clinical Practice**

Some interesting findings were revealed from the midwives' experience of working in the new NBAC clinic. Firstly; these NBAC midwives enjoyed providing continuity of care in a woman-centred model, even if the care was predominantly in the antenatal period. As discussed in Chapter Three, the NBAC midwives saw the women during the initial postnatal period following a first CS. The midwives in this study were particularly keen to explore the expansion of the NBAC service to include care across the continuum. Nevertheless, within the study setting, significant changes to midwifery practice are required. One of the major strengths identified was the number of midwives wanting to provide continuity of care and a supportive manager. On the other hand, one of the challenges was that there were not enough midwives with recent experience to practise across the full scope of midwifery practice to ensure a sustainable model. More broadly, health services need to recognise that continuity of carer is as important to midwives as it is to women, and barriers that prevent midwives from working to the full scope of practice may be contributing to the current Australian midwifery workforce shortage (McCourt et al 2006). These barriers may include the institutions' system of maternity care and the promotion of a system that bases midwifery care on an acute nursing model. Further research needs to examine existing power relations internally and externally to the study setting so that midwives are aware of factors that may hinder or help their efforts to deliver midwifery care to women.

Secondly, strategies to improve midwifery medical relationships are vital to the provision of woman-centred care. Poor relationships between maternity care professionals contribute significantly to poor outcomes for pregnant and birthing women (Pollard, 2011). Effective collaboration between health professionals is deemed to be essential to ensure women receive care that is appropriate and leads to the best possible outcomes (Homer et al, 2008). The recent publication of the National Health and Medical Research Council (2010), guidance on collaborative maternity care, identifies key elements which are integral to maternity care collaboration. These include woman-centred care and communication, communication amongst professionals, awareness of disciplines and autonomy, responsibility and accountability, cooperation and coordination, mutual trust and respect, policy, procedures and protocols, inter-professional learning, organisational support and systems (p. 13). Whilst some maternity services in Australia incorporate some of these elements into their practice, organisations providing maternity care would do well to implement all of the key elements of collaborative maternity care as part of their strategic plans.

Thirdly, when implementing new models of care, midwifery leaders and health service managers need to be mindful of the pressure midwives feel particularly in relation to up-skilling in providing care across the continuum, changes to work practices, staffing the model and the industrial challenges. Walker et al (2004) contends that organisational support for midwives must include information, resources and opportunities to enable them to deliver woman-centred, continuity of care. Identifying and working with key stakeholders will ensure that agreed principles and shared vision is maintained. Homer et al (2008), suggest that there are five key areas that underpin the principles and practical strategies for success and sustainability of a new model of midwifery-led care – shared vision, midwifery labour force supports, systems planning and change management strategies, resource and infrastructure needs and policy development and obligations.

Finally, the implications for the midwifery profession in terms of recruitment and retention are a major issue. Midwives are actively pursuing models of care that recognise them professionally as the best placed providers of care to pregnant women. Midwives are becoming increasingly dissatisfied and frustrated with midwifery and in particular the type of midwifery practice demanded of them in

current health settings (Payne, 2010). In a recent cross-sectional study by Pugh, Twigg, Martin and Rai (2011) of 1 600 midwives working in midwifery in Western Australia; the midwives surveyed recommended models of midwifery practice to overcome the perceived ‘fragmentation’, chiefly, midwifery-led practice; autonomous practice; less medicalised birthing models such as home birthing, birthing centres and shared care with GPs; and continuity of care models would encourage them to remain in the midwifery workforce. They believed that more autonomous clinical practice, based on professional competence and experience, would facilitate appropriate midwifery care. For low risk pregnancies, midwives advocated natural childbirth and less medical intervention to support women’s choice about birthing and their caregiver, enable more holistic care, reduce caesarean rates and ensure that “midwives actually deliver babies” (Pugh et al, 2011, p.22).

Establishing or extending midwifery-led practice was one suggested strategy for improving midwifery care for women and their families as well as enhancing the profession. Additionally, midwifery-led practice was considered congruent with midwives’ education. Health services will need to consider adopting models that are acceptable to both women and midwives in order to ensure a sustainable maternity workforce. Antenatal care delivery in particular needs to be tailored to meet the needs of the woman.

#### **6.4 Future Research**

From the NBAC evaluation it appeared evident that women receive care differently when they transition from one model of care to another and this area requires further exploration. The NBAC study focussed on evaluating an antenatal, midwifery -led continuity of care model, with a postnatal intervention. It is recommended that this study be repeated with groups with larger numbers. Furthermore it is recommended that the NBAC model be expanded to include continuity of care across and the intrapartum and postnatal period and further evaluation be undertaken.

There is a need for more research regarding midwives experiences of working in midwifery-led models of care that promote continuity of care for all risk women. There is research around women's experiences of being cared for in the models

where continuity of carer is provided (Biro, Waldenstrom, Brown and Pannifex, 2003; Carolan and Hodnett 2007; Page, 2003). It is clear from the NBAC research that further study needs to be undertaken to explore midwives experiences. An understanding of the experiences of midwives caring for women in continuity of care models is important in the development of woman-centred care for women of all risk.

Finally, further research is required to determine women's perceptions of being cared for by the NBAC service. The NBAC study although limited by sample size, which reduced power and needed to be cautiously presented, was an opportunity based on the commencement of the NBAC service. A replication of the evaluation with larger numbers and not limited by the boundaries of time would be beneficial.

## **6.5 Conclusion**

The purpose of the study was to evaluate a new model of care designed and implemented to improve the care provided to pregnant women who had experienced one previous CS. The NBAC clinic provided a service that consisted of a collection of care items that specifically targeted two specific intervention points.

The first intervention point was the postnatal period where the midwives working on the antenatal NBAC service visit women who had experienced a first CS on the postnatal wards. A key aim of the NBAC postnatal service was to facilitate awareness that VBAC was an option that women should consider and discuss in a subsequent pregnancy. It was also anticipated that providing women with a specific visit in the postnatal period may reduce childbirth fear associated with surgical birth and increase confidence around birth decisions in future pregnancies. For the postnatal phase, three hypotheses were proposed.

Firstly, that women with a first CS, who received an intervention visit from midwives in the NBAC postnatal service would have an increased intention to birth vaginally in a subsequent pregnancy; reduced childbirth fear and increased childbirth self-efficacy compared to women who did not receive a visit. Although there were a number of limitations to the evaluation the findings do suggest that providing women with evidenced based information about birth mode in a subsequent pregnancy

increased women's knowledge about birth following caesarean section. However, the intervention did not appear to reduce childbirth fear, increase childbirth self-efficacy or intention to pursue a vaginal birth in a future pregnancy.

The second intervention point was the antenatal period where women whose last pregnancy ended with a CS are booked into the NBAC clinic at 14 - 16 weeks of pregnancy. The women's antenatal care was provided within a collaborative model; however the service featured continuity of midwifery care throughout pregnancy. A key aim of the NBAC antenatal service was to increase the intention of women to VBAC in the current pregnancy. It was also surmised that the NBAC antenatal service may also reduce childbirth fear, increase childbirth self-efficacy, knowledge and satisfaction with care. For the antenatal phase six hypotheses were proposed.

