Moving Towards Patient Centered Care: Women's Decisions, Perceptions, and Experience of the Induction of Labor Process

By

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A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Nursing)
in The University of Michigan
2012

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DEDICATION

To my precious Logan whose beautiful life will always remind me of the importance of family and to appreciate every moment in life.

To my strong and courageous sister Misty whose own birth experience will always inspire my passion to improve birth outcomes through evidence based practices and patient (woman)-centered care.

ACKNOWLEDGMENTS

It is with great appreciation that I express my gratitude for the support, expert guidance, and time that each of my committee members have provided to ensure the success of my dissertation.

Thank you to the women who participated in my research by sharing their personal experiences. Without their willingness to participate in this study, the insight gained would not have been possible.

Thank you to my long-term mentors, Dr. Deborah Oakley and Dr. Ada Sue Hinshaw, who as an undergraduate nursing student, took me under their wing and exposed me to the exciting world of research and policy. Additionally, Dr. Joanne Pohl and Dr. Suzanne Feetham have provided ongoing mentorship that has significantly impacted my research and policy career trajectory.

Finally, this accomplishment would not have been possible without the financial assistance that I received from the National Institutes of Health Individual National Research Service Award, Grant #1F31NR012855A1 (PI: Moore), and the Blue Cross Blue Shield Foundation of Michigan Dissertation Grant, Grant #1808.SAP (PI: Moore).

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CHAPTER I

Overview

Background and Significance

Labor induction is defined as the use of drugs and/or techniques to initiate labor, as opposed to allowing labor to begin spontaneously and progress at its own pace (Liao, 2005). There are two common groups of indications for an induction of labor (IOL): elective and medical. Elective refers to an IOL that is not medically justified whereas a medically indicated IOL is considered to be supported by scientific evidence and provides benefit that outweighs the risk. Currently, the evidence based clinical guidelines offered by the American College of Obstetrics and Gynecology's (ACOG) clinical practice bulletin on IOL serves as the gold standard for obstetrical practice. Recommendations are provided and a list of appropriate indications and contraindications for IOL are identified (ACOG, 2009).

However, distinguishing between indications for elective and medically supported indications, based on scientific evidence, can be a challenge. A systematic review conducted by Mozurkewich and colleagues (2009) identified eight indications that are commonly used to justify a medical IOL that currently have limited current scientific evidence base to support their use in practice. These indications include insulin-dependent diabetes, twin gestatation, fetal

macrosomia, oligohydramnios, cholestasis of pregnancy, maternal cardiac disease, fetal gastroschisis, and hypertension/preeclampsia/eclampsia. Furthermore, the World Health Organization (2011) conducted its own independent systematic review of the current evidence regarding common indications for IOL (post-term-greater than 41 completed weeks, gestational diabetes, macrosomia, premature rupture of membranes at term, and twin gestation) and found similar results to the Mozukewich (2009) review. They found that there was insufficient or weak evidence to support IOL for gestational diabetes without comorbidities, macrosomia, and twin gestation. While there are clear medical indications for an IOL that are supported by evidence, there are indications, as presented by Mozurkewich and colleagues (2009) and the World Health Organization (2011) that have a weak or nonexistent evidence base, that are commonly used by providers; also referred to as indications with limited current evidence. There is concern that women may be presented with a rationale for their IOL without discussion about the level of evidence that supports it. Therefore, women may not be fully informed of the benefits and risks of proceeding with an induction that is elective or one that has an indication with limited current evidence.

Despite evidence that elective induction of labor increases health risks to mothers and their newborns as well as adding unnecessary healthcare costs, the rates of induction of labor continue to rise. According to the 2010 National Vital Statistics final report utilizing the U.S. Standard Certificates for Live Births, the rate of induction of labor has increased by 140% between 1990 (9.5%) and 2007

(22.8%) for all births (Martin et al, 2010). However, inaccuracies in documenting IOL on birth certificate forms suggest the rate cited may be an underestimation (Kirby, 2004; Northam & Knapp, 2006; Parrish et al., 1993). Approximately 4.3 million childbirth related hospitalizations occurred in 2006 at a cost of $14.8 billion, with the most common procedures for maternal hospitalization being induction of labor (IOL), manual assisted delivery, and other procedures to assist delivery (Russo et al., 2009). A 2006 secondary analysis by the Agency for Healthcare Research and Quality (AHRQ) Healthcare Cost and Utilization Project data showed that one out of every two women in the U.S., 51.4%, experiences an induction of labor, manual assisted delivery, or other intervention to assist with birth. The average cost per woman for childbirth related hospitalizations in 2006 ranged from $3,500-$4,100 (Russo, 2009). On average, labor inductions cost an additional $910 per woman (Kaufman et al., 2002). This figure does not include costs associated with pre-term delivery which can be an iatrogenic complication of an ill-timed IOL. In 2006, coronary artery disease, mother's pregnancy and delivery, newborn infants, and acute myocardial infarction were the most expensive conditions treated within U.S. hospitals, with cesarean sections being the most common surgical procedure hospital-wide (Russo, 2009). The issue of elective induction of labor has gained national attention by organizations such as the National Quality Forum (2009) and the Joint Commission (2009) which have recently included elective induction of labor as part of their core performance measures for quality perinatal care.

Experts speculate that the significant increase in IOL is attributable to the

rising practice of elective IOL, an intervention that is not medically justified and that represents significant risk particularly to the newborn when conducted before 39 weeks gestation (Caughey et al., 2009a; Oshiro et al., 2009). Caughey and colleagues (2009a) noted that the rate of inductions is rising faster than the rate of pregnancy related complications suggesting that the increase might be attributed to the practice of elective inductions that are not evidence-based. Inductions that are initiated for convenience or for a non-evidence based indication can have serious health and financial implications (Angood, 2010; Cammu, 2002; Vahratian, 2005; Vrouenraets, 2005). In a recent study conducted by Vardo and colleagues (2011), elective induction of labor between 37 and 41 weeks gestation (n=485) was associated with increased rates of epidural use, cesarean section, postpartum hemorrhage, neonatal resuscitation, and longer length of hospital stay.

Elective inductions are believed to be directly responsible for the recent increase in late pre-term babies and cesarean sections (Ehrenthal et al., 2010; March of Dimes, 2009; Vardo et al., 2011). Since 1990, the cesarean section birth rate has increased by 33% (Martin et al., 2010). Late pre-term births in women who were induced have increased by 130% since 1990 (March of Dimes, 2009; Martin et al., 2010). The Institute of Medicine estimates that the long-term impact including the health (e.g., cerebral palsy, mental retardation, vision impairment, and hearing loss), social-emotional (e.g., mental health and special education), and economic (e.g., lost productivity) of pre-term births costs at least $26 billion a year (IOM, 2006).

Several authors have suggested that patient preferences, provider practice style, and defensive medicine to avoid litigation as possible causative factors to explain the practice of elective IOL (Bailit, 2010; Luthy, 2004; Zhang et al., 2010). However, as will be discussed in greater detail in chapter two, scientific studies from the provider or patient perspective that actually demonstrate or document this link are absent.

To begin to address the gap between speculation and empirical data regarding the reasons for the rise in elective IOL, a 2010 pilot study was completed to identify factors that influence elective IOL of maternity care providers (Moore et al., 2010). A more detailed account of the pilot study will be presented in chapter three. The survey included nurse-midwives and obstetricians (M.D. and D.O.) in the State of Michigan (N=62).

Overall, the providers identified the primary factor influencing the increase in elective IOL as patient demand/request. Other factors such as fear of litigation, provider financial incentives, pressure from the hospital or colleagues, and convenience for the provider were not identified as significantly influencing the practice of elective IOL. According to the respondents, the most common reasons cited by their patients for desiring elective IOL were convenience (partner's availability or work schedule) and social indications (prefer a specific birthdate). It is concerning that providers focused almost exclusively on women's role in requesting an elective IOL, especially in light of the recent reviews conducted by the World Health Organization (2011) and Mozurkewich (2009) that identified eight commonly used justifications by maternity care providers that

currently have limited current evidence base to support their use of an induction. Of note, women's actual role in requesting elective IOL is unsubstantiated beyond the secondary reference of provider's claims that women's preferences are in fact the basis for use of elective IOL. Careful documentation of women's perspectives is essential to gain a clear understanding of this phenomenon.

As will be discussed in greater detail in chapter two, the Agency for Healthcare Research and Quality (AHRQ) commissioned a systematic review on the safety of elective IOL at term; 39 to 41 weeks gestation (Caughey et al., 2009a). The review included 76 studies between 1966 and 2007 with only one being rated as "good" quality by the reviewers while the other studies were identified as "poor" due to method and design problems. Major limitations recognized within the studies included the use of spontaneous labor as the control group. It was argued that comparisons should be made between IOL and expectant management; not spontaneous labor. Furthermore, the report concluded that qualitative studies on how women perceived their birth experience in the setting of elective and indicated (medical) IOL are needed. Specifically, the qualitative approach is needed to explore and develop an understanding of how women felt regarding their preferences being incorporated into the decision-making process, whether they felt pressured by their provider regarding their decision, the process for which they were counseled and consented for the procedure, and how their birth experience affected their perceptions of quality of life in future pregnancies.

Although the rate of elective IOL is increasing, why women might be

seeking an elective IOL or why maternity care providers might be offering it given the health risks, financial implications, and professional organization recommendations is not understood. The gap between scientific evidence and what is practiced in care delivery is a dilemma (Titler, 2008). Frequently identified barriers to evidence based practice include limited access to research, issues in the organizational or practice setting (e.g., policies incongruent with the evidence), findings from science not appropriately packaged for use in practice, and issues related to clinicians (e.g., knowledge attitudes, beliefs, and values) (Rycroft-Malone, 2002; Titler, 2008). Despite decades of research which serves as a significant evidence base, the translation of evidence into practice has been inconsistent and the existence of evidence does not guarantee translation into practice (Fisch, 2009). Even though there is evidence-based research against the practice of elective IOL, the rates continue to increase. The cause for this staggering trend is relatively unknown. Furthermore, the challenge in translating IOL research into practice has not been fully explored. To better understand the factors that influence the practice of elective induction of labor, it is essential to obtain the perspective of women before and after having had an IOL. Using this approach for the study, addressed the recommendations from AHRQ to understand the voice of women and to explore the complex intersection between women, their providers, and the application of evidence based care in clinical practice. Additionally, the study is aligned with the national priorities and agenda of the Patient-Centered Outcomes Research Institute as part of the Affordable Care Act of 2010 (Patient Centered Outcomes Research Institute, 2012).

Specific Aims

The rising rates of elective IOL, data from the pilot study described above, and AHRQ's recommendation for further study highlight the compelling need to obtain scientific evidence on the factors that are associated with the increase in elective IOL and that impair translation of scientific findings regarding IOL into practice. A qualitative investigation to seek an enhanced understanding of women's perspectives regarding the experience of IOL is critical to addressing the question of translating induction of labor research into clinical practice. The use of grounded theory methodology incorporates AHRQ's recommendations to obtain knowledge from women who have experienced either an induction that is elective or one that has an indication with limited current evidence as defined by Mozurkewich (2009) and the World Health Organization (2011) to explore women's experiences of IOL. Grounded theory methodology allowed the researcher to investigate a phenomenon where little is currently known. Using inductive and deductive reasoning, grounded theory methodology enabled the researcher to explore and more fully understand the contextual factors involved in a women's decision making regarding induction of labor. According to Lincoln and Guba (1985), grounded theory research is important for formulating understanding of local scenarios that would go unexplained and implicit if not researched. Stern (1980) supported rigorous use of grounded theory research methods to promote the discovery of accurate and useful analyses of social processes relevant to nursing science. Therefore, an essential step in addressing elective IOL as a rising medical procedure was to explore the critical

gap in understanding pregnant women's perceptions, desires, and experiences of IOL. Qualitative interviews were conducted with women before their scheduled IOL and afterwards, representing women who experienced an elective induction or one with an indication that has limited current evidence according to reviews conducted by Mozurkewich (2009) and the World Health Organization (2011). Women who experienced a medically indicated scientifically supported IOL were excluded from the study. Those women who had experienced either an elective induction or one with an indication that has limited current evidence were interviewed to address the following specific aims:

1) To identify the factors that influence pregnant women's decision regarding induction of labor including her knowledge and understanding of the risks and benefits,

2) To explore postpartum women's experience of having had an induction of labor including her reflection of the decision to be induced, and

3) To explore similarities and differences between the medical documentation of the women's IOL and the women's understanding of the induction.

Conducting a qualitative investigation of women's experiences having had an IOL is critical in directly addressing the National Institute of Nursing Research's (NINR) research priorities to advance nursing science by supporting research on the science of health, which focuses on the promotion of health and quality of life. As part of the science of health, a priority is to investigate how individual patients should be supported in their efforts to understand, interpret, and apply health strategies to promote and manage their own well-being (NINR, 2011).

Ultimately, findings from this study will influence future research and policy

decisions regarding initiatives that develop innovative, appropriate, and comprehensive solutions regarding IOL and maternity care for women in the U.S. Foundational knowledge gained from this qualitative investigation using a grounded theory methodology will allow for future research that incorporates provider perspectives. This program of research has the potential to influence health policy initiatives related to the use of evidence based practice and ultimately reduce elective inductions and those with indications that are not evidence-based, thereby reducing maternity care costs and promoting optimal maternal/fetal birth outcomes. The innovation of this approach for an investigation is its focus on women's knowledge, decision making, and experiences of IOL to close a critical gap in the research on this topic.

CHAPTER II

Review of the Literature

As a foundation to understanding the varied aspects of women's experience of IOL, a review of the literature which provides a historical overview of induction of labor, a summary of current evidence related to elective induction of labor, and a systematic review exploring factors that influence elective induction of labor is presented.

History of Induction of Labor

Methods of induction of labor have evolved significantly over the centuries including mechanical methods and pharmaceutical interventions. For instances, Hippocrates suggested nipple stimulation and placing the patient in a tree of branches before tossing her as an effective method of induction of labor (Muhlstein et al., 1986). After training with French obstetrician Ambrois Pare, Louise Bourgeois (1563-1636), a midwife, recommended strong enemas and a mixture of folk medicine to induce women with small pelvices (Fields, 1968; York, 1984). In 1775, the British adopted rupturing of membranes as the preferred method for induction of labor (Muhlstein et al., 1986). Shortly afterwards, Thomas James, professor of obstetrics at the University of Pennsylvania, brought these techniques to the U.S. and expanded the practice to include venesection

(blood letting) (Eden, 1908; Fields, 1968). During the 1800's, applying a stream of tepid water against the cervix and into the vagina, initiating a high rupture of membranes (above the fetal head), and the use of a sponge tent to stretch the cervical os were routinely performed and medically justified without any scientific evidence to support the intervention (Eden, 1908; York, 1984). In the late 19th century, obstetric textbooks indicated, again, without scientific evidence, that the ideal time to induce was between 35 and 37 weeks and recommended induction by way of cervical dilation (two fingers were inserted into the os to make a snapping motion as additional fingers are inserted until full dilatation is reached) and the use of the Bossidilator, a four-pronged metal instrument with a powerful "screw" action (Muhlstein et al., 1986; Ashford, 1986).

As the 20th century approached, pharmaceutical approaches such as ergot, quinine, and pituitary extract became the preferred induction technique (York, 1984). In 1955, du Vigneaud received the Nobel Prize in chemistry for his 1949 discovery of an effective method to develop synthetic oxytocin, intended to be placed inside the woman's nostril, by isolating pure oxytocin from the neurohypothesis (Speert, 1980). In the 1930's, Kurzoak and Lieb discovered that semen, when applied to the strips of the myometrium, made the muscles contract and relax. Elias Corey at Upjohn Pharmaceuticals successfully synthesized prostaglandin in 1969 to induce labor (Speert, 1980). While these discoveries were significant and important for women needing to be induced, the appropriateness (i.e., type of patient, circumstances, risks, benefits) in using these interventions was vague at best and lacked scientific evidence to guide the

maternity care provider in ensuring quality patient care that was safe.

As science continued to progress and new obstetric interventions were developed, noted physician, Edward Bishop expressed concern in 1958 stating that the hazards [of elective induction] may be minimized by adopting a set of regulations focused on the identification of satisfactory facilities, proper preparation of the patient, proper selection of the patients and proper technique. He further added, “enthusiasm of the obstetrician for a procedure which may appear to make the practice of obstetrics easier must be tempered and moderated by the exercise of good judgment at all times (Bishop, 1958, p. 1956).”

This historical overview regarding the use of induction of labor raises a fundamental question. Is elective induction of labor, a practice that is not risk free, supported by rigorous scientific evidence? Or does this practice represent an obstetric intervention that has gained favor over time with limited current evidence to support its practice?

Current Evidence on Elective Induction of Labor

The Agency for Healthcare Research and Quality contracted Caughey and colleagues (2009a) to conduct a systematic review on elective induction research. The inclusion criteria consisted of studies conducted between 1966 and 2007 that specifically targeted women who were between 37 to 41 weeks gestation that were induced without a specific indication. The mode of delivery (i.e., cesarean, spontaneous,etc.) and maternal/neonatal outcomes had to be

identified as part of the study for inclusion in the review. Despite having identified thousands of publications, only 76 studies met the inclusion criteria including nine randomized controlled trials. Of the 76 studies reviewed, only one was rated as "good" research by Caughey and colleagues while the others were unanimously identified as "poor" due to method and design problems. The majority of the nine final studies included in the review after the rating system was applied represented women who were electively induced at or beyond 41 weeks gestation. Only three small studies that represented women less than 41 weeks gestations were included but based on the rating system were ranked as "poor." One of the major limitations identified by Caughey et al. (2009a) after rating the studies was the use of spontaneous labor as the control group. It was argued that women and their providers have a choice between induction of labor and expectant management, not spontaneous labor. However, Glantz (2010) argued that the limitation cited by Caughey et al. (2009a) is flawed in that the expectant management group excludes women who did labor spontaneously during the same week as those who were induced, thus creating a bias towards spontaneous labor. To test his argument, Glantz (2010) conducted a secondary analysis of the New York State birth certificate database and, upon completion of the data analysis, concluded that the use of expectant management as a comparison group is appropriate when comparing outcomes of induction of labor. Furthermore, using spontaneous labor in the same or subsequent weeks as a proxy for expectant management is also appropriate.

The results of the systematic review by Caughey et al. (2009a) found an

increased risk of a cesarean section and obstetric costs for women in the expectant management group compared to those with elective induction for women who were beyond 41 weeks gestation. Despite the lack of sufficient evidence (significant limitations in design and methods of existing studies) for women less than 41 weeks, the authors state that their findings regarding the linkage between elective induction and cesarean section for women in this category were not statistically significant. They also concluded that upon review of the other potential maternal and fetal outcomes, there was low or limited current evidence regardless of gestational age between expectant management and elective induction (Caughey et al., 2009a). In summary, the benefits and risks associated with elective induction of labor before 41 weeks lack rigorous evidence while elective induction after 41 weeks may be beneficial.

However, Caughey and colleagues did caution about the use of the review indicating that how elective induction of labor may be used in non-study settings requires careful consideration to avoid an expensive intervention that actually may increase cesarean section delivery and associated morbidity in current and future pregnancies (Caughey, 2009a). The AHRQ review produced many recommendations including the need for qualitative studies to investigate how women perceived their birth experience in the setting of elective and indicated (medical) inductions. Specifically, they recommended qualitative studies to explore and develop an understanding of how women felt regarding their preferences being incorporated into the decision-making process, whether they felt pressured by their provider regarding their decision, the process for which

they were counseled and consented for the procedure, and how their birth experience affected their perceptions of quality of life in future pregnancies.

In addition to the systematic review commissioned by AHRQ, Vardo and colleagues (2011) found that elective induction of labor in nulliparas between 37 and 41 weeks gestation (n=485) was associated with increased rates of cesarean section and longer length of hospital stay. The odds ratio for cesarean was 2.1 (p=0.001) after adjusting for gestational age and birthweight. They also found that induction of labor was associated with increased rates of epidural use, postpartum hemorrhage, pediatric delivery attendance, and neonatal oxygen requirement before and after adjustment ($p<0.05$).

Moreover, Spong and colleagues (2011), in collaboration with other stakeholders, held a workshop to evaluate the evidence on the timing of common indications for induction of labor. The goal of the workshop was to synthesize the evidence regarding the timing of medically indicated inductions to determine the optimal gestational age for delivery. Several of the medically indicated reasons for induction that the group identified (gestational diabetes, hypertension, multiple gestation, and preeclampsia) were actually indications that Mozurkewich and colleagues (2009) and the World Health Organization (2011) identified as not having sufficient evidence to support their use. There was no indication in the article that the group evaluated the evidence regarding appropriate indications for IOL before proceeding to evaluate the evidence regarding the timing for each indication. The group recommended gestational ages for their list of IOL indications but acknowledged that it was based primarily on expert opinion. This

was due to the lack of high-level evidence specific to the indication and the appropriate gestational age to optimize outcomes.

Clinical Guidelines for Induction of Labor Practice

To assist maternity care providers in understanding the evidence related to IOL and provide guidance for applying it to practice, the American College of Obstetricians and Gynecologists (ACOG) released its first practice bulletin on induction of labor in 1999 (ACOG, 1999). The bulletin on induction of labor provides clinical guidelines for obstetric providers based on the committee review of the available evidence; including a small portion on elective IOL. The American College of Obstetricians and Gynecologists recently revised its recommendations in 2009 to reflect the current evidence on methods to effectively induced women. The new guideline includes a section on elective induction of labor but maintains an ambiguous opinion regarding the appropriateness of the practice (ACOG, 2009). A significant portion of the research cited and utilized by ACOG to justify the recommendations within the guideline included those that were rated as “poor” by the AHRQ review conducted by Caughey and colleagues (2009a). Additionally, a review of the evidence used in ACOG’s practice bulletins by Chauhan and colleagues (2006) concluded that among the 55 clinical bulletins that provide 438 recommendations published between June 1998 and December 2004 offering guidelines to maternity care providers, less than one third are based on quality scientific evidence. Chauhan (2006) concluded that for every ten references cited to

support the guidelines identified within the bulletins, less than two were adequately designed randomized controlled trials. The analysis included the 1999 clinical bulletin on induction of labor that was widely regarded as the "gold standard" by maternity care providers.

The current ACOG clinical bulletin on induction of labor does not meet the requirements defined by the recently released Institute of *Medicine's Standards for Developing Trustworthy Clinical Practice Guidelines* (IOM, 2011a; IOM, 2011b). The development of the standards was in response to a mandate by the U.S. Congress as part of the *Medicare Improvements for Patients and Providers Act of 2008* to ensure that organizations developing such guidelines have information on approaches that are objective, scientifically valid, and consistent. To be considered a trustworthy guideline it should, 1) be based on systematic review of the existing evidence; 2) be developed by a knowledgeable, multidisciplinary panel of experts and representatives from key affected groups; 3) consider important patient subgroups and patient preferences (as appropriate); 4) be based on explicit and transparent process that minimizes distortions, biases, and conflicts of interest; 5) provide a clear explanation of the logical relationships between alternative care options and health outcomes, and provide ratings of both the quality of evidence and the strength of recommendations; and 6) be reconsidered and revised as appropriate when important new evidence warrants modifications of recommendations. The Institute of Medicine report proposed eight standards for developing trustworthy guidelines that include, 1) establishing transparency; 2) management of conflict

of interest; 3) guideline development group composition that is diverse and representative; 4) clinical practice guideline-systematic review intersection; 5) establishing evidence foundations for and rating strength of recommendations; 6) articulation of recommendations; 7) external review; and 8) updating guidelines as the evidence warrants it. ACOG's clinical bulletin on induction of labor does not meet the requirements for the Institute of Medicine's standard #2 because the focus of ACOG's guideline is on protecting the legal interest of the provider. The bulletin does not meet standard #3 as the review group consisted exclusively of ACOG members. Standard #5 is not met because there was inconsistent evaluation and use of evidence to formulate the guideline. For standard #6 the recommendations in the IOL clinical bulletin related to elective IOL are vague and allow for a significant amount of provider discretion and, therefore, do not meet the expectations of the standard. Finally, standard #7 is not met due to the lack of an external review process for the ACOG guidelines.

As presented in the previous chapter, Mozurkewich and colleagues (2009) conducted a systematic review of the literature on commonly acceptable indications for induction (i.e., intrauterine growth restriction, oligohydramnios, maternal heart disease, mild pre-eclampsia), including acceptable indications cited in ACOG's induction of labor practice bulletin, and found that a number of these indications do not have a strong evidence base from which to guide the practice and that additional research is needed to identify the risks and benefits for each indication (Mozurkewich et al., 2009). Furthermore, the World Health Organization (2011) conducted its own systematic review on common IOL

indications (post-term gestation-greater than 41 weeks, gestational diabetes, macrosomia, premature rupture of membranes, and twin gestation) that supported the findings from Mozurkewich (2011). The acceptable indications identified within ACOG's clinical bulletin that were found to have a weak or nonexistent evidence base by Mozurkewich and colleagues (2009) and the World Health Organization (2011) will be referred to as indications with limited current evidence for or against IOL. These indications include insulin-dependent diabetes, twin gestatation, fetal macrosomia, oligohydramnios, cholestasis of pregnancy, maternal cardiac disease, fetal gastroschisis, hypertension, preeclampsia, and eclampsia.

DeVries and colleagues (2008) provided insight regarding the challenges in the development of rigorous obstetric research that can be used to establish strong practice guidelines by indicating that it would be impossible to conduct randomized clinical trials on this topic. Assigning a woman to give birth in a setting she would not ordinarily choose not only would be unethical but also would create a confounding variable; the emotional state of a woman birthing in an environment she did not prefer or choose would influence the outcome of the birth. Additionally, extremely large samples would be required to find significant differences in the outcomes of healthy women. DeVries suggested that researchers have three ethical choices; they can use existing statistics, conduct "prospective studies" that analyze outcomes based on an "intention to treat" design, or devise new measures capable of discovering small differences in outcomes (DeVries et al., 2008).

Supporters of elective maternity interventions argue that the method of delivery is a patient's right and that hospitals and providers should support a woman's choice (Edwards & Davies, 2001; Paterson-Brown, 1999). However, this belief does not mean that providers must provide the intervention on demand while respecting a woman's autonomy; especially if the intervention is viewed as inappropriate or harmful (ACOG Committee on Ethics, 2009). The intersection between patient autonomy and consideration of medical risks is complex especially when the evidence related to the intervention is not always clear.

The evidence on elective IOL for women before 41 weeks can neither support nor reject the current practice of elective induction of labor. There are two extreme approaches to view the evidence on elective induction; to doubt everything or to believe everything. In both instances, the view enables us to avoid critically thinking about this issue including the ethical dilemma of utilizing an elective intervention that may or may not harm the mother or baby. Therefore, a critical next step is to go beyond the evidence regarding outcomes and understand the process by which providers and women decide to select an induction of labor. Any effort to decrease the rate of elective induction of labor hinges on the understanding of the factors that influence the utilization of this practice. Recently, the largest birthing hospital unit in the Pittsburgh area initiated a quality improvement project to encourage voluntary adoption of evidence-based practices on induction of labor by offering a series of educational sessions. Upon completion of the training, a modest decrease in inductions (.2%) occurred (Fisch et al., 2009). The QI team, consisting of physicians and

nurses, obtained administrative support to implement a policy that strictly enforced the elective induction guidelines established by ACOG. After adoption of this policy, elective inductions decreased by 30%, inductions before 39 weeks of gestation decreased by 64%, and cesarean sections decreased by 60% (Fisch et al, 2009). The authors noted that despite the evidence supporting the guideline established by ACOG and despite the intensive educational sessions on the evidence, the providers were unwilling to change their practice without the mandate.

While implementation studies that include strict hospital protocols may significantly decrease elective induction of labor as recently published by Akinsipe and colleagues (2012), Donovan and colleagues (2010), Fisch and colleagues (2009), O'Rourke and colleagues (2011), Oshiro and colleagues (2009), and Reisner and colleagues (2009), without understanding the factors that contribute to the use of elective IOL, unresolved issues may arise and be manifested such as increased use of elective cesarean sections. The following review of the literature represents the first step in exploring the factors that influence the increase use of elective induction of labor.

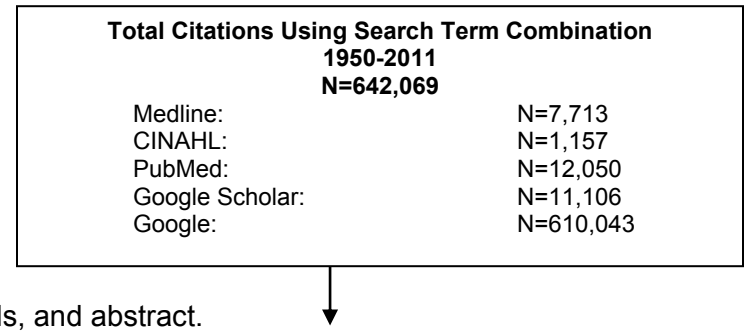
Review of the Literature on Elective Induction of Labor

To identify factors that influence the practice of elective induction of labor information was extracted from the literature to address the following question: **what factors influence the use of elective induction of labor?** The following search terms were used to identify peer reviewed and non-peer reviewed

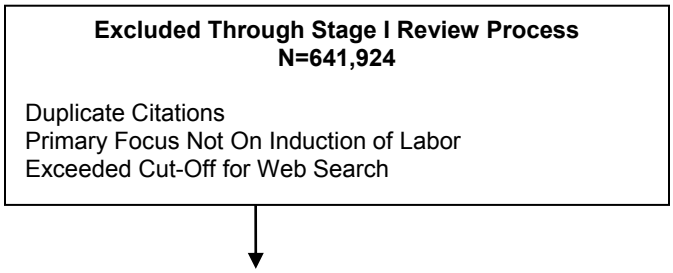
publications: “elective induction of labor/labour,” “induction of labor,” and “labor/labour, induced” resulting in 642,097 potential publications for this review. An overview of the process can be viewed in Figure 2.1 illustrating the use of a variety of search engines and databases including Google and Google Scholar. Inclusion criteria for this initial set of publications were 1) English language or availability of the articles to be translated into English, and 2) published between 1950 and 2011. The extensive timeframe was selected to intentionally capture any changes that may have occurred over time. However, most of the articles were published in the past 10 years.

Titles, abstracts and key words of the over 600,000 publications were reviewed and articles whose topic primarily focused on another obstetric area (e.g., cesarean section, continuous labor support, etc.) were excluded. The Google searches identified four scientific articles from the Agency for Healthcare Research and Quality (AHRQ) and two publications from the Childbirth Connection that focused on induction of labor and thus were retained for the synthesis. This resulted in 155 articles. References from the 155 articles were examined to determine if any additional articles existed that focused on induction of labor, resulting in nine (9) more publication for a total of 164. The March of Dimes, American College of Obstetricians and Gynecologists, and the American College of Nurse-Midwives web sites were also reviewed but generated no new articles.

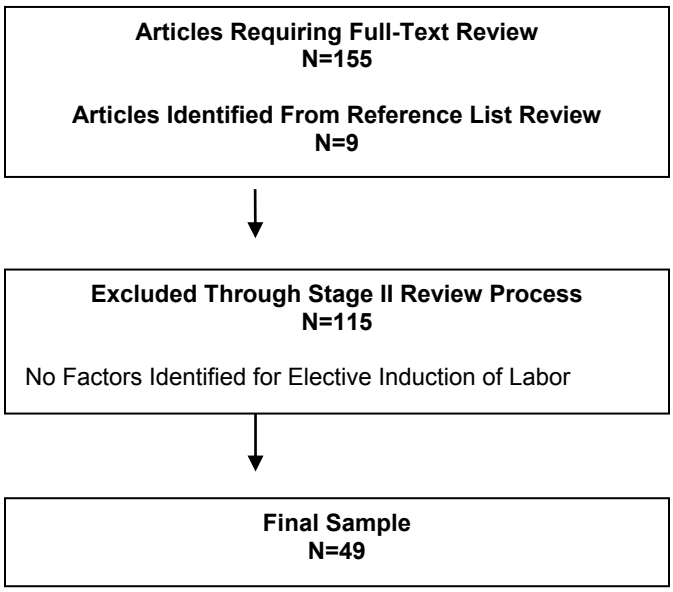
Figure 2.1. Study Flow Diagram



Stage I: Review title, key words, and abstract.



Stage II: Full-text review, reference list review, and abstraction.



The164 articles were entered into a table organized by citation, sample, methods, results, and limitations for each article. Of the 164, only articles that

addressed factors that influence the increase use of elective induction of labor and/or the rise in elective obstetric interventions in general were retained resulting in 49 articles.

The 49 articles retained for this review addressed three levels of information about factors that influence the elective induction of labor: factors discovered from research (4 articles); factors from investigators who had conducted intervention studies to reduce elective IOL (2 articles); and factors based on expert opinion and personnel perspectives, but not research (43 articles).

The factors were extracted using exact words, written on Post-It Notes®, and coded for one of the three above levels of information source (research, investigator reflection and perspective, and expert opinion). These were posted on a very large wall for further examination. Exact words/phrases from multiple articles were grouped together and consolidated. For instance, several articles cited “convenience to provider” as a factor. Next, words/phrases that had similar meaning were grouped together. For example, “technology-driven culture” and “culture of technology” were grouped together, as well as “local practice style” and “provider practice preferences.” Three authors identified factors that were too vague to place into a group and therefore were removed from the analysis.

Clustering was continued by grouping similar words/phrases such as “freedom of doctors to practice as they see best,” “provider preference,” and “decision making based on personal experience.” Hierarchal relationships were explored but none were identified.

Factors extracted from the 49 articles across the three levels of information categories resulted in 131 factors noted in the literature as influencing elective induction of labor. There were 12 factors identified from the first level of information (scientific studies, five factors from the second level of information (authors' reflection of having conducted an intervention study on elective induction of labor), and 114 from the third level of information (non-scientifically supported factors based on expert opinion and perspective). With close examination of the factors and clustering three major themes of factors emerged, patient, maternity care provider, and organization. The factors within each theme (patient, maternity care provider, and organization) are presented in the following section organized by the level of information (scientific, reflection, and expert opinion) in which it was found in the literature.

Findings from Review Process

Factors discovered from research (4 articles). The first level of information representing factors from scientific studies revealed only patient themes as factors that influence elective induction of labor (Table 1). This was an expected finding since the methodology used for these scientific reports was primarily qualitative with data collected only from the perspective of women. Three factors emerged from the studies, from the perspective of women, was; patient preference/convenience, patient pressure/influence, and external influence. Patient preference/convenience was referred to in terms of the patient intentionally seeking to being induced, despite the risks, due to various personal

reasons (e.g., “sick of being pregnant”). Patient pressure/influences were cited by all four publications and were referred to as pressure and/or influence from childbirth educators, nurses, and physicians. This pressure/influence was identified in both positive and negative terms. For instance, in the study conducted by Simpson and colleagues (2010a; 2010b) they found that childbirth educators positively influenced women by providing accurate information about the risks and benefits of elective induction of labor. The study identified a strong relationship between participating in the educational session on induction of labor and not being induced. Conversely, it was discovered that physicians negatively influence women’s decisions about being induced. The study found that if a physician offered the option to be induced, it was a strong predictor that the woman would then decide to be induced.

Table 1

Factors Supported by Scientific Studies, 1950-2011 (N=4 Articles)

Factors Within Theme	Authors (Year)
Patient Theme	
Preferences/ Convenience (N=2)	Declercq et al. (2006), Declercq et al. (2002)
Pressure/Influence (N=4)	Declercq et al. (2006), Declercq et al. (2002), Simpson et al. (2010a), Simpson et al. (2010b)
External Influences (N=1)	Simpson et al. (2010b)

Family and friends along with media resources (i.e., books, magazines, television, and internet) were identified as being a source of external influence

regarding a woman's decision and/or perceptions of elective induction of labor. Limitations from Simpson (2010) study include the lack of random assignment between the control and treatment group, the absence of follow-up questions to probe for more details to the women's responses on the questionnaire, and the absence of psychometric testing of the instrument (questionnaire) to assess its validity and reliability. Only content validity was briefly reported. Limitations from the Childbirth Connection studies (Declercq et al., 2006; Declercq et al., 2002) identified in Table 1 include the absence of follow-up questions to probe for more details and the lack of validation of the data through the use of chart reviews. Both studies did not employ traditional qualitative techniques to obtain information from the perspective of women. Instead women were guided to identify factors based on pre-selected options identified by the researchers. In the Simpson (2010) study, they were also given the opportunity to voluntarily expand upon their answer by writing down a brief word, phrase, or sentence. There was no dialogue regarding their response.

Factors discovered from investigators who conducted intervention studies to reduce elective IOL. The second level of information representing factors based on the authors' reflection of having conducted an intervention study to reduce elective induction of labor revealed two themes; maternity care provider and organization (Table 2). The provider theme factors included practice preferences/convenience and lack of information about the evidence regarding elective induction of labor. Lack of enforcement of hospital policies related to elective induction of labor and hospital culture were the only factors identified

under the organization theme.

Table 2

Factors Based on Reflection of Intervention Study, 1950-2011 (n=2 Articles)

Factors Within Each Theme	Authors (Year)
Maternity Care Provider Theme	
Practice Preferences/Convenience (n=1)	Oshiro et al. (2009)
Lack of Information (n=1)	Oshiro et al. (2009)
Organization Theme	
Lack of Enforcement/Accountability (n=2)	Fisch et al. (2009), Oshiro et al. (2009)
Hospital Culture (n=1)	Fisch et al. (2009)

Factors based on expert opinion and personnel perspectives. The third level of information identified within the literature was based on expert opinion and personal perspective. Amongst these articles three themes (patient, maternity care provider, and organization) representing theorized factors that contribute to the increase in elective induction of labor (Table 3) were identified. Among the patient themes, seven factors emerged from the literature. These factors included patient preferences/convenience, communication, fear, pressure/influence, trust, external influences, and technology. There were six factors among the maternity provider category. They included provider practice preferences/convenience, lack of information, financial incentives, fear, patient desire/demand, and technology. Finally, four factors emerged under the

organization category and included lack of enforcement/accountability, hospital culture, and scheduling of staff. Preferences/convenience, fear, and technology were the three most common non-scientifically supported factors cited.

Table 3

Factors Based on Expert Opinion and Perspective, 1950-2011 (n=43 Articles)

Factors Within Each Theme	Authors (Year)
Patient Theme	
Preferences/ Convenience (n=23)	Bailit (2010), Bailit et al. (2010), Beebe et al., (2000), Caughey et al. (2009a), Caughey et al. (2009b), Clark et al. (2009b), Coonrod et al. (2000), Heinberg et al. (2002), Holm (2009), Knoche et al. (2008), Laube (1997), Osmundson et al. (2010), Out et al. (1986), Prysak & Castronova (1998), Ramsey et al. (2000), Rayburn & Zhang (2002), Sakala & Corry (2008), Vrouenraets (2005), Wilson et al. (2010), Wing (2000), Zhang et al. (2010), Zhang et al. (2002), Zlatnik (1999)
Communication (n=4)	DeVries et al. (2008), Goldenberg et al. (2009), Lowe (2007), Sakala & Corry (2008)
Fear (n=3)	DeVries et al. (2008), Klein et al. (2006), McFarlin (2004)
Pressure/Influence (n=2)	Payant et al. (2008), Tillett (2009)
Trust (n=1)	Klein et al. (2006)
External Influences (n=3)	Coonrod et al. (2000), Klein et al. (2006), Sakala & Corry (2008)
Technology (n=2)	DeVries et al. (2008), Klein et al (2006)
Maternity Care Provider Theme	
Practice Preferences/Convenience (n=28)	Bailit (2010), Bishop (1958), Cartwright (1977), Caughey et al. (2009a), Caughey et al. (2009b), Clark et al. (2009a), Clark et al. (2009b), Coonrod et al. (2000), DeVries et al. (2008), Holm (2009), Klein et al. (2006), Knoche et al (2008), Laube (1997), Le Ray et al. (2007), Luthy et al. (2004), Moore & Rayburn (2006), Osmundson et al., (2010), Prysak & Castronova (1998), Rayburn (2007), Rayburn & Zhang (2002), Sakala & Corry (2008), Simpson (2010), Vrouenraets (2005), Wilson et al (2010), Wing (2000), Zhang et al. (2010), Zhang et al. (2002), Zlatnik (1999)

Factors Within Each Theme	Authors (Year)
Lack of Information (n=1)	Sakala & Corry (2008)
Financial Incentives (n=6)	Caughey et al. (2009a), Caughey et al. (2009b), Klein et al. (2006), Rayburn & Zhang (2002), Sakala & Corry (2008), Simpson (2010)
Fear (n=5)	DeVries et al. (2008), Rayburn (2007), Sakala & Corry (2008), Simpson (2010), Vrouenraets (2005)
Patient Desire/Demand (n=5)	Ramsey et al. (2000), Rayburn (2007), Rayburn & Zhang (2002), Vrouenraets (2005), Wing (2000)
Technology (n=2)	DeVries et al. (2008), Tillett (2009)
Organization Theme	
Lack of Enforcement/Accountability (n=3)	Beebe et al. (2000), Edris et al. (2006), LeRay et al. (2007)
Hospital Culture (n=5)	Glantz (2003), Johnson et al. (2003), Klein et al. (2006), Simpson (2010), Wilson et al. (2010)
Scheduling of Staff (n=5)	Bailit et al. (2010), Cartwright (1977), Prysak & Castronova (1998), Rayburn (2007), Simpson (2010)
Market Share Issues (n=1)	Simpson (2010)

Summary of Findings from Literature Review

Among the three levels of information (scientific, reflection, and expert opinion), factors within three themes (patient, maternity care provider, organization) emerged. Most of the factors identified for this review were based on expert opinion and not science. An overview of these factors is presented in Table 4. Only four articles representing three studies identified factors that influence elective induction of labor based on scientific evidence. Three factors, patient preferences/convenience, pressure/influence, and external influence, were identified as factors that represent information collected from the perspective of women. Patient preferences/convenience was consistently

identified amongst the other two levels of non-scientific information (i.e., reflection from intervention study and expert opinion and perspective) reviewed from the literature. However, this does not imply that there is an absence of factors that influence providers or organizations. It simply implies that, at this time, the only scientific evidence on factors is from the patient perspective.

Table 4

Patient, Maternity Care Provider, and Organization Themes (n=43 Articles)

	Three Levels of Information		
	Scientific Studies	**Reflection of Intervention Study**	**Expert Opinion**
Patient Themes			
Preferences/Convenience	X		X
Communication			X
Fear			X
Pressure/Influence	X		X
Trust			X
External Influences	X		X
Technology			X
Maternity Care Provider Themes			
Preferences/Convenience		X	X
Lack of Information		X	X
Financial Incentives			X
Fear			X
Patient Desire/Demand			X
Technology			X
Organization Themes			
Lack of Enforcement		X	X
Hospital Culture		X	X
Scheduling of Staff			X
Market Share Issues			X

The patient factors identified from all three levels of information included patient preferences/convenience, communication, fear, pressure/influence, trust, external influences, and technology. The factors that were reported to influence the maternity care provider to recommend an elective induction included practice preferences/convenience, lack of information, financial incentives, fear, patient desire/demand, and technology. Clark et al. (2009) noted that the provider convenience factor could be a product of the unreasonable demands that are placed on maternity care providers. They are expected to make hospital rounds before and after their private practice during the day in addition to being on-call in the evening and weekends for births and emergencies. This practice model greatly impacts their family/personal life in addition to creating performance deficiencies and dangers from sleep deprivation (Barger et al., 2005; de Graaf et al., 2010; Landrigan et al., 2004; Lockley et al., 2004). Factors in the organization theme that influence elective induction of labor included lack of enforcement/accountability, hospital culture, scheduling staff, and market issues.

The primary factors that emerged from the literature review were not unexpected, however, it was surprising to discover a lack of scientific evidence to support the factors identified. While the intention of the review was to establish a scientific foundation of the factors that influence elective induction of labor, few scientific studies were available. The review represents an understanding of the current published literature about elective IOL and identifies gaps in the science that identify the need for additional research.

Considering that elective induction of labor has potential health, financial,

and societal ramifications, there is ongoing discussion about how best to reduce this practice. Nurses have a unique opportunity to address the factors in the patient theme that influence elective induction of labor through patient education as highlighted by the study conducted by Simpson and colleagues (2010a; 2010b). However, without understanding the cause for the increase from a scientific perspective, it seems premature and costly to institute changes geared towards addressing this issue when there is no clear understanding of the phenomenon. This is consistent with the recommendation by Caughey and colleagues (2009a) at the conclusion of their systematic review on elective induction of labor outcomes commissioned by AHRQ. They stated that qualitative studies of how women perceive[d] their birth experience in the setting of elective and indicated inductions are needed.

The findings from the review provide a foundation to scientifically explore potential factors that influence the practice of elective IOL. To explore the findings of the review regarding provider factors related to evidence-based practices for IOL, a pilot study was conducted with maternity care providers in the State of Michigan. This was a first step to understanding the factors and providing a segway to a potential regional or national survey.

Exploration of Provider Factors

Using a convenience sample, a pilot study was initiated to examine and explore maternity care providers' (N=62) beliefs about the current IOL practice, assessed their knowledge of ACOG's guideline on elective IOL, and examined

the factors that influence their use of the guideline (Moore et al., 2010). The exploratory, descriptive pilot study utilized Roger's Diffusion of Innovation Theory described by the OMRU model. The Ottawa Model of Research Use (Graham & Logan, 2004) was used to guide the study with an emphasis placed on collecting data within the model elements of practice environment, potential adopters, and evidence-based innovation. A detailed description of the framework will be discussed in chapter three.

The purpose of this study was to measure current evidence-based practice (EBP) activities by obstetric medical doctors and certified nurse-midwives in relation to ACOG's recommended clinical guideline on elective induction of labor. At the time of the pilot study, the best source of EBP on IOL was ACOG's clinical guideline. The study was designed to identify key factors that may influence the use of EBP in the acute care setting and to identify potential opportunities to provide assistance at the unit, individual, and organizational level to improve clinical practice through the use of evidence. The primary research questions for this study included:

- What are the current practices of maternity care providers on elective induction of labor and what is their current knowledge of ACOG's clinical guideline?
- What are the implementation factors (subscales of BARRIERS Scale) that may impact the application of the American College of Obstetricians and Gynecologists' (ACOG) clinical guideline on elective induction of labor?

Upon approval from the University of Michigan's Institutional Review Board, a convenience sample of two types of maternity care providers, certified nurse-midwives (CNM) and medical doctors (MD)/doctor of osteopathy (DO) practicing in the clinical area of obstetrics in the State of Michigan were eligible for participation in the study. All maternity care providers that were active members in 2010 of the Michigan chapter of either the American College of Obstetricians and Gynecologists (ACOG) or the American College of Nurse-Midwives (ACNM) and had opted-in for their professional association's e-newsletter were identified for the sampling frame of the study. According to ACOG, there are approximately 1,010 individuals, active and retired, that have signed-up and receive ACOG's Michigan e-newsletter. According to ACNM, approximately 125 Michigan nurse-midwives have signed-up for the Michigan Chapter of ACNM email list to receive announcements. It is unknown how many of the ACOG or ACNM email addresses were active and current. It is also unknown how many obstetricians or nurse-midwives read the messages from ACOG or ACNM.

The Michigan obstetricians were recruited by way of the monthly Michigan ACOG e-newsletter during the month of February 2010. Only one email via the e-newsletter was sent to the obstetricians regarding this survey due to the limitations established by the organization. Emails that bounced back due to delivery errors were not re-attempted. A brief paragraph was included in the e-newsletter describing the survey and encouraging participation. A direct link within the paragraph to the actual web-based questionnaire was provided.

The Michigan nurse-midwives were recruited by way of an email message sent to the membership from a current member representing the Michigan ACNM Chapter during the month of February 2010. The Chapter made the decision to send a follow-up reminder email approximately one month after the initial email. This was not part of the original study proposal but yielded five additional responses. One email bounced back due to delivery errors. The same brief paragraph and link used for the obstetricians was also used in the body of the email for the nurse-midwives.

Instrument for Pilot Study

The questionnaire (Appendix A) was investigator developed with expert review. It was divided into three sections including an adapted version of the BARRIERS scale (Funk et al., 1991). The questionnaire was guided by the OMRU and included questions designed to collect data in relation to portions of the model's three elements of practice environment (structural, cultural/social, patients, economic), potential adopters (awareness, attitude, knowledge/skills, concern), and evidence-based innovation (development process and attributes). A brief statement on ACOG's guideline on induction of labor along with the reference for referral and/or retrieval was provided at the beginning of each section of the questionnaire.

The first portion of the questionnaire was "Part I: Obstetric Clinical Practice" which presented clinical scenarios to ascertain the maternity care providers' use of ACOG's clinical guideline on elective induction of labor in their

practice. It also assessed the presence of other factors (legal, patient preferences, and pressure from the hospital administrators and colleagues) that influence their use of the evidence on elective induction of labor in their practice. This section of the questionnaire represented the elements of practice environment and potential adopters with the OMRU model. Participants responded to each question with either yes or no. They were also provided with opportunities to write-in comments to identify any additional potential factors that were not identified by the investigator in the questionnaire. It also provided an opportunity for the maternity care providers to tell the story (no word limit) about this phenomenon from their own words and perspective.

The second portion of the questionnaire was "Part II: Obstetric Evidence-Based Practice" and represented the adapted BARRIERS Research Use Scale by Funk and colleagues (Funk et al., 1991). The BARRIERS scale is a validated research instrument assessing evidence-based practice utilization that is based on four factors of Roger's Diffusion of Innovation Theory (Rogers, 2003). The four factors include characteristics of the adopter (provider's values, skills, beliefs and awareness), innovation (qualities of the research), communication (mechanisms that effectively influence adoption), and organization (facilitators, barriers, and limitations within the practicing hospital). These are the same factors underlying the Ottawa Model for Research Use (Graham & Logan, 2004) and represent the elements of practice environment, potential adopters, and evidence-based innovation. Several key changes to the original questionnaire include the deletion of nurse-specific items and replacement with provider neutral

statements, the integration of specific references to ACOG's clinical guideline on elective induction of labor, and the deletion of the original measurement scale language (e.g., To No Extent) with less confusing and more modern language (e.g., Strongly Disagree). Participants responded to each item on a five-point Likert scale (1=Strongly Agree to 5=I Do Not Know). The last four un-scored questions of Part II were open-ended questions to allow the participant to use their own words share their story of the phenomenon.

The subscales within "Part II: Obstetric Evidence-Based Practice" (characteristics of adopter, organization, innovation, and communication) that assesses Roger's Diffusion of Innovation Theory had internal consistency coefficients (Cronbach's alpha) ranging from 0.79 to 0.89 (Funk et al., 1991). This portion of the questionnaire evaluated the utilization of evidence-based practices by maternity care providers.

The final portion of the questionnaire was "Part III: Demographic Form" and included questions to obtain basic information about the providers. No identifying information was collected, including but not limited to email address and name.

The instrument for the study was reviewed by four experts representing translation science, midwifery, and obstetric medicine with appropriate changes made according to their suggestions. Content validity was established by the reviews of these experts. The questionnaire was five pages in length and took approximately 15-minutes to complete. The instrument was hosted by Qualtrics© survey system (Qualtrics Labs Inc., 2009) through the University of Michigan.

Findings from Pilot Study

Data was retrieved from Qualtrics (Qualtrics Labs Inc., 2009) and entered into the SPSS-9 statistical database. Mean, standard deviation, and ranges were calculated for continuous variables and frequencies were analyzed for categorical variables. Both types of variables were found within the questionnaire. Chi-square was calculated to determine if a statistically significant difference existed between the dichotomous variables of “yes” and “no” for responses from the maternity care providers. It should be noted that while additional statistical analyses were initially planned to evaluate the subscales of the BARRIERS scale, this was not conducted due to the pilot study’s small final sample size.

The final sample included 42 (68%) nurse-midwives and 20 (32%) physicians. Five questionnaires were discarded due to missing data that exceeded 95%; only answering the first two questions. The demographic data is provided in Table 5.

Table 5

Demographic Data of Pilot Study (n = 62)

	n (%)	Mean	SD
Provider Type			
Physician	20 (32)		
CNM/CM	42 (68)		
Retired			
Yes	0 (0)		
No	62 (100)		
Sex			
Male	10 (16)		
Female	52 (84)		
Age		45.90	11.95
Race			
American Indian	1 (2)		
Black	0 (0)		
Hispanic	1 (2)		
Asian/Pacific Islander	0 (0)		
White/Non-Hispanic	59 (95)		
Other	1 (2)		
Years Practicing Obstetrics		16	
Number of Births Attended in 2009		80.16	56.46
Number of Births at Hospital in 2009		2,187.85	1,811.15
Type of Hospital			
Public (Federal)	1 (2)		
Public (State)	7 (11)		
Private (Non-Profit)	32 (52)		
Private (For Profit)	7 (11)		
University Affiliation	15 (24)		

	n (%)	Mean	SD
Non-Hospital	0 (0)		
Hospital Setting			
Urban	26 (42)		
Metropolitan	30 (48)		
Rural	6 (10)		
Hospital Size			
Level I	8 (13)		
Level II	16 (26)		
Level III	18 (29)		
Level IV	11 (18)		
Unknown	9 (15)		

A large portion of the respondents did not complete the optional portion of the demographic form which included items such as year of graduation and state where completed degree. The maternity care providers' knowledge of ACOG's guideline on elective induction of labor varied (Table 6). The information was collected in the questionnaire using practice scenarios to assess whether their knowledge of the evidence on IOL was congruent with the evidence presented in ACOG's guideline.

Table 6

Provider's Knowledge of ACOG's Guideline on Induction of Labor (n = 62)

	Yes n (%)	**No n (%)**	***P Value****
Would you agree to initiate an induction of labor on a healthy woman without maternal or fetal complications before 39 weeks?	3 (5)	59 (95)**	<0.001***
Would you agree to initiate an induction of labor on healthy woman without maternal or fetal complications after 42 weeks?	58 (94)**	4 (6)	<0.001***
Would you agree to initiate an induction of labor on a healthy nulliparous woman without maternal or fetal complications with a Bishop score that is less than eight (8)?	39 (63)	23 (37)**	0.042***
Would you agree to initiate an induction of labor on a healthy multiparous woman without maternal or fetal complications with a Bishop score that is less than six (6)?	34 (55)	28 (45)**	0.446
Have you read 2009 ACOG practice bulletin on induction of labor?	50 (81)	12 (19)	<0.001***

*P-Values were calculated using chi-square.
** Item response represents an approved practice for inducing labor as identified by ACOG (ACOG, 2009).
*** Significance at the level of P <0.05.

The respondents were in agreement regarding the timing of the induction in relation to the gestational age of the woman and accurately identified the majority of ACOG's approved indications for inducing labor. The maternity care

provider beliefs (Table 7), using scenarios within the questionnaire to identify this information, indicated that 37 (60%) would electively induce a woman in the absence of any medical indication after informed consent has been provided. Paradoxically, 57 (92%) of respondents believe that a woman does not have a right to be induced and 60 (97%) would not recommend an elective induction to a family member or friend.

Table 7

Beliefs of Maternity Care Providers Regarding Elective Induction of Labor (n=62)

	Yes n (%)	**No n (%)**	***P Value****
After an informed discussion, is it your belief that it is acceptable medical practice to initiate, at the patient's request, an elective induction of labor when no medical or obstetrical complications are present?	37 (60)	25 (40)	0.128
Do you believe that a woman has a right to an elective induction before 39 weeks in the absence of any medical or obstetrical indication?	5 (8)	57 (92)	<0.001**
If you or your partner were pregnant for the first time, would you recommend an elective induction, assuming a healthy, uncomplicated pregnancy without any maternal or fetal complications?	2 (3)	60 (97)	<0.001**

*p-values were calculated using chi-square.
** Significance at the level of P <0.05

The self-reported provider practices and factors that influence practice are

shown in Table 8. Eighteen (29%) have initiated an elective induction before 39 weeks and 57 (92%) after 39 weeks. The most common factors that influenced a maternity care provider to electively induce a woman before 39 weeks was patient request (N=13, 21%), convenience for the patient (N=16, 26%), and social indications such as scheduling the birth around a specific date (N=15, 24%), and pressure from colleagues. The most common factors that influenced a maternity care provider to electively induce a woman after 39 weeks was patient request (N=53, 85%), convenience for the patient (N=51, 82%), and social indications (N=57, 92%). Fear of malpractice, convenience to self, pressure from the hospital or colleagues, and financial incentives were rarely cited as influential factors as self-reported by the maternity care providers. Approximately 92% of maternity care providers whose practice includes electively inducing a woman before 39 weeks indicated that patient request was a factor in their decision (Table 8). The same providers indicated that patient convenience (87.5%), social indications (93.3%), and pressure from colleagues (75%) also contributed to their decision. These findings represent a sharp contrast from the results of the Listening to Mothers Survey II study that surveyed U.S. women (Declercq et al., 2006b). They found that physicians were a major factor in influencing women's choice to be electively induced. Fifteen percent (15%) of physicians (n=3) and 11.9% of nurse-midwives (n=5) identified that pressure from colleagues is a factor when deciding to electively induce a woman.

Table 8

Practices of Maternity Care Providers and Factors that Influence Practice (n=62)

	Yes n (%)	No n (%)	*P Value**
Have you ever initiated an elective induction…			
before 39 weeks?	18 (29)	44 (71)	<0.001**
after 39 weeks?	57 (92)	5 (8)	<0.001**
Have you ever initiated an elective induction…			
Due to fear of malpractice?			
Before 39 weeks?	5 (8)	57 (92)	<0.001**
After 39 weeks?	17 (27)	45 (73)	<0.001**
Due to patient request?			
Before 39 weeks?	13 (21)	49 (79)	<0.001**
After 39 weeks?	53 (85)	9 (15)	<0.001**
Due to convenience for yourself?			
Before 39 weeks?	1 (2)	61 (98)	<0.001**
After 39 weeks?	9 (15)	53 (85)	<0.001**
Due to convenience for the patient?			
Before 39 weeks?	16 (26)	46 (74)	<0.001**
After 39 weeks?	51 (82)	11 (18)	<0.001**
Due to pressure from your colleagues?			
Before 39 weeks?	8 (13)	54 (87)	<0.001**
After 39 weeks?	31 (50)	31 (50)	<0.001**
Due to pressure from the hospital?			
Before 39 weeks?	2 (3)	60 (97)	<0.001**
After 39 weeks?	6 (10)	56 (90)	<0.001**
Due to social indications (i.e., patient personal schedule?			
Before 39 weeks?	15 (24)	47 (76)	<0.001**
After 39 weeks?	57 (92)	5 (8)	<0.001**
Due to financial incentives from 3rd part payers?			
Before 39 weeks?	1 (2)	61 (98)	<0.001**
After 39 weeks?	1 (2)	61 (98)	<0.001**
Due to financial incentives from the hospital?			
Before 39 weeks?	0 (0)	62 (100)	<0.001**
After 39 weeks?	0 (0)	62 (100)	<0.001**

*p-values were calculated using chi-square. ** Significance at the level of *P* <0.05.

Table 9 represents the assessment of the barriers to implementing evidence-based practice regarding elective induction of labor as aligned with the Ottawa Model of Research Use (OMRU). Based on frequencies, three items were consistently identified by a small majority of respondents as being a barrier. These barriers included limited time to read the current evidence (N=10, 16%), inadequate cooperation by colleagues to implement the evidence (N=10, 16%), and lack of authority to change patient care policies and procedures to reflect the evidence (N=20, 32.4%). Due to the small sample size, only descriptive statistics are presented. The descriptive data of the characteristics of the innovation, characteristics of the adopter, characteristics of communication, and characteristics of the organization descriptive suggest that these areas are not a barrier to implementing evidence-based practices regarding elective induction of labor for the respondents of this questionnaire. It should be noted that while additional statistical analyses were initially planned to evaluate the subscales of the BARRIERS scale, this was not conducted due to the pilot study's final sample size. To determine the sample size required to test the initial proposed research questions, a power analysis was conducted utilizing guidelines proposed by Cohen (1992). The power analysis indicated that the number of respondents needed to detect a medium effect size (eta^2=.25) for ANOVA with four groups representing each subscale at an alpha level of .01 was a sample size of N=63 for each subscale or a total sample size of N=252 (Cohen, 1992).

Table 9

Barriers to Implementing Evidence

	SA n (%)	A n (%)	D n (%)	SD n (%)	DK n (%)
Characteristics of Innovation					
Evidence on elective inductions has been sufficiently replicated	13 (21)	25 (40.3)	7 (11.2)	2 (3.2)	15 (24.1)
I believe the results on elective inductions	16 (25.8)	34 (55)	1 (1.6)	1 (1.6)	10 (16)
The evidence on elective inductions is methodically sound	10 (16.1)	31 (50)	1 (1.6)	1 (1.6)	19 (30)
The recommendations from the guideline are justified	21 (33)	30 (48)	1 (1.6)	1 (1.6)	9 (15)
Characteristics of Adopter					
Guideline is relevant to my practice	24 (39)	30 (48)	1 (1.6)	2 (3.2)	5 (8)
I have access to colleagues to discuss the evidence	29 (46)	31 (50)	0 (0)	1 (1.6)	1 (1.6)
I see benefit for myself in utilizing the evidence on elective inductions	25 (40.3)	30 (48.3)	4 (6.4)	1 (1.6)	2 (3.2)
I value utilizing evidence from clinical guidelines in my practice	34 (54)	26 (42)	0 (0)	0 (0)	2 (3.2)
There is a documented need to change practice on elective inductions	25 (40)	27 (44)	2 (3)	0 (0)	8 (13)
My colleagues are willing to implement the guideline	13 (21)	37 (60)	4 (6)	0 (0)	8 (13)
I feel capable of evaluating the quality of the evidence on elective inductions	23 (37)	31 (50)	2 (3)	0 (0)	6 (10)
Characteristics of Communication					
Implications for my practice are made clear in ACOG's guideline	18 (29)	33 (53.2)	2 (3.2)	1 (1.6)	8 (13)
Information about the guideline from my peers influences my use	11 (18)	27 (44)	8 (13)	3 (5)	13 (20)

	SA n (%)	A n (%)	D n (%)	SD n (%)	DK n (%)
Information from L & D nurses influences my use	3 (5)	19 (30)	21 (34)	8 (13)	11 (18)
Information from experts influences my use	16 (26)	36 (58)	4 (6)	0 (0)	6 (10)
Information from hospital administrators influences my use	13 (20)	28 (45)	9 (15)	3 (5)	9 (15)
Characteristics of Organization					
My hospital policies are congruent for implementing the guideline	18 (29)	31 (50)	6 (10)	0 (0)	7 (11)
I have time to read the evidence on elective inductions	17 (27.4)	33 (53.2)	10 (16.1)	0 (0)	2 (3.2)
I have authority to change patient care procedures	7 (11.2)	30 (48.3)	16 (26)	4 (6.4)	5 (8)
The guideline is generalizable to my setting	12 (19)	41 (66)	2 (3.2)	1 (1.6)	6 (10)
My colleagues will cooperate with implementation of the guideline	17 (27)	29 (47)	10 (16)	0 (0)	6 (10)
Administration at the hospital will support implementation of the guideline	23 (37)	28 (45.1)	2 (3.2)	1 (1.6)	8 (13)
L & D nurses are supportive of the guideline	13 (21)	35 (56.4)	4 (6.4)	0 (0)	10 (16.1)

Note. SA= Strongly Agree, A= Agree, D= Disagree, SD= Strongly Disagree, DK= Don't Know

As indicated previously, the findings from the literature review were used as the foundation for this study to explore potential factors that influence the increase in elective induction of labor. The pilot study was intended to explore the findings from the literature review. As a result of the analysis, the findings from this pilot study differed from the literature review. The maternity care providers surveyed identified women as the primary factor influencing the

utilization of elective induction of labor. In other words, women are requesting to be electively induced and the providers are honoring this request. This sharply contrasts with the findings from the literature review which indicated a relatively equal balance between women (preference/convenience) as a factor and maternity care providers (preference/convenience) as a factor. The literature indicated that both women and providers are both strong factors as opposed to the pilot study findings which implicate women as the driving force requesting elective IOL. **This discrepancy highlights the critical need to explore the factors that influence induction of labor from the perspective of women.**

To further reinforce the maternity care provider's emphasis on women's role in requesting IOL, the providers in the pilot study expanded their responses about the role of the patient by written responses to open ended questions in each section of the questionnaire. Frequent comments obtained from respondents were consistently along the lines of "patients were the driving force behind elective induction." The most common reasons that the providers hear from patients requesting an induction identified as being "sick of being pregnant" and the "need to schedule birth around their personal/work/school schedule."

The Ottawa Model of Research Use provides a framework for assessing, monitoring, and evaluating the translation of evidence related to IOL into practice. Based on the OMRU model, the first stage in translating the evidence on elective IOL into practice is to assess the potential adopters, evidence-based innovation, and practice environment. The pilot study assessed these three elements among a small sample of Michigan maternity care providers. The assessment of the

providers as the potential adopter revealed that their knowledge of ACOG's clinical bulletin on IOL (understanding of research), attitudes (beliefs), and skills in applying the IOL guideline into practice (ability to implement research) does not represent a barrier to implementation in this sample. The assessment of the providers' perspective of the evidence-based innovation, ACOG's IOL practice bulletin, revealed that the providers are aware of the guideline and may use it as a source of evidence to guide practice. They also identified minimal challenges in translating the evidence into their practice. The assessment of the practice environment ruled out structure (hospital), social (politics and expectations), and other (litigation and financial incentives) factors that influence utilization of the evidence on elective IOL. The patient element (preferences and demands) was overwhelmingly identified by the Michigan maternity care providers as the primary source for their practice decisions regarding elective IOL. However, the results from the study do not eliminate the maternity care providers as a potential factor that influences IOL. These findings reveal important insights into the intersection of women's desires, health care provider practices and potential ethical conflicts related to meeting consumer demands.

Limitations of Pilot Study

The small sample size and disproportionately higher number of nurse-midwife respondents prevents generalizability of findings. Due to limitations imposed by the State professional associations to prevent a) in-person contact with members and b) repeated attempts to contact their members to increase

response rates, the sampling design was severely limited. The survey was completed by volunteer participants who self-reported their individual knowledge, beliefs, and practices. Self-reporting relies on honest responses and is subject to potential bias and inaccuracies. Additionally, information provided by the maternity care providers represents their perspective. Even though they may have identified patient factors as being the driving force behind elective induction of labor, their perspective may not be an accurate representation of the patient. This supports the purpose of the qualitative study to collect data from the perspective of the patient to confer the findings presented from this study. Furthermore, the use of the OMRU framework in the pilot study revealed an important element that requires further expansion within the framework; the role of the patient. While it is not explicit in the OMRU framework, the provider and organization is viewed as the primary user and adopter of the innovation with the patient playing a smaller role in the utilization of research. This is one of several limitations of the OMRU framework that require attention.

Summary of Findings from Pilot Study

Overall, the results from the pilot study indicated that maternity care providers in Michigan appear to have a solid knowledge of the evidence as it relates to elective induction of labor. Additionally, very few maternity care providers in the pilot study encountered institutional barriers in implementing the evidence on elective induction of labor into practice. As the national rate of induction of labor continues to increase above the current 51.4%, it appears that

challenges in translating research on elective induction of labor into practice for Michigan maternity providers may not be the source for the increase. This still leaves unanswered the question of why if obstetric providers are aware of the evidence and are not restricted in their ability to practice based on the evidence, elective induction of labor rates increasing. The survey results, from the perspective of providers, indicate that women are associated with the increase in IOL. Responding to women's choice for induction of labor is being put forward by Michigan maternity care providers as the rationale for why they participate in a non-evidence based use of induction of labor.

In conclusion, based on the extensive review of the literature discussed in this chapter, the clear missing link in identifying what influences the practice of elective induction of labor is the voice of women. While both the literature review and the findings from maternity providers surveyed in the pilot study would lead one to believe that women are a primary factor, scientific evidence supporting this theory is absent. Therefore, the logical next step is to explore women's experiences of having had an elective IOL.

CHAPTER III

Conceptual Framework

The purpose of this chapter is to present the challenges of implementing evidence-based practices, to provide an overview of the Ottawa Model of Research Use (OMRU) framework that is being used to guide this research. A discussion of the limitations of the OMRU and the role of patient decision making and patient/provider communication in relation to translating induction of labor research into practice is provided.

Challenges of Translation/Implementation Science

The gap between scientific evidence and what is practiced in care delivery is a dilemma (Titler, 2008). Frequently identified barriers to evidence based practice include limited access to research, issues in the organizational or practice setting (e.g., policies incongruent with the evidence), findings from science not appropriately packaged for use in practice, and issues related to clinicians (e.g., knowledge attitudes, beliefs, and values) (Rycroft-Malone, 2002; Titler, 2008). Despite decades of research which serves as a significant evidence base, the translation of evidence into practice has been inconsistent and the existence of evidence does not guarantee translation into practice (Fisch, 2009). It is clear that the existence of evidence does not guarantee translation

into practice (Clancy et al., 2004; Fisch et al., 2009; McGlynn et al., 2003). Titler (2010, p. 36) defines translation/implementation science as "the investigation of methods, interventions, and variables that influence adoption by individuals and organizations of evidence-based practices to improve clinical and operational decision-making in healthcare" (Rubenstein & Pugh, 2006; Walshe & Rundall, 2001). Titler further explains that evidence-based practice (EBP) is defined as "the conscientious and judicious use of current best evidence in conjunction with clinical expertise and patient values to guide healthcare decisions" (Cook, 1998; Jennings & Loan, 2001; Sackett et al, 2000; Titler, 2006). Frequently identified barriers to evidence based practice include limited access to research, issues in the organizational or practice setting (e.g., policies incongruent with the evidence), findings from science not appropriately packaged for use in practice, and issues related to clinicians (e.g., knowledge attitudes, beliefs, and values) (Rycroft-Malone, 2002; Titler, 2008). Furthermore, challenges in using evidence at the point of care delivery include time constraints, limited access to literature, lack of ability to judge the quality of research, patient preferences, and limited evidence to guide practice (Ciliska et al., 1999; Presseau, et al., 2009; Vogel, 1999). As discussed in the previous chapters, Fisch and colleagues (2009) implemented an educational training intervention for physicians to reduce elective inductions with modest results. However, as with several other implementation studies, after they adopted strict hospital protocols against elective induction of labor they found a significant decrease in the number of scheduled elective inductions in their hospital setting (Donovan et al., 2010;

Fisch et al., 2009; O'Rourke et al., 2011; Oshiro et al., 2009; Reisner, et al., 2009).

A unique aspect in the study of translation science in maternity care is the focus on discontinuing popular interventions for non-medical (elective) and conditions with limited current evidence. This phenomenon is referred to as overuse by the Institute of Medicine (2001) in the report, "Crossing the Quality Chasm: A New Health System for the 21st System." The report divides issues surrounding quality of care into three main types: overuse, underuse, and misuse. Overuse implies the potential for healthcare services to produce more harm than benefit. Underuse is the absence of services where it is reasonably indicated and misuse is the impact of a service to create a preventable injury. While many studies on translation science are focused on traditional medical conditions such as failure-to-rescue, patient falls, and pressure ulcers, with an interest in understanding why interventions are not being implemented (underuse), many maternity-based translation/implementation science studies (e.g., induction of labor, cesarean section, epidural use, and continuous fetal monitoring) have been focused on overuse.

Induction of labor is an intervention that has arguably been overused despite the evidence against the use of the practice for elective and those with limited current evidence to support the indication. The study of translation/implementation science related to this issue is centered on identifying the facilitators and barriers to implementing the IOL evidence that can be used to identify effective strategies to decrease its overuse. The Ottawa Model of

Research Use (Logan & Graham, 1998) has been selected as the conceptual framework to guide the long-term research goals testing implementation interventions to promote use of evidence based IOL practices.

Several models on translating research into clinical practice were reviewed including those focused on organizational and individual characteristics and those that provide a heuristic approach to various parts of the translation process (Browman et al., 1995; Graham & Logan, 2004; Graham & Tetroe, 2010; Kitson et al., 2008; Lomas, 1993; Stetler, 2001; Titler et al., 2001). The commonly used nursing translation models have the advantage of being grounded in substantive theories; an important element in developing sound nursing research. However, several limitations exist as it relates to the application of these models; including the lack of integration of the interdisciplinary environment that exists within most healthcare systems (e.g., nurse-midwives, obstetricians, staff nurses, Lactation consultants), the absence of the strong role of patient-centered care, and the lack of external/community-based influencers (e.g., Lamaze classes, internet resources, social interactions/networks, and popular media). Models that explicitly address the patient as a user of evidence in guiding their health related decision making were not found.

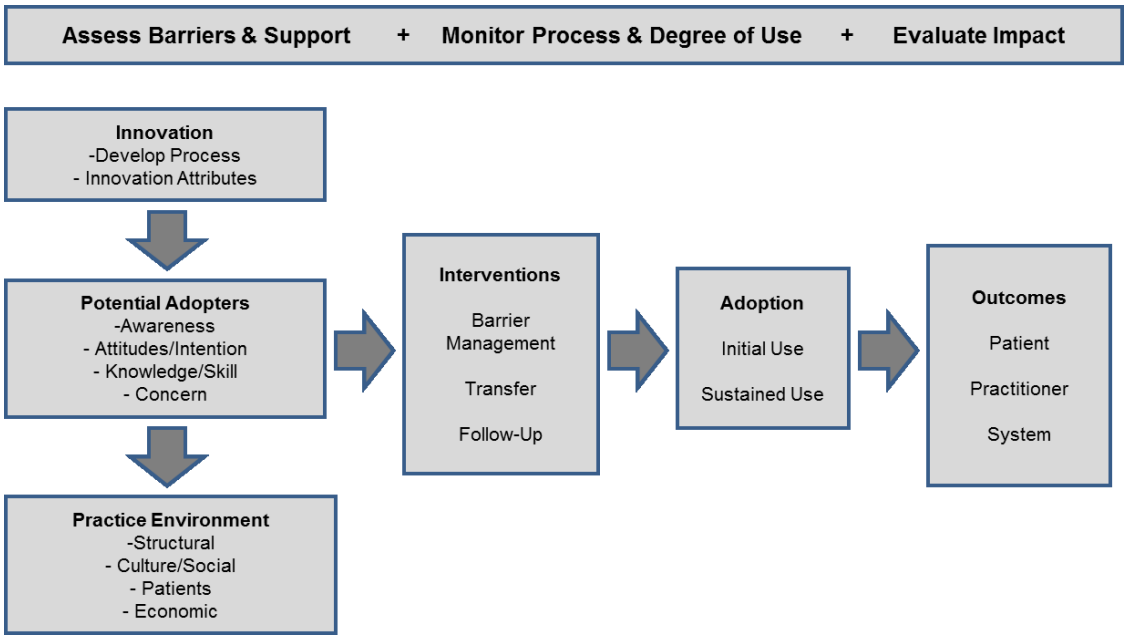
Ottawa Model of Research Use

The Ottawa Model of Research Use (Figure 3.1), adapted from its original

model (Graham & Logan, 2004; Logan & Graham, 1998), is based on a frequently utilized theory for guiding change in nursing practice; the Diffusion of Innovations Theory by Everett Rogers (Rogers, 2003). Based on this theory, the Ottawa Model of Research Use proposes that the rate of adoption of an innovation is influenced by the nature of the innovation, the manner in which the innovation is communicated, the characteristics of the users, and the social system into which the innovation is to be introduced. The OMRU builds upon Rogers' theory to promote adoption of evidence based practices.

It consists of six key elements that are interconnected through the process of evaluation. These elements address the components of research evidence to guide practice including the practice environment, the potential research adopters (practitioners, policy makers, and patients), evidence-based innovation (research on practice), interventions (strategies for transferring the innovation into practice), adoption/use of the evidence, and outcomes (Logan & Graham, 1998). While the model is presented as a linear representation of the translation process, it is intended to be interpreted as each construct of the model having influence and being influenced by one another in a dynamic and interactive way (Logan & Graham, 1998).

Figure 3.1 Ottawa Model of Research Use



Ottawa Model of Research Use (Graham & Logan, 2004)

The central component to the OMRU is the systematic assessment, monitoring, and evaluation (AME) of the state of each element prior to, during, and following the research transfer effort. According to Logan & Graham (2010), "Assess" refers to assessing the innovation, potential adopters, and practice within the context of facilitators and barriers. "Monitor" refers to the ongoing monitoring of the implementation and adoption of interventions recognizing that change occurs during the process that may require adjustments of the implementation strategy. "Evaluate" refers to evaluating the outcomes. The data collected (both quantitative and qualitative) as part of the AME phases serves four main functions: 1) to identify a profile of potential barriers and support for research use related to the practice environment, 2) to provide direction on transfer strategies, 3) to track the progress of the efforts, and 4) to evaluate the

use of evidence-based innovations (Logan & Graham, 1998). Logan & Graham (2010) propose that the AME portion of the OMRU framework is most useful for those in the practice setting while researchers may find the structural portion of the six key elements to serve their research needs.

Each of the six elements (practice environment, potential adopters, innovations, interventions, adoption, and outcomes) serves as a facilitator or barrier in the translation of research into practice. Negative perceptions of the innovation will serve to delay its diffusion throughout the system (Rogers, 1995). Logan et al (1999) provide the following definitions on the six components. The term "innovation" is defined as something that is new to the potential adopter but not necessarily to others (Rogers, 1995). The sub-elements presented as "innovation" include development process (evidence behind the innovation) and innovation attributes (positive attributes such as easy to learn, does not require extensive changes, easy to test before committing, non-controversial, and evidence-based). The characteristics of innovation that influence the rate of evidence-based practice adoption include the complexity of the evidence-based healthcare practice, the credibility and pertinence of the evidence-based healthcare practice to the user, and the ease of assimilation into existing behavior (Rogers, 2003; Titler & Everett, 2001). The "innovation" element of the model focuses on the potential adopter's perceptions of the characteristics of both the process by which the evidence was translated and the innovation itself.