Finally, that pregnant women with a previous CS, who received the intervention from midwives in the NBAC antenatal service would have reduced childbirth fear; increased self-efficacy, childbirth knowledge, satisfaction with antenatal care, intention to VBAC at 36 weeks gestation and increased number of vaginal birth compared to women who received standard care. Findings from the evaluation suggest that providing women with continuity of care in the antenatal period increased women's knowledge about birth and childbirth confidence. Additionally, having continuity of care in the antenatal period was valued by both the women and midwives. However, the intervention did not appear to reduce childbirth fear or increase intention to pursue VBAC. Nor did the intervention increase the actual number of vaginal births.

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## APPENDIX A

## Scheduled Caesarean Section Birth Plan

Women and Newborn Health Service King Edward Memorial Hospital  <b>SCHEDULED CAESAREAN          SECTION BIRTH PLAN</b>	Med Rec. No: ..... Surname: ..... Forename: ..... Gender: ..... D.O.B. ....
<p>It is very important to us that your baby's birth is a joyful, positive and memorable event. To help us make it special, we invite you to complete a birth plan - an outline of your preferences for your care during your baby's birth. If there are no complications during your baby's birth we will use this birth plan as a guide for your care.</p>	
<p>1. My support person in theatre will be:</p> <p>Name: ..... Relationship to me: .....</p>	
<p>2. If possible, I would like my support person to stay with me while I have my anaesthetic. Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/></p> <p><small>(This is dependent on many circumstances and may not be immediately possible in a emergency situation. If it is not possible your support person will be brought in at the earliest possible convenience).</small></p>	
<p>3. Music</p> <p><input type="checkbox"/> I don't mind the radio or the staff's choice of music being on in theatre</p> <p><input type="checkbox"/> I will bring my own music CD with me to play in theatre</p> <p><input type="checkbox"/> I don't want any music on while I'm in theatre</p>	
<p>4. If at all possible, you may be invited by the doctor to watch as your baby is born. Please tick your preference</p> <p><input type="checkbox"/> YES - if possible please offer me the chance to watch as my baby is born</p> <p><input type="checkbox"/> NO - I don't want to watch as my baby is being born</p> <p><input type="checkbox"/> I'm undecided about watching as my baby's born - I'd like to decide at the time</p>	
<p>5. If you would like, you can discover your baby's sex for yourself. Please tick your preference:</p> <p><input type="checkbox"/> YES. I would like to discover my baby's sex myself</p> <p><input type="checkbox"/> I don't mind if the staff tell me the baby's sex</p> <p><input type="checkbox"/> I'm not sure - I'd like to decide at the time</p>	
<p>6. As long as your baby is born healthy, the midwife may be able to place him or her straight onto your bare chest ('skin-to-skin'). Please tick your preference:</p> <p><input type="checkbox"/> YES - if possible, I'd like my baby placed skin-to-skin with me</p> <p><input type="checkbox"/> I'd like my baby to be wrapped before I cuddle him / her</p> <p><input type="checkbox"/> I'm undecided about having my baby skin-to-skin with me - I'd like to decide at the time</p> <p><small>(If you DON'T want your baby placed skin-to-skin with you, your baby will be wrapped up warmly and depending on your preference, given to you or your support person to cuddle. You don't have to decide this now; you can let your midwife know at the time).</small></p>	
<p>7. If you will be breastfeeding, you may be able to do this in theatre if your baby shows signs of wanting to. Please tick if this is your preference:</p> <p><input type="checkbox"/> YES - if possible, and my baby wants to, I would like to breastfeed my baby in theatre</p>	
<p>8. After the caesarean section it may be possible for you, your baby and your partner / support person to stay together while you go to the recovery area. Please tick your preference:</p> <p><input type="checkbox"/> YES - if possible, I would like my baby and partner / support person to stay with me in the recovery area</p> <p><small>(If this is your preferred option, the staff will try their very best to keep your family together after you leave the operating theatre. Where this is not possible, the reasons will be discussed with you and you will be reunited as soon as possible)</small></p>	
<p>In addition to the choices you have made, we encourage you to write down anything else that is important to you for your caesarean section birth. All of your requests will be carefully considered and discussed with you, and <i>wherever possible</i>, we will accommodate your wishes. If it is not possible, we will try very hard to reach a compromise with you.</p>	
<p>9. Comments / other requests / questions for discussion:</p> <p>.....</p> <p>.....</p> <p>.....</p>	
My signature:	Date:

 K3.754  
 10/08

## APPENDIX B

### Participant Information Sheet



#### PARTICIPANT INFORMATION SHEET

##### PHASE 2: EVALUATION OF N-BAC SERVICE ~ POSTNATAL COMPONENT

King Edward Memorial Hospital is committed to developing and implementing creative and sustainable solutions to improving the quality of care offered to women and their families through their childbirth experience. We have recently implemented a new service specifically designed for women who have had a caesarean section (CS). The development of the service is driven by a desire to improve care offered to women after a CS birth, provide women with appropriate evidenced base information and resources and decrease the CS rate (increase vaginal birth after CS). The service aims to improve care to women at two critical time points. Immediately after the first CS and again in the next pregnancy.

As you have recently had a CS you are being seen by an N-BAC midwife. She will be asking you about your experience, providing you with a resource/information package about options in your next pregnancy and inviting you to a sharing session. Over the next 12 months we will be evaluating the service. It is for this reason that you are invited to participate in this study / evaluation.

The aim of is to evaluate whether the postnatal component of the N-BAC service is achieving its goals.

##### **Who is carrying out the evaluation?**

Clinical and research staff at King Edward Memorial Hospital, in conjunction with the School of Nursing and Midwifery at Curtin University of Technology are conducting the evaluation. Ms Tracy Martin, the Manager of Ambulatory Services is leading the evaluation and will be completing it as part of her higher degree by research studies at Curtin. Associate Professor of Midwifery Jennifer Fenwick, Ms Janice Butt and Ms Jennie Wood will be providing academic support.

##### **What is expected if you decide to participate?**

If you consent to participate in this evaluation you will be asked to complete a questionnaire about your child birth experience. The questionnaire will ask you a few details about yourself and your pregnancy as well as your feeling about your birth experience. We think this will take you about 10-15 minutes. When you have completed the questionnaire place it in the enveloped provided and give to the ward clerk before you leave. Alternatively you can contact the Ms Martin and ask her to pick it up.

When your baby is about 12 weeks old we will telephone you and ask you to repeat the questionnaire. At this time we will ask you some additional questions about the usefulness of the information package and sharing session, your knowledge about options in any future pregnancy and your choice of birth mode.

We will also be conducting a number of in-depth interviews with women, partners and /or significant others. If you are happy to be contacted for an interview please mark this on your consent form. The interview would take place at a time convenient to you, in a place of your choosing and last approximately 60 minutes.

**Do I have to take part?**

Your participation in the evaluation is voluntary. If you do not wish to be involved or wish to withdraw at any time you are free to do so. May we reassure you that this will not affect the care given to you during your postnatal period, in any way.

**Will my privacy be protected?**

The questionnaires are coded for the purpose of data tracking and the information you provide will be kept separate from your personal details. Please feel reassured that you will not be able to be identified by anyone outside of the research team. Results published in professional journals will be reported as a summary of the whole group not as anyone individually.

**Who has approved the study?**

Ethical approval to conduct this evaluation has been granted by the committee for Conduct of Ethical Research at King Edward Memorial Hospital (Approval number 1469/EW) and Curtin University of Technology (???)

**Where is the data kept?**

Sources of raw data, including questionnaires and computer diskettes will be stored in a secure location in a locked filing cabinet at King Edward for a period of five years. No name related information will be used in written reports or presentations, as only group data will be recorded.

**Who you can contact if you have any questions about the study:**

Please feel free to contact Ms Tracy Martin 9301617, Clinic coordinator Ms Sara David on 93402222, or Associate Professor Jennifer Fenwick on 040 110 3634.

**Who you can contact if you are concerned and/or would like to clarify any issues pertaining to the way the study has been conducted:**

If you have any concerns or complaints regarding this evaluation, you can contact the Executive Medical Director of KEMH (telephone number (08) 9340 222) on a confidential basis. Your concerns will be drawn to the attention of the Committee who is monitoring the study.

**What you now if you want to be part of this study?**

- Read all the information provided and make sure you get any questions or queries clarified (please do not hesitate to phone us)
- Sign the attached consent form and make sure we have your contact details
- Complete the questionnaire booklet
- Place signed consent form and completed booklet in envelop and deposit with ward clerk.

***Thank you for considering taking part in this study.***





## APPENDIX E

### Routine Postpartum Care Guidelines



**WOMEN AND NEWBORN HEALTH SERVICE**  
King Edward Memorial Hospital

**CLINICAL GUIDELINES**  
SECTION A: GUIDELINES RELEVANT TO OBSTETRICS AND GYNAECOLOGY

#### 6 ROUTINE POSTPARTUM CARE

##### 6.2 CARE OF THE MOTHER ON THE POSTNATAL WARD

Date Issued: September 2001  
Date Revised: April 2008  
Review Date: April 2013  
Authorised by: OGCCU  
Review Team: OGCCU

6.2.1 Care on admission to the ward  
Section B  
Clinical Guidelines  
King Edward Memorial Hospital  
Perth Western Australia

##### 6.2.1 CARE ON ADMISSION TO THE WARD

###### KEY POINT

This procedure encompasses the care provided to women who have had a normal labour, birth and immediate postpartum period.

###### AIMS

1. To assess maternal condition
2. To identify factors which may influence postpartum care of the woman
3. To determine the level of care the woman requires.
4. To make the woman feel welcome and at ease

PROCEDURE	ADDITIONAL INFORMATION
1. Welcome woman and support person into the ward and introduce self.  Note time of arrival to ward.	The literature suggests that admission is part of the process of care for the woman and not a procedure in itself. <sup>1</sup> It is the time when the relationship between the woman and midwife begins and it provides the opportunity for the midwife to: <sup>1</sup> <ul style="list-style-type: none"> <li>• allay the woman's anxiety<sup>2</sup></li> <li>• establish an effective means of communication</li> <li>• establish a collaborative relationship based on respect and understanding</li> <li>• make an initial assessment of the woman</li> </ul>
2. Assist the woman onto the bed	
3. Check with the escorting midwife that the: <ul style="list-style-type: none"> <li>• woman's identification band matches her medical record</li> <li>• infant's identification bands match the woman's band.</li> </ul>	Confirms the identification of the woman and her infant and ensures transfer of the correct medical records.

## APPENDIX F

### NBAC Information Brochure

WOMEN AND NEWBORN HEALTH SERVICE

King Edward Memorial Hospital

#### Resources

Please feel free to ask for a Next Birth After Caesarean Section information package.

#### NBAC Clinic

Tel: (08) 9340 1626

Birthrites: Healing After Caesarean Inc.  
www.birthrites.org

#### Community Midwifery WA Pregnancy and Childbirth Resource Centres

Located in Fremantle, Kalamunda and Joondalup  
www.cmwa.net.au  
Tel: (08) 9430 6882

#### Your Child Health Nurse

Women and Newborn Health Library, KEMH  
Tel: (08) 9340 1100

#### Postnatal Depression Support

- From the Heart WA  
www.fromtheheartwa.org.au
- Post and Antenatal Depression Association (PANDA) helpline  
1300 726 306 (7.00am - 5.00pm)

Additional information can also be accessed from the following websites:

<http://kemh.health.wa.gov.au/health/VBAC/index.htm>

<http://kemh.health.wa.gov.au/services/NBAC/index.htm>

Your midwife or doctor will be happy to talk through your options and answer any questions you may have.

**Disclaimer:** The advice and information contained herein is provided in good faith as a public service. However the accuracy of any statements made is not guaranteed and it is the responsibility of readers to make their own enquiries as to the accuracy, currency and appropriateness of any information or advice provided. Liability for any act or omission occurring in reliance on this document or for any loss, damage or injury occurring as a consequence of such act or omission is expressly disclaimed.

Every picture tells a story.  
Thank you to all the women who so generously provided their photos for use in this publication.

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Women and Newborn Health Service

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Website: <http://wnhs.health.wa.gov.au>

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Revised October 2011

This information is available in alternative formats upon request

WOMEN AND NEWBORN HEALTH SERVICE

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Telephone: (08) 9340 2222



Government of Western Australia  
Department of Health



Delivering a Healthy WA

## Next Birth After Caesarean (NBAC)

### For women who have had a previous caesarean section



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Delivering a Healthy WA

## APPENDIX G

### Birth after CS Booklet

WOMEN AND NEWBORN HEALTH SERVICE

> King Edward Memorial Hospital

**Disclaimer:** The advice and information contained herein is provided in good faith as a public service. However the accuracy of any statements made is not guaranteed and it is the responsibility of readers to make their own enquiries as to the accuracy, currency and appropriateness of any information or advice provided. Liability for any act or omission occurring in reliance on this document or for any loss, damage or injury occurring as a consequence of such act or omission is expressly disclaimed.

**Every picture tells a story.**  
Thank you to all the women who so generously provided their photos for use in this publication.

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Government of Western Australia  
Department of Health



Delivering a Healthy WA

Delivering a Healthy WA



## APPENDIX H

### Perinatal Mental Health Support Brochure

#### Where to get HELP

From the Heart WA 9340 1622  
 PANDA phone support 1300 726 306  
 (Post and Antenatal Depression Association)

Child Health Centres, Medical Centres, GPs,  
 Professional Therapists and Counsellors

Health Direct 1800 022 222

Mental Health Emergency Response Line 1300 555 788

Parenting WA 6279 1200

Raphael Centre, St John of God Healthcare 1300 306 828

Mother Baby Unit (KEMH) 1800 422 588

Women's Information Service 6217 8230

Women's Health Service Northbridge 9227 8122

Midland Women's Health 9250 2221

Gosnells Women's Health 9490 2258

The Spiers Centre 9401 7021

Women's Healthworks Joondalup 9300 1566

Fremantle Women's Health 9431 0500

South Coastal Women's Health 9550 0900

Ishar Women's Health 9345 5335

Derbal Yerrigan 9421 3888

Ngala Helpline 9368 9368

Red Cross Family & Practical Support 9225 1946

beyondblue 1300 224 636

Remember, if you are feeling overwhelmed, depressed or anxious during pregnancy or after the birth of a baby, **please seek help.**

With proper treatment, care and support, **recovery is possible.**



Emotional adjustments that come with having a baby may be challenging and difficult.