"Potential adopters" refers to the knowledge, skills, attitudes, motivations, current practices, and characteristics of patients, policy makers, nurses,

physicians, and other adopters. The sub-elements presented by Graham & Logan (2004) as "potential adopters" include awareness of specific practice innovations, attitudes and intention to adopt, knowledge and skills related to the adoption of the innovation, and concerns about the impact of the innovation (e.g., increased workload). The rate of diffusion as described by Logan & Graham (1998) varies from setting to setting and differs based on the potential adopters' perceptions of the attributes.

"Practice environment" refers to system policies, decision-making structures, beliefs and values within the organization, economic and other incentives, politics, personalities, resources, social cohesion, and support and pressure. The influences found within the practice environment can enhance or delay research transfer and use (Funk et al., 1995; Walczak et al., 1994). The sub-elements presented as "practice environment" include structural (i.e., rules, regulations, policies, workload, current practice, physical structure), culture/social (i.e., politics, personalities, influence of peers, champions), patients (i.e., influence and pressure for or against adoption, patient compliance), and other aspects which may include legal implications (Funk et al., 1995; Lomas, 1993; Logan & Graham, 2010; Rogers, 1995; Titler et al., 1994).

"Interventions" are approaches or strategies to provide evidence-based innovations to potential adopters while promoting their adoption and use. The sub-elements presented by Graham & Logan (2004) as implementation "interventions" include barrier management strategies (reduce or eliminate barriers), transfer (passive and active implementation strategies), and follow-up

activities (to identify problems or areas where the innovation has been altered). This concept is commonly referred to as audit and feedback (Ivers et al., 2012). Lomas (1993) divides research transfer strategies into three conceptual processes: diffusion (a passively uncontrolled process), dissemination (an active concept that requires tailoring and a target audience), and implementation (a process of coupling dissemination with systematic efforts to remove adoption barriers). However, Ivers and colleagues (2012) found that even with the most complex transfer strategies, at best, 5% of efforts changed provider behavior. Furthermore, Oxman and colleagues (1995) found that while all of the implementation interventions work at least some of the time, none of them work all of the time. Therefore, it is important to ensure that the implementation strategy has the potential to be effective.

"Adoption" represents the decision to use and the behavioral change of making full use of the innovation as the best course of action (Rogers, 1995). Evaluation of adoption and use will determine whether the innovation is being utilized as intended. Logan and colleagues (1999) stated that this is a critical concept considering that the research outcome is dependent on how it was used. The sub-elements of "Adoption" as presented by Graham & Logan (2004) include initial use (learning curve to build competency) and sustained use of the innovation that may vary based on the adopters experience with the innovation and/or professional experience. Logan & Graham (2010) argue that there are three types of knowledge use that are utilized. They include 1) conceptual use of knowledge which occurs from general enlightenment that increases

understanding or changes attitudes, 2) instrumental use which is when knowledge is applied directly and is reflected in changes in behavior or practice, and 3) symbolic or strategic use in which strategic use in which the knowledge is used to legitimate and sustain predetermined positions (Estabrooks, 1999).

The “outcomes” element of the model represents the impact of using the evidence-based innovation as it relates to patients and their families, practitioners, and economic (system) dimensions. The outcomes of utilizing research may be desirable or undesirable, direct or indirect, and anticipated or unanticipated (Logan & Graham, 2010).

The Ottawa Model of Research Use serves as a framework to understand, “what factors influence the implementation of evidence on induction of labor by providers and patient,” that can be used to develop and test interventions. By assessing the first category of constructs within the OMRU model (practice environment, potential adopters, and evidence-based innovation) both barriers and facilitators will be identified that will assist in understanding challenges in translating IOL research into practice. The evidence-based innovation for this program of research is the use of ACOG’s clinical bulletin (ACOG, 2009) and the systematic review conducted by Mozurkewich (2009) and the World Health Organization (2011). Induction of labor is divided into three distinct categories;1) medically indicated, 2) indicated based on limited current evidence, and 3) elective. A detailed definition for each category of IOL is presented in chapter four.

Limitations of OMRU Framework

Graham & Logan (2004) acknowledged that the phenomenon of translation of research into practice has limited understanding regarding the process of research transfer over time. It is unknown which factors are critical in facilitating or hindering research uptake during specific times within specific settings. Therefore, the importance of the practice environment, potential adopters, and guideline characteristics on influencing research transfer in specific clinical areas identified within the OMRU is also unknown (Graham & Logan, 2004).

Another criticism of the Ottawa Model of Research Use is the absence of the role of "external drivers," such as third-party payers, outside of the system influencing the translation of evidence-based practices. As part of the Institute of Medicines report, "To Err is Human," key external and internal drivers were identified that impact the safety and quality of healthcare (IOM, 2000). The external drivers were identified as regulation and legislation, accrediting organizations, efforts to link payment with performance, interdisciplinary guidelines, the commitment of professional organizations, and the level of public engagement (IOM, 2000). It would be reasonable to expand this list to include legal implications considering the impact litigation plays on the U.S. healthcare system including decision-making by health care providers. However, this theory would need to be tested to ensure validity and appropriateness in any translation of research model. The internal drivers identified by the IOM included policies, management decisions, and other organizational features that either help to

prevent or predispose individuals to committing to errors. The report further suggested that internal drivers represent the greatest threat to patient safety and quality citing that the influence of internal drivers on errors is not readily apparent (IOM, 2000). The internal drivers proposed by the IOM are currently well integrated into the OMRU model

While Graham & Logan (2004) identified economic outcomes as part of the “Practice Environment” and “Outcome” elements, the definition could be expanded. In 2003, Leatherman and colleagues, in an effort to better understand economic implications on health care, provided clarity on the concept and role of a business case when suggesting changes in the health care environment. They stated that a business case for a health care improvement intervention exists if “the entity that invests in the intervention realizes a financial return on its investment in a reasonable timeframe, using a reasonable rate of discounting (p. 18).”

Leatherman and colleagues (2003) explain that the economic case (financial costs and returns) are different than the social case (value to patient and society) and that both the economic and social case influence the adoption of evidence-based practices. When one aspect becomes the dominant factor in health care decisions, a misalignment occurs.

In an ideal society, the best care for a patient will also be financially beneficial for the hospital through better payment, improved margins, or equal compensation. However, in reality, this is not always the case. While society places a high value on the social case for healthcare and treatment, what is good

for the patient may not be in the best financial interest of the hospital. When the social and business cases are misaligned decisions have to be made regarding the level of financial risk that a hospital is willing to take to provide an intervention that will be costly yet beneficial. A revised definition of "economic" within the OMRU framework should include the role of the social and business case in translating research into practice.

Finally, while the patient is identified within the OMRU framework, the role of the patient requires further expansion to include the complex patient decision making process and patient/provider interaction. With the shift towards patient-centered care, translation/implementation science models must account for the extensive role of the patient in the utilization of evidence and the impact that providers have in relation to patient decisions. Graham & Logan (2010) support the use of the OMRU as an overarching framework that encompasses more specific theories especially those that address organizational and individual behaviors but does not provide guidance on how to proceed with this effort. Decision making and patient/provider interaction will be discussed in greater detail as it plays a central role in the translation of IOL evidence into practice.

Patient Decision Making and Patient-Provider Interaction

Translating and implementing induction of labor evidence into practice can be a challenging task if women are indeed asking for care that is not consistent with the evidence based recommendations. This challenge is exponentially increased when considering the often unique and individualized decision making

process of women along with the influence of her interaction with her provider. To date, translation/implementation science models have not taken into account the role of patient decision making and patient-provider interaction. Arguably, consideration of these two concepts is essential for understanding the factors that influence the practice of elective induction of labor. An overview of the literature on decision making and patient-provider interaction is provided below along with a presentation of a decision making framework that can be used to guide research on the topic of women's experience of IOL.

Decision Making

While there are a limited number of scientific studies exploring patient decision making in relation to induction of labor, the information that is available provides a snapshot into the phenomenon. There are two published *Listening to Mothers* surveys (Declercq et al., 2006; Declercq et al., 2002) that included a few questions to identify why U.S. women may choose an elective induction. In the most recent *Listening to Mothers* publication, the reasons cited by women during telephone questionnaire interviews (n=200) and an online survey (n=1,573) for choosing to be induced included their desire to "get pregnancy over with," "control the timing of the birth," and "birth with a specific provider" (Declerq et al., 2006, p. 29). The authors cited that women may be choosing elective induction without adequate knowledge of the potential risks as exhibited by their findings that 74.7% of women surveyed wanted to know about every possible complication, however, only 56% were aware of the relationship between labor

induction and cesarean birth and only 32% knew that a “large baby” was not a recommended indication for induction. Patient desires and misperceptions about the risks of elective induction of labor may be factors that influence women’s decisions about their childbirth. Limitations from the Childbirth Connection studies (Declercq et al., 2006; Declercq et al., 2002) include the predetermined response options for questions, absence of follow-up questions to probe for more details, and the lack of validation of the data through the use of chart reviews.

A recent study published by Simpson and colleagues (2010b) surveyed 1,349 nulliparous women at term to explore decision making for childbirth and to identify whether or not childbirth education classes impacted those choices. The questionnaire included both close and open ended questions. Of those surveyed, 551 women were induced with 442 being elective inductions. The study findings revealed that women were more likely to have an elective induction if their physician offered the option ($p<.001$). Physicians offered an elective induction of labor to 69.5% (n=937) of those surveyed. However, those who attended childbirth education classes were less likely to choose the induction (37.7%, n=195) over those who did not attend classes (50%, n=209). Therefore, the researchers argue that attendance at childbirth education classes that integrate the risks and benefits of elective induction of labor into the curriculum represent a factor that influences women’s decisions regarding elective induction of labor. Additionally, the role and influence of women’s providers is a significant factor that influences their decision. Limitations from Simpson (2010) study include the lack of random assignment between the

control and treatment group, the absence of follow-up questions to probe for more details to the women's responses on the questionnaire, and the absence of psychometric testing of the instrument (questionnaire) to assess its validity and reliability. Only content validity was briefly reported. As discussed previously, both studies did not employ traditional qualitative techniques to obtain information from the perspective of women. Instead women were guided to identify factors based on pre-selected options identified by the researchers. In the Simpson (2010) study, they were also given the opportunity to voluntarily expand upon their answer by writing down a brief word, phrase, or sentence. There was no dialogue regarding their response.

Another common maternity care issue that has similar features to elective induction (prevalence of elective option and recent increase in rates) is gaining attention within publications. The role of patient decision making related to elective cesarean section for women has been explored through five, mostly international, qualitative studies.

Moffatt and colleagues (2006) found that women acknowledged that their decision to request an elective cesarean section from their provider was provisional in that social or medical reasons could alter it and that it was influenced by their previous experience. While the women expressed a desire to be involved in the decision making process, many women did not actively participate and were uncomfortable with the responsibility of making the final decision. The quality and amount of information received regarding elective cesarean section varied. Many women expressed a desire for a more

individualized and tailored approach to the information obtained from their provider. The researchers also noted that it did not appear that the media was a strong influencer of the decision made by the participants.

Another study by Emmett and colleagues (2006) reported that the major themes were 1) factors influencing decision to plan a vaginal birth after cesarean (e.g., fear of cesarean and better for the baby), 2) factors influencing decision to plan an elective cesarean section (e.g., being able to plan, medical indication, knowing what to expect, fear of labor, and does not impact sex life), 3) attitudes to motherhood (e.g., not being an earth mother, and coming to terms with previous birth experience), 4) information (e.g., inconsistent or misleading information, having to know the questions to ask, and timing of information), 5) decision making roles (e.g., own decision, provider support, and provider not requiring justification), and 6) views about process of making a decision (e.g., made the right choice, made the wrong choice, and uncertainty). It was found that the most common source of information was their provider and that the information was primarily focused on procedural issues as opposed to risks and benefits. Women felt that they had to actively seek information and were expected to make an independent decision instead of benefiting from information they could glean from their providers.

Data collected by Wiklund and colleagues (2007) demonstrated that fear of childbirth was the most common reason for their request. Anxiety about their unborn baby and their own health rated second. Furthermore, Fenwich and colleagues (2001) found that the main themes included fear of childbirth

(delivering vaginally), issues of control and safety, devaluing of female body, and devaluing birth process. Women perceived that their providers supported and reinforced their request as being "safe" and a "responsible" choice. Women were aware of the risks associated with an elective procedure but, according to the researchers, minimized the severity and likelihood of the risk. It was reported that only two women knew of the potential long-term risks of an elective cesarean section in relation to future pregnancies.

In a recent qualitative study exploring the question of elective cesarean conducted by Kornelsen and colleagues (2010), the themes included 1) women's decision-making process, 2) attributes and experiences of elective cesarean section, and 3) the influence of birth stories on attitudes towards mode of delivery. Common factors that influenced a woman's decision about seeking an elective cesarean section included physiology (family history of difficult labor), social influences (birth stories from family and friends), and fear (of pain and bad outcome as influenced by negative birth experiences told by friends and family).

Munro and colleagues (2009) identified two primary sources of birth information; prenatal classes and family/friends. Popular childbirth books were viewed as the "evidence" that led to informed decisions with "common sense" being used to determine the credibility of the information. Birth stories confirmed existing attitudes and beliefs held by the women but did not "add to the evidence" when making a decision. Finally, Gamble and colleagues (2007) conducted a review of the literature on women's request for an elective cesarean section. They noted that the studies conducted to date have not taken into account the

way in which care is offered or the interactions between women and their provider.

In the instance of elective cesarean section, a woman is viewed as requesting a procedure that is not necessarily indicated but that the risk/benefit ratio is difficult to quantify. For IOL, in particular the use of IOL prior to 41 weeks, the evidence is clear that an IOL represents significant risk. Translating the findings from the exploration of elective cesarean and women's decision making into the context of IOL offers some important principles. The interaction between a woman and her provider is a critical point of possible intervention regarding the decision making process. The concept of patient-provider interaction and the approach used by the provider to discuss health decisions is commonly referred to as patient activation. Patient activation is not included in the OMRU model.

Patient Activation

Patient activation is defined as the ability or readiness of a person to engage in health behaviors that will maintain or improve their health status (Hibbard et al., 2004). According to Hibbard and colleagues (2004), the initial stage of activation focuses on the patient being able to tell their concerns to their health care providers; to manage symptoms; to get information to make decisions about treatment; to take an active role in care; to discuss treatment options with the provider; to discuss side effects of medication; and to know how to avoid emotional triggers. Other aspects of the definition include achieving knowledge of lifestyle changes and achieving knowledge of the nature and

causes of health conditions. Patient activation is viewed as being neither static nor specific to a particular disease or outcome.

Patient activation was first utilized in chronic care management research and is commonly measured by the Patient Activation Measure developed by Hibbard and colleagues (2004). The measure assesses a person's knowledge, skill, and confidence for managing one's own healthcare. In 2009, Hibbard found that there is a positive association between patient activation and those who are younger and a have a higher education level.

As part of their initial research into patient activation, Hibbard and colleagues (1999) stated that patient-centered care views patients as partners in their health care where the patient is encouraged to share responsibility for their health and are considered to be an integral member of their health care team. They further explain that for consumers to actively participate in their own care they need the "knowledge, skills, and confidence to successfully negotiate the health care system (p. 850)."

Hibbard (2009) argues that increasing a patient's involvement can lead to improved health outcomes and patient experiences. Recently, a cross-sectional survey to measure patient activation in adults (n=504) aged 19-90 years with a chronic illness found that both quantity of time and quality of interaction between patient provider was associated with high patient activation (Wong et al., 2011). However, it has also been found that when providing care to women who have experienced an early pregnancy failure that, despite strong feelings from patients, women have a tendency to make decisions about their treatment based

on provider recommendations (Dalton et al., 2006; Charles et al., 1997). It could be argued that despite a patient's desire to be "activated" in the decision making process, provider preferences may influence the decision.

Becker & Roblin (2008) address the issue of patient activation and the role of the provider by stating that power in physician-patient relationships is inherently unequal. For example, patients are in a vulnerable position when they seek knowledge and advice from their provider who is viewed as the expert. Therefore, providers are in a dominant position having the ability to control the knowledge and treatments offered to a patient. In supportive interactions, providers acknowledge and respect each patient's unique values, needs, concerns, and expectations; communicate with patients in an open, honest, and comforting manner; encourage and answer questions; demonstrate technical competence in developing care plans; and tailor those plans to each patient's unique psychosocial circumstances. Through these interactions, primary care practitioners provide patients with the knowledge, confidence, and motivation to maintain or improve their health. Interactions in which patients perceive honesty, reliability, benevolence, assistance, support, and understanding build trust (p.796).

As Hibbard (2009) pointed out, more highly activated patients believe their role in managing their health is important, have the knowledge and confidence to act appropriately, will act to maintain or improve their health, and will adhere to recommended care even when under stress. Therefore, a supportive and trustworthy relationship between the provider and patient is needed to promote

better informed, motivated, and committed patients (i.e., activated patients). Patient activation leads to shared decision making. Shared decision making refers to the process by which practitioners and patients reach healthcare choices together and avoids the unequal power balance between patient and provider (Charles et al., 1997; Coulter, 2002; Elwyn et al., 1999; Elwyn et al., 2000; Pierce & Hicks, 2001). The goal of shared decision making then becomes the ability to reach a decision that is informed by the best available evidence, integrates the patient's values, and is void of provider bias or preferences.

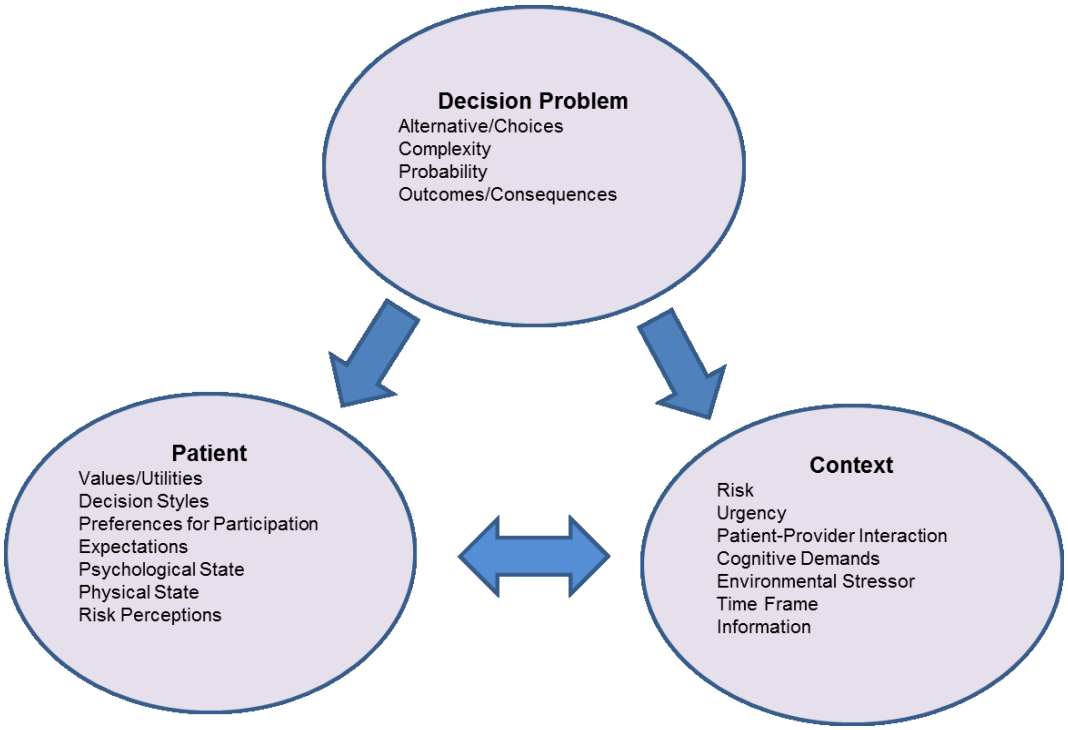
As noted earlier, the OMRU model does not fully integrate the concepts of patient activation or shared decision making. However, Graham & Logan (2004) encourage the integration of other theories that can strengthen the model. Therefore, a decision making framework is presented to supplement the OMRU model.

Decision Making Framework

As highlighted by the findings from the decision making studies on elective cesarean section discussed earlier, it is not uncommon for patients to be surprised by the expectation that they participate in selecting a treatment or therapy. This is partly due to the recent shift from the paternalistic approach to healthcare delivery to one of collaboration and shared decision making. Furthermore, decision making processes are complex, multidimensional, and typically inaccessible by direct observation. Therefore, it becomes important to be able to conceptualize the process and interactions that influence decision

making. Pierce & Hicks (2001) developed the Framework of Interactive Decision Making (Figure 3.2) as a tool to guide the emerging science on patient decision making, Pierce (1996) argued that providing a structure that allows one to evaluate the ways people make decisions provides insight into the rules or strategies that a patient uses, it improves the assessment of the patient as to when it is appropriate to intervene in the decision-making process, and it provides an opportunity to examine how patients make decisions and reflect on these experiences and outcomes.

Figure 3.2 Framework of Interactive Decision Making



Framework of Interactive Decision Making (Pierce & Hicks, 2001)

The Framework of Interactive Decision Making is guided by the decision problem. The decision problem is theoretically defined by "the acts of options

among which one must choose the possible outcomes or consequences of these acts and the contingencies of conditional probabilities that relate outcomes to acts" (Tversky & Kahneman, 1981, p. 453). The framework consists of three main elements; the decision problem, the patient, and the context.

The decision problem has at least four basic sub-elements; 1) initial options (alternatives/choices), 2) values (worth, utility, or attractiveness), 3) uncertainties (probabilities), and possible consequences (outcomes). An alternative is described as how a patient evaluates recommended alternatives (at least two options are present) and/or how they understand the alternatives and their implications. Complexity is defined as how a patient handles complex information that has the potential to lead to incomplete consideration of options and cognitive overload. Probability refers to the language of uncertainty and risk (Stael von Holstein, 1977; Tversky, 1967) and can be represented in objective or subjective terms in the form of a statistical database or the strength of a belief (Llewellyn-Thomas et al., 1993). The outcome refers to the possible consequences of the decision and its influence on the decision being made.

The patient element of the framework is intended to be flexible to the context of the problem and the patient population (P. Pierce, personal communication, June 6, 2011). Pierce & Hicks (2001) have suggested six potential sub-elements; 1) values/utilities, 2) decision styles, 3) preferences for participation, 4) expectations, 5) psychological state, physical state, and 6) risk perceptions. For each decision problem, not every sub-element suggested will be applicable as it is dependent on the context and patient population.

Therefore, the user of the framework needs to evaluate what sub-elements may or may not be appropriate for any given situation.

In the general framework, value refers to the measure of attractiveness of a possible outcome or the desirability of each outcome (Matheson & Howard, 1977). However, Pierce & Hicks (2001) admit that attempts to assign a numeric value have been unsuccessful partially because of the lack of clarity surrounding how preferences are formed. The patient's preference for a particular alternative is referred to as the utility. It is considered a subjective measure that represents the relative worth of each outcome (Barclay et al., 1977). Individual styles (decision styles) exist on a continuum with the decision problem from avoidance to engagement and are influenced by deferment of responsibility, avoidance, information seeking, and deliberation (Pierce, 1993, 1996). Preferences for participation (level of involvement) are related to the way a patient approaches the decision problem and the amount of control that they prefer when making decisions about the decision problem (Pierce & Hicks, 2001).

The element of context is also intended to be flexible to the context of the problem and patient population (P. Pierce, personal communication, June 6, 2011). Pierce & Hicks (2001) have suggested seven sub-elements; 1) risk, 2) urgency, 3) patient-provider interaction (patient activation), 4) cognitive demands, 5) environmental stressor, 6) timeframe, and 7) information. Patient-provider interaction is considered a crucial aspect of the decision making process and includes the elicitation of patient preferences, the identification of the amount of information sought, the degree of preferred patient participation, and the level of

control that exists within the decision making process. There is also a recognition that what providers believe the patient should know may not be congruent with what the patient wants to know. Information is described as the amount, quality, and clarity of the information being provided that is aligned with the patient preferences. It has been found that the way information is presented and the way that it is explained may have more influence on a patient's decision than the amount of information provided (Llewellyn-Thomas et al., 1991; Mazur & Hickman, 1994). A phenomenon called the "framing effect," in which the provider intentionally frames the information presented to influence the patient decision toward the outcome preferred by the provider, can bias both the perception of the problem and the way that it is processed by the patient (Kahneman & Tversky, 1984; O'Connor et al., 1996; Payne, 1980; Sullivan et al., 1996; Tversky & Kahneman, 1981).

The framework assumes that decision making behaviors will change and adapt over time as the patient encounters new experiences and their understanding of the situation evolves. While the decision problem remains constant, the patient and context changes. Decisional conflict is a concept that arises when presented with an alternative that challenges the individual's values (Pierce & Hicks, 2001). This conflict results in stress for the patient. Additionally, conflict may occur when there are "competing alternatives with uncertain risks and outcomes, when trade-offs between equally valued options are required or when the decider anticipates regret over rejecting potentially positive alternatives" (Pierce & Hicks, 2001, p. 269).

Therefore, the objectives of patient decision-making research are to a) help patients become more efficient given their limited physical and cognitive resources, b) reduce the psychological stress of making the decision, c) help patients avoid decision hazards, and d) help patients arrive at decisions that accurately reflect their preferences and values (Pierce, 1996). However, Pierce & Hicks (2001) acknowledge that a major challenge in creating a framework is capturing the theoretical explanation that accounts for the range of experiences in which patient decisions are made. For instance, it is difficult to capture both those that easily make a decision about complicated and serious medical issues and those that experience a tremendous amount of stress when making the same decision.

The process of decision making by women regarding IOL is a complex issue. When a provider presents the option of an elective induction or one with an indication based on limited current evidence to a woman, it is possible that she may interpret this as being an endorsement for the procedure. She may believe that the IOL is medically indicated based on her own personal process of understanding information and decision making. A provider plays an important role in the decision making of women in that they may frame the information regarding the IOL in a way that influences the woman to make decisions that are consistent with the provider's preferences. Decision making is further complicated by the vague information about the impact of an induction based on an indication that has limited current evidence. A provider may promote an induction that is not evidence-based believing that there is evidence to support

the practice when in reality it does not exist.

Adapted Ottawa Model of Research Use

The Ottawa Model of Research Use (Graham & Logan, 2004) has been adapted for the purpose of this study by integrating the patient activation and decision making concepts found within the Framework for Interactive Decision Making (Pierce & Hicks, 2001). As acknowledged by Pierce & Hicks (2001; 2004) these concepts are difficult to comprehensively identify in that they are constantly changing and evolving for each individual person. Therefore, these concepts will be generally referred to as the "decision making process" and represents the elements and sub-elements of decision problem, context, and patient as described by Pierce and Hicks (2001). The "decision making process" has been added to the "monitor" phase of the adapted OMRU model as it conceptually influences the implementation interventions (barrier management, transfer, and follow-up) and adoption (initial use and sustained use) of evidence based practice. All changes to the original OMRU model are represented in blue as found in Figure 3.3. It is also argued that the "intervention" and "adoption" can influence the "decision making process." The decision making process is further influenced by the elements and sub-elements found under the "assess" portion of the model.

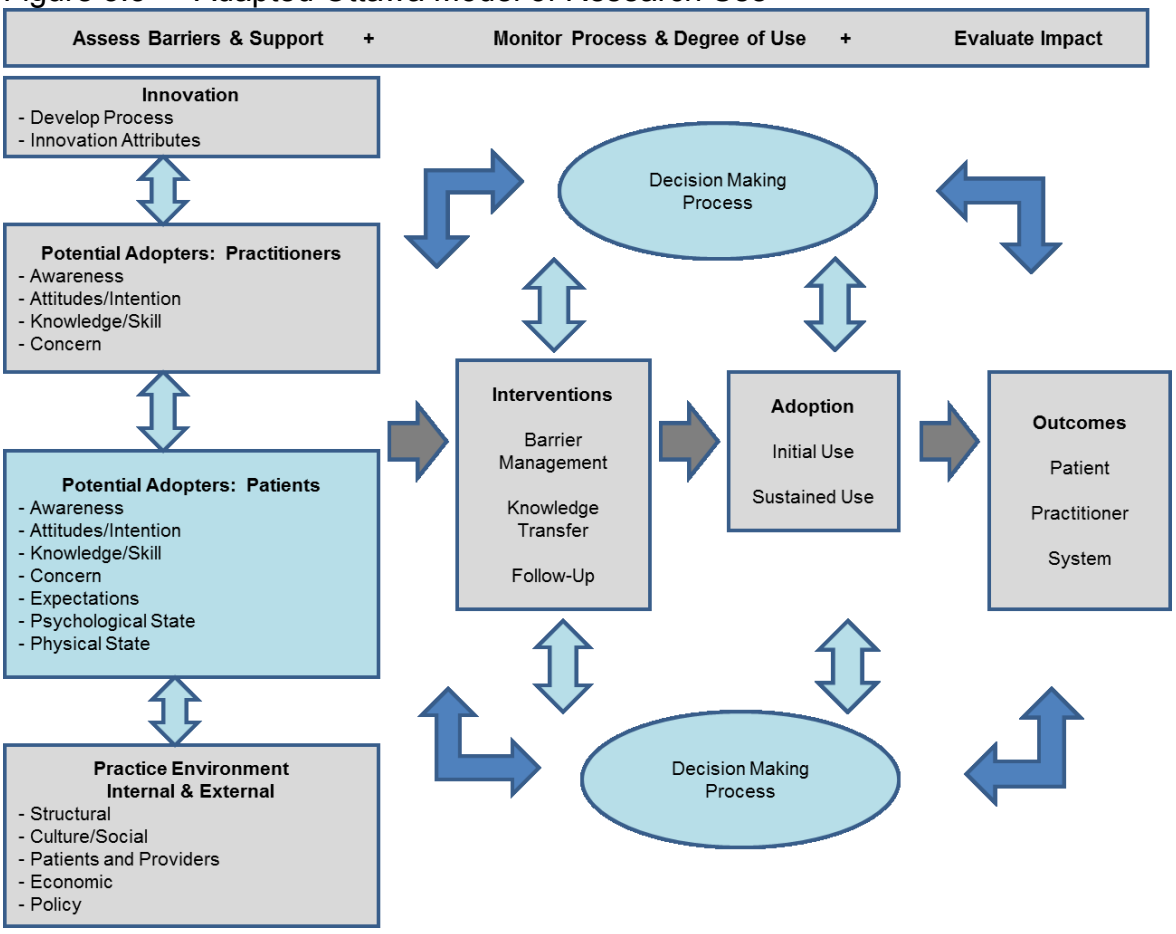
While a general "decision making process" is presented in the adapted OMRU model, several specific items within the Framework for Interactive Decision Making (Pierce & Hicks, 2001) have been explored as part of the study.

For instance, under the decision problem element, the probability of maternal/fetal risk and potential outcomes from the induction were examined from the perspective of the women. The patient and context elements of the framework were also examined with an emphasis placed on learning more about the woman's decision making process and the influence of patient/provider interaction as part of patient activation on the decision. As acknowledged by Pierce and Hicks (2001) the sub-elements are dynamic and subject to change depending on the individual person and circumstances. Therefore, the study identified the common themes amongst all of the women in the data regarding the decision making process.

Another important change presented in the adapted OMRU model is the inclusion of "patients" as an adopter of evidence based information. This element has been added to the "assess" phase of the model. The sub-elements identified as part of the "patients" element include awareness of the evidence, attitudes about the evidence in relation to the intervention, intention to use the evidence about the intervention, knowledge (ability to understand the evidence), skill in applying the evidence to their situation, concerns about the risks and benefits, expectations of what the intervention will and will not provide for their specific situation, and the psychological and physical state of the patient. The definitions of these concepts are consistent with those presented by the developers of the OMRU (adapted to fit for the patient context) and the Framework for Interactive Decision Making. Additionally, it is argued that the influence between the "potential adopters" (health care providers) and the

"patients" is reciprocal in that the providers may influence the patients and the patients may influence the providers. The double arrow between the provider and patient captures this important concept. Additionally, the double arrow represents patient activation outside of the decision making process. For instance, a provider that introduces bias or preferences (their intention) would be viewed as a barrier to patient activation and informed decision making. As an example, the intentions of a provider to encourage an elective IOL may influence the woman's attitudes, intention, concerns, or expectations.

Figure 3.3 Adapted Ottawa Model of Research Use



CHAPTER IV

Methods

The review of literature on elective induction of labor and the pilot study surveying maternity care providers both identified women as a primary factor in the increase incidence of induction of labor. Despite the literature that indicates health care providers inconsistently apply research into practice, the providers from the pilot study reported that few challenges exist in understanding and applying the evidence related to induction of labor. Their consensus that women are the driving force behind the practice of IOL in that they are requesting the intervention despite the lack of direct evidence is problematic if the goal is to promote evidence based practice and reduce elective IOL. In contrast, the literature review indicated that both women and providers are factors that influence the practice of elective induction of labor. Thus, it is critical to scientifically document women's experience of IOL to better understand their role in the complex decision making process involved with having an induction.

The limited scientific data explaining the phenomenon of interest, women's experience of elective IOL, indicates the use of an exploratory approach via individual qualitative interviews to facilitate description of personal experience and meaning in specific contexts (Creswell, 2003). This study is the first step in identifying factors that influence women's choice and experiences of IOL from the voice of women. The specific aims of the study were the following:

1) to identify the factors that influence pregnant women's decision regarding induction of labor including her knowledge and understanding of the risks and benefits,

2) to explore postpartum women's experience of having had an induction of labor including her reflection of the decision to be induced, and

3) to explore similarities and differences between the medical documentation of the women's IOL and the women's understanding of the induction.

The study recruited and screened women prenatally that were scheduled to be induced. Pre-induction and post-induction qualitative interviews were conducted along with a medical record review. This approach allowed women to explain in their own words, their understanding of the indication for an IOL, the process by which they made the decision to have an IOL and then the experience of the IOL that was performed. Data from the medical record allowed comparison of women's' experiences and explanation to what had been suggested in the literature as the various factors purported to influence women's desire for IOL (see Tables 1-3). The interviews explored factors that influence a woman's decision regarding IOL, allowed for reflection of her decision to be induced, and provided an opportunity to describe her experience of the IOL.

Glaser's (1978) grounded theory method was used to guide this study's design and process of analysis. According to Lincoln and Guba (1985), grounded theory research is important for formulating an understanding of scenarios that would go unexplained if not researched. Stern (1980) supports

rigorous use of grounded theory research method to promote the discovery of accurate and useful analyses of social processes relevant to nursing science. An adapted version of the Ottawa Model of Research Use (Graham & Logan, 2004), as described in the previous chapter, guided the development of the interview questions. A chart review was conducted to compare the women's perception of her experience with induction of labor (IOL) and that of her maternity care provider. The linkage between the specific aims, sources of data for the study, and elements of the adapted OMRU model that was used for the study is presented in Table 10.

Table 10

Linkage between Specific Aims, Data Source, and Model

Specific Aim #1	To identify the factors that influence pregnant women's decision regarding induction of labor including her knowledge and understanding of the risks and benefits.
Source of Data:	Pre-Induction Interview
Model Concepts:	Potential Adopters (Patient), Decision Making Process
Specific Aim #2	To explore postpartum women's experience of having had an induction of labor including her reflection of the decision to be induced.
Source of Data:	Post-Induction Interview
Model Concepts:	Potential Adopters (Patient), Decision Making Process, Outcomes (Patient)
Specific Aim #3	To explore similarities and differences between the medical documentation of the women's IOL and the women's understanding of the induction.
Source of Data:	Medical Record
Model Concepts:	Potential Adopters (Provider)

Design

This study used an exploratory qualitative approach based upon ground theory methods. The grounded theory method was developed by Glaser and Strauss (1967) based upon the theory of symbolic interactionism. This is an inductive qualitative method that identifies the main concern of a group and the behaviors that they use to resolve their main concern. Grounded theory methodology is the systematic generation of a concept from systematic research about a phenomenon. It is regarded as a set of rigorous research procedures leading to the emergence of conceptual categories.

The concept of symbolic interactionism as defined by George Herbert Mead (1934) and Herbert Blumer (1969), place great emphasis on the importance of meaning and interpretation as essential human processes that react against behaviorism and mechanical stimulus-response psychology. Symbolic interactionism focuses on social interaction occurring within the context of society. Labor and birth decisions made by women are shaped by interaction with society and these decisions (as highlighted by the discussion in the previous chapter), in turn, shape society. The three premises of symbolic interactionism as defined by Blumer are; 1) humans act towards things based on the meanings they attribute to the things, 2) social interaction with others is the basis for the acquisition of these meanings, and 3) that these meanings are managed or modified via an interpretive process used in dealing with these human encounters. Using grounded theory methodology with its underlying inclusion of the concept of symbolic interactionism in this study facilitated the understanding

of the psychosocial processes by guiding the development of interview questions.

Stern (1980) argued that grounded theory method is uniquely different than other qualitative methods based upon the following rationale: 1) the resulting conceptual framework is gained from the analysis of the data; 2) the individual and their social context is the primary focus of the study; 3) the data is constantly compared with other data throughout the process; 4) data collection is driven by the emerging concepts and thus questions can be changed as the process evolves; and 5) from the beginning, data are analyzed and serves as a basis for the preparation of research reports.

According to Glaser and Strauss (1967), there is a five-step method for research using grounded theory methods: 1) collection of data; 2) identification of the concept; 3) development of the concept; 4) modification and integration of the concept; and 5) writing the research report. Additionally, Glaser (1998) maintained that there are four criteria necessary for conducting and evaluating grounded theory data that include fit, workability, relevance, and modifiability. Fit refers to the categories, properties, and concept fitting the data that have been collected. It is commonly referred to as the validity of the study. Workability refers to the idea that the categories and the way in which they are related into hypotheses explain the behavior that is occurring in an area of study. In other words, how the main concern of participants is being continually resolved. Relevance is achieved when the categories both fit and work while the concept is able to address the main concerns of the participants. Modifiability is

demonstrated when concepts, their properties, and the substantive theory can readily accommodate new data or, in other words, when any of them can be readily modified by new data. The ultimate goal of grounded theory method is to develop a theoretical model that is reflective of the relevant individual patterns of behavior. However, for the purpose of this study, the findings were used to inform and modify an existing theoretical model.

For this study, grounded theory methodology was an appropriate approach as it provided a framework for effectively capturing the voice of women through open-ended questions. The experiences of women having had an IOL provided the foundation for developing an understanding of the factors that influence the practice of induction of labor. The detailed steps of grounded theory methodology, as applied to this study, are described later within this chapter. Unique to this study was the opportunity to gain understanding of women's perceptions of IOL prior to and following the procedure and the ability to compare her perceptions with her provider's documentation in the medical record. This data was used to evaluate the two concepts, patient activation and decision making, that were integrated into the adapted OMRU model.