We understand and support is available.

#### From the Heart WA

Administration: 15 Loretto Street Subiaco

Postal: PO Box 548 Subiaco WA 6904

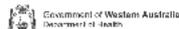
Email: [info@fromtheheartwa.org.au](mailto:info@fromtheheartwa.org.au)

Phone: (08) 9340 1688

Support: (08) 9340 1622

[www.fromtheheartwa.org.au](http://www.fromtheheartwa.org.au)

Kindly funded through the National Perinatal Depression Initiative.

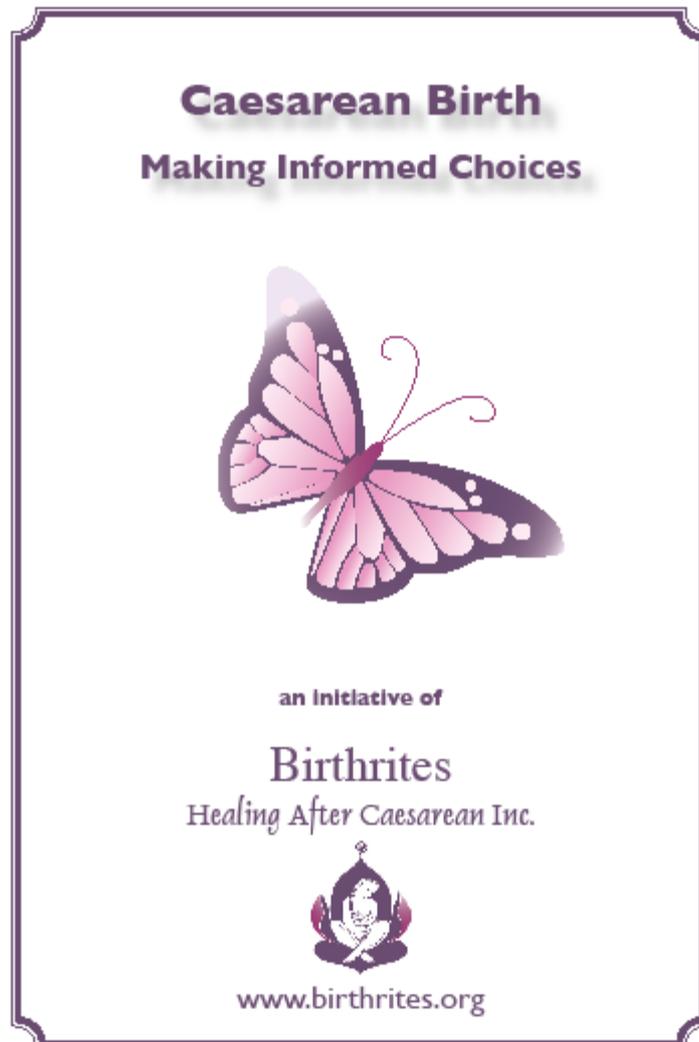


[www.fromtheheartwa.org.au](http://www.fromtheheartwa.org.au)

[www.fromtheheartwa.org.au](http://www.fromtheheartwa.org.au)

APPENDIX I

**Birthrites Information Brochure**



## APPENDIX J

## Postnatal Demographic Survey

POSTNATAL INTERVENTION POINT  
SURVEY PACKAGE

code \_\_\_\_\_

**DEMOGRAPHIC DATA: POSTNATAL**

1. What is your age
  - <sup>1</sup> 18 - 20
  - <sup>2</sup> 21 - 25
  - <sup>3</sup> 26 - 30
  - <sup>4</sup> 31 - 35
  - <sup>5</sup> 36 - 40
  - <sup>6</sup> 41 - 45
  - <sup>7</sup> over 45
  
2. What is your current marital status? (Please mark one box only)
  - <sup>1</sup> Married
  - <sup>2</sup> Defacto
  - <sup>3</sup> Single, not living with partner
  - <sup>4</sup> Divorced/separated
  - <sup>5</sup> Widowed
  
3. What is the **highest** level of education you have attained? (Please mark one box only)
  - <sup>1</sup> Primary school only
  - <sup>2</sup> Secondary school less than year 12
  - <sup>3</sup> Secondary school year 12
  - <sup>4</sup> Completed an apprenticeship
  - <sup>5</sup> Completed a diploma or degree
  - <sup>6</sup> Completed a postgraduate qualifications
  - <sup>7</sup> Other: \_\_\_\_\_
  
4. Before this pregnancy, were you involved in paid work or study?
  - <sup>0</sup> No
  - <sup>1</sup> Yes, paid work (please describe occupation)
  - <sup>2</sup> Yes, studying
  - <sup>3</sup> Both work and study
  
5. If you have a partner are they currently in paid work or study?
  - <sup>0</sup> Not applicable
  - <sup>1</sup> No
  - <sup>2</sup> Yes, paid work (please describe occupation) \_\_\_\_\_
  - <sup>3</sup> Yes, studying

- <sup>4</sup> Both work and study
6. What is your gross (before tax) family income? (Please mark one box only)
- <sup>1</sup> Less than \$20,000  
<sup>2</sup> Between \$20,001 - \$40,000  
<sup>3</sup> Between \$40,001 - \$60,000  
<sup>4</sup> Between \$60,001 - \$80,000  
<sup>5</sup> More than \$80,000
7. What is your country of birth? \_\_\_\_\_
8. What language do you speak at home? \_\_\_\_\_
9. Are you a member of a private health fund? <sub>0</sub> No <sub>1</sub> Yes
10. When you first knew you were pregnant, how did you feel?
- <sup>1</sup> Overjoyed  
<sup>2</sup> Pleased  
<sup>3</sup> Mixed feelings  
<sup>4</sup> Not very happy  
<sup>5</sup> Very **un**happy  
<sup>6</sup> No particular feelings
11. Which of the following models of care provided your antenatal care for this pregnancy? (*Please mark one box only*)
- <sup>1</sup> Birth Centre: Midwives  
<sup>2</sup> Shared care between GP and hospital  
<sup>3</sup> Midwives antenatal clinic  
<sup>4</sup> Doctors antenatal clinic  
<sup>5</sup> Doctors private rooms  
<sup>6</sup> Midwifery teams  
<sup>8</sup> Other: \_\_\_\_\_
- 11a. Did you attended any antenatal education? <sub>0</sub> No <sub>1</sub> Yes
- 11b. If yes what type of antenatal education has this been?
- <sup>1</sup> Hospital antenatal education classes  
<sup>2</sup> Private education session with a midwife  
<sup>3</sup> Women / community groups  
<sup>7</sup> Other: \_\_\_\_\_
- 11c. How many sessions did you attend? \_\_\_\_\_

12. How helpful were the antenatal education session in helping you feel **confident** about your labour and birth?

- <sup>1</sup> Very helpful  
<sup>2</sup> Helpful  
<sup>3</sup> Mixed feelings  
<sup>4</sup> Not very helpful  
<sup>5</sup> Very **un**helpful  
<sup>6</sup> No particular feelings

13. Did you experience any of the following during this last current pregnancy?

	No, I did not experience	Yes, I did experience
a. Vaginal Bleeding	0	1
b. High Blood Pressure	0	1
c. Gestational Diabetes	0	1
d. Reduced Fetal Movements	0	1
e. Concern that your baby was small	0	1
f. Concern that your baby was big	0	1
g. Premature Labour Pains	0	1
h. Other: Please describe		
i.	0	1
_____	0	1
ii.		
_____		

14. Did you expect to have a caesarean section ?

- <sup>1</sup> No                      <sup>2</sup> Yes, Elective (planned) caesarean delivery

If yes, could you tell us why?