One area that is not typically completed as a step in the research process when using grounded theory is the completion of a review of the literature. According to Glaser (1998), literature reviews are problematic for grounded theory researchers because they constrain the researcher's ability to keep an open mind with respect to concepts, problems, and interpretations. Glaser contended that grounded theory methods should avoid a literature review in the

substantive area and related areas related to the study and that the use of literature should not be reviewed until the concept is nearly completed during sorting and writing up.

Glaser (1998) argued that the researcher risks six potential problems if a literature review is conducted prior to data collection of a study that utilizes grounded theory methods. These problems include: 1) fixating on concepts that are irrelevant or do not fit; 2) developing preconceived, “professional” problems that are not relevant and only lead the researcher away from the actual substantive issues; 3) engaging in speculative, non-scientific work that causes the researcher to make decisions about the data that are not relevant to the work; 4) feeling overwhelmed by other author’s work, which leads the researcher to feel as though their own work is lacking merit or value; 5) making the researcher more closely align to the current literature and not maintain an open mind to the emerging theory; and 6) presenting problems for the researcher because understanding which literature is relevant to the emerging theory does not begin until data analysis occurs and a substantive theory begins to form.

Although Glaser (1998) firmly believed that early literature reviews were counterproductive to the grounded theory method, he also stated that there are exceptions. The two exceptions are dissertation proposals for those seeking a PhD and grant submissions. Glaser acknowledged that a literature review is a required piece of a dissertation proposal for most academic institutions and, therefore, the study needs to meet the academic requirements. He recommended that doctoral students remain focused on the method by first,

remembering that the literature available is not the absolute authority on the subject and second, using the "review within data collection to be constantly compared as the review is done" (Glaser, p. 72). In this way, the researcher can maintain distance from the literature and ensure that during data analysis the literature is put into a proper perspective.

By using the literature as a constant comparison rather than as an authoritative guide, an emerging concept can be exceptionally strong (Glaser, 1998). For this dissertation, a literature review was completed as provided in chapter two. The questions that were developed for the pre-induction interview and for the post-induction interview were informed by the state of the science regarding IOL. However, the investigator was sensitive to the potential problems of having á priori knowledge and focused on preventing any potential constraints presented by having this information during the data collection phase of the study. Weekly discussions with committee members and senior faculty ensured that the state of the science did not influence the data collected from the individual women. This allowed the researcher to glean as much new insight into the phenomenon of IOL from the perspective of women. The researcher utilized Glaser's advice on managing information from a literature review in grounded theory method. The literature review sensitized the researcher to the current state of the science regarding elective IOL, factors that influence its practice, and decision making processes that were used as a constant comparison during the data analysis process.

The adapted Ottawa Model of Research Use (Graham & Logan, 2004) also guided the development and conduct of the interview questions. The influence of evidence on IOL, the interplay between the patient/provider interaction as part of patient activation and its impact on decision making was explored in understanding the woman's perception of her IOL experience. Specifically, the questions provided an opportunity to explore the patient/provider interaction during the assess phase, to explore the concepts that act as facilitators and/or barriers for the patient in translating evidence as part of the assess phase, to explore decision making within the context of induction of labor, and knowledge was gained regarding the women's perception and evaluation of the outcomes in reflection of her decision to be induced. The questions encouraged women to discuss their knowledge of the evidence related to IOL, their relationship with their provider, their process and the factors/concepts that influence decision making regarding their birth, and their perception of the birth experience having had an IOL.

Finally, consistent with grounded theory methodology, data analysis for this study included the constant comparison method recommended by Glaser and Strauss (1967). This was an inductive process in that the analytic themes emerged from the data. The details of the application of the constant comparison method to this study will be described in greater detail later within this chapter.

Methods

Sample & Setting

A purposeful sample of English-speaking, primiparous women 21 years of age or older who were scheduled for an induction of labor between December 2011 and February 2012 were recruited for the study. The recruitment plan is detailed in Table 11.

Table 11

Overview of Recruitment Plan & Sample

Announcement Letter	All women 34 weeks gestation or greater planning to deliver at the designated hospital.
⇩	
Sampling Frame	Women scheduled for IOL at the designated hospital.
⇩	
Recruitment Inclusion Criteria	Primiparous women, 21 + years of age at time of recruitment, scheduled for IOL at the designated hospital, and English speaking.
⇩	
Screening Exclusion Criteria	Multiparous women, medically indicated IOL (e.g., post-term) and non-viable infant.
⇩	
Eligible for Enrollment	Elective IOL (patient initiated) and Indications with limited current evidence (e.g., fetal macrosomia).

All women who were scheduled for an IOL were included in the initial sampling frame due to the ambiguous boundaries between types of IOL (medically indicated based on evidence, indications with limited current evidence, elective) discussed previously and as highlighted by Mozurkewich and colleagues (2009) and the World Health Organization (2011). This approach was consistent with the recommendations from the AHRQ systematic review and provided insight into the variation of indications and rationale as understood by the women. Multiparous women were excluded from this study to eliminate the influence of previous stressful, traumatic, or unsatisfactory birth experiences. Moffatt and colleagues (2006) found that a women's decision about her delivery was influenced by her previous experience.

Through the screening process only women who were scheduled for an elective induction or an induction with an indication that had a limited current evidence base were eligible for actual enrollment in the study. Those with a medical indication were not included. For the purpose of this study, an elective induction was defined as a patient-initiated induction that was not medically indicated and had a rationale that was not evidence based. A non-evidence based rational included logistic reasons (distance from hospital) or psychosocial indications (patient preference/patient convenience) as defined by ACOG (2009). Provider initiated IOL fell under one of two other categories; medically indicated or an indication with a limited current evidence based as defined by Mozurkewich and colleagues (2009) and supported by the Caughey and colleagues (2009) and World Health Organization (2011) reviews. Medically indicated IOL have a

rationale with a documented evidence-base. Medically indicated IOL included fetal demise, post-term gestation (greater than 41 weeks), intrauterine growth restriction, premature rupture of membranes at term, and premature rupture of membranes near term with pulmonary maturity. An induction with an indication that has a limited current evidence base represents indications that have limited scientific evidence to support the rationale. These indications are commonly documented as a "medical" IOL, yet the current evidence does not support it. These indications, as defined by Mozurkewich and colleagues (2009) and supported by the Caughey and colleagues (2009) and the World Health Organization (2011) reviews, include women with gestational diabetes, twin gestation, fetal macrosomia, oligohydramnios, hypertension, cholestasis, maternal cardiac disease, and fetal gastroschisis.

As discussed in chapter three, the approach that a provider uses to frame the information they present to women regarding IOL may directly influence the decision made by the patient. The manner in which the provider intentionally frames the information presented, called the "framing effect," influences the patient decision toward the outcome preferred by the provider (Kahneman & Tversky, 1984; O'Connor et al., 1996; Payne, 1980; Sullivan et al., 1996; Tversky & Kahneman, 1981). This unique dynamic between the provider and patient is difficult to confirm without directly interviewing providers themselves. However, it may be possible to explore this concept as women describe their interactions and discussions that occurred regarding the decision to have an IOL. DeVries and colleagues (2001) found that women tend to favor the type of care that they are

offered by their provider. Women have a tendency, for a variety of reasons, to avoid challenging the recommendation from their provider despite their lack of understanding of the rationale.

Women were recruited from a large academic medical center in the Midwest with support from the Department of Obstetrics and Gynecology. An overview of the recruitment plan and sample can be viewed in Table 11. On average approximately 60 women (17% of the 350 births per month) are scheduled for an IOL (medical, indication with limited current evidence, and elective). In hospitals across this Midwest state, IOL rates range from 0-72% (Leapfrog Group, 2011). Recruiting women from the community at large to capture births at multiple hospitals was considered. However, after further exploration of the option, it was discovered that the other hospitals that would potentially be included in study are currently participating in a state-wide, two-year initiative through the state's Health and Hospital Association to reduce elective induction of labor in their facility through a series of interventions. The academic medical center in this study was not participating in this initiative. It was important to avoid the impact of these interventions on the data collected regarding the experience of women who were induced. Therefore, only women scheduled to be induced at the designated hospital were recruited. While this approach may limit generalizability of the study findings, it is consistent with grounded theory methods when seeking to build a foundation of knowledge through individual interviews. Future studies may build upon this study by exploring the experiences of women in other settings for comparison purposes.

All women planning to deliver at the designated hospital that were greater than 34 weeks gestation received a mailed letter from the researcher indicating that a study on induction of labor was currently being conducted at the designated hospital. The letter indicated that if they qualify for the study (i.e., they are scheduled for an IOL), they may be contacted by phone to potentially participate. An overview of the study was provided along with an opportunity for the woman to opt-out from being contacted for recruitment into the study. If the researcher received notification of anyone wishing to opt-out, they were placed on a "no contact list." Four women contacted the researcher by email because they did not want to be considered for the study. As it turned out, none of these women were scheduled to be induced.

The contact information of women who were scheduled to be induced at the designated hospital was obtained and reviewed daily. As part of the medical center's consent form, patients consent to be contacted for potential research for which they may qualify. However, as an extra measure to protect privacy, as described previously, all women having a first birth and planning to give birth at the designated hospital were informed of the study and given an opportunity to opt-out prior to being scheduled for an IOL. Women scheduled for an IOL were contacted by phone to provide information about the study and to assess her potential interest to participate. Flyers were also posted at the designated hospital's obstetric clinic and Perinatal Assessment Center which allowed women to proactively enroll in the study by self-identifying. No one contacted the researcher based on these flyers.

During the phone call, the potential participant was encouraged to ask questions about the study. After the questions were satisfactorily addressed and the potential participant expressed interest in participating, the screening process began to assess her eligibility to participate in the study. The pre-induction screening form can be found in Appendix B. The screening was based on the inclusion and exclusion criteria and included the collection of the following information: age of woman, gestational age, date of scheduled IOL, confirmation of primiparous status, type of provider, and reason for IOL. If she met the inclusion criteria and indicated that she was still interested in participating she was enrolled in the study. If it was convenient for her, the phone call continued by asking her three (3) pre-induction interview questions related to her interaction with her provider and the decision making process. Women were contacted by phone on the same day of their appointment with their provider in which the IOL was discussed and scheduled (for a later date) in an effort to ensure greater accuracy in the woman's recall of the discussion and decision with her provider to be induced. A classic study commonly cited within the psychology literature found that the outcome from a decision can bias the person's recall of that decision (Baron & Hershey, 1988). Thus this approach of conducting a pre-induction interview was conducted to control for this potential. The responses to the pre-induction interview questions were digitally recorded and transcribed by the researcher within one hour.

After the pre-induction interview, if she verbally expressed a continued interest in participating in the study, arrangements were made for an interview

four weeks after her scheduled IOL. This interview occurred at a time, day, and location that was identified by the individual woman as being most convenient. A congratulatory card for the woman's birth that included a reminder of the interview was mailed to every woman two weeks after her birth. A reminder phone call was made one week before the interview to confirm the woman's continued interest in participating in the study and to remind her of the appointment. Women also provided verbal consent during the phone call for the researcher to send an SMS text message on the day of the interview to inform her when the researcher was 10 minutes from arriving at the predetermined destination. Written informed consent was obtained immediately before the onset of the face-to-face interview. The interview was recorded and transcribed. The chart review occurred after the interview to avoid any potential bias on behalf of the researcher. Details about the screening, pre-induction interview questions, post-induction interview questions, and medical chart review, including forms found in the Appendices, will be presented in the next section.

Attention was paid in identifying and selecting women for the interviews that represented variation in the type of indication for the IOL, diverse pre-induction knowledge, and anticipated experiences as identified by the women through the pre-induction screening and interview process. However, it should be noted that minority women traditionally experience bias in the healthcare system as it relates to access to IOL. There is a higher incidence of IOL in older, non-Hispanic white women with commercial insurance that have more than 12 years of education (Coonrod et al., 2000; Dublin et al., 2000; Glantz, 2005, Murthy,

2011). The sample collected through the designated hospital (i.e., non-Hispanic white, college educated, and insured) was consistent with the national demographics of women who are induced. This will be discussed in more detail in the subsequent chapter. Furthermore, sensitivity to the potential that any given woman had a bad birth experience or outcome was addressed by not employing aggressive tactics to contact the woman when confirming the post-induction interview; recognizing that non-response to the confirmation may signify her decision to not participate in the study.

It was estimated that 20-30 women would be required to reach saturation for this study. After approximately 19 interviews it was believed that saturation had been achieved due to redundancy in information being collected. Diversifying the sample provided unique individual information but it did not add additional information for the specific purpose of the study. For example, although women were recruited with diverse indications for IOL, most spoke about the encounter with their provider as being brief and that they had received minimal information about the IOL. Additionally, although women were recruited with diverse socioeconomic and educational levels most women indicated that they did not seek out additional information about the IOL. Although different types of indications and women were interviewed, similar stories were being told. However, despite reaching saturation at 19 participants, it was decided to interview the remaining 11 enrolled women to confirm saturation and to explore potential themes that were emerging from the data. According to Patton (2002), sample size in qualitative research can vary depending on what the researcher is

attempting to explore, the purpose of the inquiry, and the available time and resources. The number of participants should be determined when data saturation has been reached. Likewise, Lincoln and Guba (1985) recommend data collection continue until redundancy has been reached. Patton argued that although data collection and analysis are the guiding force behind sample size, it is reasonable to estimate a minimum sample based upon the phenomenon of interest and the purpose of the study.

Data Collection Instruments

The pre-induction interview (Appendix B) was developed with the assistance of the researcher's dissertation committee and reflects the knowledge gained from the review of literature on elective induction of labor and decision making, as described in the previous chapter, to capture data at the point of decision making. The basic demographic data is also included in this instrument.

The pre-induction interview asked potential participants of the study three (3) primary questions (Table 12). The purpose of these questions was threefold. First, it provided insight, as guided by the adapted OMRU model, to explore the patient/provider interaction and facilitators/barriers from the perspective of the patient (woman) during the "assess" phase of the model. Second, it provided an opportunity to obtain information that was useful in determining those who qualify to enroll in the study while simultaneously ensuring that a diverse sample based on pre-induction knowledge (i.e., knowledge of risk and benefits, perspective of the IOL process, etc.) was selected. Lastly, the information collected pre-

induction was compared to women's knowledge and perceptions postpartum as they reflected on their experience.

Table 12

Pre-Induction Interview Questions

Question #1	Tell me about how the decision was made to be induced.
Possible Probe:	How do you feel about the decision to be induced?
Question #2	What was most important to you in making your decision to be induced?
Possible Probes:	What was particularly helpful, if anything, to you in making the decision? What, if anything, was not helpful?
Question #3	When you think about your upcoming induction, what things are you thinking about?
Possible Probes:	Some women are excited, some are a bit anxious, some are happy to know that they have a set date, while some women have questions, how are you thinking about it? What are some of your expectations for the induction?

Note. To be completed after initial inclusion criteria is met.

The post-induction interview guide (Appendix C) was originally developed as part of a qualitative research course and was tested on three postpartum women who met the same inclusion criteria for this study. Based on the test, the guide was edited and reviewed as part of the requirements of the course. The researcher's dissertation committee provided additional review and assistance to ensure that the guide was consistent with the specific aims of the study in light of the knowledge gained from the literature review, pilot study, and adapted Ottawa Model of Research Use.

The questions were guided by the adapted OMRU model and seek to understand the experience of women having had an IOL including an exploration

of their decision making process. As indicated in the adapted model, the questions exploring the "decision making process" were explored as part of the "monitor" phase. An overview of the post-induction questions and probes is presented in Table 13.

The guiding open-ended questions for the post-induction interviews ranged from "tell me about your birth experience" to "what would you want other women to know about if they were planning to be induced?" Appropriate probes used ranged from "share with me more about what you expected from your birth experience" to "share with me what you feel would be the best way to communicate to women the risks and benefits of being induced to help guide their decision."

Table 13

Post-Induction Interview Questions

Question #1	At this time, I would like to hear from you about your birth experience. Please tell me about your birth experience.
Possible Probes:	Please share with me more about what you expected from your birth experience. If possible, tell me about anything that happened that you didn't expect.
Question #2	Reflecting back over your birth experience, please tell me more about how being induced did or did not impact your birth experience.
Possible Probes:	Please tell me more about how the benefits of being induced influenced your birth. Now, tell me more about how the risks of being induced influenced your birth.
Question #3	When you think back to when the decision was made to be induced, how do you feel about that decision now after having experienced the induction?
Possible Probes:	Please tell me about how prepared you felt going into the induction. Share with me any information, if anything that you wish you would have known before you were induced. Please tell me more about how this information may have impacted your decision if you had received it before the induction.
Question #4	What would you want other women to know about if they were planning to have an induction?
Possible Probes:	Please tell me about any resources that you would encourage her to review before being induced. Share with me what you feel would be the best way to communicate to women the risks and benefits of being induced to help guide their decision.
Question #5	Now that you have experienced an induction, what should health care providers tell women in preparation for the induction?
Possible Probes	Share with me what information women should receive about being induced. Please tell me more about the ideal format for this information to be shared with women; for instance brochures, discussion, website, video, class, etc. Please tell me more about the ideal person to provide this information; for instance nurses, doctors, childbirth educators, or maybe a combination of providers.
Question #6	Based on what you have shared with me, tell me the top three "take away" messages that you feel are the most important for me to know about your experience of being induced.

Note. To be completed 4 weeks after IOL and birth of a viable infant.

Finally, the medical abstraction form (Appendix D) was developed with the assistance of the researcher's dissertation committee. This instrument was primarily designed to collect information about the reason for the IOL as documented by the provider and to provide context of the pregnancy, labor and delivery, and postpartum period from a medical perspective. The data collected was also used to identify any potential discrepancies that existed between the woman's perception of the rationale for the IOL and with the provider's documentation. Data presented by Willmarth (2010) indicated that 33% of women identified a different rationale for their IOL than what the provider identified in the medical chart. Therefore, obtaining the rationale for the IOL from both the women and from their provider as documented in the medical record provided a useful method of comparison and provided further insight into the communication between the woman and her provider as part of patient activation.

In order to obtain data that provided an overall understanding of each woman's pregnancy, labor and delivery, and postpartum experience from a medical perspective, the medical record abstraction form was divided into five sections. These sections included 1) data from IOL schedule (e.g., rationale for induction, date of induction), 2) data from prenatal medical record (e.g., comorbidities prior to pregnancy, complications during pregnancy), 3) data from labor and delivery record-IOL (e.g., method of induction, verification of items for appropriateness), 4) data from labor and delivery record as part of labor and delivery (e.g., complications for mom and baby, mode of delivery, apgar scores),

and 5) data from labor and delivery record as part of postpartum (e.g., postpartum complications, breastfeeding status). All information was recorded exactly as documented in the medical record.

Information about comorbidities prior to pregnancy (e.g., diabetes, hypertension, anxiety, and depression) was collected from the medical history in the physician notes as part the prenatal medical record. Since access to pre-pregnancy records was not available, comorbidities were recorded as documented in the prenatal medical record and could not be confirmed or investigated. This limited the researcher from obtaining additional information, such as the original date for the diagnosis of the comorbidity, severity of the comorbidity, or ongoing treatment plan. History of comorbidities was the only item in which access to information was restricted. Comorbidities that were diagnosed during the pregnancy were recorded as pregnancy complications.

Data Collection Procedures

A list of names and addresses of potential participants that were primigravidas and 34 weeks gestation or greater was obtained from a large academic medical center in the Midwest. Those who had not seen their provider within the past four weeks were excluded from the list to avoid contacting women who had potentially experienced a pregnancy loss. A total of 278 announcement letters providing details about the study were mailed to potential participants over a period of 63 consecutive days beginning December 2011 and ending February 2012. A total of 101 women were scheduled to be induced during this time

period with 67 of the inductions (66%) representing either elective or indications that had limited current evidence to support their current use in practice as described by Mozurkewich and colleagues (2009) and the World Health Organization (2011).

After women were identified on the induction of labor schedule and compared to the “no contact list,” a phone call was made to inform her of the study and her potential eligibility to participate. The “no contact list” included women who contacted the researcher in response to the opt out option identified in the announcement letter that described their potential eligibility to participate in an IOL study. Of the women on this list, none of them were scheduled for an IOL. The phone call was made on the same day of the women’s appointment with her provider in which the induction was scheduled (for a later date). The phone call occurred within 4-6 hours of her prenatal appointment to ensure that the most accurate recollection of her discussion with her provider about the induction and the decision making process was captured. After her questions about the study were answered on the call, if she expressed an interest in participating in the study, the initial screening process was initiated. As described previously, the data collected for this portion of the process included the age of the woman, gestational age, date of scheduled IOL, confirmation of primiparous status, type of provider, and reason for IOL. Attention was paid in identifying and selecting a diverse group of women. This included age, race/ethnicity, income level, educational level, reason for induction, and pre-induction knowledge.

Forty women met the initial inclusion criteria (primigravida, 21 years of age or older, 34-41 weeks gestation at the time of the induction, and had a non medical indication for the induction). Women who were eligible to participate in the study were receiving care from physicians; obstetricians, obstetric residents, or family practice physicians. None of the eligible women were receiving care from nurse-midwives. The women receiving care from midwives that were identified on the IOL schedule were all scheduled after 41 weeks gestation thus making the women ineligible to participate. Of the 40 women identified as being eligible for recruitment, 30 (75%) agreed to be enrolled in the study. The most common reasons provided by women not to enroll in the study included concern that they would be too overwhelmed to participate in the interview four weeks after the birth of their baby or the inability to obtain permission from their husband to participate. Lack of spousal support was identified by women of Arab/Middle Eastern descent. Of the thirty women enrolled, one woman requested to be removed from the study a month after she had completed the post-induction interview at the request of her husband. The final sample for the study was 29 women. However, of the 29 women who remained in the study, four went into spontaneous labor before their scheduled induction. These four women were excluded from the post-induction interview results discussed in the next chapter.

After the screening process was completed, if a woman was determined to meet the inclusion criteria and verbally agreed to participate in the study, the pre-induction interview questions were also collected during that phone call using the interview guide (Appendix B). All information collected was digitally recorded and

transcribed by the researcher. At the conclusion of the collection of the pre-induction data, if she agreed to continue to participate in the study she was offered the opportunity to make arrangements to schedule the face-to-face post-induction interview. Information collected from women who no longer wished to be considered for enrollment in the study was shredded and disposed of in a confidential trash bin.

The post-induction interview was scheduled four weeks postpartum during a time, day, and a location that was convenient, private, and safe for the woman. Although four weeks is a significant amount of time to have elapsed since the birth experience, prior investigators have noted that women recall their birth with great accuracy and that time alone is not a sufficient criterion for judging trustworthiness (Simkin, 1991; Simkin, 1992). Three interviews were conducted at homeless shelters, two were completed at the home of in-laws, one in an abandoned/foreclosed home, and the remaining at personal residences that the woman owned or rented.

After written informed consent was obtained, the post-induction interview began by reiterating the purpose of the study and the importance of her participation in sharing her perceptions and experience to help guide future research. A series of six open-ended questions were used for the unstructured, informal interviews that lasted approximately 30-60 minutes. A detailed interview guide and protocol was developed to provide guidance during the interview and to ensure that the interview remained true to the specific aims and purpose of the study (Appendix B). All interviews were digitally recorded and transcribed.

Consistent with grounded theory methodology, additional questions were added, altered, or deleted based on what was learned from previous interviews to clarify themes as they emerged in the data analysis. However, it is important to note that the questions were peripherally relevant as the purpose of the proposed grounded theory study was to discover the woman's main concerns related to IOL and the pattern of behavior that she used to resolve the concern. Data collection and analysis was interwoven with concept development being examined during subsequent encounters (Belgrave & Smith, 1995; MacKenzie, 1994). By the end of the data collection period, the pre-induction interview and post-induction interview questions had evolved based on insights gained from the process. The final set of questions and probes for the pre-induction and post-induction interviews can be found in Appendix E.

The interview concluded by providing each woman with an opportunity to summarize from her perspective, the top three key points from the discussion. The method of giving the participant an opportunity to bullet point the key points in qualitative research was developed by Seng and colleagues (2002) and served as a useful validation tool. The method provided additional rigor and accountability for the grounded theory method. Seng and colleagues (2002) encourage the use of bullet points from the participants to be used as an audit to verify that participants' messages are not selectively left out or misrepresented. This approach ensured that the women's main points were accurately recorded and that false perceptions or inaccurate conclusions by the researcher were not introduced into the data. Detailed field notes were completed at the end of each

interview capturing non-verbal behavior and considerations raised by the interview process for the investigator.

The participant was compensated $30 for her time in participating in the post-induction interview. Each session was digitally recorded and transcribed verbatim for data analysis. All tapes and transcripts were de-identified and only a four digit identification code was used to identify the tapes, transcripts, and field notes. Transcription was completed by the researcher and a transcriptionist who followed all guidelines for security and confidentiality. All transcribed data were compared to the audio tapes to validate accuracy.

The qualitative technique of member checking was conducted to validate data, analytic categories, interpretations, and conclusions. Member checking is a technique used by researchers to help improve the accuracy, credibility, validity, and transferability (also known as applicability, external validity, or fittingness) of a study (Lincoln & Guba, 1985). During the interviews, the researcher would restate or summarize information and then questioned the woman to determine the accuracy of the statement. Women either affirmed or denied that the summaries reflected their views, feelings, or experiences while also providing additional clarifying information. This was done frequently as opportunities arose during the normal course of the interviews. Lincoln and Guba (1985) identify this technique as being critical for establishing credibility of the findings. The overall goal of this process is to provide findings that are authentic, and original. The information collected from each interview was immediately transcribed, reviewed, and compared to the other interviews.

Medical record abstraction (Appendix D) was completed to collect information about the reason for the IOL as documented by the provider and to provide context of the pregnancy, labor and delivery, and postpartum period from a medical perspective. Additionally, the indication for the IOL, as noted by the provider, was collected and used in the analysis to compare with women's understanding of the rationale for the IOL. Clinical definitions for items collected (pre-pregnancy comorbidities or complications during the pregnancy, labor and delivery, or postpartum period) were not developed due to the variance in individual provider practice and overall purpose of the study. All data from the record was collected exactly as documented in the chart. For instance, if the provider documented that a woman was hypertensive, even in the absence of documented clinical findings such as high blood pressure (>140/90), it was recorded on the medical record abstraction form as hypertension. The purpose of the medical record abstraction was not to question the clinical judgment of the provider but rather to understand the woman's overall health and well-being from the perspective of the provider.

Data Analysis

The constant comparative method was used for data analysis simultaneously with data collection. According to Glaser (1978) grounded theory methodology is a detailed grounding by systematically analyzing data by constant comparison as it is coded until a concept emerges. Further, Glaser (1992) stated that the basic social-psychological process (BSP), the central

theme in the data, is first identified during the grounded theory method and upon its discovery an emerging concept is developed.

Each interview, through the process of constant comparison, guided the subsequent interviews. Data collection and analysis was interwoven with concept development being examined in subsequent encounters (Belgrave & Smith, 1995; MacKenzie, 1994). This process assisted with identifying consistency of the data, to continually formulate hypotheses about potential themes and reject them if not supported, to identify contradictory data by pursuing unexpected findings and to detect any potential misrepresentations of the truth. Additionally, the key points that each woman identified at the end of her interview were used to validate concepts identified from the other interviews (Seng et al., 2002).

Using the grounded theory method of constant comparative analysis, three levels of coding guided the data analysis using NVivo 10 software. First, data collected from each individual interview underwent open coding (Level I) and consisted of sentence-by-sentence examination of the data with substantive codes assigned and compared with codes identified from data obtained from subsequent interviews. As an example, a sentence from one woman's transcript, "my provider brought it up briefly with me during my visit and we scheduled it" was coded with "provider suggested-patient agreed" and "brief conversation with provider." The codes that were similar were clustered into concepts (Level II coding) with relationships between the different concepts compared. For instance, "cesarean section," "impact on baby," "increased pain intensity," "not

natural," "no risks," and "diminish risks" were analyzed and grouped together because the codes represented women's conversation about the potential risks during the pre-induction interview. As these codes appeared to cluster they were assigned to categories (Level II). The categories were composed of coded data that appeared to form patterns or exhibit similar information and were compared to other categories to ensure that they were mutually exclusive (Glaser, 1978). Continuing with the same example, the category of "risks of IOL-pre-IOL" was identified to represent the codes assigned to women's sentences about the potential risks of being induced. For some codes, they were grouped under multiple categories. For instance, the Level I code of "birth stories" was placed in two Level II categories, "sources of evidence" and "influence." An overview of the codes (Level I) and categories (Level II), organized by pre- and post- induction interviews, which were identified can be found in Appendix F.

The pre-induction and post-induction interview data for each woman was coded independently. After the completion of Level II coding, the codes were individually compared. For instance, woman A's pre-induction interview was coded first. Four weeks after the birth, the post-induction interview was coded. Once both interviews underwent Level II coding, they were compared to identify any similarities or differences between the two points time in which information was collected about her IOL. Furthermore, Level II codes for all women from the pre-induction interview were compared with the Level II codes for all women from the post-induction interview, again, to identify any similarities or differences.

Reduction of the categories through comparison to determine their appropriateness to fit within a higher order category (Level III coding) was conducted to identify thematic codes (major themes) in relation to the primary concern and behavior to resolve the concern as identified by the women. This process helped to identify the major concerns, or themes, as expressed by women. The important themes were synthesized and compared to the results to validate the findings from each phase collectively and to begin to explain any variances that may have emerged. For instance, the pre-induction interview quote, “my doctor brought it up and said she thought it would probably be a good idea-that was kind of like, what sold me on it-completely-her professional opinion” initially underwent Level I sentence-by-sentence coding. As part of Level II coding, the quote was assigned the following categories, “factors that influence IOL,” “sources of evidence,” “conversation to schedule IOL,” feelings about decision,” “helpful information,” and “sources of evidence.” Finally as part of Level III coding, the major theme that was identified was “women’s trust in their provider.” Data as part of each Level III code, such as “women’s trust in their provider,” was compared to validate findings and to identify/explain any variances. Overall, five major themes (Level III) were identified for the pre-induction interview and five major themes (Level III) were identified for the post-induction interview. The names for each of the major themes were discussed and agreed upon between the researcher, peer reviewer, and dissertation advisor. The details of these findings are presented in Chapter 5. Additional

examples that highlight specific narratives from women that went from Level II categories to each of the Level III major themes are presented in Appendix G.

Level I coding began immediately after the first pre-induction interview in December 2011. Level III coding was completed in May 2012. The entire coding process, Levels I to III, provided a framework for the researcher to maintain a conceptual understanding of relationships between concepts and how codes related to one another. Additionally, memos were used as a means for the researcher to collect additional personal, theoretical, methodological impressions, thoughts, and research ideas. Memos, according to Glaser (1978) "are that stage of generating theory which serves to connect the data and final analysis explicitly by conceptually raising the analytic formulation of the codes" (p. 84).

Finally, as will be described in Chapter 6, the major themes from Level III coding were compared to the adapted OMRU model to assess its applicability. Specifically, the findings from the pre-induction interview to identify the factors that influence pregnant women's decision regarding induction of labor including her knowledge and understanding of the risks and benefits were compared to the model elements of potential adopters (patient) and decision making process. The findings from the post-induction interview to explore postpartum women's experience of having had an induction of labor including her reflection of the decision to be induced was compared to the model elements of potential adopters (patients), decision making process, and outcomes (patient). The findings from the medical chart abstraction were used to explore similarities and

differences between the medical documentation of the women's IOL and the women's understanding of the induction was also compared to the model elements of potential adopters (patient).

Glaser and Strauss (1967) stated that the credibility (relevance) of the data should be the focus of the grounded theory research as opposed to reliability and validity. A senior emeritus professor at the School of Nursing with extensive experience in federally funded women's health research, served as a peer debriefer to review transcripts and validate findings that were identified by the researcher. She independently reviewed every pre- and post-induction transcript and coded the data. On a weekly basis, her findings from Level II and III coding were reviewed and compared with the findings from the researcher to validate findings. All Level II categories and level III major themes were consistent between both individuals and specific discussions occurred to ensure that all words being used for coding had the same meaning. Any discrepancies were clarified and consensus was reached. Additionally, the senior emeritus professor reviewed chapters five and six to ensure that the themes and concepts presented were an accurate representation of the data. As an additional measure, weekly debriefing sessions were also conducted between the researcher and the dissertation chair. This process was completed to ensure the trustworthiness of the qualitative research to avoid biases, increase theoretical sensitivity and credibility, produce collaborative analysis, and provide supportive resources.

Furthermore, as discussed previously, the researcher utilized constant comparative analysis throughout the research process to determine consistency of the data, to continually formulate hypotheses about potential themes and to reject them if not supported, to identify contradictory data by pursuing unexpected findings and to detect any potential misrepresentation of the truth. Finally, integrating frequent member checking throughout the interviews and providing women with the opportunity to identify the key points from their experience at the end of the interviews (Seng et al., 2002), provided additional techniques to validate the credibility of the data and findings.

Saturation of the data and confirmation by key informants enhanced the scientific integrity of the findings. Collecting data from 30 women, beyond the point of saturation, helped to ensure that the information received was not unique to one particular individual. The data collected and analyzed revealed similarities to indicate that there were common themes amongst the population. Ongoing discussions with the dissertation chair, other faculty mentors, and colleagues throughout the process helped the researcher avoid biases, increase theoretical sensitivity, produce collaborative analysis, and provide supportive resources.

Finally, both continuous and categorical data collected from the medical record abstraction was entered into an Excel spreadsheet. Categorical data, such as comorbidities, was entered as hypertension “1,” diabetes “2,” anxiety “3,” depression “4.” Due to the small sample size, only basic descriptive statistics was conducted. Means were calculated for continuous data and percentages

were calculated for categorical data. Additionally, side-by-side individual comparisons of data were conducted. For instance, the rationale for the IOL that was recorded in the medical record for a specific woman was compared to the rationale that the woman provided as part of the pre-induction interview.

Researcher Role

According to Krueger (1994) and Kline and colleagues (1992), people are more likely to share personal information about themselves with people who are like them. In qualitative research, the researcher becomes a primary data collector; therefore, personal issues must be identified prior to starting the research in order to identify personal beliefs and bias. This study was conducted by a white, educated, female researcher of childbearing age with access to healthcare coverage and resources. This is consistent with the average demographics of women who experience an IOL. The researcher has not personally experienced pregnancy, labor, or birth but has worked and volunteered as a registered nurse in this clinical setting. While the researcher does not qualify as an ethnic or racial minority, as a healthcare provider she has had extensive experience working with diverse ethnic and racial populations within a variety of healthcare settings. The researcher is culturally aware and competent of diversity issues and was respectful, mindful and appropriate of differences that existed.

Finally, a potential conflict of interest the researcher encountered during the interview process was when a woman reported her understanding of the

rationale for her IOL to be medically indicated based on the information provided to her by her provider and, as identified by the researcher, was actually elective or had a limited current evidence base. It was important in these situations not to challenge or undermine the relationship or information between the patient and provider. Therefore, when these situations arose, the researcher did not challenge women's understanding of the rationale or present information that would question the expertise of her provider or trust that she had established. The goal of the interview was to understand the process and experience from women's perspective and not to focus on the accuracy of the facts given to her by her provider.

Ethical Issues

Informed consent to participate in the study and to abstract data from their labor and birth medical record was obtained from women that were at least 21 years of age or older. The informed consent contained the following information: purpose of collecting the information, intended use of the information, how the questions would be asked, how the responses would handled (including confidentiality), the risks and/or benefits for the participant, and contact information for the primary investigator and the Medical IRB through the University of Michigan.

Confidentiality of the women enrolled in the study was maintained throughout the research study. A four digit number was used to identify the recorded data, transcripts, and memos. The informed consent and a document linking her name to her four digit identification code document were the only

documents containing the participant's full name. Both documents were stored in a separate locked cabinet from the secured (locked) data that was collected from the pre-induction interviews, post-induction interviews, and medical chart abstraction. The tapes of the recorded pre- and post-induction interviews were transcribed by the primary investigator and a hired transcriptionist that has worked on multiple studies for the University of Michigan. This person was briefed on the confidentiality of the tapes and agreed prior to beginning the transcription process.

CHAPTER V

Results

The women enrolled in this study participated in a pre-induction screening and interview by phone and a post-induction, in-depth, face-to-face interview. The post-induction interviews took place at homeless shelters, the home of in-laws, an abandoned foreclosed home, and at women's personal residences. Information gathered during both interviews provided insight into their interaction with their maternity care provider regarding the induction as it related to the decision making process and agreement to be induced. The data also provided information about their understanding of the induction process and risks prior to the procedure, their experience of the induction and the decision to be induced, and their recommendations for opportunities to educate women in the future about being induced. Medical information from their records was compared with women's descriptions and perceptions of the experiences that they had reported as part of the interview process.

The results of the study are organized in response to each of the original specific aims. The aims for the study included:

> 1) To identify the factors that influence pregnant women's decision regarding induction of labor including her knowledge and understanding of the risks and benefits,
>
> 2) To explore postpartum women's experience of having had an induction of labor including her reflection of the decision to be induced, and

3) To explore similarities and differences between the medical documentation of the women's IOL and the women's understanding of the induction.

An overview of the sample composition is presented followed by a discussion of findings for each specific aim. Finally, a summary of the analysis is provided. Quotes presented throughout this chapter represent exemplars from the findings of the grounded theory study rather than being inclusive of all supporting quotes.

Overview of Sample

Thirty women were enrolled in the study. One woman requested to be removed from the study a month after she had completed the post-induction interview at the request of her husband. Of the 29 women who remained in the study, four went into spontaneous labor before their scheduled induction. These four women were excluded from the final sample. To clarify, the pre-induction interview analysis included 29 women whereas only 25 women were included in the post-induction analysis. Despite the exclusion of the four women that went into spontaneous labor, they were still interviewed postpartum to provide insight into their initial decision to be induced and their subsequent experience of not being induced. The potential contrasts between the two groups (spontaneous labor vs. IOL) were reviewed but, overall, the findings were similar.

As presented in Table 14, the average age of those participating in the study was 30.2 years with a range of 21 to 41 years. Approximately a third of the women self-identified themselves as minorities representing black, Asian, Indian, American Indian, and Arab/Middle Eastern backgrounds. It should be noted that

five of the women who identified themselves as white, also indicated in passing that they had a second race but preferred and/or insisted to be identified as white for the study. According to the U.S. Census Bureau (2010), between 2000 and 2010, the number of Americans identifying two or more races increased by 32%, representing 2.9% of the entire U.S. population. The percentage of actual minorities (48%) in the study was greater than the racial identity that women preferred (31%) to be identified as for the study. Table 14 represents the preferred racial identity of women.