**APPENDIX L**  
**New General Self-efficacy Scale**

*Please circle the number that best matches your feelings*

Strongly Disagree					Strongly Agree
1	2	3	4	5	

1. I will be able to achieve most of the goals that I set for myself  
1                      2                      3                      4                      5
2. When facing difficult tasks, I am certain that I will accomplish them  
1                      2                      3                      4                      5
3. In general, I think that I can obtain outcomes that are important to me  
1                      2                      3                      4                      5
4. I believe I can succeed at most any endeavour to which I set my mind  
1                      2                      3                      4                      5
5. I will be able to successfully overcome many challenges  
1                      2                      3                      4                      5
6. I am confident that I can perform effectively on many different tasks  
1                      2                      3                      4                      5
7. Compared to other people, I can do most tasks very well  
1                      2                      3                      4                      5
8. Even when things are tough, I can perform quite well  
1                      2                      3                      4                      5

Chen G, Gully SM and Eden D (2002) Validation of a New General Self-Efficacy Scale. *Organisational Research Methods*, 4 (1), 62-83

## APPENDIX M

## Phase Two 12 week Postnatal Survey

**PHASE TWO EVALUATION: POSTNATAL INTERVENTION POINT**

Additional questions to be asked at 12 weeks

code \_\_\_\_\_

1. How helpful was having the N-BAC midwife visit you in the ward after your caesarean section?

(not helpful ) 1 .....5.....10 (extremely helpful)

2a. How reassuring was it knowing you could contact the N-BAC midwife in the first 8 weeks after birth?

(not reassuring ) 1 .....5.....10  
(extremely reassuring )

2b. Did you use this service?    No     Yes

2c. If yes, how many times did you contact the midwife? \_\_\_\_\_

2d. If you used this service how helpful was talking to the midwife?

(not helpful ) 1 .....5.....10 (extremely helpful)

3. Are you planning to have another baby?    No     Yes

4. What would be your choice of mode of birth?

<sup>1</sup> Vaginal birth / VBAC    <sup>2</sup> Repeat caesarean section    \_\_\_\_\_

<sup>3</sup> Not sure\_\_\_\_\_

5. How useful was the educational information you received on birthing after a caesarean section in helping you make a decision about your intended birthing option in a subsequent pregnancy?

(not useful) 1 .....5.....10 (extremely useful)

Didn't read

Didn't read as had already made up mind to

<sup>1</sup>...have a CS\_\_    <sup>2</sup>...have a VBAC \_\_    <sup>3</sup>...never have another baby

## APPENDIX N

### Antepartum Care Guidelines



WOMEN AND NEWBORN HEALTH SERVICE  
King Edward Memorial Hospital

CLINICAL GUIDELINES  
SECTION B: GUIDELINES RELEVANT TO OBSTETRICS AND MIDWIFERY

#### 1 ANTEPARTUM CARE

##### 1.1 ANTEPARTUM CLINIC VISITS

Date Issued: November 2006  
Date Revised: December 2009  
Review Date: December 2012  
Authorised by: OGCCU  
Review Team: OGCCU

1.1.2.2 Low Risk Midwives Clinic with Medical Consultation  
Section B  
Clinical Guidelines  
King Edward Memorial Hospital  
Perth Western Australia

##### 1.1.2 MIDWIFERY CARE

##### 1.1.2.2 LOW RISK MIDWIVES CLINIC WITH MEDICAL CONSULTATION

###### KEY POINTS

1. The women attending this clinic are suitable to have the majority of their antenatal visits with a midwife, but require medical consultation as indicated in the table below.
2. **A management plan is written on the MR 004** when the woman's medical records are reviewed by a consultant (a woman's medical records are checked after the booking visit to the midwives clinic to assess ongoing suitability for midwifery care).
3. **All** medical records of women attending the midwives clinic regardless of when they commenced their visits shall be reviewed by the obstetric consultant after the booking visit, and then signed on the MR 004.
4. The medical consult can occur via telephone, by review of the medical records, or a follow-up visit is arranged by the midwife to attend the obstetric team antenatal clinic. **When the obstetric team reviews the woman a management plan is documented on the MR 004 or in the antenatal notes.** This management plan must include when (at what gestation), and if, the woman requires future visits with the obstetric medical team.
5. If in the midwives opinion the woman is no longer suitable for midwifery shared care, after consultation with the medical team, the woman may be transferred to medical care for the remainder of her pregnancy. This change should be documented on the MR 004.

## APPENDIX O

## Royal Australian College of Obstetricians and Gynaecologists VBAC Guidelines



The Royal Australian  
and New Zealand  
College of  
Obstetricians and  
Gynaecologists

New College Statement  
C-Obs 38  
1st Endorsed: July 2010  
Current: July 2010  
Review: July 2013

## C-Obs 38

## Planned Vaginal Birth after Caesarean Section (Trial of Labour)

A woman with a uterine scar has the option of choosing an elective caesarean section or to attempt vaginal birth. Factors to consider include: the material risks in the index pregnancy associated with each approach, plans for further childbearing, the likelihood of achieving a vaginal delivery and other aspects of individual importance. The decision is one for the woman to make in consultation with her carer who has an obligation to provide her with all relevant information.

### Terminology

This area of practice suffers from misleading terminology. The following terms are recommended and adapted from the National Institutes of Health Consensus Statement (2010)<sup>13</sup>:

- Trial of labour (TOL): A planned attempt to birth vaginally in a woman who has had a previous caesarean section. This is also sometimes called a "Trial of Vaginal Birth after Caesarean" (TOVBAC).
- Vaginal birth after caesarean section (VBAC): Vaginal birth following a TOL.
- Elective repeat caesarean section (ERCS): Planned caesarean section in a woman who has had one or more prior caesarean sections, whether or not the caesarean section occurred at a scheduled time. Also may be termed Elective repeat caesarean delivery (ERCD).
- Unsuccessful TOL: Delivery by caesarean section of a woman who has had a TOL.

### Risks associated with a TOL

#### Uterine Rupture

Chauhan et al (2003)<sup>4</sup> reviewed maternal and perinatal complications in 142,075 patients who attempted vaginal birth after cesarean delivery. They reported a uterine rupture rate of 6.2 per 1000 trials of labour. The uterine rupture-related complication rate was 1.8 per thousand for packed red blood cell transfusion, 1.5/1000 for pathologic fetal acidosis (cord pH < 7.00), 0.9/1000 for hysterectomy, 0.8/1000 for genitourinary injury, 0.4/1000 for perinatal death, and 0.02/1000 for maternal death. These figures concur with a large Australian series where the likelihood of uterine rupture with attempted vaginal delivery after a previous lower segment caesarean section was estimated at 5 per thousand, hysterectomy 0.5 per thousand and perinatal death from uterine rupture 0.7 per thousand. Landon et al (2004)<sup>10</sup> reported 'symptomatic uterine rupture' in 7 per thousand in 17,898 TOLs from 19 academic centres in the USA.

#### Perinatal Mortality

Women electing TOL undoubtedly have a significant increase in perinatal mortality risk relative to those who undergo ERCS.<sup>12</sup> However, much of this is attributable to the often understated background rate of perinatal death after 39 weeks' gestation. Where 0.4 per thousand may have a perinatal death related to rupture,<sup>4</sup> a further 1.4 per thousand can be expected to have an

## APPENDIX P

### Participant Information Sheet – Antenatal Phase



#### PARTICIPANT INFORMATION SHEET

##### PHASE 2: EVALUATION OF N-BAC SERVICE ~ ANTENATAL COMPONENT

King Edward Memorial Hospital is committed to developing and implementing creative and sustainable solutions to improving the quality of care offered to women and their families through their childbirth experience. We have recently implemented a new service specifically designed for women who have had a caesarean section (CS). The development of the service is driven by a desire to improve care offered to women after a CS birth, provide women with appropriate evidenced base information and resources and decrease the CS rate (increase vaginal birth after CS). The service aims to improve care to women at two critical time points. Immediately after the first CS and again in the next pregnancy.

As you have recently booked into King Edward and have previously had a CS you are being seen by an N-BAC midwife. She will be asking you about your previous birth experience, providing you with a resource/information package about options in this pregnancy and inviting you to antenatal sharing sessions. If you choose to have all your care in the antenatal NBAC clinic we hope to provide you with an opportunity to see the same midwife on a regular basis. Alternatively you may like to see your GP and just come back to the hospital for the antenatal sharing sessions. Over the next 12 months we will be evaluating the service. It is for this reason that you are invited to participate in this study / evaluation.

**The aim is to** evaluate whether the antenatal component of the N-BAC service is achieving its goals.

#### **Who is carrying out the evaluation?**

Clinical and research staff at King Edward Memorial Hospital, in conjunction with the School of Nursing and Midwifery at Curtin University of Technology. The evaluation is being undertaken by Associate Professor Jennifer Fenwick and Ms Tracy Martin in conjunction with the NBAC team.

#### **What is expected if you decide to participate?**

If you consent to participate in this evaluation you will be asked to complete a questionnaire booklet about your child birth expectations. The questionnaire will ask you a few details about yourself and your pregnancy as well as your feeling about your coming birth experience. When you are between 34 - 36 weeks pregnant we will ask you to answer the same questions. Answering the questions will take you about 10-15 minutes. When you have completed the booklet you can use the prepaid enveloped to return it to us (or alternatively bring it to your next visit). Six weeks after your baby is born we will telephone you to ascertain your satisfaction with the service and the care you received. This will include a questionnaire on your

birth experience. We think this will take about 15 minutes of your time. If you take part in the study we will also collect information about the labour and birth of your baby. This will be collected from your medical records by one of the research team.

We will also be conducting a number of in-depth interviews with women, partners and /or significant others. If you are happy to be contacted for an interview please mark this on your consent form. The interview would take place at a time convenient to you, in a place of your choosing and last approximately 60 minutes.

**Do I have to take part?**

Your participation in the evaluation is voluntary. If you do not wish to be involved or wish to withdraw at any time you are free to do so. May we reassure you that this will not affect the care given to you during your pregnancy, birth or the early parenting period.

**Will my privacy be protected?**

The questionnaires are coded for the purpose of data tracking and the information you provide will be kept separate from your personal details. Please feel reassured that you will not be able to be identified by anyone outside of the research team. Results published in professional journals will be reported as a summary of the whole group not as anyone individually.

**Who has approved the study?**

Ethical approval to conduct this study has been granted by the committee for Conduct of Ethical Research at King Edward Memorial Hospital (Approval number 1496/EW).

**Where is the data kept?**

Sources of raw data, including questionnaires and computer diskettes will be stored in a secure location in a locked filing cabinet at King Edward for a period of five years. No name related information will be used in written reports or presentations, as only group data will be recorded.

**Who you can contact if you have any questions about the study:**

Please feel free to contact the Ms Tracy Martin on 0407193486, or Associate Professor Jennifer Fenwick on 040 110 3634.

**Who you can contact if you are concerned and/or would like to clarify any issues pertaining to the way the study has been conducted:**

If you have any concerns or complaints regarding this evaluation, you can contact the Executive Medical Director of KEMH (telephone number (08) 9340 2222) on a confidential basis. Your concerns will be drawn to the attention of the Committee who is monitoring the study.

**What you now if you want to be part of this study?**

- Read all the information provided and make sure you get any questions or queries clarified (please do not hesitate to phone us)
- Sign the attached consent form and make sure we have your contact details
- Complete the questionnaire booklet
- Place signed consent form and completed booklet in envelop and deposit with ward clerk / or hand to your NBAC midwife.

***Thank you for considering taking part in this study.***





## APPENDIX S

## Antenatal Demographic Survey

## ANTENATAL SURVEY PACKAGE

code \_\_\_\_\_

**DEMOGRAPHIC DATA ANTENATAL**

The midwife will complete this sheet if woman consents to participate.

1. What is your age

- <sup>1</sup> 18 - 20
- <sup>2</sup> 21 - 25
- <sup>3</sup> 26 - 30
- <sup>4</sup> 31 - 35
- <sup>5</sup> 36 - 40
- <sup>6</sup> 41 - 45
- <sup>7</sup> over 45

2. What is your current marital status? (Please mark one box only)

- <sup>1</sup> Married
- <sup>2</sup> Defacto
- <sup>3</sup> Single, not living with partner
- <sup>4</sup> Divorced/separated
- <sup>5</sup> Widowed

3. What is the **highest** level of education you have attained? (Please mark one box only)

- <sup>1</sup> Primary school only
- <sup>2</sup> Secondary school less than year 12
- <sup>3</sup> Secondary school year 12
- <sup>4</sup> Completed an apprenticeship
- <sup>5</sup> Completed a diploma or degree
- <sup>6</sup> Completed a postgraduate qualifications
- <sup>7</sup> Other: \_\_\_\_\_

4. Before this pregnancy, were you involved in paid work or study?

- <sup>0</sup> No
- <sup>1</sup> Yes, paid work (please describe occupation)
- <sup>2</sup> Yes, studying
- <sup>3</sup> Both work and study

5. If you have a partner are they currently in paid work or study?

- <sup>0</sup> Not applicable  
<sup>1</sup> No  
<sup>2</sup> Yes, paid work (please describe occupation)  
<sup>3</sup> Yes, studying  
<sup>4</sup> Both work and study

6. What is your gross (before tax) family income? (Please mark one box only)

- <sup>1</sup> Less than \$20,000  
<sup>2</sup> Between \$20,001 - \$40,000  
<sup>3</sup> Between \$40,001 - \$60,000  
<sup>4</sup> Between \$60,001 - \$80,000  
<sup>5</sup> More than \$80,000