Greater than half had a college degree and commercial insurance. All women identified at least one support person that was available to them throughout the pregnancy and for labor and birth. Three women between the ages of 38 and 41 also utilized the services of a doula. Approximately half of the women attended childbirth preparation classes. For those who did not attend classes the most common reasons included inconvenience (did not occur during a time that worked with their schedule) or it was cost prohibitive. Cost was commonly expressed by those without commercial insurance and whose job was at or slightly above minimum wage. The demographics of the women participating in this study were generally consistent with the national demographics of women who are induced; with the exception of race. According to the national demographics, the majority of women who are induced are non-Hispanic white (Coonrod et al., 2000; Dublin et al., 2000; Glantz, 2005, Murthy, 2011). For this study, there was a relatively even distribution between the number of non-Hispanic whites and minorities.

There are a total of eight offices (practice sites) representing the hospital's maternity care system. Within the practice sites, there are four maternity care provider groups. These groups include obstetricians, family medicine physicians, nurse-midwives, and obstetrical residents. A large percentage of women who were scheduled to be induced were primarily from one particular maternity care office. It should be noted that this site represents the office where obstetrical residents practice. Of the women scheduled to be induced, none of them were eligible from Office site #8. This site represents the office where nurse-midwives primarily practice.

Table 14

Demographics of Enrolled Women (n=29)

Age, years		
Mean	30.2	
Range	21 – 41	
	n	%
Race*		
White	20	70
Black	4	14
Asian	2	7
American Indian	1	3
Indian	1	3
Arab/Middle Eastern	1	3
Level of Education		
High School	8	28
Vocational	3	10
Associates	1	3
Bachelors	7	24
Masters	6	21
Doctorate	4	14
Insurance Coverage		
Commercial	17	59
Medicaid	11	38
Military	1	3
Provider Office Location (Type of Providers at Location)**		
Office #1 (OB only)	3	10
Office #2 (OB and CNM)	6	21
Office #3 (OB and CNM)	3	10
Office #4 (OB, CNM, and NP)	2	7
Office #5 (Family MD only)	1	3
Office #6 (OB Residents only)	12	42
Office #7 (OB and CNM)	2	7
Office #8 (CNM only)	0	0
Attended Childbirth Classes		
Yes	15	52
No	14	48

*Represents self-identified, preferred racial identity of women.

**OB represents obstetricians, CNM represents certified nurse-midwives, NP represents women's health nurse practitioners, Family MD represents family practice physician, and OB Resident represents obstetrician resident..

Specific Aim #1: Pre-Induction Interview Results

The first specific aim of the study was to identify factors that influence pregnant women's decision regarding induction of labor including their knowledge and understanding of the risks and benefits. During the pre-induction interview women were asked to talk about the conversation that they had with their provider regarding being induced. This conversation was either initiated by the provider or, less commonly, by women. Although most of the inductions were provider initiated, ten women asked for an induction without a medical reason (elective IOL). For the purposes of this study, these two types are referred to as provider initiated and patient initiated. An assumption of the aim was that women are part of the decision making process to be induced. However, a key finding, as will be discussed later, was that this assumption was not correct. Women indicated that due to the lack of patient activation and informed decision making, they were not deciding to be induced but rather were agreeing with their provider's decision or recommendation. Therefore, the findings presented throughout these sections are reported based on this knowledge and represent the perspective of women agreeing to be induced as opposed to make a decision about their care.

Through the process of constant comparison and coding, as described in the previous chapter, five major themes emerged from the pre-induction interview data. These themes included 1) safety of baby, 2) women's trust in their provider, 3) relief of discomfort and/or anxiety, 4) diminish potential or actual risks, and 5) lack of informed decision making. Appendix G and H provide

examples and an overview of linkages between Level II categories with the Level III major themes. The following section provides both contextual information from the pre-induction interview, indicated by headings in italics, and examples representing the five major themes that emerged from the data, indicated by headings in bold.

Conversation to Schedule IOL with Maternity Care Provider

Women described their conversation for patient initiated inductions as being brief that included minimal dialogue with their provider. Women would ask for an induction and their provider would agree to schedule it without discussion or resistance. Women generally described both types of encounters (provider or patient initiated inductions) as being brief (less than 5 minutes) without opportunities to ask questions or express concerns. A 23 year old woman that was scheduled to be induced at 39 weeks for being post-term nonchalantly described the conversation with her provider.

> Really, all that he said, it was quick, was that he wanted to take me early just to make sure that I am ok and that the baby is ok. I was like, oh, ok, whatever to keep the baby safe. The doctor just kind of told us that he was going to take me early if I don't go into spontaneous labor before 39 weeks.

A 28 year old woman who was scheduled to be induced at 39 weeks for macrosomia, currently a non-evidence based indication for induction of labor, also highlighted the brevity of the conversation.

> They said, you know, that they kind of don't want the baby too big so an induction would be the best thing to do if I go to 39 weeks. My provider brought it up briefly with me during my visit and we scheduled it.

A few providers would also bring up during the conversation that proceeding with an induction was the policy of the hospital to induce for a specific

indication, typically diabetes, hypertension, or post-term gestation, and therefore the provider or woman did not have an option as to whether or not an induction would be scheduled. For instance, a 33 year old woman that was scheduled to be induced at 40 weeks for being post-term was under the impression that regardless of the situation, the provider must follow the hospital policy.

> My understanding is that it was my doctor's preference and the hospital's policy that they don't let you go over your due date. So the discussion was about being induced so that I wouldn't go over my due date. I have been led to believe that no one is allowed to go past their due date.

For this study, the conversation about the necessity to follow hospital policy was presented to women as a rationale by only obstetrical residents. Obstetricians and family practice physicians did not bring up this idea to women as part of their conversation about being induced. It is unknown whether residents thought they were following a hospital policy or were simply following what they had been told to do in these circumstances.

Women described their conversations with their provider as not being a shared decision but rather a decision that was made by their provider. Women expressed that they were expected to agree with the provider's decision based on the rationale that the provider had presented. For instance, a 27 year old registered nurse who was expecting twins was told that she needed to be induced at 38 weeks.

> Essentially she just scheduled it and didn't ask us about whether we wanted it or not. It was her decision. Basically, she just said that she doesn't want me to go past 38 weeks because I have twins. She wanted to schedule it. She said things can happen with the babies. Like, they can go into fetal distress and be uncomfortable and their rate getting too high, or something like that, or maybe it was heart rate going too low. That is all she said.

Currently there is a lack of evidence to support twin gestation as an indication for induction as described by the Mozurkewich (2009) review. Consistent with other women in the study, this woman was not given the opportunity to make a decision. She was simply told by her provider that it was going to happen and she was expected to agree.

Major Theme I: Safety of Baby

The provider initiated IOL conversations, as reported by the women in the study, were focused on the provider's rationale for the induction and the potential risk to their baby if the induction was not carried out. Pressure to be induced by the provider based on the safety of the baby was a concept that women spoke about during the interview.

The safety of the baby was emphasized by the provider as being key information for the decision. The safety of the baby was typically the main point that women identified when describing their conversation with their provider. Therefore, her agreement to be induced was focused on preventing harm and/or risk to her baby. As an example, a 33 year old woman stated:

> Basically what he said to me was that at 39 weeks the baby has reached all of the benefits from being inside of me. And then he, you know, told me that he would feel comfortable inducing me because of the potential problems with blood pressure. He thought that it would be necessary to induce so it wouldn't become an emergent situation. But I felt, like, rushed. And I didn't feel like I had enough time to think through it. And I couldn't ask the questions that I knew that would come but I don't want to put my baby at risk.

An induction was also presented by the provider within the context of preventing death or a stillbirth. As with other women in the study, this was a salient issue. A 32 year old woman scheduled to be induced for post-term gestation at 40 weeks

emphasized that the baby's safety was paramount in her agreement to be induced.

> He told me that it is a good idea to be induced to prevent a stillbirth. We did not have any discussion about the risks from the induction we just spoke about that it was a good idea to be induced to prevent stillbirth. The high risk of stillbirth really made me realize that this was a good idea to be induced.

For women who were unsure of the induction, when the safety of the baby was brought up, they instantly agreed with the provider's decision to be induced. As women discussed their conversation with their provider, the safety of the baby appeared to be the preferred phrase used by providers when discussing an induction in which the woman was hesitant to accept. Discussing the safety of the baby positioned the provider's potential preferences for an induction as superior to what the women may have desired. It also limited any further conversation or questions by the women about the appropriateness of the induction.

The indications identified by providers for the IOL, as reported by women, ranged from macrosomia to hypertension (Table 15). Over 30% of the indications were focused on preventing the unknown (fetal distress, harm to the baby, preeclampsia, stillbirth). Half of the women in the study reported that their provider indicated that an induction was needed for the safety of their baby as a form of prevention to control the actual or potential circumstances. Although some women had briefly indicated that their preference was to avoid an induction, when the safety of the baby was presented, they indicated that the induction became an essential part of their care and subsequently they altered their birth plan accordingly. However, as expressed by a 27 year old woman that

was scheduled to be induced at 37 weeks gestation, even though she agreed to the induction she was hoping that she would go into spontaneous labor.

> I am hoping that I don't have to do it [induction]. You know, I know that there are risks if I am not induced but I also know that it is better to be induced than to cause potential harm to my baby. I am hoping. I am trying to do everything to go into labor on my own because I really don't want it. I just want it naturally.

Advanced maternal age and macrosomia were non-evidence based indications for IOL that providers cited when discussing the rationale for the induction with women. . Post-term gestation, hypertension, gestational diabetes, and twin gestation were also indications that the providers presented to women as indications for the IOL. These indications are aligned with ACOG's 2009 clinical bulletin on induction of labor and the hospital's policy on acceptable indications. However, these indications are not aligned with the findings by the AHRQ review (2009), Mozurkewich and colleagues (2009), or the World Health Organization (2011). These commonly used indications currently have limited or insufficient evidence to support their use in practice. As will be discussed later, after reviewing the medical record women in this study were experiencing mild symptoms related to these indications and were successfully being managed without complications, commonly in the absence of medical interventions such as medication. Of the twelve post-term inductions, only one was scheduled at or after 41 weeks gestation as suggested by the evidence. The others were scheduled before 41 weeks gestation.

Table 15

Provider Rationale for Induction as Reported by Women* (n=29)

Indication	n	%
Advanced Maternal Age	2	4
Gestational Diabetes	3	5
Hospital Policy/Protocol	3	5
Hypertension	3	5
IUGR (Potential/Borderline)	2	4
Lupus	1	2
Macrosomia	7	14
Oligohydramnios	1	4
Post-Term	12	24
Potential Fetal Distress	1	2
Prevent Risk/Harm to Baby	14	27
Prevent Preeclampsia	1	2
Prevent Stillbirth	1	2

*In some instances the provider identified multiple indications for one woman.

Pressure to be Induced Based on Safety of Baby

Some women mentioned that they felt pressured to agree to be induced. Two of these women declined the provider initiated induction multiple times but were met with resistance and added pressure until they eventually agreed. The provider presented the seriousness of the potential risks and safety of the baby in order to convince the women to be induced. For instance, one woman that declined the induction had been informed by an obstetrical resident that her induction was necessary because of oligohydramnios and post-term gestation.

> He kept on pushing me because he was saying, “this is what we’re gonna do,” “this is when we’re gonna do it,” instead of asking what was my birth plan that I had created. I cried. I totally broke down and then he stopped and he kind of stopped yelling at me. And then he said, “well then, what would you want to do?” But he didn’t ask until after I kind of broke down. And so after that I said, “I don’t see the point of being induced.” But he talked about the risks to the baby, that I was putting my baby at risk. So, I agreed.

Although her concern about the lack of necessity to be induced was not acknowledged by her provider, once he mentioned the safety of the baby, she agreed. During the interview she indicated that she was induced because of

oligohydramnios, post-term gestation, and the safety of the baby. When reviewing her medical chart, oligohydramnios was later noted as an error by the resident and that she was only 39 weeks gestation. There was no indication of fetal distress or concern for the safety of the baby. Furthermore, she was never informed that oliogohydramnios was diagnosed in error before agreeing to the induction.

The other woman who initially declined the induction multiple times but eventually agreed to schedule the IOL at 40 weeks was also receiving care from the resident practice.

> Well, I was really against it. When they told me that they wanted to schedule me at 39 weeks I said no. They kept on telling me that I needed to be induced and that going past my due date could result in risk to the baby. I said during the appointment that I wanted to let her come when she comes. When she is ready, she will come. I felt pressured by this doctor to be induced but I said no. I kept on saying no. I was crying, you know. I started questioning if I was at the right place for my care because they were not listening to me. But I don't want to have any unnecessary risks to the baby. I was repeatedly told that if I went past my due date I would be introducing more risks to the baby. It would be safer for the baby to be induced. I didn't want to put my baby at risk.

In contrast, not all women had a negative experience when discussing the option of an induction. As mentioned earlier, most of the inductions were provider initiated. However, ten women asked for an induction without a medical reason, an elective induction. Their provider agreed to schedule the induction without challenging the woman's request. Of the patient initiated inductions half were with residents while the other half were with obstetricians. Women who initiated the conversation with their provider to be induced discussed the conversation in positive terms.

> My visits had been going pretty well and there was really nothing to talk about. So, I just asked him when I was going to get induced and if it could be before 40 weeks. I am ready. So, he opened up the calendar, showed it to me, and said, "pick a date that works for you."
> – 31 y.o. woman induced at 39 weeks gestation

> I asked if I could be induced and he said, "yeah." He found a date and signed me up. It was as easy as that. It wasn't something that I had to fight for or keep asking for.
> – 26 y.o. woman induced at 39 weeks gestation

Of the patient initiated inductions, one woman that requested to be induced had presented the idea to her provider that she wanted to birth her first child on her husband's birthday. Perceiving that the provider was in agreement with this idea, she scheduled her induction on her husband's birthday. During the pre-induction interview, she spoke about the excitement of being able to have her baby on her husband's birthday. However, the provider did not share with her that it was highly unlikely that she would be induced and birth her baby on the same day.

> I asked her to induce me. Wednesday is my husband's birthday. So, I personally, want it to be, if I had the choice, to have the baby on the same day as my husband's birth for our first kid. So now I am going to be induced on Wednesday because I want my first child to be born on my husband's birthday [Wednesday]. I am so excited.

Her baby was born four days after her husband's birthday. It should also be noted that the recruitment and enrollment period of the study coincided with two major holidays. None of the women that participated in the study indicated that they wanted the induction in order to schedule the timing of the birth on or around a holiday. Although several women did joke that an advantage of being induced before the end of the year was that they could claim the baby as a dependent and receive the tax benefit.

Major Theme II: Women's Trust in their Provider

The women in the study were asked during the pre-induction interview to identify what information they found most helpful in making the decision to be

induced. Women consistently identified that they trusted the information and rationale that their provider presented and cited this as the most important element in their agreement to be induced. Women accepted the rationale that their provider cited without cause for concern or question. The rationale presented by the provider was further justified by the idea that the safety of the baby was in jeopardy if they did not proceed with the induction. Two women whose provider recommended an induction for macrosomia, a non-evidence based indication, had the following to share about trusting her provider's decision.

> My doctor brought it up and said that she thought it would probably be a good idea. That was kind of like, what sold me on it. Completely. Her professional opinion.
> – 25 y.o. woman induced at 38 weeks

> My provider has been good all along with the whole pregnancy. I trust him and this was the option that he thought was the best. You know. I am going with that.
> – 36 y.o. woman induced at 39 weeks

Although women were further asked to share how friends and family, childbirth education classes, books, and the internet influenced the conversation with their provider to be induced, they indicated that it either did not influence it or it had a marginal impact. These other sources of information were considered secondary to the expertise and recommendation of their provider. The other sources of information were only used to learn more about the actual process of an induction and not to guide the conversation with their provider. Women trusted the expertise and recommendations of their provider. For most women, they had been seeing the same provider throughout their pregnancy and had developed a relationship.

As part of the conversation about helpful information and trusting their provider, women continued to describe that the safety of the baby influenced their agreement to be induced. A 33 year old women who stated that she was being induced for gestational diabetes and macrosomia was confident in the knowledge that her provider told her about the benefits of the induction to ensure the of safety her baby. As part of this discussion, her provider mentioned that she was full-term at 38 weeks gestation and told her to essentially disregard the risk of cesarean section.

> It was very helpful that the doctor told me, shared her knowledge with me. She told me that my placenta might be getting old and it won't give the baby enough nutrition or oxygen. It might endanger the baby. Basically, my doctor said that at 38 weeks is full-term and the baby is ready to come to the world. She said, "don't worry about it. You don't want a big baby." So, I feel pretty comfortable with that answer. I trust her. This is what they do for women with gestational diabetes. Oh, and she also said that a cesarean, it is not necessary considering that everything has been good so far.

Major Theme III: Relief of Discomfort and/or Anxiety

While women noted the importance of their provider's recommendation as a key factor influencing their agreement for IOL, the influencing factors are actually more complex. Although a provider appears to be able to present a medical rationale framed within the context of safety for the baby as a key influencing factor, during the pre-induction interview, women also expressed some conflicting feelings. A common response expressed by women was that they were very happy with their provider's recommendation to be induced. This comment was made even after they had identified that the IOL wasn't their decision, that they felt pressured, or that the conversation was quick and very little information was provided. They explained that the IOL provided relief from their discomforts of being pregnant and/or their anxiety related to not knowing

when or where the onset of labor would take place. Regardless of whether the induction was provider or patient initiated, almost every woman expressed these feelings during the pre-induction interview.

Women expressed their feelings about relieving discomfort associated with their pregnancy in the following terms.

> I wish that it could happen sooner. I am just done being pregnant. I know that sounds terrible. You know, the fact that we know that she is growing fine, I am ready. It is time. I did ask if it could be earlier and she said no I cannot do it until 38 weeks. I am just uncomfortable which, unfortunately, is not an indication to do an induction. I am disappointed about that.
> - 31 y.o. woman induced at 39 weeks gestation

> You know I am at the point where it is uncomfortable to walk, to sit, to lay. I am uncomfortable at all times. It would be great if this whole thing was natural, let it happen on its own, but I am miserable.
> – 41 y.o. woman induced at 40 weeks gestation

The idea of having control was discussed by many women that participated in the study. They repeatedly brought this idea up during the discussion.

> For me personally, it is kind of a relief to know when and to know that I will be where I need to be when I go into labor. Waiting for labor to start is kind of like, it causes anxiety. There is a lot of built-in anxiety especially as a first time mother and not knowing what to expect. Now I have more control over my birth because I know when it will happen and I will be at the hospital when it starts.
> – 36 y.o. woman induced at 39 weeks gestation

> I am at peace knowing that at this point, on this day, I know when it is going to happen. It is like I have a resolution to the situation. I kind of know everything now. I don't have to worry about where I am going to be at when everything starts. I won't be standing up in front of a group of people, or not knowing if I will be at home. Now I have a time. When it is planned, all of those things take care of themselves and go away. There is a sense of relief.
> – 41 y.o. woman induced at 40 weeks gestation

To better understand the contrasting role of the provider's recommendation to schedule an induction with women's underlying personal desires for an induction, women were asked if they would proceed with the

induction if their provider had not presented a rationale for it. They responded repeatedly with, “that is a difficult question to answer. I don’t know.” With the exception of the four women who preferred a natural childbirth without an induction, the other women (n=15) who were scheduled for a provider initiated induction were unable to provide a direct answer. Thus women’s desire to relieve their discomforts associated with pregnancy while also relieving anxiety by gaining control over the timing of their birth was a critical factor in their agreement to be induced. These factors combined with the influence of the provider’s statements about the safety of the baby created a confluence that encouraged women to accept the decision to be induced instead of to question it.

Major Theme IV: Diminish Potential or Actual Risks of IOL

Overall, women had a difficult time identifying the risks associated with being induced. They were able to share the rationale that their provider discussed with them and the benefit of being induced to reduce potential harm to the baby, to reduce discomfort, and to reduce anxiety but they were unsure of the actual process of being induced or the risks. For those that could identify potential risks, it was from their own independent searching on the internet that they quickly conducted after the induction had been scheduled. Women agreed to be induced without obtaining information by their provider about the process, risks, or options. They spoke about feeling informed about the IOL.

For the two women who identified cesarean section as a potential risk to being induced, they spoke about it very briefly.

> The problems that I have heard about inductions and the need to have a cesarean section, the higher rates of c-section, at least from what I have heard is because the cervix is not ready.
> – 33 y.o. woman induced at 40 weeks

A few women identified that an induction was associated with the risk of increased pain intensity. One woman knew that she did not want to receive pitocin because it would increase the strength of the contractions. However, she was not informed by her provider that pitocin would be the primary medication for her induction.

> I can't remember the medication exactly. I think that it starts with a "p." I know that it is one of the medications that I don't want. I have been told on more than one occasion that the medication causes you to have harder contractions. Painful contractions. I don't want to go through extra pain.

In contrast, one 30 year old woman was well informed about the risks of being induced. Her colleague at work had provided her with the documentary, "The Business of Being Born" after she found out that she was scheduled to be induced. This movie highlights, in detail, the risks of common medical interventions for birth, the lack of evidence to support these interventions, and an emphasis on respecting the natural process of childbirth to reduce harm to both mother and baby. As a result of the movie, the information presented caused her to question her agreement to be induced. However, despite her feelings against the induction based on this new knowledge she was convinced that she must proceed. When she expressed a desire to cancel the induction with her provider, an obstetrical resident, he presented the necessity of the induction for the "safety of the baby" to convince her to follow the original plan. She agreed and was induced at 40 weeks for being post-term.

> It is kind of disappointing, I guess. I didn't want this to happen. I wanted to let my body do this when it was ready, when she [baby] was ready and not forcing it to happen.

> Sometimes I wonder, why would I do this if it isn't natural? If she [baby] isn't ready, why would I agree to be induced considering the risks? But then I think about what my doctor said that I am doubling her risks by not being induced. That she might die if I go past my due date. So, who I am to question that? Who am I to put my child at increased risk? I have to accept the risks of the induction.

With the exception of this one woman, when women asked about their thoughts regarding the risks associated with being induced, whether they were aware of the risks or not, they diminished the actual or potential risk. They focused only on the elements that were of most concern to them; such as the excitement of seeing their baby soon or being in a safe place to have their baby.

One way that women diminished risks was by stating that birthing at a hospital provided a safe place where high quality care would be available. If something happened, they were confident that everything would be okay because they were at the University hospital.

> Risks are possible with anything that you do. I am ok with it because if something happens I am at the right place.
> – 26 y.o. woman induced at 40 weeks

> Being at the University hospital kind of takes my fears away about any risk. We will be at the right place.
> – 31 y.o. woman induced at 39 weeks

Others diminished the severity of the risks because they viewed it as a common procedure.

> Well, I know, I don't think that there is a lot of high risk with inducing. I mean there is some risk but induction is not uncommon.
> – 41 y.o. woman induced at 39 weeks

> There really isn't any downside of being induced. So many women have been induced. I know a lot of women that were induced. The birthing process went faster than natural.
> – 41 y.o. woman induced at 39 weeks

While others diminished the risk by stating that their body is ready and therefore not susceptible to the risk.

> Everything seems to be progressing for me. It is just a little slow. Every week my exam has improved. I don't want to increase my risk of complications but I think everything will go smoothly. I feel like my cervix is going to be ok. It is ready. It will be ok.
> – 33 y.o. woman induced at 40 weeks

> When they said that since I am already dilated to 2 centimeters and that she should react pretty good to the pitocin, I wasn't worried about the c-section. I am already dilated and she is doing good and doing what she is supposed to be doing so I feel ok about the risks.
> – 21 y.o. woman induced at 38 weeks

Finally, other women diminished the risks because they felt that their desire to end the pregnancy superseded the risk:

> I mean I am concerned about the risk but I am ok with it. I just don't want to be pregnant anymore.
> – 34 y.o. woman induced at 41 weeks

> I am apprehensive about the induction because of the risks but I am miserable and so uncomfortable. I can't breathe.
> – 36 y.o. woman induced at 37 weeks

Overall, women were unable to share the process, risks, or options associated with an induction. For those few women who had been told or had found information about a potential risk, they diminished its potential to happen to them.

Women Felt Informed About IOL

Although women were provided with limited information from their provider about the risks of being induced before agreeing, when women were asked to share how informed they felt going into the induction their responses ranged from not feeling informed to feeling very informed.

The majority of women expressed that they were informed. In fact, it was not uncommon for women to confidently state that they were very well informed as described by this 28 year old woman.

> I am very well informed. I feel that I am informed as much as possible right now. There is always going to be 'what ifs.' There is always going to be potential challenges that may come up. There will be things that I just don't know about but I feel that I have been told everything that I need to know that is a potential. So we will just have to wait and see how I react to it. If I knew more about it, I might have more questions but I don't know what questions to ask. I guess I will learn while it happens.

For some women, after identifying how informed they felt, they proceeded to share the information that reinforced their response. This information was generally from their provider and was specific to the logistics of the induction (i.e., a nurse would call them regarding the time to arrive at triage) and not on the risks of the induction or options.

> I feel informed. Well, my doctor basically scheduled me to be induced tomorrow but they will call me today to let me know what time they want me to go in. So, I know about what is going to happen. You know, about how I have to go through triage and how they are going to take me to my room and when I am in the room they are going to set-up IVs in case I need them and they will do blood testing.
> – 21 y.o. woman induced at 38 weeks

A few women felt that they did not have enough information about the upcoming induction but expressed that they trusted that their provider would give this information to them as needed. They diminished any concern that they may have had related to not having enough information by expressing that the information would be given to them when it would be needed.

> I am not really informed. We just really selected a time and a date. No information was given. We were just told that a nurse would call us about coming in for the induction. We are not prepared at this point. We are a little in the dark right now about it but we trust that our physician has provided us with all of the information that is needed right now.
> – 33 y.o. woman induced at 40 weeks

Major Theme V: Lack of Informed Decision Making

As women continued to discuss how informed they felt, they also indicated that they wanted additional information. To further explore women's contrasting thoughts about feeling informed but wanting more information, they were asked

to identify in more detail what they would like to receive from their provider, nurses, online resources, books, handouts, or through childbirth education classes. Woman proceeded to identify a desire for general information as well as more and specific details about the process, medications used, the risks and benefits involved, and alternative options. The brief encounter with their provider about scheduling an induction did not include this type of information nor did it include a discussion about the information before a decision was made to be induced. As highlighted by many of the previous quotes, lack of informed decision making was a major theme identified throughout all aspects of the pre-induction interview. However, the theme was discussed in greater detail by women when they spoke specifically about the information that they had not received from their provider but felt that they should have been given.

A lengthy discussion about the desire for more information came from women regardless of whether or not they attended childbirth education classes, indicating that these classes may not be providing adequate information about IOL. Women who did not attend childbirth education classes said the following.

> Probably more information about the actual process and like, the drugs that they use. I really want to know this information in some sort of informational sheet that basically says this is the medication that we will use or won't use. This is how it is used and, you know, what is involved and things like that. I think that I would like to know the risks and benefits.
> – 31 y.o. masters prepared woman who was induced at 39 weeks

> Basically, is it painful? What should I expect? What is my body going to go through for the induction? Is it harmful for the baby? Basically, just the procedure. What do they do and what my body will do? Obviously my body is going to be forced to go into labor but there could be other things, there could be pain, being dizzy. You know, anything, anything extra that can happen. The risks. I should know this. We didn't talk about it.
> – 25 y.o. woman with some college education who was induced at 40 weeks

Women who attended childbirth education classes also wanted more information about being induced.

> I asked the doctor about the number of c-sections at the hospital and how many are for women that were induced and he didn't know the answer. And that was the end of the conversation. I want to know the average number of women that are induced and end up with a c-section. I want to know the likelihood that I will need a c-section based on the statistics. I want to know. He just didn't know the answer and I am not sure that the information is even available. I don't know if they would really tell people that anyway.
> – 30 y.o. masters prepared woman who was induced at 40 weeks
>
> More on the risks and problems. When they say that an induction increases the risk of a c-section, what would cause the need to have a c-section? How would I know if I needed a c-section? What am I looking for that would determine that I would need a c-section? I don't understand how an induction can cause me to need a c-section. I want to know why.
> – 26 y.o. woman with vocational training who was induced at 39 weeks

Although women felt that they should receive more information about their upcoming induction, at no point did they suggest that they planned on contacting their provider to obtain this information. In fact, they did not indicate any intention of seeking out this information through other resources such as the internet. It is challenging to reconcile these conflicting perspectives. Women indicated they were informed about the IOL but at the same time identified a long list of items that they wanted to know more about. At the beginning of this study, it was unclear as to whether or not women would receive this information at any point. However, as will be discussed later, the information was presented to women after they had been admitted into the hospital for the induction.

To explore the idea that women felt informed but wanted more information yet were not going to seek it out, they were asked to talk more about what they were primarily thinking about as they were preparing for their upcoming induction. Their responses provided important insight. The women stated that their frame of mind was not focused on the actual induction or their self-identified knowledge gap about it. Instead they were focused on the outcome of the

induction, the excitement of seeing their baby soon. Women repeatedly spoke about it with great enthusiasm. Their voices were joyous with nervous laughter.

> I am excited. The main thing that I am thinking about is that I am going to see my baby. I am kind of nervous but what first time mom isn't?
> – 23 y.o. woman induced at 39 weeks

> We are finally going to get her out and see her. I am not trying to focus on too much of the other things.
> - 26 y.o. woman woman induced at 39 weeks

Although women recognized a knowledge gap, their focus on their upcoming birth and seeing their baby superseded a desire to be fully informed.

The first specific aim of the study was to identify factors that influence pregnant women's decision regarding induction of labor including their knowledge and understanding of the risks and benefits. During the pre-induction interview women were asked to talk about the conversation that they had with their provider regarding being induced. Through the process of constant comparison and coding, as described in the previous chapter, five major themes emerged from the pre-induction interview data. These themes included 1) safety of baby, 2) women's trust in their provider, 3) relief of discomfort and/or anxiety, 4) diminish potential or actual risks, and 5) lack of informed decision making.

Specific Aim #2: Post-Induction Interview Results

The second specific aim was to explore postpartum women's experiences of having had an induction of labor including her reflection of the decision to be induced. Through the process of constant comparison and coding, as described in the previous chapter, five major themes also emerged from the post-induction interview data. These themes included 1) lack of informed decision

making/limited patient activation, 2) IOL as part of a checklist, 3) women's trust in their provider, 4) happy with IOL decision, and 5) opportunities to improve the experience of the IOL process. Appendix G and H provide examples and an overview of linkages between Level II categories with the Level III major themes. The following section provides both contextual information from the post-induction interview, indicated by headings in italics, and examples representing the five major themes that emerged from the data, indicated by headings in bold.

Reflection of the Experience of the IOL Process

Four weeks after the induction, women were asked to share their experience of having been induced during a post-induction, face-to-face interview. In response, women began the conversation by talking about what they considered to be the most important information to share about their experience. The women in this study started the discussion by focusing on the unexpected events that occurred as part of their induction and birth. These events ranged from the impact of the induction on their baby to having a cesarean section. A 31 year old nurse practitioner induced at 39 weeks said that she was surprised that the induction affected the health of her baby.

> When she was born, they had to take her to the NICU for a little bit because of her breathing, something to do with the induction. It was scary. I didn't know that could happen.

For the women who were surprised by the impact of the induction on their baby, they spoke about it with uncertainty and hesitation. They weren't exactly sure of what happened to their baby.

> There were some issues with her, the baby, I mean there were some, I think they called them decels, I guess, which meant her heart rate, you know, went down at the end of contractions because of the induction or something like that.

Woman were surprised that they were unable to eat or that their mobility would be limited. These basic details of the induction were not provided to women until after they had been admitted to the hospital and the induction had begun. While women were animated with their gestures and laughed as they described the omission of this detail, under the humor, they indicated that this information should have been provided to them.

> They kept me tied to the bed because of the induction. I would have been more comfortable being a little more mobile than I was able to be. All of the monitors because of the induction, it was too much. And then no eating! Oh my, and only ice chips. That was not expected.

Women also mentioned with laughter that they were surprised by the pain intensity associated with the induction. A 21 year old woman induced at 38 weeks used different animated voices to emphasize key points as she described her experience with pain.

> It was excruciating. Like, before they started to induce me, I was all happy. After they started the IV in me that's when the contractions started harder and fast. That's when all the pain came on, hard and fast. I expected pain but I just didn't know how bad it was. I felt like I was going to die. It was real bad pain. The contractions from the induction were awful.

Every woman spoke about how surprised they were about the length of time for the induction. Women were not informed by their provider about how quickly or long the process could be for an induction. There were women who were surprised that the induction was a fast process.

> I expected it not to go that fast. 'Cause the nurse told me it was probably going to be like a two to three day process. But they said I was ready to push in less than eight hours and I was like, "oh man, seriously?!" I mean come on I didn't expect it to go that fast. – 24 y.o. woman induced at 41 weeks with some college education that did not attend childbirth classes

While a greater number of women were surprised that the induction took so long.

> When I left my doctor's office, she led me to believe we're going to go in, we're going to do the Pitocin, she could feel the baby's head, and so she said, 'this is gonna be super good and easy.' Not so much. It took longer than I had expected, for sure. In my mind an induction meant we're going in on Friday, we're getting induced at whatever time, and we're having a baby within 12-24 hours. That was not my experience at all.
> – 41 y.o. woman induced at 39 weeks with bachelors degree that attended childbirth classes

For women who needed a cesarean section, although they had laughed about various portions of their experience up to this point, they would suddenly switch to a more serious tone and in many instances would begin to cry when talking about it. While a few women had mentioned that they were made aware of the increased risk of a cesarean section with an IOL, most were not informed about the risk until after they had been admitted to the hospital. The risk of and subsequent need for a cesarean section associated with an IOL was a surprising and emotional unexpected event for women. In general, the women in the study did not expect that their first birth experience would result in a cesarean section. When they learned upon admission to the hospital that there was an increased risk of cesarean section associated with the IOL, they were surprised. Subsequently, it was very upsetting to those who then needed a cesarean section.

> The c-section, I didn't expect that. [crying] I mean, that was something that was unexpected. This is hard to talk about. [Took a 10 minute break to regain composure]
> – 33 y.o. woman with doctoral degree that attended childbirth class who was induced at 40 weeks

Furthermore, women who needed a cesarean section (n=12) associated it with a failed induction and/or a failure of their body to birth their baby. One 24 year old woman placed personal blame on her body for not being able to have a vaginal birth.

> The fact that I didn't go into labor quicker really surprised me because the signals my body was giving me. I just really thought that my body was going to do it. I was in shock that nothing happened that way. I thought it would. [crying] I thought that I would be able to have a vaginal birth. I missed out on the birth because it was a cesarean. I didn't expect to have a c-section. I really thought that my body was going to do it on its own.

Major Theme I: Lack of Informed Decision Making/Limited Patient Activation

As women discussed their induction experience from the perspective of the unexpected events that occurred (pain intensity, impact on baby, no eating, limited mobility, and increased risk of cesarean section), it became apparent that these items were not explained to women prior to agreeing to be scheduled for an induction. Instead women were told about the drugs that would be used, the process, risks, and options only after they had arrived to the hospital for their scheduled induction. Once they were out of triage and in their room, a nurse would come in and go over the details of the induction. At this point, this was the first time that women had been fully informed about the induction. However, it was arguably too late for her to change her agreement to be induced. She had agreed and signed up for the procedure, had mentally prepared to see her baby soon, and was receiving this pivotal information after having been admitted into the hospital while sitting in her room. How does she back out at that point?

As women recalled their experience of having been induced, they frequently discussed their thoughts regarding the level of preparation that they felt going into the induction. For the few women who felt well prepared, they typically had a positive induction experience (quick induction and no cesarean

section). In some instances, they expressed the idea of feeling informed and/or prepared as being focused on the logistics of the induction.

> You know, I felt pretty well prepared. I mean they give you this sheet of paper that kind of tells you what's gonna happen. It tells you that a nurse will call you to give you a time to come in and it tells you where to go, those kinds of details.
> – 28 y.o. woman induced at 40 weeks that attended childbirth classes.

However, women who had a negative experience (long induction and/or had a cesarean section) indicated that they were unprepared for the induction. It is worth pointing out that those women who indicated during the pre-induction interview that they were well informed and prepared for the induction no longer felt this way during the post-induction interview if they had a negative induction experience. A 38 year old woman that had a cesarean section spoke about the conversation she had with her provider about being induced when commenting that she was not prepared.

> The only thing we talked about during the appointment was choosing a date and that someone will call me on the date to let me know when to come in. I didn't feel prepared because I didn't know the details.
> - 38 y.o. woman induced at 41 weeks that did not attend childbirth classes.

A 33 year old attorney, who was familiar with the concept of informed decision making, spent a large portion of the post-induction interview recalling the conversation with her provider and the emphasis on the safety of the baby to persuade her to have an induction. Many women used variations of "lack of informed consent" and "lack of informed decision making" as they discussed their experience. For the attorney, she was emotionally passionate when describing her perception that there was a lack of informed decision making.

> I hate to say it but the induction was kind of a non-decision. We were led to believe that the induction was what was needed to prevent risks to him because I was getting close to my due date. We were basically told that this is when the induction was going to happen. We were not presented with all of the information about the risks or the options. We were not informed and therefore we were not making a decision. It is not a decision if you are

> not informed. You are just simply going along with what your provider tells you. We were not prepared for any of it because we did not make the decision. We did not have the all of the information.

The post-induction interviews indicated variation in how women were provided information about the induction and that, in the words of women, informed decision making did not occur. As articulated by the attorney, "it is not a decision if you are not informed." Her thoughts and that of other women, was that the provider made the decision. Women agreed with the plan to be induced based on the information presented to them about the rationale of the induction and the safety of the baby. Limited information was given to women about the risks, process, or options with limited opportunities for discussion. Therefore, a lack of informed decision making, patient activation, and engagement occurred related to scheduling the IOL.

Additionally, women who requested an elective induction, found the conversation with her provider equally as uninformative. After considering the IOL experience, they also expressed that they were unprepared for the induction experience.

> I wasn't prepared to be induced. I wasn't prepared to be induced. I wasn't prepared for a c-section. No one told me the information that I should have received.
> – 24 y.o. woman induced at 41 weeks that attended childbirth classes.

> I don't feel like I got a lot of education on it beforehand. You know, I got one paper before I went to the hospital. I don't think I had a lot of information.
> – 31 y.o. woman induced at 39 weeks that did not attend childbirth classes.

Although the women that participated in this study did not feel informed about the induction, at no point did they indicate that they felt that their provider had intentionally withheld information. Instead, they reported that their perception

was that providers were unaware that women want and need to have this information. A 23 year old woman mentioned:

> You know I don't think that my doctor even knew that I didn't know this stuff. I mean, I want this information but he didn't know that I wanted it so he didn't give it to me.

They also acknowledged that providers are probably too busy to supply this information but highlighted that this information should be provided before making a decision to be induced.

> Well, I understand that the doctor can't sit there and tell you everything because there are so many things. I don't think that the doctor, you know, there are time limits to your doctor's appointments. So, I don't think they even have enough time to tell you all the things that you need to know…but I should get all of the information before being induced. Somehow
> – 26 y.o. woman induced at 39 weeks.

Major Theme II: IOL as Part of a Checklist

A major theme that emerged as women discussed the initial agreement to proceed with the IOL was that women felt that the induction was presented by their provider as part of their checklist of things that needed to be accomplished for that visit. Several women compared their provider's recommendation to proceed with an induction as being similar to when they were scheduled for an ultrasound. Women were told that the IOL was needed or recommended to be done with no or minimal information being presented about the process, risks, or options. Women would agree and then it was scheduled. It was treated as the natural next step in the woman's pregnancy, as part of a checklist of things that needed to be done.

Returning back to the attorney, in reflecting on her agreement to be induced and how providers, in general, do not treat an induction with the level of seriousness that it deserves.

> Induction should not be treated as a protocol or a checklist. It isn't just a simple step. Women need to be provided with information. They need to make an informed decision, give informed consent. The process currently treats it like scheduling an ultrasound but it is far from a simple ultrasound. There are risks and options that women should know before agreeing to it.

Other women also expressed similar thoughts about the conversation and the lack of informed decision making and limited patient activation. A 24 y.o. lighting technician that worked at an automotive factory in Detroit summarized what women spoke about during the interview.

> The induction was treated like a step in a checklist. It was something that my provider felt was necessary. It wasn't a decision. It was just part of the process of what my provider decided needed to be done. I was basically told that it was what was needed to happen. You know, they don't give you time to think about it or consider it. They don't go into details about it. The doctors don't give you a say in it because they push it so hard because it is part of their checklist. But you are at the end of your pregnancy and you are uncomfortable so you just agree. You are ready to be done. You just want your baby. So, you don't question it. You trust your provider and go along with the steps that they have decided for you. The doctor just tells you that you need to be induced and you do it. It is the next step that they recommend. Once I was at the hospital and realized what it was about, I really didn't feel like I had any choices at that point. It was too late. I had to keep moving forward because I had already agreed to the first step of being induced. I was stuck in this process and forced to move forward to keep my baby safe.

The idea that the care they received was routine and part of a checklist was mentioned repeatedly. The twelve women who received prenatal care from obstetrical residents all emphasized and spoke extensively about the scheduling of their induction as being part of their provider's checklist. Of the 19 provider initiated inductions in this study, more than half (63%) were initiated by obstetrical residents. However, women who also received care from non-residents (obstetricians and family medicine physicians), including the attorney, spoke about the checklist. While this study did not interview providers to clarify this concept, it is unknown whether they were following a checklist or practice guidelines. Either way, women perceived that their care was not individualized (patient-centered) which was not conducive to shared decision making.

Major Theme III: Women's Trust in their Provider

Consistent with the pre-induction interview, during the post-induction interview women again mentioned that they went into the IOL process trusting their provider despite feeling that they did not have enough information. Wanting to better understand whether women sought out additional information (e.g., online searches, read books, spoke with other providers) about the IOL process or indication that their provider had given to them about the induction, they were asked to speak more about their decision to or not to obtain this information. With the exception of two women, the other women in the study said that they did not seek out additional information to verify or clarify the information presented by their provider. Even those with a healthcare background did not attempt to obtain information about the induction.

> I guess I just never really even thought of it. It didn't even cross my mind to do that.
> – 31 y.o. nurse practitioner who was induced at 39 weeks.

> No, I didn't because what people post online about the whole labor and birth stuff is scary. I didn't want to expose myself to that. It would create bias in my mind.
> – 32 y.o. dentist who was induced at 40 weeks.

> No, I really just accepted it because she [provider] said that it was the next step. I just accepted it at face value. I really did think at that point that it was just the next thing to do.
> – 39 y.o. nursing assistant who was induced at 41 weeks.

> I didn't really do a search on induction, results, and complications because I didn't think that I was going to have a complication. It's just, it's not something you think to even look for, you know, the rationale for doing it. I guess it is because your provider says, you know, we need to do this because it's for the baby. I just wanted my baby out safely.
> – 33 y.o. general surgeon who was induced at 40 weeks.

Women mentioned that they did not seek out this information because, again, they trusted their provider. They trusted the rationale that their provider had presented and the idea that the induction was for the safety of the baby.

> I trusted my provider, you know. This is something that they do, you know, everyday, so, I trusted my provider.
> – 25 y.o. vascular technician who was induced at 40 weeks.

> I trusted my provider. I trusted my provider and the hospital to do the right thing and to tell me the correct information that was best for me and my baby.
> – 33 y.o. dental student who was induced at 39 weeks.

> I think that 100% of why I didn't research the reason for my induction was because of trusting my provider. He usually was good with providing information. Not sure why he didn't for the induction.
> - 36 y.o. graphic designer who was induced at 39 weeks.

Furthermore, as part of their response, women started to question why they did not seek this information from their provider. Most women when seeking resolution to this contemplation expressed that they did not know enough about the induction to be able to ask the right questions or to know what information they needed. A 41 y.o. research assistant for a pharmaceutical company concluded that providers need to assume that women know nothing because they have never done this before and that women don't know what questions to ask to ensure that they are informed.

> The doctor says to you, 'you're gonna be induced which may lead to a cesarean section, are you ok with that?' And that is really all the information that you have. You are not educated about it. And, you know, looking back, I probably, I didn't ask the right questions. But, I've never had a baby before. I mean, I don't know what I'm supposed to ask. I felt like I knew what I needed to know. Well, I didn't. I didn't know what I didn't know. And they [providers] need to treat it that way. I mean, I have no idea what to ask, no clue what to ask. Don't ask me if I have questions because I don't know what questions to ask. Just tell me the information because I don't know any of it.

The attorney also contemplated what her role should have been during the interaction with her provider to ensure that she was informed about the induction. She contemplated taking responsibility for obtaining the information but concluded that her provider was best suited for this role.

> You know what, I never asked the questions, so I can't throw her [provider] under the bus and say that it was her fault. I never asked the questions but you never question other things that you do during the pregnancy. I didn't ask why I needed a strept test. You just do it. I thought that I had all the information that I needed but I didn't. You know I was

> disappointed because she didn't volunteer to provide the information. But then, I didn't ask for it either. I don't know. But really, how would I know what to ask?

Although women indicated that their provider should have given them more information, it is unknown whether this information would have altered their agreement to proceed with the induction.

Major Theme IV: Happy with IOL Decision

Although women reported that they were not fully informed about the induction and felt that the decision was part of a checklist, women spoke about their provider's recommendation to schedule their induction within positive terms. With the exception of a few women, overall, women felt that their provider had made the right decision and that they were glad that they agreed with the induction. They framed their satisfaction with the decision within the context of the benefits that they had identified before the induction. These benefits included preventing harm related to the medical rationale, preventing risks to the baby, relieving discomfort, and reducing anxiety.

Women felt that they made the right decision to agree with their providers' decision due to the medical rationale presented to them. This was shared by a 21 year old that was induced at 40 weeks because of gestational diabetes and macrosomia.

> I felt like it was a good decision because of the diabetes. You know, if I wasn't induced and waited, maybe the baby would have been too big and I would have needed a c-section. So I feel that it was the right decision.

During the post-induction interview, all women with a provider initiated induction reported that the safety of their baby was an important factor. In

reflection of the induction, their recall of the conversation included a discussion with their provider about the safety of their baby. Women indicated that the induction prevented harm and therefore agreeing with their provider's decision was the right approach to their care. At the end of the day, the outcome of a healthy baby reinforced that it was the right decision.

> I feel good about it. I feel even though everything that I went through, she was healthy and safe in the end. I feel it was the right decision.
> – 33 y.o. woman induced at 38 weeks because of hypertension.

> I look back and it's positive. Even with the decels, even with everything else, because she came out healthy. We prevented harm to her by being induced.
> – 23 y.o. woman induced at 39 weeks because of post-term gestation.

As part of the discussion, most women did not consider that there may not have been any safety issues related to their baby despite what their provider had said to them. As presented previously, there was only one baby that had documentation in the medical record that indicated a potential problem. Although the providers of the other women may have had concerns about a potential risk, it was not documented. Therefore, in those circumstances, the induction itself may have become the risk that actually compromised the safety of the baby.

Women framed their agreement with their provider within the context of their provider's rationale and the benefit of relieving discomfort. Once the provider offered an opportunity to end the pregnancy, women were relieved and focused on the outcome of having their baby soon.

> Once she [provider] explained to me, like it can be dangerous to go past your due date, I decided that I was ready. I was tired of being pregnant. I just rolled with the punches and went with it. I still think it was a great decision.
> – 25 y.o. woman induced at 40 weeks because of post-term gestation.

Even women who recognized that it might have been better to allow the baby and her body to decide when it was ready to go into labor, her discomfort justified the agreement to be induced.

> I was just ready for him to be born. I was uncomfortable. He might have been comfortable but we were ready for him to be born. I didn't want to wait. I still feel like I would have done it again. It was the right thing to do because I was having pain and it just wasn't manageable.
> – 31 y.o. woman induced at 39 weeks for hypertension.

Finally, women were also happy with their provider's recommendation to be induced because it reduced the anxiety they felt from not knowing when and where the onset of labor would occur. The fear of the unknown and the desire to gain control over their sense of anxiety was discussed during the post-induction interview.

> I wasn't asked if I wanted to be induced, I was just told that I will be. And I was kind of like, ok. I don't feel any different about it. I would have gone the same route. Even now, even though I feel like maybe my body wasn't ready, I still would. If I had to be induced again I would do it. Again, it is the whole, I know the day, I am in the hospital, everything is monitored, everything is controlled. I am not sitting at home anxious about when it will happen. With an induction, you don't have to worry about the unknown. It is scheduled and controlled. You don't have to worry about it. It takes away the anxiety.
> – 23 y.o. woman induced at 39 weeks for post-term gestation.

Interestingly, the two women at the beginning of this chapter who had declined the provider initiated induction multiple times, in retrospect, did not regret agreeing to be induced. They both felt that their provider made the right decision. However, both mentioned that they would not agree to receive maternity care from residents for future pregnancies.

As mentioned earlier, a few women, in retrospect, felt that being induced was not right for them. The attorney was one of them.

> I think it was a little bit…I think we were so ready to meet him that we were kind of hasty in the decision. I don't think we were given all of the information by our physician, information that would have caused us to slow down and give pause to the decision. I should have waited another week. Who knows what would have happened another

> week. He might have come out on his own and I would not have had the experience that I had.

The other two women also reflected on their experience and the lack of information that was presented to them and concluded that the induction was not appropriate.

> Well, in hindsight, being 20/20, I would have preferred to just ride it out, you know, let events unfold naturally. I think, based on the information that we were given by my provider, it was the right decision but he wasn't a big baby. He was actually normal size. I am thankful that he was small and not big like they were telling us but the induction wasn't necessary.
> – 36 y.o. graphic designer induced at 39 weeks for macrosomia.

> To be honest, I think that I probably would rather wait and let it happen naturally. Let my body go into labor. I should have thought it out more but I didn't want anything to affect my baby. But, you know, the c-section and now the problems with breastfeeding. I think it would have been better to wait. It wasn't the right decision.
> – 38 y.o. flight attendant induced at 41 weeks for post-term gestation.

For all three women, the conclusion that the induction was not the right decision for them was based on their realization that they were not fully informed about the process, risks, or options associated with an induction.

Major Theme V: Opportunities to Improve the Experience of the IOL Process

Finally, as part of the post-induction interview, women felt strongly that other women should be fully informed and educated by their provider before deciding to be induced. Everyone indicated that all women should be told by their provider about the induction process, medications, risks, and options as part of the decision making process. To highlight the need for maternity care providers to offer better information, a very teary-eyed general surgeon that needed a cesarean section compared her personal approach in informing her patients with what she had experienced related to the induction.

> Women need to know the risks and benefits of doing something and the risks and benefits of not doing something. Once you have that information, then I feel that women can make their own decision. They can decide which option is more beneficial or riskier. I provide this type of information to my patients in advance so that they can make a decision that is best for them. [crying] I give them the time needed to think about it based on all of the information about the risks and benefits. After the decision is made to proceed, then it [information] is repeated with the nurse at the hospital. This should be done with inductions too. I don't see why not.

Several women mentioned, including the general surgeon, that the timing in which the information is presented by the provider needs to be well in advance of the induction. A 25 year old security officer identified the constraints of not having information in advance of the induction.

> I want my provider to explain it to me and give me a handout but not when I am at the hospital two seconds away from being induced. I mean, they explain it at the hospital but I really didn't process it and I didn't look at the piece of paper. It was quick and I just went with it, kept going with the process that I signed up for. I want my provider to tell me the in's and out's of the induction a couple of times before I am even at the hospital. That would be nice.

Although it is not uncommon for healthcare providers to quickly provide information immediately before a procedure, such as with an urgent and unplanned cesarean section, women indicated that they did not appreciate this approach for an IOL. Since a scheduled IOL is planned in advance and not considered an urgent event, women indicated that they wanted information well in advance as part of their conversation with their provider before any decision is made. As reported by the security officer, offering this important information at the very last moment does not promote patient activation or informed decision making. It does not provide women with the chance to review the information, ask questions, or make an informed choice. It also does not provide women with an opportunity to decline the induction since she has already been admitted to the hospital for it.

As women continued to speak about their recommendation to better inform other women, they also mentioned that the information presented by their provider should be reinforced by a handout, web site, and/or encouragement to attend an updated version of childbirth classes.

> Well, I understand that the doctor can't sit there and tell you everything because there are so many things. I don't think that the doctor, you know, there are time limits to your doctor's appointments. So, I don't think they even have enough time to tell you all the things that you need to know. So, they can tell you information but then like a web site or brochure with all the information so you can kind of look it all over to be informed. That would be helpful. After your review everything, you can decide what to do.
> – 26 y.o. woman induced at 39 weeks.

> I think that for the provider just to say it once and be done with it- you're talking to a pregnant woman. Half of what you're saying is being retained and the other half is off in la-la land. I mean it's the reason why they call it placenta brain. You can't remember half of the stuff anyway. I think a hand-out or something linked to my phone would be perfect because I am the type of person that when I get a handout that I want to remember the information, I post it and review it. And it would be nice if the hospital had one of those short video clips on a web site that goes through, like, step-by-step what happens when you're induced and the options and the risks.
> – 23 y.o. woman induced at 39 weeks.

The younger women in the study (less than 30 years of age) also suggested a phone app to reinforce information. They indicated that the phone app could provide daily or weekly tidbits of information about the induction. Regardless of socioeconomic status or education, all women in this study had access and used smart phones with apps and computers with internet. This also included the homeless women in the study.

A common idea that came up during the interviews was that childbirth classes would be a great opportunity to inform women about an induction. This idea was expressed by both women that did and did not attend childbirth education classes. As presented earlier, about half of the women (48%) in this study participated in some type of class. For those who attended a class, they

added a caveat to their suggestion. They said that in order for the classes to be effective they would need to be updated.

> You know childbirth classes would be nice but they would need to change it. The class I took was mostly about natural delivery and didn't talk about anything else that could happen. It didn't talk about induction. I think that women should know about the risks of induction and the medications in addition to the natural options. The classes should tell women this information so that they can ask the right questions with their provider and so that they will feel prepared for the induction.
> – 33 y.o. woman induced at 39 weeks that attended childbirth classes.

Another woman started to tear-up when she expressed the following about what childbirth classes should tell women.

> Well, I think in those classes, they really should tell you, they should say, like, you have the right to say no. You have the right, you know what I mean? You get to decide. [crying] You can choose. You can review the risks and ask questions and you can be the one to decide. Because, I think a lot of times the provider just tells you some information and then they proceed forward. No one tells you that you can say no and that it is ok to say no.
> – 27 y.o. woman induced at 39 weeks that attended childbirth classes.

Most women who did not attend a childbirth education class shared that it was because they could not fit into their schedule or because it cost too much money. However, they indicated that all women should have access to a class. Furthermore, one woman said that providers should encourage women to attend a class to ensure that they receive all of the information that they will need about their upcoming labor and birth.

> Not all women choose to take childbirth classes, I'm one of them. I heard that they aren't helpful. But if my provider had told me that I needed to take the class because I will obtain detailed information about the induction, it would have changed my mind. I would have taken the class if I thought that there would be value in it. You know, but I really thought that my provider would be the one-stop shop where she would kind of tell me everything that I would need to know…well, she wasn't. I mean, obviously, I was just kind of on my own.
> – 39 y.o. woman induced at 41 weeks that did not attend childbirth classes.

The second specific aim was to explore postpartum women's experiences of having had an induction of labor including her reflection of the decision to be

induced. Through the process of constant comparison and coding, as described in the previous chapter, five major themes also emerged from the post-induction interview data. These themes included 1) lack of informed decision making/limited patient activation, 2) IOL as part of a checklist, 3) women's trust in their provider, 4) happy with IOL decision, and 5) opportunities to improve the experience of the IOL process.

Specific Aim #3: Medical Chart Review Results

The third specific aim focused on similarities and differences between the medical documentation of the women's IOL and women's understanding of the induction. As presented in Table 16, a comparison of the indication as charted in the medical record, in the hospital induction schedule, and as reported by women during the pre-induction interview was conducted. As part of the medical abstraction, additional insight was also gained regarding the rationale for the IOL, safety of the baby, and anxiety and depression as a comorbidity. The records from all 29 women enrolled in the study were reviewed.

Overview of Indications for IOL

According to the medical record, three women were induced primarily related to gestational diabetes, six for hypertension, twelve for post-term gestation (before 41 weeks), two for other indications (borderline IUGR and lupus), and six were elective. In many instances the medical record noted several indications. The primary indication as identified by the provider in the

medical record was used when organizing the data in Table 16. Most inductions were scheduled 1-2 weeks in advance; including post-term inductions. In other words, women were scheduled during her 38 week check-up for a 40 week post-term induction. The idea of scheduling a post-term induction during the 38 week check-up when she is technically not post-term is consistent with women's stories that the induction was treated like a step in the provider's checklist for that visit. At 38 weeks it is unknown whether a woman will require an IOL for being post-term (greater than 41 weeks), therefore scheduling an IOL was a routine step. However, it should be noted that this process is used by providers to ensure that women are scheduled during the preferred gestation time period. Currently there is a limit of three scheduled inductions per day at this hospital. Therefore, it is important to schedule the IOL for post-term gestation early to ensure that women make it on the schedule before they are full. In general, post-term inductions (n=12) occurred between 39-41 weeks gestation with only one occurring exactly at 41 weeks. The evidence, as highlighted earlier, indicates that the benefits of a post-term induction outweigh the risks at or after 41 weeks.

Both the ACOG clinical bulletin and the hospital guidelines on induction of labor identify diabetes, hypertension, and post-term gestation as acceptable reasons to schedule an induction. However, these documents do not provide parameters as to when a diabetic, hypertensive, or post-term women would benefit from an induction. The ambiguous guidelines allow providers the flexibility to determine what is appropriate for their patient. Arguably this is intended to allow for individualization of the care provided to women. Other

indications identified in the medical record that currently do not have a strong evidence base include macrosomia, lupus, and twin gestation.

Table 16

Comparison of Indication: Medical Record, IOL Schedule, & Women's Perspective

Medical Record	IOL Schedule	Women's Perspective	GA**	Notes
Gestational Diabetes (GD)				
GD	GD	GD	40^{3}	Diabetes controlled with diet.
GD, Macrosomia	GD, Macrosomia	Macrosomia	39^{0}	Diabetes controlled with diet. Blood Sugar 70-125. Birthweight 9#.
Pre-GD	Macrosomia	Pre-GD, Hospital Diabetes Protocol Macrosomia, Prevent Harm To Baby	39^{0}	Diabetes controlled with insulin. Blood sugar 60 -120. Birthweight 7#.
Hypertension (HTN)				
HTN r/t Anxiety, Borderline IUGR	HTN, GD, Borderline IUGR	Patient Requested, GD, Macrosomia, Possible IUGR, Prevent Harm to Baby*	38^{6}	Diabetes controlled with diet. Blood sugar 64-122. Blood pressure 120s. Birthweight 7#. Did not want 2x/week testing.
HTN r/t Anxiety, Discomfort, Patient Requested	HTN, DM, Discomfort	Patient Requested, Discomfort	37^{5}	Diabetes controlled with insulin. Blood Sugar 74-128. Blood Pressure 110-142.
HTN r/t Anxiety	HTN, Advanced Maternal Age	Patient Requested, Advanced Maternal Age	40^{0}	41 y.o.. Blood Pressure 120-144. Did not want 2x/week testing.
HTN r/t Anxiety Patient Requested	HTN	HTN, Prevent Preeclampsia, Prevent Harm to Baby*	38^{6}	Blood Pressure 130s.
HTN	HTN	Post Term, HTN, Prevent Harm to Baby	39^{1}	Blood Pressure 80-110s.
HTN, Macrosomia	HTN, Macrosomia	Borderline HTN, Macrosomia	39^{0}	Blood Pressure 110-130s. Birthweight 8#.

Medical Record	IOL Schedule	Women's Perspective	GA**	Notes
Post-Term (PT):				
PT	PT	Patient Requested	40^{0}	Wanted birth on husband's birthday.
PT	PT	PT	40^{1}	
PT, Support Person in Town for One Week	PT	Patient Requested, PT	40^{0}	
PT	None	Unknown	40^{6}	
PT, Patient Requested r/t Anxiety	Patient Requested	Hospital Post-Term Protocol	40^{6}	
PT	PT, Hypothyroidism	Hospital Post-Term Protocol, Prevent Harm to Baby*	40^{1}	Hypothyroidism controlled.
PT	PT	PT, Macrosomia	40^{5}	Birthweight 8#.
PT	PT	Patient Requested, PT, Discomfort, Prevent Harm to Baby*	41^{0}	
PT, Advanced Maternal Age, Patient Requested r/t Anxiety	PT	Patient Requested, PT, Macrosomia, Discomfort, Advanced Maternal Age	39^{6}	41 y.o.. Birthweight 8#.
PT	PT	PT, Prevent Stillbirth, Prevent Harm to Baby*	40^{4}	
PT	None	PT, Prevent Harm to Baby*	40^{2}	Declined IOL twice before consenting. Did not want 3x/week testing.
PT, Oligohydramnios	None	Oligohydramnios, Prevent Harm to Baby*	39^{1}	Oligohydramnios noted as an error after patient consented. Declined IOL four times before consenting.

Medical Record	IOL Schedule	Women's Perspective	GA**	Notes
Other				
Lupus	None	Patient Requested, Lupus, Prevent Harm to Baby*	39^{0}	Lupus Controlled.
Borderline IUGR	Borderline IUGR	IUGR, Prevent Harm to Baby	38^{1}	Birthweight 5#.
Elective				
Patient Requested	PT	PT, Prevent Harm to Baby*	41^{0}	
Patient Requested	None	Patient Requested, PT, Discomfort	41^{0}	
Patient Requested, Discomfort	Twins, Headaches	Potential Fetal Distress, Discomfort, Prevent Harm to Baby*	37^{4}	No fetal distress noted in medical record.
Patient Request, Discomfort	Discomfort	Patient Requested, Discomfort	39^{1}	
Patient Requested	None	Patient Requested, Discomfort, Prevent Harm to Baby*	40^{2}	
Patient Requested	Macrosomia	Macrosomia	39^{0}	Birthweight 8#.

* Prevent harm refers to the woman's understanding of her conversation with her provider that by allowing spontaneous labor begin there could or would be harm to the baby due to their medical condition and/or post dates. Therefore, an induction would reduce the actual or potential harm to their baby.

** Refers to the gestational age of the woman on the day that she is to be induced. Most inductions were scheduled 1-2 weeks in advance; including post-term inductions.

Discrepancies between Medical Record and Women

In general, the indication identified between the medical record, induction schedule, and women's perspectives were not aligned. Based on the primary medical indication identified, Table 17 provides an overview of this discrepancy. Within the medical record, post-term before 41 weeks (42%), hypertension (21%), and elective (21%) were the most common documented reasons for the induction. After reviewing the induction schedule, post-term before 41 weeks (32%), hypertension (21%), and none/unknown (21%) were the top three identified indications. None/unknown refers to the lack of indication documented in the schedule. From the perspective of women, the most common rationale identified was post-term (32%), elective (35%), diabetes mellitus (7%), hypertension (7%), and macrosomia (7%). Eleven of the twelve inductions for post-term gestation were before 41 weeks. Of the eleven post-term inductions, five (45%) resulted in a cesarean section. The discrepancy between the medical record and women's perception of the rationale is consistent with other studies (Marx et al., 2001; McCourt et al., 2007; Willmarth, 2010).

Furthermore, four providers identified a medical reason as the primary indication for an induction even when women reported that they had requested the induction (patient initiated induction). Without interviewing providers, it is unknown why providers documented a medical reason instead of elective. However, the University hospital where women were receiving care does discourage the routine use of elective induction of labor.

Table 17

Indication from Medical Record, Induction Schedule, & Women's Perspective*

	Medical Record n (%)	**Induction Schedule** n (%)	**Women's Perspective** n (%)
Post-Term Before 41 wks	12 (42)	9 (32)	9 (32)
Hypertension	6 (21)	6 (21)	2 (7)
Diabetes	3 (10)	3 (10)	2 (7)
Elective	6 (21)	2 (7)	2 (7)
Macrosomia	0 (0)	1 (3)	1 (3)
IUGR	1 (3)	1 (3)	1 (3)
None/Unknown**	0 (0)	6 (21)	1 (3)
Other (e.g., twins)	2 (6)	1 (3)	2 (6)

*Indication represents the primary rationale documented or noted for the IOL.
**None/Unknown represents that the indication was not documented or was not known.

Safety of Baby

As discussed earlier, women noted that one of the major reasons for their induction was to prevent harm to their baby. This refers to the woman's understanding of her conversation with her provider that she would be placing her baby at increased risk for harm due to either the medical condition that the provider identified or because she was post-term (before 41 weeks) if she did not proceed with the IOL. Women believed that an induction would reduce the actual or potential harm to their baby. Interestingly, after reviewing the medical records it was found that only one induction had documentation indicating a potential risk to the baby. The provider for this woman took a cautious approach and sought

consultation from other colleagues before proceeding to schedule the induction. The other 28 inductions did not have a documented potential or actual risk. There was no medical issue or concern documented for the baby. Although a risk was not documented, it does not indicate that an actual or potential risk was not of concern to the provider.

Anxiety and/or Depression

As part of the medical record abstraction form, comorbidities were identified to provide context of the woman's overall health and well-being. As part of this review, it was noted that many of the women had a history of anxiety and/or depression (n=15). The other comorbidities included hypertension (n=1), diabetes (n=1), and lupus (n=1). Considering that anxiety of not knowing when and where the onset of labor would occur was a factor that influenced women's desire and agreement to be induced, all medical records were reviewed more closely to identify the prevalence of mental health history. It was important to explore more closely whether women's stated anxiety about the upcoming labor and birth was associated with an underlying mental health condition. Although the small sample size of this study prevents statistical analysis regarding the relationship between a mental health history and IOL, the findings may offer insight into an underlying phenomenon that is occurring related to IOL. As highlighted in Table 18, half of the women who requested an induction (patient initiated) and over half of the women who were being induced at the suggestion of their provider (provider initiated) had a history of anxiety and/or depression.

Approximately half of the women in both categories attended childbirth education classes to prepare them for their upcoming birth.

Table 18

History of Anxiety and/or Depression, (n=29)

IOL Approach	History of Anxiety/Depression	Attended Childbirth Classes
	n(%)	**n(%)**
Patient Initiated (n=10)	5(50)	6(60)
Provider Initiated (n=19)	10(53)	8(42)

Of the 15 women who had a history of anxiety and/or depression, only one was offered mental health services as documented in her medical record in the provider notes. Two women were already receiving care from a mental health care provider, again, as noted in the provider notes. Current medications for anxiety and/or depression were not noted in any of the charts.

Several providers documented that anxiety was influencing the woman's request to be induced and/or was causing an increase in her blood pressure but documentation as to how they addressed their assessment of her anxiety was not found. Attempts to offer assistance to manage or relieve the anxiety was also not documented. For these women (n=4), 'history of anxiety and/or depression' or 'current anxiety' was documented as an indication along with hypertension for the induction. Anxiety and depression are not evidence based indications for IOL.

Summary of Findings

In summary, the five major themes from the pre-induction interview included 1) safety of baby, 2) women's trust in their provider, 3) relief of discomfort and/or anxiety, 4) diminish potential or actual risks of IOL, and 5) lack of informed decision making. First and foremost, women valued the safety of their baby and the interventions that they were told were required to ensure this safety. Limited information about the process, medications, risks, or options was provided during the brief conversation women had with their provider about being induced. Patient activation did not occur. The indication for the IOL within the context of the safety of their baby affected their agreement to proceed with their provider's recommendation for an induction. Women trusted the rationale that their provider presented. The agreement to be induced was further supported by women's own desire to relieve discomfort and to relieve anxiety associated with not knowing when and where the onset of labor would begin. More women were scheduled for inductions by obstetric residents than by any other type of provider (i.e., obstetrician, family practice physician).

As women prepared for their upcoming induction, they focused on the excitement of the upcoming birth of their child. Women self-identified that they had a lack of specific information about the induction but did not seek out this information. Despite the self-identified gap in the information about the upcoming IOL, women indicated that they were informed. Overall, from the perspective of women in this study, the factors that influenced their agreement to

be induced included their interaction with their provider, the rationale for the IOL, safety of the baby, trust in their provider, anxiety, desire to control birth experience, discomfort, and excitement to see baby soon (Table 19).

Table 19

Factors that Influence IOL from the Perspective of Women (n=29)

◆ Interaction with Provider	◆ Rationale for IOL
◆ Safety of Baby	◆ Trust in Provider
◆ Anxiety	◆ Control Birth Experience
◆ Discomfort	◆ Excitement to See Baby Soon

The five major themes from the post-induction interview included 1) lack of informed decision making/patient activation, 2) IOL as part of a checklist, 3) women's trust in their provider, 4) happy with IOL decision, and 5) opportunities to improve the experience of the IOL process. After women's experience of the IOL process, women acknowledged that they were not as well prepared for what occurred and felt that they were not presented with all of the information that they needed to make an informed decision. As they continued to recall their provider's recommendation for an IOL, they were disappointed that their provider did not give the details about the induction including the process, medications used, risks and benefits involved, and alternative options. Patient activation and informed decision making did not occur.

Women in the study contemplated what role they should have taken to ask questions to ensure that they were informed. The conclusion of their rumination

was that they simply did not know what to ask and therefore the provider should be expected to provide this information. Furthermore, women did not appreciate receiving detailed information about an induction after they had been admitted to the hospital. Their preference was to receive this information during their initial discussion with their provider at the prenatal appointment before any decision was made. Most of this information was not provided to women until after they had been admitted to the hospital. A comparison of the information given by the provider in the office and by the nurse at the hospital is presented in Table 20.

Table 20

Comparison of Information Presented by Provider and Nurse

Information from Provider in Office	Information from RN after Admission to Hospital
◆ Rationale for Induction	◆ Types of Medications and Risks
◆ Safety of Baby	◆ Process and Steps of IOL
◆ Logistics (i.e. day and time of IOL)	◆ Timeframe for an IOL
	◆ Risks Associated with IOL
	◆ Restrictions (i.e., can't eat, limited mobility)

Women felt that the decision to proceed with an induction was treated as part of the provider's checklist, thus limiting the ability of women to discuss their options. However, most women did not regret agreeing with their provider's decision to be induced and went so far as to suggest that they would do it again. They felt that the benefits that they had identified before the induction had materialized and thus further supported that their provider had made the right decision. Finally, women felt strongly that all women should be fully informed

about the process, medications, risks, and options regarding an induction before making a decision. They indicated that this information should be given to other women by their provider in advance and supplemented with other resources such as a handout, internet links, a phone app, and an updated version of the current childbirth classes.

The factors that influence induction of labor are complex. Women appear to be influenced by their provider's rationale and concern for the safety of their baby. As an underlying factor, their own desire to end discomfort and relieve anxiety influences their agreement to be induced. Patient initiated inductions also occurred with minimal discussion about the risks from their provider. For both patient and provider initiated inductions, without informed decision making, providers assumed an authoritative role in which women were not active participants in their care.

As presented in the previous chapter, symbolic interactionism, the underlying concept of grounded theory methodology, focuses on social interaction occurring within the context of society (Blumer, 1969; Mead, 1934). Labor and birth decisions made by women are shaped by interaction with society and these decisions, in turn, shape society. The three premises of symbolic interactionism as defined by Blumer are; 1) humans act towards things based on the meanings they attribute to the things, 2) social interaction with others is the basis for the acquisition of these meanings, and 3) that these meanings are managed or modified via an interpretive process used in dealing with these human encounters. Using grounded theory methodology with its underlying

inclusion of the concept of symbolic interactionism in this study facilitated the understanding of the psychosocial processes.

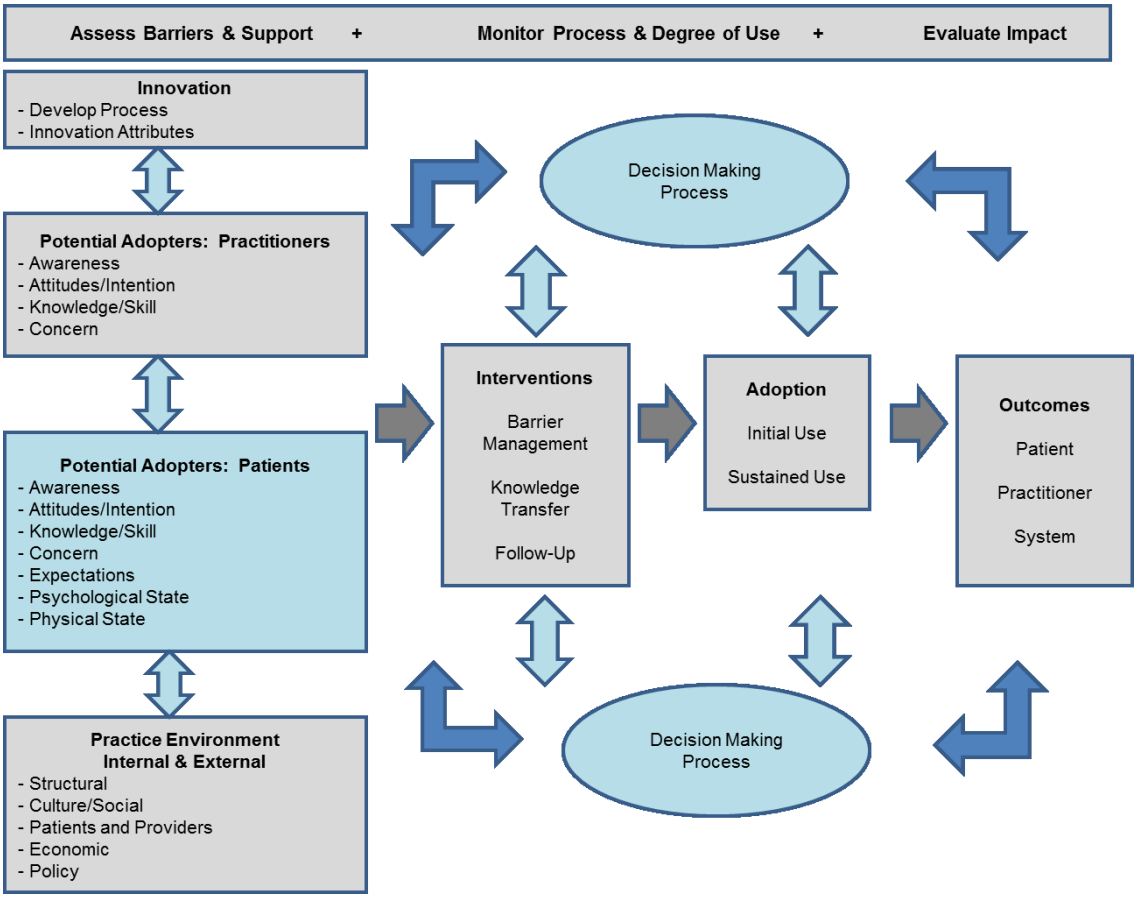
In response to AHRQ's recommendation and NINR's priorities, the study addressed the three specific aims identified at the beginning of the chapter. The findings also provided a beginning understanding of the factors, from women's perspectives, that influence the use of IOL. The application of the findings from this study to the adapted OMRU model is presented in the next chapter.

CHAPTER VI

Application of Findings to Adapted OMRU Model

Currently, most implementation science models do not include the patient or the process of patient activation as an important element in the translation of evidence into practice. Prior to this study, little was known about how women use information about IOL to make decisions about their care. Using grounded theory methodology, findings from this study revealed five major themes from the pre-induction interview that influenced decisions about IOL from the perspective of women. The major themes from the pre-induction data included safety of baby, women's trust in their provider, relief of discomfort and/or anxiety, diminish potential or actual risks, and lack of informed decision making. Additionally, five major themes were identified from the post-induction interview, representing women's experience of the IOL process. The major themes from the post-induction data included lack of informed decision making/limited patient activation, IOL as part of checklist, women's trust in their provider, happy with IOL decision, and opportunities to improve the experience of the IOL process. The purpose of this chapter is to apply these findings to the adapted OMRU model (Figure 6.1), identify coherence or not with the model elements, and to determine if any revisions are indicated.

Figure 6.1 Application of Findings to Adapted OMRU Model



Review of OMRU Model in Relation to Specific Aims

As discussed in chapter 3, the adapted OMRU model used for this study blended the implementation/translation science Ottawa Model of Research Use (Graham & Logan, 2004) with the decision making and patient activation science of the Framework for Interactive Decision Making (Pierce & Hicks, 2001). The adapted OMRU model (Figure 6.1) is divided into three phases (assess, monitor, and evaluate) with elements and sub-elements under each phase.

The first aim was to better understand the role of women (potential adopters-patients) and their interaction with their provider (potential adopter-provider) in relation to the decision making process of being induced. These elements were reviewed as part of the assess phase of the model. Information gathered from the pre-induction interview was used to inform this aim. The second specific aim sought to better understand how women's experiences of IOL and the outcome of the IOL influenced her thoughts about the decision to be induced. These elements were reviewed as part of the evaluate phase of the model. Data collected from the post-induction interviews informed the knowledge gained for this aim. Finally, aim three was to utilize data from the medical record to compare women's perceptions and understanding of the induction with that of the provider. This information was useful in supporting the data that was gathered for the first aim.