7. What is your country of birth? \_\_\_\_\_

8. What language do you speak at home? \_\_\_\_\_

9. Are you a member of a private health fund? <sub>0</sub> No <sub>1</sub> Yes

10. When you first knew you were pregnant, how did you feel?

- <sup>1</sup> Overjoyed  
<sup>2</sup> Pleased  
<sup>3</sup> Mixed feelings  
<sup>4</sup> Not very happy  
<sup>5</sup> Very **un**happy  
<sup>6</sup> No particular feelings

11. Which of the following models of care provided your antenatal care for your last pregnancy? (Please mark one box only)

- <sup>1</sup> Birth Centre: Midwives  
<sup>2</sup> Shared care between GP and hospital  
<sup>3</sup> Midwives antenatal clinic  
<sup>4</sup> Doctors antenatal clinic  
<sup>5</sup> Doctors private rooms  
<sup>6</sup> Midwifery teams  
<sup>8</sup> Other: \_\_\_\_\_

12. Did you have your caesarean section here at King Edward? <sub>0</sub> No <sub>1</sub> Yes

13. Can you tell us why you had your caesarean section?

---

---

14. At this stage do you intend to have a ...

- Vaginal birth / VBAC \_\_\_
- Repeat caesarean section \_\_\_
- Not sure\_\_\_\_\_

Could you tell us about your choice?









## APPENDIX U

## Childbirth Self-efficacy Inventory

## CBSES: PART 1

CODE \_\_\_\_

The following questionnaire asks you specifically about your confidence for labour and birth. There are four sections (in 2 parts) to complete.

Think about how you imagine labour will be and feel when you are having contractions 5 minutes apart or less (the first stage of labour). For each of the following behaviours, indicate **how helpful you feel the behaviour could be in helping you to cope** with this part of labour by circling a number between 1 [not helpful at all] and 10 [very helpful].

	1 Not at all helpful - very helpful 10									
1. Relax my body.	1	2	3	4	5	6	7	8	9	10
2. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
3. Use breathing during labour.	1	2	3	4	5	6	7	8	9	10
4. Keep myself in control.	1	2	3	4	5	6	7	8	9	10
5. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
6. Concentrate on an object in the room to distract myself.	1	2	3	4	5	6	7	8	9	10
7. Keep myself calm.	1	2	3	4	5	6	7	8	9	10
8. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
9. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
10. Think positively.	1	2	3	4	5	6	7	8	9	10
11. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
12. Tell myself that I can do it.	1	2	3	4	5	6	7	8	9	10
13. Think about others in my family.	1	2	3	4	5	6	7	8	9	10
14. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
15. Listen to encouragement from the person helping me.	1	2	3	4	5	6	7	8	9	10

Continue to think about how you imagine labour will be and feel when you are having contractions 5 minutes apart or less (first stage of labour). For each behaviour, indicate **how certain you are of your ability to use the behaviour to help you cope** with this part or labour by circling a number between 1 [not at sure] and 10 [completely sure].

**1 Not at all sure -completely sure 10**

16. Relax my body.	1	2	3	4	5	6	7	8	9	10
17. Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
18. Use breathing during labour contractions.	1	2	3	4	5	6	7	8	9	10
19. Keep myself in control.	1	2	3	4	5	6	7	8	9	10
20. Think about relaxing.	1	2	3	4	5	6	7	8	9	10
21. Concentrate on an object in the room to distract myself.	1	2	3	4	5	6	7	8	9	10
22. Keep myself calm.	1	2	3	4	5	6	7	8	9	10
23. Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
24. Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
25. Think positively	1	2	3	4	5	6	7	8	9	10
26. Not think about the pain.	1	2	3	4	5	6	7	8	9	10
27. Tell myself that I can do it.	1	2	3	4	5	6	7	8	9	10
28. Think about others in my family.	1	2	3	4	5	6	7	8	9	10
29. Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
30. Listen to encouragement from the person helping me.	1	2	3	4	5	6	7	8	9	10

**CBSES: PART 2**

CODE \_\_\_\_

Think about how you imagine labour will be and feel when you are **pushing your baby out** to give birth (2<sup>nd</sup> stage of labour). For each of the following behaviours, indicate how **helpful you feel the behaviour could be in helping you to cope** with this part of labour by circling a number between 1 [not helpful at all] and 10 [very helpful].

**1 Not at all helpful - very helpful 10**

- |   |   |   |   |   |   |   |   |   |   |    |
|---|---|---|---|---|---|---|---|---|---|----|
| 31. Relax my body.  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 32. Get ready for each contraction.                             | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 33. Use breathing during labour contractions.                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 34. Keep myself in control.                                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 35. Think about relaxing.                                       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 36. Concentrate on an object in the room to<br>distract myself. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 37. Keep myself calm.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 38. Concentrate on thinking about the baby.                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 39. Stay on top of each contraction.                            | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 40. Think positively.   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 41. Not think about the pain.                                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 42. Tell myself that I can do it.                               | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 43. Think about others in my family.                            | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 44. Concentrate on getting through<br>one contraction at a time | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 45. Focus on the person helping me in labour.                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| 46. Listen to encouragement from<br>the person helping me.      | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

Continue to think about how you imagine labour will be and feel when you are **pushing your baby out** to give birth (2<sup>nd</sup> stage of labour). For each behaviour, indicate how **certain you are to use the behaviour to help you cope** with this part of labour by circling a number between 1 [not at all sure] and 10 [completely sure].

**1 Not at all sure -completely sure 10**

- |                    |   |   |   |   |   |   |   |   |   |    |
|--------------------|---|---|---|---|---|---|---|---|---|----|
| 47. Relax my body. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------------|---|---|---|---|---|---|---|---|---|----|

48.	Get ready for each contraction.	1	2	3	4	5	6	7	8	9	10
49.	Use breathing during labour contractions.	1	2	3	4	5	6	7	8	9	10
50.	Keep myself in control.	1	2	3	4	5	6	7	8	9	10
51.	Think about relaxing.	1	2	3	4	5	6	7	8	9	10
52.	Concentrate on an object in the room to distract myself.	1	2	3	4	5	6	7	8	9	10
53.	Keep myself calm.	1	2	3	4	5	6	7	8	9	10
54.	Concentrate on thinking about the baby.	1	2	3	4	5	6	7	8	9	10
55.	Stay on top of each contraction.	1	2	3	4	5	6	7	8	9	10
56.	Think positively	1	2	3	4	5	6	7	8	9	10
57.	Not think about the pain.	1	2	3	4	5	6	7	8	9	10
58.	Tell myself that I can do it.	1	2	3	4	5	6	7	8	9	10
59.	Think about others in my family.	1	2	3	4	5	6	7	8	9	10
60.	Concentrate on getting through one contraction at a time.	1	2	3	4	5	6	7	8	9	10
61.	Focus on the person helping me in labour.	1	2	3	4	5	6	7	8	9	10
62.	Listen to encouragement from the person helping me.	1	2	3	4	5	6	7	8	9	10

Lowe NK. Maternal confidence for labour: development of the Childbirth Self-Efficacy Inventory. *Research in Nursing and Health* 1993;16(2):141-149.