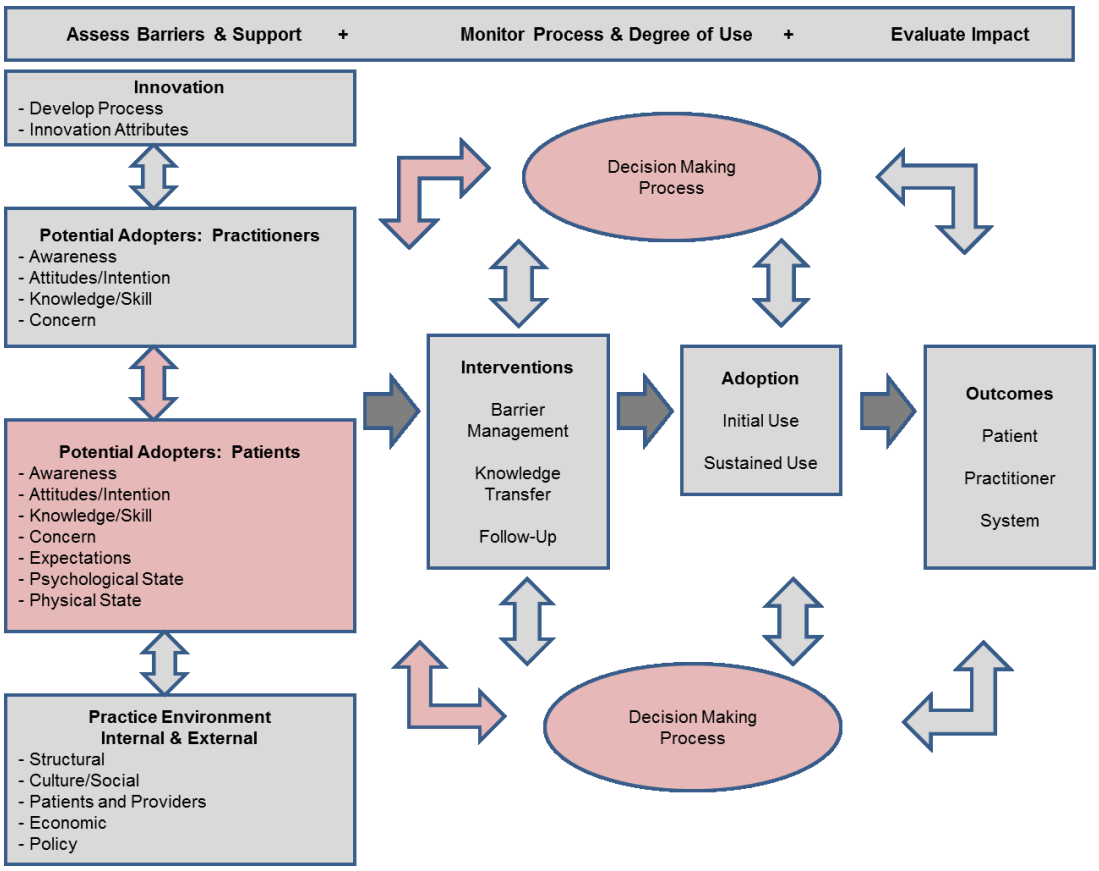
The application of the findings from the study to the adapted OMRU model is presented in two sections organized by the major themes from the pre-induction and post-induction interviews.

Application of Pre-Induction Interview Themes to Adapted OMRU Model

Under the assess phase of the adapted OMRU model, the study findings from the pre-induction interview provided insight into the element of potential adopters-patients (women) and their interaction with potential adopters-providers (maternity care providers). It further provided information about women's decision making process related to induction of labor. As presented in Chapter

3, the sub-elements identified as part of the patient element include awareness of the evidence, attitudes about the evidence in relation to the intervention, intention to use the evidence about the intervention, knowledge (ability to understand the evidence), skill in applying the evidence to their situation, concerns about the risks and benefits, expectations of what the intervention will and will not provide for their specific situation, and the psychological and physical state of the patient. The definitions of these concepts are consistent with those presented by the developers of the OMRU (adapted to fit for the patient context) and the Framework for Interactive Decision Making. The elements and sub-elements of the adapted OMRU model that will be discussed as part of the major themes from the pre-induction interview are highlighted in red in Figure 6.2.

Figure 6.2 Application of Findings: Pre-Induction Interview Major Themes



Safety of Baby

The safety of the baby was a major theme identified as part of the pre-induction interview data analysis. The safety of the baby, as a major theme, is applicable to the element of potential adopter-patients and its sub-elements of awareness, attitudes/intention, knowledge/skill, and expectations. Specifically, women were made aware (awareness) of the evidence on IOL related to ensuring the safety of their baby, from the perspective of their provider, through the information that was presented to them. Although it should be noted, as indicated in the previous chapter, that the evidence presented by the provider to

women and what was documented in the medical chart was not always aligned with the current research (evidence). Regardless of whether or not this information was evidenced based, it was considered to be evidence by women and influenced their agreement (attitudes/intention) to proceed with the induction. Women in this study indicated that they understood the information about the evidence from their provider (knowledge/skill) that an IOL would prevent harm to their baby. These sub-elements interacted with the decision making process element in that this information influenced their agreement and decision to follow their provider's recommendation for an IOL.

Women's Trust in their Provider

Women's trust in their provider, as a major theme, is applicable to the element of potential adopter-patients and its sub-elements of attitudes/intention and expectations. Specifically, women's trust in their provider enabled (attitudes/intention) them to trust the information being presented to them as evidence for the IOL. This trust supported their agreement (attitudes/intention) to proceed with their provider's recommendation.

Relief of Discomfort and/or Anxiety

Relief of discomfort and/or anxiety as a major theme is applicable to the element of potential adopter-patients and its sub-elements of expectations, psychological state, and physical state. Specifically, women in this study expected that an IOL would end their discomfort and/or eliminate the anxiety

associated with not having control over when their labor would begin and where it would happen. A woman's physical discomforts related to pregnancy and psychological state of anxiety strongly influenced her agreement and decision making process to proceed with the induction.

Diminish Potential or Actual Risks

Diminish potential or actual risks were another major theme that emerged from the pre-induction interview data analysis. As a major theme it is applicable to the element of potential adopter-patients and its sub-elements of awareness, attitudes/intention, concerns, and expectations. Specifically, women in this study were given limited information about the evidence (awareness) from their provider about the risks associated with IOL. Due to the limited information and the brevity of the conversation about IOL, women's attitude about the applicability of the risk to their situation was diminished. They were not concerned about the risks of IOL because they perceived that their provider did not identify it as a concern. This influenced the decision making process and enabled women to proceed with the IOL.

Lack of Informed Decision Making

Lack of informed decision making is the final major theme that was identified throughout the entire pre-induction interview data analysis. It is applicable to the adapted OMRU model in relation to the double arrow between the potential adopter-provider and the potential adopter-patient and the decision

making process. However, as will be discussed later, the double arrow representing patient activation and informed decision making is insufficient to capture the magnitude of the importance of this concept in relation to translating evidence into informed decision making.

As discussed in chapter 3, patient activation is defined as the ability or readiness of a person to engage in health behaviors that will maintain or improve their health status (Hibbard et al., 2004). According to Hibbard and colleagues (2004), the initial stage of activation focuses on the patient being able to tell their concerns to their health care providers; to manage symptoms; to get information to make decisions about treatment; to take an active role in care; to discuss treatment options with the provider; to discuss side effects of medication; and to know how to avoid emotional triggers.

The results of this study indicate that the conversation between women and their provider was unidirectional, represented by a single arrow instead of a double arrow as indicated in the adapted OMRU model. The direction of the arrow was dependent on the type of IOL. For instance, an arrow originating with the provider and pointing towards the patient (women), represents that the provider influenced and was in control of the conversation in provider initiated IOL. In contrast, an arrow originating with the patient (women) and pointing towards the provider, represents that women influenced and were in control of the conversation in patient initiated IOL. The single arrow conversation between women and their provider regarding the recommendation to proceed with an IOL

indicates that patient activation was not implemented in the conversation with the provider.

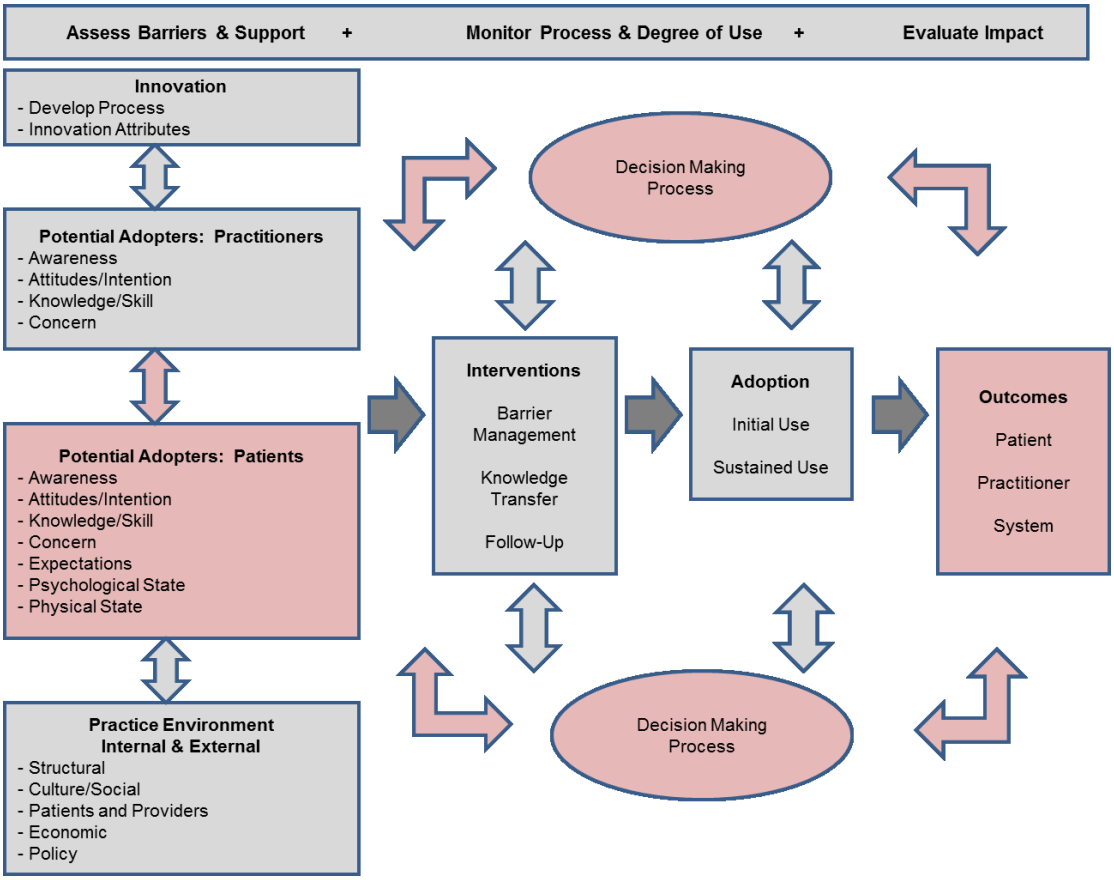
Although the adapted OMRU model integrated patient activation and informed decision making during the assess phase through the use of a double arrow, after applying the findings of the study, it was realized that the double arrow was insufficient to capture the magnitude of the importance of this concept in relation to translating evidence into informed decision making. The adapted model, even with its modifications, failed to fully represent patient (women) centered care. A new model that places women (patients) at the center of informed decision making through patient activation is warranted based on the findings from the pre-induction interview.

Application of Post-Induction Interview Themes to OMRU Model

Under the evaluation phase of the adapted OMRU model, the study findings from the post-induction interview provided insight into the element of outcome, specifically patient outcomes. As presented in chapter 3, the outcomes of utilizing information from evidence may be desirable or undesirable, direct or indirect, and anticipated or unanticipated (Logan & Graham, 2010). Women in this study reflected on their conversation with their provider, the decision making process, their experiences of the IOL process, and how the outcome affected their perspective of their provider's recommendation to proceed with the induction. The elements and sub-elements of the adapted OMRU model that will

be discussed as part of the major themes from the post-induction interview are highlighted in red in Figure 6.3.

Figure 6.3 Application of Findings: Post-Induction Interview Major Themes



Lack of Informed Decision Making/Limited Patient Activation

Lack of informed decision making/limited patient activation was a major theme from the post-induction interview data analysis. As indicated previously, this theme is represented by the double arrow between the potential adopter-patient and potential adopter-provider in the adapted OMRU model. As part of

the evaluation phase, women in this study reflected upon the outcome and experience of the IOL process in relation to patient activation, the sub-elements of the potential adopter-patient (awareness, concern, and expectations), and the decision making process. Specifically, women in this study stated that informed decision making did not happen because they had received limited information from their provider about the process, medications, risks, and options before a decision was made which prevented them from asking additional questions or engaging their provider in a discussion. Women were disappointed (expectations) that they were not fully informed about the IOL and were concerned that the risks associated with IOL, especially cesarean section, were not clearly identified before a decision was made. As indicated previously, the adapted OMRU model was unable to fully capture the magnitude of the importance of patient activation or women (patient) centered care. Therefore, a new model that places these concepts at the center of utilizing evidence for informed decision making is warranted based on this analysis.

IOL as Part of Checklist

The IOL as part of a checklist was another major theme identified as part of the data analysis for the post-induction interview. This major theme is applicable to the element of outcome and patient activation. Women expressed that the brevity and limited information shared during the conversation with their provider was similar to experiencing a checklist of activities that needed to be accomplished during the appointment. There was limited opportunity to ask

questions or discuss the induction specific to their situation (patient activation). Lack of patient activation was interspersed throughout the other major themes as well highlighting the need for a new model that emphasizes this important concept.

Women's Trust in their Provider

Women's trust in their provider, as a major theme, is applicable to the element of outcome, the element of potential adopter-patients and its sub-elements of attitudes/intention and expectations, and patient activation. As part of the evaluation phase, specific to patient outcome, women expressed that proceeding with the IOL was a decision that their provider had made and that they had agreed with that recommendation based on trust. In retrospect, women expressed that they should have received more information (expectations) to make an informed decision and that they, personally, should have asked their provider more questions (patient activation). Women in this study spoke about how their trust in their provider enabled them to agree (attitudes/intention) to proceed with their provider's recommendation.

Happy with IOL Decision

Happy with the IOL decision was another major theme from the post-induction interview data analysis. This major theme was evaluated under the outcome element, specifically the patient outcome. As part of the evaluation phase (patient outcome), women spoke about the outcome of their IOL and their

agreement to proceed with the IOL within positive terms. For women in this study, the outcome (vaginal or cesarean section, successful or unsuccessful induction, healthy or unhealthy baby) did not impact their evaluation of their agreement to proceed with the IOL. Birth outcome, represented by the patient outcome in the adapted OMRU model, had a minimal impact on women's reflection of the IOL.

In contrast, women were critical of their provider's recommendation to proceed with the IOL within the context of their personal experiences of the process of the induction. For women in this study, their '*experience'* of the IOL process impacted their evaluation of patient activation and the way it influenced their decision making process. Overall, personal experience of the IOL process was a more salient approach for women to critically reflect on their overall experience of the IOL process. Reflecting solely on the outcome of the IOL did not elicit the same level of response. The adapted OMRU model did not capture this important concept.

This is an important finding that has application to patient centered outcomes research, ensuring that the salient concepts of care and evaluation from the perspective of women are considered and not just the outcome. Patient-reported outcomes (PRO) as defined by the U.S. federal government refers to "any report of the status of a patient's health condition, health behavior, or experience with health care that comes directly from the patient, without interpretation of the patient's response by a clinician or anyone else (U.S. Food and Drug Administration, 2009). According to this definition, the experience of

the IOL process, as part of the IOL outcome, must be integrated into a new model.

Opportunities to Improve the Experiences of the IOL Process

The final major theme from the post-induction interview data analysis was opportunities to improve the experiences of the IOL process. This major theme was evaluated as part of the outcome element, specifically patient outcome, and patient activation. However, as mentioned previously, women's experience of the process, not the outcome, inspired women to discuss this theme further reinforcing the need for expanded models to capture this nuanced approach to considering outcomes.

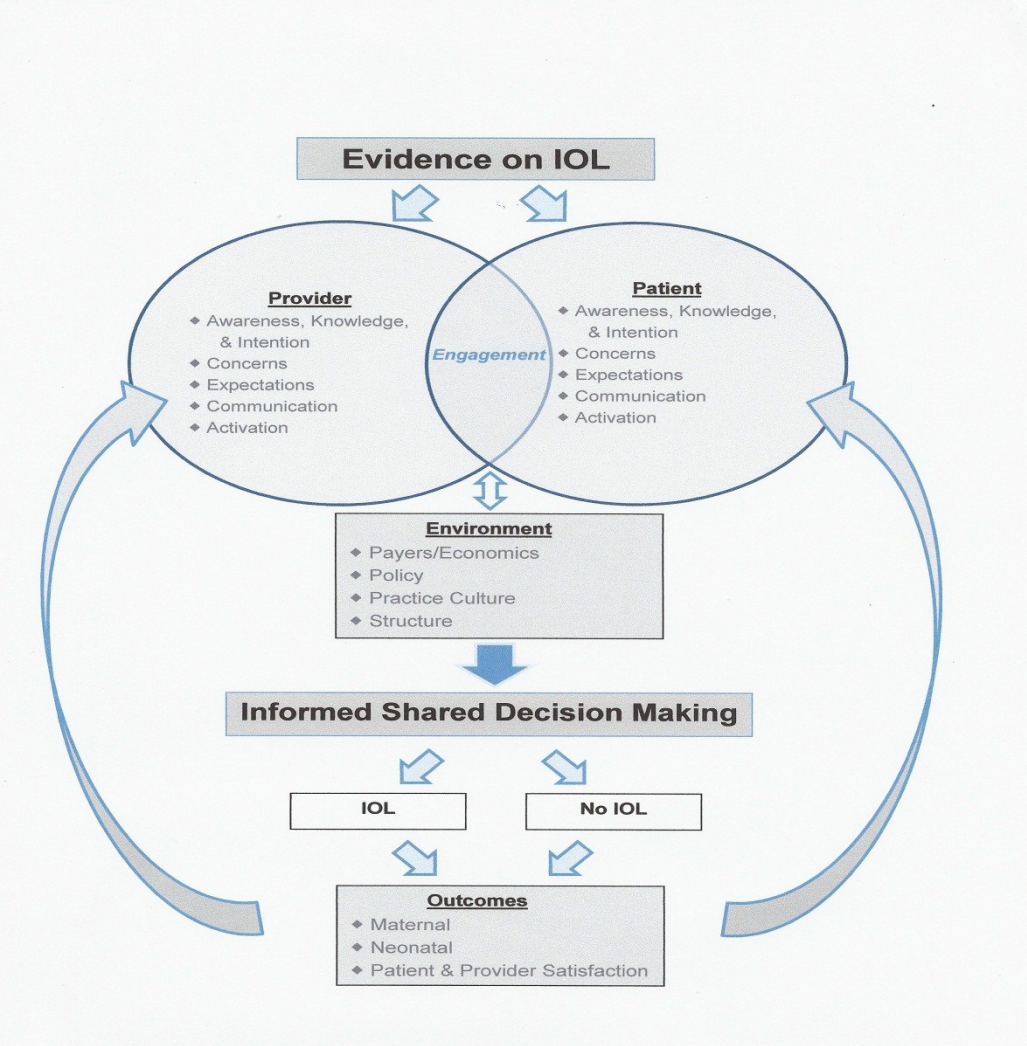
New Model: Evidence Informed Decision Making Through Engagement

Based on the findings presented in this chapter, a new model (Figure 6.4) was developed. The "Evidence Informed Decision Making Through Engagement Model" addresses the weaknesses of the adapted OMRU model presented in this chapter. An overview of the new model is presented.

As shown in Figure 6.4, current evidence on IOL informs both the provider and patient (woman). Evidence is traditionally considered to be information from the scientific literature that is critiqued before it is applied to practice. However, this model allows for sources of evidence to be extended beyond the traditional literature. This is in response to the sources of evidence that women identified during the pre- and post- IOL interview. For women in the study, providers were

identified as the primary source of evidence. Websites and books that cited evidence were also identified as providing information.

Figure 6.4 Evidence Informed Decision Making Through Engagement



Women, as consumers of information, may bring evidence to the encounter from multiple sources; sometimes relying on others to critique the quality. For instance, the Agency for Healthcare Research and Quality provides free online evidence based resources for consumers related to specific health topics (AHRQ, 2012). This resource includes suggested evidence based questions to ask a provider to facilitate patient activation. In response to the varied sources of

evidence, the new model is flexible and allows for individual women and providers to identify what they consider to be sources of information (evidence) that they bring to the encounter to facilitate engagement. The quality of the source of evidence will vary therefore, the quality of the decision and subsequent outcome will also vary. Informed decision making will be influenced by the quality of the evidence.

Both the provider and patient bring to any given encounter specific sub-elements that will influence their use of the evidence on IOL which will impact the process of patient activation and how it occurs. Consistent with the adapted OMRU model, the sub-elements of awareness, knowledge, attitudes, intention, concern, and expectations were integrated into the new model. As discussed throughout this chapter, these sub-elements reflect the findings from the study and include important concepts such as safety of baby (awareness, knowledge, intention, and expectations), trust in provider (attitudes, intentions, and expectations), and relief from discomfort and anxiety (expectations). However, two additional sub-elements emerged from the data that was absent in the adapted OMRU model. They include communication and activation.

Communication includes the way in which messages are framed and understood, the type and quality of information that is shared, including the understanding of the evidence regarding the IOL process, rationale, risks, benefits, medications and options, the time given to women to review the information, the mechanism in which patients are encouraged and coached within a positive environment to ask informed questions. This can include the

support that is provided to patients when they challenge the options that are presented to them or when they are insistent to proceed with a non-evidence based rationale for an IOL.

The second sub-element that was added is activation. As defined by Hibbard (2004), patient activation is the ability or readiness of a person to engage in health behaviors that will maintain or improve their health status. This definition is expanded to include the ability or readiness of the patient and provider to engage in evidence based discussions about health issues that impact health behaviors. Both the provider and patient must be activated for an evidence based discussion to occur.

Although not explicit in the model, a patient's educational level, socioeconomic status, values, beliefs, and culture also may impact whether engagement occurs and may be expressed in the manner and type of communication that occurs. When all of the provider and patient sub-elements are optimally present, engagement between the provider and patient occurs. Engagement represents the active behaviors that occur between the patient and provider that contributes to informed shared decision making. These behaviors may include verbally expressing concerns, active listening, providing support, avoiding emotional triggers, and discussing evidence based information to make informed decisions about treatment.

Before an informed decision is made, environmental factors may influence what options are available or how evidence based practice is or is not implemented. This affects both the provider and patient in terms of how they

proceed with the process. Consistent with the adapted OMRU model, the environmental factors include payers/economics (e.g. treatment choices may not be covered by a third party payer), policy (e.g., hospital clinical guidelines), practice culture (e.g., influence of provider's peers, usual practice), and structure (e.g., workload, physical environment). These environmental factors can be viewed as constraints or facilitators when informing patients about their IOL options. While the environmental factors are not always based on evidence, the model highlights that evidence on IOL should be the primary source of information in guiding conversations towards informed shared decision making.

Shared decision making refers to the process by which providers and patients reach healthcare choices together while avoiding the unequal power balance between the provider and patient (Charles et al., 1997; Coulter, 2002; Elwyn et al., 1999; Elwyn et al., 2000; Pierce & Hicks, 2001). The goal of shared decision making is the ability to reach a decision that is informed by the best available evidence, integrates the patient's values, and is void of provider bias or preferences. Then the final decision of whether or not to proceed with an IOL will subsequently have associated maternal and neonatal outcomes.

As highlighted in Figure 6.4, the experience of the IOL process was integrated into the outcome element of the model through the assessment of both patient and provider satisfaction. This was added to reflect the salient approach that women from the study used to assess the outcome of their IOL. Evaluation of satisfaction with the IOL process as an outcome should include the early discussions between the provider and patient about whether to proceed

and the actual IOL experience. The outcome of the decision (maternal, neonatal, and satisfaction) will then impact the patient and provider sub-elements regarding how they use evidence based information and approach patient activation in future pregnancies.

Summary of Findings

The major themes from the pre-induction interview (safety of baby, women's trust in their provider, relief of discomfort and/or anxiety, diminish potential or actual risk, and lack of informed decision making) and post-induction interview (lack of informed decision making/limited patient activation, IOL as part of checklist, women's trust in their provider, happy with IOL decision, opportunities to improve the experience of the IOL process) when applied to the adapted OMRU model provided valuable insight.

The application of the findings to the adapted OMRU model provided an opportunity to explore the patient/provider interaction during the assess phase, to explore the concepts that act as facilitators and/or barriers for the patient in translating information (evidence) from their provider as part of the assess phase, to explore decision making within the context of induction of labor, and to gain knowledge regarding women's perception and evaluation of the outcomes and experiences in reflection of her agreement to be induced. The information presented in this chapter highlighted several weaknesses in the adapted OMRU model. Patient activation and engagement, evidence informed shared decision making, and experience of the IOL process as an outcome were missing from the

adapted OMRU model. Therefore, a new patient centered model was developed that integrates the concepts that women in the study identified as important. It includes the varied elements that inform the process of integrating evidence based knowledge into the process of engagement and informed shared decision making.

CHAPTER VII

Summary and Recommendations

Understanding Factors that Influence IOL

The major themes from the pre-induction interview (safety of baby, women's trust in their provider, relief of discomfort and/or anxiety, diminish potential or actual risk, and lack of informed decision making) and post-induction interview (lack of informed decision making/limited patient activation, IOL as part of checklist, women's trust in their provider, happy with IOL decision, opportunities to improve the experience of the IOL process) provided valuable insight from the perspective of women about the factors that influence induction of labor.

During the pre-induction screening and interview, women identified that their agreement to proceed with the induction was influenced by their provider suggesting it to them. Furthermore, the way in which the provider framed the recommendation, using the medical rationale and that the induction would prevent harm to the baby, also influenced their agreement. The way in which a provider framed the information being presented, referred to as the "framing effect," influenced women's decision toward the outcome that was preferred by the provider. The "framing effect" can bias both the perception of the problem and the way that it is processed by women (Kahneman & Tversky, 1984;

O'Connor et al., 1996; Payne, 1980; Sullivan et al., 1996; Tversky & Kahneman, 1981). The safety of the baby was a major theme that women identified when describing her conversation with their provider about the induction. For women, the safety of the baby served as the critical piece of information, convincing them that an induction was necessary. This information was also used to influence women who were ambivalent or resistant about the idea of being induced. The baby's safety positioned the provider's recommendation for an induction as a necessary action that women should follow as opposed to being a choice. Additionally, women's own desire to have relief from discomfort and to alleviate their anxiety associated with not knowing when and where the onset of labor was also a major theme that influenced her agreement to proceed with the IOL.

For most women, the decision to be induced had been made by providers with limited input or discussion from women. For the women in this study, they trusted their provider, another major theme, and their expertise in suggesting the induction. Based on this trust, they agreed with the plan to be induced. This finding is consistent with the results from Simpson and colleagues (2010a; 2010b) that found that physicians negatively influence women's decision about being induced. Their study indicated that if a physician offered the option to be induced, it was a strong predictor that women would then agree to be induced. Although not specific to IOL but related, Emmett and colleagues (2006) found that the most common source of information for women when deciding on a cesarean section was their provider. Additionally, Fenwich and colleagues (2001) reported that control and safety were a major theme in deciding whether

to schedule a cesarean section and those women perceived that their provider supported and reinforced the decision as being “safe” and a “responsible” choice.

Interestingly, the obstetric residents who provided services at one central practice site were responsible for suggesting an induction more frequently than any of the other practice sites and more frequently than with any other provider group. It is possible that, as a new provider, their reliance on using standardized checklists without individualizing the care for women could be influencing their decision to recommend an induction to women. Additionally, providers might be proceeding with the IOL as part of a checklist that is aligned with established guidelines that may or may not be evidence based. Due to time constraints and practice expectations, providers may be focused on following general protocols and not providing individualized, patient centered care. The perception, as reported by women in this study, was that providers were rushed for time and following a checklist as opposed to engaging them in a discussion about their care. Patient activation and informed shared decision making between the provider and woman did not occur.

Women were given limited information about the process, medications, risks, or options associated with IOL. Without this information women did not have the opportunity to have a discussion with their provider about it. This finding is consistent with the recent *Listening to Mothers* (Declerq et al., 2006) publication that found that women were choosing an induction without adequate knowledge of the potential risks. Due to the absence of additional current studies exploring women’s perspectives of IOL, studies on cesarean section were

reviewed. Cesarean section, while a different obstetric intervention, is similar in that it also involves risks, there is a growing national concern about its use for elective purposes, and the evidence about when the risks outweigh the benefits and the timing of when it should be done is limited.

One of the cesarean section studies by Emmett and colleagues (2006) found that the provider focused primarily on procedural issues as opposed to risks and benefits when talking to women about a cesarean section. They also found that women had to actively seek out information as opposed to the provider giving it to them as part of the informed consent process. Similarly, Moffatt and colleagues (2006) found that women undergoing an elective cesarean section did not experience patient activation. However, as with women in this study, women in their investigation also expressed a desire for a more individualized and tailored approach to their care.

Women had a difficult time identifying risks associated with IOL. While they acknowledged that risks are inherent with any procedure, they diminished the likelihood that a risk specific to IOL would happen to them. Instead of discussing potential or actual risks or information that they would like to receive from their provider, they focused on the excitement of seeing their baby and relieving their discomfort and anxiety. Consistent with the findings from Declerq and colleagues (2006), “get pregnancy over” and “control the timing of birth” were common reasons women identified for choosing to be induced. Although not specific to IOL, Fenwich and colleagues (2001) reported that a major theme that emerged from their data on cesarean section was issues related to control and

safety. They also found that women minimized the severity and likelihood of risks. These finding were supported by Wiklund and colleagues (2007) who found that women requesting a cesarean indicated that an underlying factor influencing their decision was anxiety and fear.

Currently, there is an absence of scientific literature on the potential link between anxiety and/or depression and rates of induction of labor. However, Littleton and colleagues (2007) conducted a systematic review and meta-analysis on the relationship between anxiety symptoms during pregnancy and perinatal outcomes. They found that anxiety symptoms are associated with depressive symptoms (r=0.66), stress (r=0.40), and self-esteem/self-worth (r=-0.47) in pregnant women. However, they also found that current evidence does not suggest that anxiety is associated with adverse perinatal outcomes. The authors emphasized that there is a significant gap in the existing literature and that additional studies are needed before conclusions can be made.

As part of the post-induction interview in which women discussed their IOL experience, women acknowledged that they were not as well prepared for what occurred and felt that they were not presented with all of the information. As they continued to recall their provider's recommendation, they were disappointed that their provider did not disclose the details about the induction including information about the process, medications, risks, and options. Women repeatedly shared that they simply did not know what to ask and therefore the provider should have been expected to provide this information to them without having to be prompted. Women emphasized that they felt that they were not fully

informed of the induction as part of the decision making process with their provider. Lack of informed decision making and limited patient activation was a major theme identified throughout the post-induction interview.

Regardless of whether a woman is induced for medical, elective, or for an indication that currently does not have sufficient evidence, she should always be informed and engaged in patient activation. As described by ACOG's Committee on Ethics (2009) document on guiding principles regarding informed consent, identifies informed consent for medical treatment as an ethical requirement. Although the formal process of signing an informed consent document is not required for IOL, the concepts described by ACOG associated with informed consent are consistent with ensuring patient activation.

ACOG states that seeking informed consent expresses respect for the patient as a person and their ability to make decisions within a caring relationship (ACOG Ethics Committee, 2009). Informed consent protects the patient against unwanted medical treatments and ensures that the patient is actively involved in her medical planning and care. They also emphasize that communication, a sub-element that was added to the "Evidence Informed Decision Making Through Engagement Model," is necessary and that physicians are responsible for facilitating communication. Finally, the guiding principles indicate that informed consent should be considered a process where mutual sharing of information occurs over time to facilitate patient autonomy in making choices as opposed to treating it as a signature on a form. In other words, patient activation and

informed shared decision making should be an integral part of every woman's experience when discussing her individual plan of care during childbirth.

ACOG's Committee on Ethics (2009) defines the ethical meaning of informed consent to include two concepts, comprehension (understanding) and free consent. Comprehension refers to the patient's awareness and understanding of her situation and possibilities. This concept implies that she has been given adequate information about her diagnosis, prognosis, and alternative treatment options. Free consent refers to the intentional and voluntary choice that authorizes someone to act in a certain ways. The Committee (2009) states that free consent should be absent of coercion or pressure and that it involves the ability to choose among options including the opportunity to choose an option that may not be recommended by the provider. Women in this study shared that they felt pressured and that the discussion with their provider did not include a discussion about risks or options. Finally, the Committee (2009) emphasizes that physician's perspectives should not influence the patient's voluntary decision making and that providers must be aware of their own beliefs and values during the informed consent process. Although provider bias should not be part of the decision making process, eliminating this bias may be a challenge. Currently, the evidence on many of the common indications for IOL is limited. The lack of clear guidance for providers allows for individual interpretation and internalization about what is the best choice for a woman. In the absence of guidance, the provider and woman must determine what level of risk they are willing to take in relation to past experiences. Therefore, their own

bias does influence the decision making process due to the lack of clear guidelines that are scientifically support by evidence.

Specific to IOL, ACOG (2009) recommends counseling women regarding indications for induction, pharmacologic agents and methods available, and the possible need for repeat IOL or cesarean before initiating the induction. It is recommended that nulliparous women with an unfavorable cervix should be informed about a twofold increased risk of cesarean birth. During the post-induction interview, women in the study stated that all women should be given information about the process of being induced, medications, the risks and benefits, and the alternative options. Consistent with these findings, based on data collected from the Listening to Mothers Survey II, women indicated that they wanted information regarding potential risks of IOL. First time mothers wanted to know about every complication (74.7%) or most complications (24%) of labor induction (Declercq et al., 2006). Considering ACOG's document on informed consent and the findings from this study and others, it seems reasonable to expect that patient activation would ideally occur during every encounter between the provider and woman, if not specifically when a procedure is being scheduled or planned. However, for women interviewed in this study, the recommendations by ACOG on informed consent were rarely being implemented by their providers.

Women in this study felt strongly that other women should be fully informed about the process, medications, risks, and options regarding an induction before making a decision. They indicated that this information should be given to other women by their provider in advance and supplemented with

other resources such as a handout, internet links, a phone app, and integrated into the current childbirth education curriculum.

The medical chart review revealed discrepancies between what was documented as the rationale for the IOL and what women said was the rationale. Several providers documented a medical indication for what women said were patient requested, elective inductions. Although women indicated that their provider explained to them that the safety of the baby was guiding their recommendation to suggest an IOL, with the exception of one chart, there was no documented concern regarding the safety of the woman or baby by the provider. Without interviewing the providers, it is unknown why providers did not document the same safety concerns that women perceived that they shared with them in the chart. While it is unknown if there is an association between anxiety and/or depression with IOL, when reviewing the medical record for comorbidities, it was found that half of the women in the study had a history of anxiety and/or depression. Finally, for women whose rationale for the IOL represented an indication that currently has limited evidence (e.g., hypertension and gestational diabetes), their medical record indicated that their symptoms were being well managed.

Indications with limited evidence, due to the lack of quality studies, have resulted in limited specific guidelines for maternity care providers, many of which are informed by expert opinion rather than science. The severity of symptoms necessary to warrant an IOL is not clear. It is challenging for a provider to balance the current state of the evidence, which may lack strong scientific

studies, with the reality that risk does exist and does occur. Without information supported by scientific evidence to guide practice, providers are left to make decisions based on their own experience or the general practice at an institution, a non-evidence based approach to care (Clark et al., 2012).

Prior to the initiation of this study, modifications were made to the adapted OMRU model (Graham & Logan, 2010) to reflect the inclusion of three important concepts: patients as users of evidence, patient activation, and the decision making process. The adaptation to the model was then used as a framework to explore the experience of IOL for the women in this study, the influence of information about evidence on IOL from their provider, the interplay between the patient/provider interaction (patient activation), and the role of decision making. The application of the major themes from the pre- and post-induction interviews revealed that women (patients) are an important and central element of translation science through the process of patient activation, engagement, and informed shared decision making. Furthermore, the findings from the analysis identified that women assessed the outcome of the IOL in terms of the overall experience of the IOL process. Their experience more strongly influenced their thoughts about the IOL than the actual outcome (e.g., vaginal or cesarean birth). These findings were important as it provides insight into how to design future patient centered outcomes research and it provided guidance in the development of a new model, “Evidence Informed Decision Making Through Engagement,” that can be used for future patient centered IOL research.

The findings from the study highlighted that the factors that influence induction of labor are complex. Women appear to be influenced by their provider's rationale and an emphasis on the safety of their baby. However, as an underlying factor, their own desire to end discomfort and relieve fear and anxiety of the unknown also influences their agreement to be induced. Patient initiated inductions occurred without challenge or discussion about the risks from their provider. For both patient and provider initiated inductions, without patient activation and informed decision making, providers assumed an authoritative role in which women were not active participants in their care. Women passively agreed to the IOL without being fully informed. As stated in an earlier chapter, DeVries and colleagues (2001) found that women tend to favor the type of care that they are offered by their provider. Women have a tendency, for a variety of reasons, to avoid challenging the recommendation from their provider despite their lack of understanding of the rationale.

The findings from this study represent a sharp contrast from the results of the pilot study discussed in chapter two, in which the most common factors identified by maternity care providers to electively induce a woman was patient request (N=53, 85%), convenience for the patient (N=51, 82%), and social indications (N=57, 92%). However, the findings are consistent with the literature review which indicated a relatively equal balance between women (preference/convenience) as a factor and maternity care providers (preference/convenience) as a factor (Moore & Kane Low, 2012). The literature indicated that both women and providers are both strong factors as opposed to

the pilot study findings which implicate women as the driving force requesting elective IOL. The findings from this study revealed important insights into the intersection of women's desires, health care provider practices and potential ethical conflicts related to meeting consumer demands.

Recommendations for Nursing Practice

Considering that elective induction of labor has potential health, financial, and societal ramifications, there is ongoing discussion about how best to reduce, if not eradicate, this practice. While strict hospital protocols may significantly decrease elective induction of labor as recently accomplished by Donovan and colleagues (2010), Fisch and colleagues (2009), O' Rourke and colleagues (2011), Oshiro and colleagues (2009), and Reisner and colleagues (2009), without addressing the underlying factors, it can be anticipated that the unresolved issues will manifest in other ways such as a continued increase in the practice of elective cesarean section. A common assumption with the strict policy approach to reducing elective IOL less than 39 weeks is that a) a woman is full term at 39 weeks as opposed to 40 weeks, b) that there is only an issue with elective IOL and not with indications that have limited evidence to support their practice, and c) the only factor that influences the practice of IOL is the provider. The findings from this study indicate otherwise and emphasize women's desire to be part of these decisions as opposed to being told what to do. Furthermore, a strict policy does not address women's underlying issues of

discomfort and anxiety. A provider and patient-centered intervention is the more appropriate approach to addressing the reduction of IOL.