## APPENDIX V

## Childbirth Knowledge Survey

Childbirth knowledge

CODE \_\_\_\_\_

Please **circle** the appropriate response

1. For your **previous birth** did you attended antenatal or childbirth education classes?

Yes / No

*\* at 34-36 weeks – an added question will appear asking the participant about attending childbirth education classes in this current pregnancy*

2. Have you ever watched an actual birth or a video of a birth? Yes / No

3. How many books or magazines have you read that provide information about the birth process?

None

A few

Several

Many

A lot

3a. If you have read any books or magazines, how informative were they?

Not at all

Slightly

Somewhat

Very

Extremely

4. Do you know any behavioural techniques that may assist you during labour and delivery?

Yes / No

4a. If yes, please name three behavioural techniques you might use ...

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5. In comparison to other women, how detailed is your knowledge of childbirth?

Much less  
detailed

Less detailed

Same

More detailed

Much more  
detailed

6. How often do you practice behaviours or thoughts that may assist you when giving birth?

Never

Once a month

Once a week

Every few  
days

Daily



4. If you had the majority of your antenatal care with the NBAC midwives, how often did you see the same midwife?

- <sub>1</sub> For less than half my visit    <sub>2</sub> For about half my visits  
<sub>3</sub> For most of my visits

4a. If you saw the same midwife for most of your antenatal visits how helpful was this in making you feel **confident** about your labour and birth?

- <sup>1</sup> Very helpful  
<sup>2</sup> Helpful  
<sup>3</sup> Mixed feelings  
<sup>4</sup> Not very helpful  
<sup>5</sup> Very **unhappy**  
<sup>6</sup> No particular feelings

## 5. THE STYLE OF CARE FROM THE N-BAC CLINIC MIDWIVES

Please circle below how frequently you experienced the situations described below.

*The N-BAC Clinic midwives;*

	Never	Seldom	Sometimes	Often	Always
a. Provided me with information and advice that was easy to understand	0	1	2	3	4
b. Provided information which was of interest or relevant to me	0	1	2	3	4
c. Provided information which was consistent	0	1	2	3	4
d. Provided information which was helpful or effective	0	1	2	3	4
e. Were approachable and friendly	0	1	2	3	4
f. Had ample time to listen to my concerns	0	1	2	3	4
g. Provided me with reassurance and enabled me to feel confident	0	1	2	3	4
h. Offered me an active say in the care they provided	0	1	2	3	4
i. Were easy to contact	0	1	2	3	4



<sup>1</sup> Vaginal birth / VBAC \_\_\_ <sup>2</sup> Repeat caesarean section \_\_\_ <sup>3</sup> Not  
sure\_\_\_\_\_

13. Are there any elements you would add to improve the N-BAC service?

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14. Are there any elements you would remove from the N-BAC service?

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**APPENDIX X**  
**Quality Analysis Audit Trail**

<p>Data – Continuity of Care</p> <p>it was an opportunity to work in a model of care that was a continuity of care model. (T1)  opportunity really to get back into a <b>continuity of care model</b> (T1)  I can actually now work in a continuity of care model (T1)</p> <p>(CC) I think it's been good for me as a midwife to work with them (women) them again through their pregnancy and good for them hopefully too. (T2)</p> <p>it's great to see the women, from a midwifery point of view as a professional it's really nice to see the women again and again and I hope the women really appreciate that as well. (T49)</p> <p><b>it's fantastic to see women again a few weeks down the track and they're well and they might have been to the sessions and have, they do feel more empowered</b> (II 21)</p> <p>You'd have, you know your women that, it's more what's the word satisfying for you and for them. (LR 8)</p>	<p>Continuity  Seeing the same women</p>	<p>Getting to Know the women</p>
<p>I think it's ahm, er, still have room for improvement. I think it would still be great if there were more opportunity to see the same women through the pregnancy, it doesn't always work out that way with the rosters ahm, (T2)</p> <p>and I think we need to be a bit creative around how else can we provide that level of support for women. (T38)</p> <p>I have wondered whether some of the outcomes that we've seen in the clinic in terms of labour and birth and the repeat Caesarean sections even though I think we have got better but we certainly have a long way to go what the worldwide literature suggests is achievable. (T40)</p> <p>the biggest improvement will be that this becomes a continuity of care that extends into labour and birth (T48)</p> <p><b>I would like to see a bit more continuity of care in the clinic</b> (II 13)</p> <p>but I think that case loading would be the way to go (II 14)</p> <p>And of course that would also mean that we would follow women through I suppose into labour ward and postnatally as well. (II 16)</p> <p>know to have that continuity, that building up of a relationship, that trust, mutual trust developing. (II 20)</p>	<p>Improvements to come  More continuity  Good</p>	<p>Getting to Know the women</p>

<p>it would be good if it was a continuity service (LR 8) continuity would just be brilliant. (LR 8)</p>		
<p>But then I think that not then having a known care giver in labour must be, you know what I mean it's just the next step (T26)</p>		
<p>huge potential for this model to continue for women throughout their labour and birth (T1)</p>		
<p>an opportunity for us to follow them up at about six weeks with a phone call just to see how they were going so they don't slip through the net.</p>		
<p>So we try our very best to see the same women so that there is some continuity from their view point as well. And I think it's been really interesting even from when the clinic first started women were already asking, so you will you be looking after me in labour. (T3)</p> <p>And I think it was really interesting being able to say to them, we would love to but at this stage the way the clinic has been set up is that we are just working on the antenatal period at the moment but there is always a long term plan and a big goal plan to bring those midwives into birth suite and labour ward as well. (T4)</p> <p>you would like to be there and I think ahm, it would be really nice to be able to say yes I can be there too and I think there's been a few women that have come through this clinic where I have really felt they would have benefited from continuity of care through labour (T5)</p> <p>I really am not sure because I haven't had an opportunity to follow women through after their birth (II 13)</p> <p>can we please have these women and didn't really work well, didn't really follow through (LR 4)</p> <p>she just really appreciated that I'd popped in, it was a familiar face. (LR 6)</p>	<p>We try our best BUT Women wanting continuity Looking for it</p>	<p>Getting to Know the women</p>
<p>The clinic was a small step process and maybe the outcomes are going to be a small step process and that probably when this becomes the real continuity of care model not only for the antenatal but also for labour and birth and potentially postnatal then I think you will start to see the difference (T25)</p>	<p>Continuity</p>	<p>Getting to Know the women</p>
<p>there has been a couple of women that have come back and see us after, after with their baby and you hear their story and you just think gosh maybe if one of us had been there maybe it could have been different. (T27)</p>	<p>Making a difference</p>	<p>Getting to Know the</p>

<p>it's a really good thing to just a phone call at six weeks just to see how they are ahm, is [-] something. And I think if we identify any distress at that particular visit I offer to follow up four to six weeks as well. And then sometimes what you do is you'll ring up at six weeks saying actually you know we're going really, really well. Breastfeeding's going well and they sound fantastic. So it's almost like <b>we get closure</b> as well. (T29)</p>		women
<p>And I think for them to know that they can call us at any time if they have any concerns I think it's really nice, I think that just to know there's a phone number there if you've got a concern or question that might not have cropped up for you you know at, during that first week (T31)</p> <p>I think that that sort of philosophy (<i>continuity</i>) works really well for women and I think it works really well for midwives. (T33)</p> <p>And because it's in the <b>sense of continuity</b> for everybody.(T33)</p>	Continuity	Getting to Know the women