As national efforts continue to reduce overuse of IOL to cut healthcare costs and improve maternal infant outcomes, it will be critical to provide support to women that address the factors that influence their agreement to be induced. Nurses involved in childbirth education classes have a unique opportunity to address the patient factors influencing elective induction of labor through patient education as highlighted by the study conducted by Simpson and colleagues (2010a; 2010b). They surveyed 1,349 nulliparous women at term to explore decision making for childbirth and to identify whether or not childbirth education classes impacted those choices. The study findings revealed that women were more likely to have an elective induction if their physician offered the option ($p<.00$). Physicians offered an elective induction of labor to 69.5% (n=937) of those surveyed. However, those who attended childbirth education classes were less likely to choose the induction (37.7%, n=195) over those who did not attend classes (50%, n=209). Therefore, the researchers argue that attendance at childbirth education classes that integrate the risks and benefits of elective induction of labor into the curriculum represent a factor that influences women's decisions regarding elective induction of labor. Also aligned with nurses educating patients, the Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) launched the "Go the Full 40" campaign to promote full-term pregnancies and reduce the number of elective deliveries (AWHONN, 2012). The initiative focuses on educating women about the benefits of avoiding non-

medically indicated IOL, the benefits of spontaneous labor, and the benefits of delivering a full-term baby. As demonstrated by the Simpson (2010) study and AWHONN (2012) initiative, nurses that are actively involved in the curriculum of childbirth classes and patient education campaigns are well positioned to provide critical education about IOL to women.

Education about the normal duration of pregnancy and benefits of spontaneous onset of labor including the reduced use of technology and increased opportunities for mobility (compared to the constraints imposed by necessary surveillance of labor during an induction) should be shared with women in the process of considering an induction of labor. For some women, the bodily changes and discomforts experienced as a pregnancy nears term can become difficult to manage, however, nurses can educate women regarding the use of comfort measures such as massage, use of showers or baths, maintaining low impact exercise routines and the value of social support to offer encouragement as options to counter some of these concerns. Additionally, nurses can provide information that addresses common areas that cause concern, such as fear and anxiety about the onset of childbirth. The educational opportunities should also be expanded to provide information and coaching that empowers women to be activated during their encounter with their provider to ensure that evidence informed shared decision making occurs.

During prenatal appointments, instead of considering induction of labor as a first line response to a woman's concern about discomforts during the third trimester, maternity care providers can explore what has been tried to relieve

symptoms instead. Furthermore, providers can explore women's anxieties about their upcoming childbirth by providing support and resources, including those offered by nurses.

However, a challenge associated with the recommended nursing intervention is that not all classes are taught by nurses and not all women attend childbirth classes. According to the Listening to Mothers Survey II, the number of women attending childbirth classes declined from 70% in 2002 to 56% in 2005 (Declercq et al., 2006). Fifty percent of women in this study did not attend a childbirth class. They shared that their reasons were due to an inability afford the class or that they found it to be inconvenient (i.e., it didn't fit into their schedule). As an alternative, women indicated that they would prefer a FREE online option with high quality videos and a phone app that they could refer to for information. They also suggested that classes need to be updated to provide information beyond natural childbirth. Women want to be informed about all possibilities so that they can make an informed decision with their provider. Since women perceived that providers are too busy to provide this information, they felt that other free options for obtaining this information must be offered before the IOL is scheduled.

Women in this study indicated that patient-centered care where they are informed and are involved in the decision specific to their needs did not occur. The care that women were being provided throughout their pregnancy, particularly related to the discussion about the induction, was not individualized and did not involve patient activation. However, opportunities exist for providers

to improve upon the process and for nurses to provide education specific to IOL. As part of the discussion about IOL, women's discomforts should be addressed as part of the normal prenatal care by providers, nurses, classes, and other resources. Specific information about the process, medications, risks, and options should be provided to women during their discussion with their provider and prior to a decision being made. If providers are short on time, then alternative opportunities to become informed must be provided with an opportunity to follow-up with their provider to discuss their specific circumstances in relation to the information. Time must be given to allow for patient activation and informed decision making.

Future Patient-Centered Outcomes Research

As healthcare continues to move towards evidence based patient centered care, identifying areas for improvement are valuable. In the ideal scenario, evidence regarding IOL would be critiqued and utilized by the provider before presenting it to women in an unbiased manner with individualized recommendations. Patient activation would allow women the opportunity to evaluate the information, ask questions that would lead to an informed shared decision that would be best for her. Patient initiated inductions would also engage patient activation to encourage informed shared decision making to ensure that she was prepared for the IOL and understands the risks associated with the decision. Regardless of whether a patient or provider initiated induction is scheduled, providers should be utilizing current evidence to guide the

recommendations that they give to women and the discussion should be individualized to each woman. An evidence informed discussion between the patient and provider should be the preferred model of care and women should be given the opportunity to make an informed decision.

Furthermore, patient centered care needs to reflect the preferences of women. Therefore, the outcomes that measure patient centered care must also be patient centered. For women in this study the success of patient centered care did not rest solely on the birth outcome as the only measure of evaluation. Instead, the experience of the IOL process, starting with whether or not patient activation occurred, represented a more salient measure to evaluate patient centered care. Therefore, future research on patient centered care must also integrate a component that explores the experiences of women to truly measure patient centered outcomes.

Opportunities for future research to extend the findings from this study will help to advance the understanding of IOL. Research is needed that compares the effectiveness of a provider centered intervention, a patient centered/activated intervention, and a combined provider/patient centered/activated intervention that seeks to reduce IOL rates. The goal would be to determine which intervention most significantly reduces the number of elective IOL and those indications that currently have limited evidence. Additionally, the study would seek to identify if patient activation is an effective mechanism to improve informed shared decision making and to reduce IOL rates. The study would also explore women's experiences with each intervention to identify, qualitatively, which mechanism for

delivering care was better received and more effective at providing patient centered care. Information gained from this type of study would provide valuable insight on how to effectively deliver patient centered care while also improving birth outcomes.

Research is also needed to compare the effectiveness of IOL as an intervention to address concerns associated with GDM, HTN, and post-term compared with expectant management and spontaneous labor. The goal of this research would be to obtain better guidance regarding the timing of when GDM and HTN symptoms warrant an IOL while also controlling for gestational age. Information gained from this study would help to better inform evidence based guidelines and, hopefully, reduce the number of inductions scheduled to prevent potential risks associated with these conditions while also improving birth outcomes.

Research is also needed exploring the relationship between history of anxiety and depression with IOL rates and birth outcomes. There is also a need to assess the frequency in which providers are addressing mental health as part of prenatal care, beyond the one-time depression screening early in pregnancy. Information gained from this type of study would ensure that women are receiving the appropriate mental health services during pregnancy while also improving birth outcomes.

Finally, the new “Evidence Informed Decision Making Through Engagement Model” was developed. As such, additional research is needed to assess the feasibility and validate the elements and sub-element of the model.

Furthermore, studies exploring the elements and sub-elements of the new model outside of maternity care are needed to confirm or refute the concepts within different clinical scenarios.

Strengths & Limitations

The findings from this study represent an effort to identify factors that influence the increase in IOL as an intervention to initiate labor. The primary strength of this study was the use of qualitative methods to understand women's perspective of the factors that influence induction of labor. The study findings highlight the importance of patient activation and shared decision making, a major theme throughout the pre- and post- induction interviews and an important element of the adapted OMRU model. Additionally, the findings confirmed the applicability of women (patients) as an important element of the adapted OMRU model with modifications being made to strengthen the role of the patients in translation science.

This was the first study the researcher is aware of that focused on obtaining information about the factors that influence induction of labor from the perspective of women, pre- and post- induction, using traditional qualitative methods. The insight gained from the pilot study and systematic review of the literature discussed in previous chapters regarding factors that influence IOL provided a valuable foundation for this study.

Constraints in generalizability of the findings exist due to the qualitative design of the study, the focus on metropolitan and urban areas within Michigan

and the reliance on English-speaking participants. However, the designated hospital serves a wide-range of women (race, age, educational level, socioeconomic level, and health care payers) and 75% of eligible women were enrolled in the study during the recruitment period. The time between the birth and the point at which the post-induction interview was conducted may be viewed as a limitation but, as highlighted by the work conducted by Simkin (1991; 1992) time is not a valid measure of accuracy in reporting birth experiences. While advanced statistical comparisons and numerical conclusions cannot be presented and used to generalize the concepts of the phenomenon within the population, knowledge gained may be transferrable to similar contexts (Lincoln & Guba, 1985). Finally, the design of the study did not include an opportunity for providers to offer their perspective.

Conclusion

Since the time of Hippocrates, obstetric interventions and new technologies have been developed and implemented with or without scientific evidence to support its use. During the nineteenth century, the popularity of 'if something could be done, it should be done' has perpetuated the need for the development and consumption of goods and services as an indication of progress (Postman, 1999). According to Betts (2005) progress has "produced a value system of power, control, wealth, expansion, possession, domination, subordination, and eradication of less progressive peoples, religions, creeds, and cultures" (p.178). While technology has its value, the ability and will to obtain the

progress (obstetric intervention) is overshadowed by the misunderstanding that it is possible to solve problems of technology with the invention and use of more technology (Betts, 2005; Postman, 1999; Winner, 1988). It is natural to question why we would intentionally intervene with technology when no problem exists (elective induction of labor) only to realize that the technology actually created problems (failure to progress in labor, increased labor pain, fetal distress, cesarean section, pre-term birth) which then required more technology to fix.

Manders (1991, p. 35) argues that, "the problem is not with technology itself, but with how we use, and who controls it…we allow technology to develop without analyzing its actual bias." While use of technology may represent progress, the failure to accurately apply the evidence and balance the ethical principles surrounding the technology of elective induction of labor presents its own set of problems. The movement towards progress through increased use of obstetric technology may potentially cause more harm than benefit to the woman and her baby. As DeVries and colleagues (2008, p. 60) highlight, "the use of an expensive, highly technological, and risky procedure to assist at a birth that everyone agrees could occur without intervention pushes all the buttons of contemporary clinical ethics."

Currently, the U.S. is experiencing an increase in elective obstetric interventions that have limited current evidence to support its use with the risks and benefits, from an evidence-based practice perspective, being relatively unknown. Furthermore, Sakala & Correy (2008) expressed concern by stating that, "many maternity practices that were originally developed to address specific

problems have come to be used liberally and routinely in healthy women" (p. 4). As maternity care moves forward in the U.S., it is imperative that evidence-based decisions be made regarding the well-being of women and that the factors that influence the use of non-evidence based practices be identified and addressed.

While this was an exploratory study, it represents a critical first step in building the science related to patients' contribution to translating evidence into practice. The strengths of the study include the use of grounded theory methodology to build a solid foundation and the utilization of the designated hospital to ensure that the sample represents the national demographics of those that are induced. Information from women in this study was collected before and after the IOL with comparisons beings made between the two points in time. Additionally, the medical records provided important insights and comparisons. A limitation of the study is its lack of generalizability to other settings but, as discussed previously, this study will provide an opportunity for future studies to make important comparisons.

Additionally, this study was informed by the recommendation by Caughey (2009a) as part of the AHRQ's nationally commissioned report on elective IOL to better understand the phenomenon. In response to their recommendation that qualitative research was needed, the study's specific aims sought to address each item that they identified. Specifically, the study explored and developed an understanding of how women felt regarding their preferences being incorporated into the decision-making process, whether they felt pressured by their provider regarding their decision, the process for which they were counseled and

consented for the procedure, and how their birth experience affected their perceptions of quality of life in future pregnancies. The findings from this study provide insight into each of the main items that they had identified.

Finally, the knowledge gained from this study provides a foundation for future studies focused on patient centered outcomes that has the potential to inform policy decisions regarding EBP in U.S. maternity care to promote optimal health outcomes for mothers and their newborns. It is anticipated that the results from this study will influence future discussions and interventions to reduce elective induction of labor and influence hospital policies and procedures. Strategies to date aimed at reducing elective induction of labor are not patient-centered. In the interest of providing the highest quality evidence based care to women during pregnancy and childbirth to promote optimal health outcomes, it is essential to have a patient centered approach with shared decision making. This study represents an important first step towards achieving this goal.

APPENDIX A: Pilot Study Questionnaire

QUESTIONNAIRE PART I: **Obstetric Clinical Practice**

INSTRUCTIONS: Please select the response that best represents **your current practice**.

1. Would you agree to initiate an induction of labor on a healthy woman without maternal or fetal complications **before 39 weeks**?

   Yes **No**

2. Would you agree to initiate an induction of labor on a healthy woman without maternal or fetal complication **before 42 weeks**?

   Yes **No**

3. Would you agree to initiate an induction of labor on a healthy nulliparous woman without maternal or fetal complication with a Bishop score that is less than (8) eight?

   Yes **No**

4. Would you agree to initiate an induction of labor on a healthy multiparous woman without maternal or fetal complications with a Bishop score that is less than (6) six?

   Yes **No**

5. After an informed discussion, is it acceptable medical practice to initiate, at the patient's request, an elective induction of labor when no medical or obstetrical complications are present?

   Yes **No**

6. Do you believe that a woman has a right to an elective induction before 39 weeks in the absence of any medical or obstetrical indications?

   Yes **No**

7. Do you believe that a woman has a right to an elective induction after 39 weeks in the absence of any medical or obstetrical indications?

   Yes **No**

8. If you or your partner were pregnant for the first time, would you choose/recommend an elective induction for yourself or your partner, assuming a healthy, uncomplicated pregnancy without any maternal or fetal complications?

   Yes **No**

9. Is it the policy of the hospital where you attend births to obtain informed consent before initiating an induction of labor?

   Yes **No**

10. Please check the indications that you consider are appropriate medical indications for elective induction of labor.

    ____Vasa previa or complete placenta previa
    ____Premature rupture of membranes
    ____Abruptio placentae
    ____Fetal demise
    ____Transverse fetal line
    ____Umbilical cord prolapsed
    ____Risk of rapid labor
    ____Patient distance from hospital
    ____Gestational hypertension
    ____Chorioamnionitis
    ____Previous C-Section
    ____Active gential herpes infection
    ____Post-term pregnancy (>42 weeks)
    ____Late Pre-term pregnancy (39-40 weeks)
    ____Preeclampsia/eclampsia
    ____Previous myomectomy entering the endometrial cavity
    ____Psychosocial indications
    ____Fetal compromise
    ____Maternal diabetes mellitus, renal disease, chronic pulmonary disease, chronic hypertension

The following questions refer to induction of labor without medical indication also commonly referred to as elective induction. ACOG defines elective induction of labor as the absence of maternal or fetal indications (ACOG, 2009). Please answer the following questions using this definition.

11. Have you ever initiated an elective induction on a woman that had no medical or obstetrical complications <u>before</u> 39 weeks?

    Yes **No**

12. Have you ever initiated an elective induction on a woman that had no medical or obstetrical
complications after 39 weeks?

Yes **No**

13. Have you ever initiated an elective induction before 39 weeks due to fear of malpractice?

Yes **No**

14. Have you ever initiated an elective induction after 39 weeks due to fear of malpractice?

Yes **No**

15. Have you ever initiated an elective induction before 39 weeks due to patient request?

Yes **No**

16. Have you ever initiated an elective induction after 39 weeks due to patient request?

Yes **No**

17. What are the most common reasons that your patients identify when requesting an elective induction?

Yes **No**

18. Have you ever initiated an elective induction before 39 weeks due to convenience for yourself?

Yes **No**

19. Have you ever initiated an elective induction after 39 weeks due to convenience for yourself?

Yes **No**

20. Have you ever initiated an elective induction before 39 weeks due to convenience for the patient?

Yes **No**

21. Have you ever initiated an elective induction after 39 weeks due to convenience for the patient?

Yes **No**

22. Have you ever initiated an elective induction before 39 weeks due to pressure from your colleagues?

Yes **No**

23. Have you ever initiated an elective induction after 39 weeks due to pressure from your colleagues?

Yes **No**

24. Have you ever initiated an elective induction before 39 weeks due to pressure from the hospital?

Yes **No**

25. Have you ever initiated an elective induction after 39 weeks due to pressure from the hospital?

Yes **No**

26. Have you ever initiated an elective induction before 39 weeks due to social indications (ie. patient personal schedule)?

Yes **No**

27. Have you ever initiated an elective induction after 39 weeks due to social indications (ie. patient personal schedule)?

Yes **No**

28. Have you ever initiated an elective induction before 39 weeks due to financial incentives from third party payers?

Yes **No**

29. Have you ever initiated an elective induction after 39 weeks due to financial incentives from
third party payers?

Yes **No**

30. Have you ever initiated an elective induction before 39 weeks due to financial incentives from the hospital?

Yes **No**

31. Have you ever initiated an elective induction after 39 weeks due to financial incentives from the hospital?

Yes **No**

QUESTIONNAIRE PART II: **Obstetric Evidence-Based Practice**

In August 2009, the American College of Obstetricians and Gynecologists (ACOG) published its revised recommended clinical guideline on induction of labor.

INSTRUCTIONS: For each item listed below, please circle the response that best represents your view on the evidence discussed within ACOG's clinical guideline on ***elective induction of labor***. ACOG defines elective induction of labor as the absence of maternal or fetal indications (ACOG, 2009).

1=Strongly Agree
2=Agree
3=Disagree
4=Strongly Disagree
5=I Do Not Know

1. Implications for my practice are made clear in ACOG's clinical guideline on elective induction of labor.

2. Information about ACOG's guideline from my peers influences my use.

3. ACOG's elective induction clinical guideline is relevant to my practice.

4. My hospital's policies are congruent for implementing ACOG's guideline.

5. I have time to read the evidence on elective inductions.

6. The evidence on elective inductions has been sufficiently replicated.

7. I believe the results from the evidence on elective inductions.

8. The evidence on elective inductions is methodologically sound.

9. Information about ACOG's guideline from L & D nurses influences my use.

10. I feel that I have enough authority to change patient care procedures.

11. I feel that ACOG's guideline is generalizable to my own setting.

12. I have access to knowledgeable colleagues with whom to discuss the evidence on elective inductions.

13. I see benefit for myself in utilizing the evidence on elective inductions.

14. My colleagues will cooperate with implementation of ACOG's guideline.

15. Administration at the hospital will support implementation of the guideline.

16. I value utilizing evidence from clinical guidelines in my practice.

17. There is a documented need to change practice on elective inductions.

18. The recommendations from ACOG's clinical guideline are justified.

19. Information about ACOG's guideline from experts influences my use.

20. L & D nurses are supportive of ACOG's guideline on elective induction of labor.

21. My colleagues are willing to implement ACOG's clinical guideline.

22. I feel capable of evaluating the quality of the evidence on inductions.

23. Information about ACOG's guideline from my hospital administrators influences my use.

Are there other factors that impact your use of ACOG's clinical guideline on elective inductions?

If so, please list:

24._____

Is this a (Circle One) **positive** or **negative** factor?

25._____
Is this a (Circle One) **positive** or **negative** factor?

26._____
Is this a (Circle One) **positive** or **negative** factor?

27._____
Is this a (Circle One) **positive** or **negative** factor?

28. What are the *three greatest* ***barriers/challenges*** for you in using ACOG's clinical guideline on elective induction of labor*?*

#1:_____

#2:_____

#3:_____

29. What are the *three greatest* ***facilitators/sources of support*** for you in using ACOG's clinical guideline on elective induction of labor?

#1:_____

#2:_____

#3:_____

30. What are *three* **personal benefits** of implementing ACOG's clinical guideline on elective induction of labor into your practice?

#1:_____

#2:_____

#3:_____

QUESTIONNAIRE PART III: **Demographic Form**

INSTRUCTIONS: Please fill in the blanks or check the option that best corresponds to your answer.

*Provider Type:*_____ CNM/CM
_____ M.D. (Ob/Gyn)
_____ M.D. (Family Practice)
_____ Midwifery Student
_____ Medical Student
_____ Medical Resident

Are you retired? _____ Yes _____ No

Sex: ____ Male _____ Female

Age: _____ years

Race: ____ American Indian or Alaskan Native ____ Asian or Pacific Islander

____ Black, Not Hispanic Origin ____ White, Not Hispanic Origin

____ Hispanic ____ Other (Specify):_____

In which <u>state</u> did you complete your medical residency/midwifery education?

_____
(State)

In what <u>year</u> did you graduate from your medical residency/midwifery program?

_____
(Year)

How many <u>years</u> have you been practicing in obstetrics? _____ years

*Approximately how many <u>births</u> did you attend in **<u>2009</u>**?*_____ births

Approximately how many births occurred at the hospital where you practice in **<u>2009</u>**?____ births

In which <u>state</u> do you currently practice obstetrics? _____
(State)

Hospital Type: ____ Public (Federal) ____ Public (State)

____ Private (Non-Profit) ____ Private (For Profit)

____ University Affiliation ____ Non-Hospital (ie. Birth Center)

Hospital Setting: ____ Urban _____Metropolitan ____ Rural

Hospital Size: ____ Level I ____ Level II ____ Level III
____ Level IV ____ Unknown

Have you read ACOG's 2009 Clinical Bulletin No. 107: Induction of Labor?
___ Yes ___ No

Comments:

Thank you for your time in completing this questionnaire!

APPENDIX B: Pre-Induction Screening Form and Interview Guide

After women planning a birth at the designated hospital receive an announcement letter about the study, a "Do Not Contact List" will be created to document women who have contacted the PI who do not want to be contacted if they qualify (scheduled to be induced) to participate. Once the induction of labor schedule is reviewed against the "Do Not Contact List," the PI will contact the remaining women by phone. The phone call will inform her about her potential eligibility to participate in the study and to assess her interest in participating. Upon receiving confirmation of her interest, she has the option of completing the screening and interview questions at that time or scheduling a twenty (20) minute phone call at a later date (but prior to her induction) to determine her eligibility and answer any questions that she might have regarding participation. The following outlines the phone call transcript:

Recruitment:

Jennifer: Hi [Insert Name]. I am Jennifer Moore, a nursing doctoral student at the University of Michigan. A couple of weeks ago you received a letter from me informing you about a study that I am conducting. In the letter I mentioned that I could be possibly contacting you if you were scheduled to be induced at XXXX. After reviewing the induction schedule, I noticed that your name is listed. At this time, I would like to tell you about the study to determine if you might be interested in participating.

Potential Participant:

Possible response. If the woman does not want to hear about the study, thank her and discontinue the call. If she is interested, continue.

Jennifer: The goal of this research study is to learn more about women's birth experiences after having been induced. The information gained will be used to improve women's birth experiences in the future. I am recruiting women who are having their first baby, are 21 years of age or older, are scheduled to be induced at the University of Michigan Birth Center, and are willing participate in the study. It will involve a 60-90 minute face-to-face interview 4 weeks after your birth and a review of your birth record. You will be compensated with a $30 Visa gift card for your time in participating in the study. Additionally, you may also be randomly selected to participate in a follow-up 30-45 minute follow-up phone call. If you are selected, you will be compensated an additional $15 gift card for this portion of your time. There is a potential that you could receive up to $45 in gift cards.

At this time, do you have any questions?

Potential Respondent: No, continue.
Yes. [Allow her to ask her questions and respond appropriately.]

Jennifer: Would you be interested in potentially participating in the study?

Potential Participant: No, thank her for her time and discontinue the call.
Yes, continue.

Jennifer: At this time, I would like to ask you a series of questions to determine your eligibility to participate. If at any time you do not want to continue with the questions, please let me know.

Initial Eligibility Screening:

Jennifer: Before we begin, I want you to know that I will be recording and taking notes of our conversation. However, please know that your responses will be kept confidential. If you decide not to participate in the study, I will destroy my notes. Do you have any questions before I begin?

Potential Participant. Possible response.

Jennifer: Respond to any potential questions, comments, or concerns.

Jennifer: Please also know that your responses to these questions are voluntary and confidential. They will NEVER be shared with your provider.

Jennifer: (Proceed to Pre-IOL Interview Document)

Pre-Induction Interview

Jennifer: Option #1: Based on the information that you provided, you are eligible to enroll in this study. At this time, I would like to share with you more information about the study and answer any questions that you might have about participating. (Continue with Phone Call)

Option #2: Based on the information that you provided, you are not eligible to enroll in this study. As I shared at the beginning of our discussion, the responses that you have provided will be destroyed. Thank you for your interest in the study and your time. (End Phone Call)

Potential Participant: Possible response.

Jennifer: Answer any questions and address any comments or concerns.

Jennifer: Based on your responses to the questions that I asked, you are eligible to enroll in the study. If you decide to participate in the study, you will be participating in a 60-90 minute face-to-face interview 4-6 weeks after you deliver. The interview will be on a day, time, and location that is most convenient for you. For many women, having me conduct the interview in their home so that they do not have to arrange for a babysitter or get everything ready to leave works best. My primary interest is to learn about your birth experience so whatever is most convenient for you can be arranged. You will also be providing permission for me to review your birth record. The information collected will include information such as the reason for your induction, any complications with your birth, and the gestational age at the time of your induction. It is also important to note that all of the information that you share with me will be kept confidential. For your time in participating in this study, you will receive a $30 gift card. If you are randomly selected for the follow-up phone call, you will receive an additional $15 gift card.

Jennifer: Do you have any questions?

Potential Participant: If no, proceed.
If yes, respond to her questions, concerns, and comments.

Jennifer: There are no known risks or benefits to participating. However, your participation in this study is extremely important and has the potential to improve birth experiences for women. If you are interested in participating, I would like to set-up a time 4 weeks after your scheduled induction to conduct the face-to-face interview. May we set-up a time, day, and location for the interview?

Potential Participant:

If no, thank her for her time.

If yes, refer to the final portion of the interview form. Set-up the day, time, location for the interview and her obtain full name and preferred mailing address, phone number, and email. Also share that this information will be used to contact her to confirm the interview one week before it is scheduled. Before ending the call, provide an additional opportunity to ask any questions.

[End Call]

Screening Form

ID Code:_____ Date of Data Collection:_____

Initial Eligibility Screening

1. Are you scheduled to be induced at the University of Michigan Health System?___Yes___No

   If no, end screening. Not eligible.
   If yes, continue.

2. When are you scheduled to be induced? ____/____/_____ MM/DD/YYYY

3. What is your birthdate? ____/____/_____ MM/DD/YYYY

   If birthdate is before current month/day 1990, end screening. Not eligible.
   If birthdate is after current month/day 1990, continue.

4. Will this be your first time experiencing labor and birth?___Yes___No

   If no, end screening. Not eligible.
   If yes, continue.

5. Can you share with me the reason for your induction?

   If select one of the following reasons, end screening. Not eligible.

   ___Post-Term Gestation (Greater than 41 weeks)
   ___Premature Rupture of Membranes at Term
   ___Premature Rupture of Members Near Term with Pulmonary Maturity

   If select one the following reasons, continue.

   ___Insulin Dependent Diabetes
   ___Twin Gestation
   ___Fetal Macrosomia (Large fetus that is estimated to be > 8 pounds)
   ___Oligohydramnios (Low amniotic fluid levels.)
   ___Cholestasis of Pregnancy (Jaundice and Itching)
   ___Maternal Cardiac Disease
   ___Fetal Gastroschisis (Congential defect of fetal abdominal wall.)
   ___Hypertension (High blood pressure.)
   ___Preeclampsia (High blood pressure and protein in urine.)
   ___Eclampsia (Maternal seizures)
   ___Elective (Patient Preference/Convenience/Requested)

If she meets the inclusion criteria, proceed to the next page.
If she does not meet the criteria, inform her that she does not qualify and thank her for her time. End the call.

Pre-Induction Interview

I have three questions to ask you specifically about your induction.
6. Tell me about how the decision was made to be induced.
Possible Probe: How do you feel about the decision to be induced?

7. What was most important to you in making your decision to be induced?
Possible Probes: What was particularly helpful, if anything, to you in making the decision?
What, if anything, was not helpful?

8. When you think about your upcoming induction, what things are you thinking about?
Possible Probe: Some women are excited, some are a bit anxious, some are happy to know that they have a set date, while some women have questions, how are you thinking about it?
What are some of your expectations for the induction?

Demographic Data

I have four more questions to ask you. The following questions will collect demographic data.

9. What type of provider will be assisting with your birth?
____Nurse-Midwife ____Family Practice Physician ____Obstetrician

10. Who will be your primary source of support during your labor and birth?_____
If a specific name is provided, ask for this person's relation to them (i.e., husband).

11. What race do you primarily identify with? ____White ____Black ____Hispanic ____Asian ____Indian ____Middle Eastern/Arab ____Other:_____

12. What is your highest level of education?____High School/GED ____Vocational Training ____Some College ____College Graduate ____Graduate Degree

If she meets the inclusion criteria and is eligible to participate based on the information provided continue.

Complete the following portion ONLY after the potential participant has a) been identified as being eligible to enroll in the study and b) has verbally expressed interest in participating.

KEEP THIS DOCUMENT SEPARATE FROM THE SCREENING and INTERVIEW INFORMATION

Information Needed if Interested in Enrolling in Study

Full Name:_____

Preferred Mailing
Address:_____

_____

Preferred Email
Address:_____

Preferred Phone
Number:_____

Interview Scheduled: Date:_____
Time:_____

Location:_____

_____

Special Instructions:_____

I will contact you one (1) week before your scheduled interview, how would you prefer that I contact you:

___ Phone ___ Email ____Mail ___ No Preference

Time of Day: ___Morning ___Afternoon ___Evening

May I send you a text message to your cell phone the day of the interview to let you know that I am 10 minutes away? _____Yes _____No

One Week Follow-Up Call Date:_____

APPENDIX C: Post-Induction Interview Guide

After a time/day/location is identified by the potential participant that is most convenient for them to participate in a 60-90 minute interview. The following is the interview script:

Interview: 60-90 minutes

Jennifer: Thank you for agreeing to share your birth experience after having been induced. I am really excited to hear about your story.

Respondent: Possible response.

Jennifer: As I shared with you in the past, the agenda of this 60-90 minute interview is to first, explain the purpose of this study, second, answer any questions that you may have, and finally to obtain information about your birth experience.

Respondent: Possible response.

Jennifer: At this time, I would like to review the informed consent document. We can go through it together or you can read it by yourself. You may ask any questions about it and, if you agree to participate in this study, sign it. You will need to sign two copies. One copy will be for your records and one for mine.

Respondent: Possible Questions.

Jennifer: Respond to questions appropriately.

If informed consent is obtained, proceed with interview as described below. If informed consent is not obtained, thank her for her time and leave.

Jennifer: With your permission, I would like to begin recording this interview. The purpose of recording is to allow me to focus on what you are telling me instead of writing notes. Do you have any questions or concerns?

Respondent: Yes or No.

Jennifer: If respondent answered no, begin recording and proceed to next step.
If respondent answered yes, take the time to respond to their questions and/or concerns.

Jennifer: I want to reiterate, that all of our conversations by email, phone, and face-to-face are strictly confidential.

Respondent: Possible response. Respond to any concerns regarding confidentiality.

Jennifer: Let me tell you a little bit about myself. I am a PhD student at the University of Michigan's School of Nursing. I am a Registered Nurse and used to work in critical care and women's health. My research interest is focused on women and their birth experiences.

Respondent: Possible response.

Jennifer: The purpose of this study is to understand the choices women make about their labor and birth experience. We have heard that in Michigan, being induced is a popular intervention. Since we don't know a lot about induction of labor from the woman's perspective, we want to hear about your birth experience. The information that we are able to learn from your interview will be extremely helpful. It will be used to provide information to health care providers on how to ensure positive birthing experiences.

Respondent: Possible response.

Jennifer: At this time, I would like to hear from you about your birth experience. Please tell me about your birth experience.

Respondent: Answers will vary.

Possible Probes: Please share with me more about what you expected from your birth experience.

If possible, tell me about anything that happened that you didn't expect.

Jennifer: Reflecting back over your birth experience, please tell me more about how being induced did or did not impact your birth experience.

Respondent: Answers will vary.

Possible Probes: Please tell me more about how the benefits of being induced influenced your birth.

Now, tell me more about how the risks of being induced influenced your birth.

Jennifer: When you think back to when the decision was made to be induced, how do you feel about that decision now after having experienced the induction?

Respondent: Answers will vary.

Possible Probes: Please tell me about how prepared you felt going into the induction.Share with me any information, if anything that you wish you would have known before you were induced.
Please tell me more about how this information may have impacted your decision if you had received it before the induction.

Jennifer: What would you want other women to know about if they were planning to have an induction?

Respondent: Answers will vary.

Possible Probes: Please tell me about any resources that you would encourage her to review before being induced.
Share with me what you feel would be the best way to communicate to women the risks and benefits of being induced to help guide their decision

Jennifer: Now that you have experienced an induction, what should health care providers tell women in preparation for the induction?

Respondent: Answers will vary.

Possible Probe: Share with me what information women should receive about being induced.
Please tell me more about the ideal format for this information to be shared with women; for instance brochures, discussion, website, video, class, etc.
Please tell me more about the ideal person to provide this information; for instance nurses, doctors, childbirth educators, or maybe a combination of providers.

Jennifer: Now that we have completed the questions for this interview, I have one final item to ask you. Based on what you have shared with me, tell me the top three “take away” messages that you feel are the most important for me to know about your experience of being induced.

Respondent: Answers will vary.

Jennifer: I want to thank you for taking the time to share with me your birthing experience. It has been a pleasure to learn about your experience.

Respondent: Possible response

Jennifer: As I shared and was indicated in the informed consent, I may contact you to clarify any points that you made during this interview. I may also contact you because you will be randomly selected to participate in a follow-up phone call. At this time, do you have any questions or concerns about me calling you?

Respondent: Possible response and/or questions.

Jennifer: Respond to questions appropriately.

Jennifer: This concludes our conversation. However, if you have any additional information that you would like to share or have questions, please feel free to email me anytime. And again, thank you for your time and information.

Respondent: Possible response
[End Interview]

APPENDIX D: Medical Record Abstraction Form

Reason for IOL: **Provider Group:**
Outcome (NSVD/CS): **Weeks GA @IOL:**

Medical Chart Data Abstraction Form
Women's Decisions and Perceptions of the Induction Experience

ID Code:_____ Date of Abstraction:_____

Abstraction Completed By:_____

Confirm Age of Woman Before Proceeding With Data Abstraction (Must be at least 21 y.o.)

Birthdate:_____ Age:_____

If 21 years of age or older, proceed with data abstraction.

1. DATA FROM INDUCTION SCHEDULE

Induction Date:_____MM/DD/YYYY

Induction Scheduled on:_____MM/DD/YYYY

EDD noted in Induction Schedule:_____MM/DD/YYYY

Provider Notes/Rationale noted in Induction Schedule:

Gestational age in IOL Schedule:_____weeks

Provider Scheduling Induction:

2. DATA FROM PRENATAL MEDICAL RECORD

EDD in Medical Record (U/S):_____MM/DD/YYYY
LMP:_____MM/DD/YYYY

Complications noted during pregnancy (Mom):

(Baby):

Comorbidities Prior to Pregnancy:

Membranes Stripped prior to IOL (Gestational Age):_____weeks

Documented Reason:

Documented reason for scheduled induction:

5. DATA FROM L & D RECORD: INDUCTION

Method for Induction:

Method for Augmentation:

Verification of items for appropriateness of IOL:

6. DATA FROM L & D RECORD: L & D

Medical Notes:

Complications Noted (Mom):

(Baby):

Epidural: Yes No **Spinal:** Yes No

Mode of Delivery: NSVD C-Section **Support Present:**

Reason for C-Section:

Estimated Blood Loss:

Date/Time of birth:____/_____/_____ (MM/DD/YYYY)

_____:_____ (Military Time)

Apgar: **Weight:** **Sex of Baby:**

Providers Present During Birth:

7. DATA FROM L & D RECORD: POSTPARTUM

Medical Notes:

Complications Noted (Mom):

(Baby):

Breastfeeding: Yes No

APPENDIX E: Final Pre-Induction Interview and Post-Induction Interview Questions

Pre-Induction Interview Questions

Tell me about how the decision was made to be induced.

Probes: Tell me about the conversation you had with your provider.

How do you feel about the decision to be induced?

What was particularly helpful, if anything, to you in making the decision?

Probes: What, if anything, was not helpful?

Some women have shared that birth stories from friends and family or the internet have informed their decision, in what way, if any, did these influence your decision?

In what way, if any, did childbirth education classes inform you about your induction? (If did not attend ask: Tell me about the decision not to attend classes.)

What information would you have liked to have received about the induction?

When you think about your upcoming induction, what things are you thinking about?

Probes: Some women are excited, some are a bit anxious, some are happy to know that they have a set date, while some women have questions, how are you thinking about it?

What are some of your expectations for the induction?

At this point, how informed do you feel about your induction?

Post-Induction Interview Questions

Question #1: A) Please tell me about your birth experience.

B) Please share with me more about what you expected from your birth experience.

C) If possible, tell me about anything that happened that you didn't expect.

Question #2: A) Reflecting back over your birth experience, please tell me more about how being induced did or did not impact your birth experience.

B) Please tell me more about how the benefits of being induced influenced your birth.

C) Now, tell me more about how the risks of being induced influenced your birth.

D) In what way, if any do you associate a relationship between the induction and the events that occurred during your labor and birth (i.e., baby decels, intensity of pain, c-section)

Question #3: A) When you think back to when the decision was made to be induced, how do you feel about that decision now after having experienced the induction?

B) In what way, if any, did you utilize any efforts to self-induce such as walking or taking raspberry leaf tea?

C) Some women have shared with me that they felt that the decision to be induced was just a step in the process of their experience and that their provider treated it as if it was part of the checklist in preparing to give birth. Similar to when you go in for an appointment and they tell you that you need to have blood work done or an ultrasound. What are your thoughts on that?

D) Tell me about how prepared you felt going into the induction.

E) Some women have shared with me that they felt prepared because they didn't know what they didn't know. What are your thoughts on that?

F) Share with me any research that you did on the rationale that the provider gave to you for the induction before you were induced.

G) Some women have shared with me that they didn't research the rationale because they trusted their provider. Tell me your thoughts on that.

H) Tell me about any information, if anything, that you wish you would have known before you were induced.

Jennifer: Now I want to shift gears and talk about other women.

Question #4: A) Why do you think other women decide to be induced?

B) In what way, if any, do you think that a woman's anxiety and fear of childbirth or of not knowing when and where spontaneous labor will occur influences her decision to want to be induced?

Question #5: A) What would you want other women to know about if they were planning to have an induction?

B) Share with me what you feel would be the best way to communicate to women the <u>risks and benefits</u> of being induced to help guide their decision.

C) Some women have shared with me that they feel the best mechanism to provide this information would be through childbirth education classes. What are your thoughts on that?

Question #6: A) Now that you have experienced an induction, what should health care providers tell women in preparation for the induction?

B) Share with me what information women should receive about being induced.

C) Some women have shared with me that they wish that they had received information about the types of medications and side effects, c-section rates, and the fact that they won't be able to eat and will have limited

mobility. What are your thoughts on providing that information?

D) Please tell me more about the ideal format for this information to be shared with women; for instance brochures, discussion, website, video, class, etc.

E) Some women have shared with me that this information should be provided by their provider verbally multiple times to reinforce the information and that a handout with these details should be provided. What are your thoughts on that?

Before I ask you the final question, I want to give you an opportunity to share anything that you think that we might have missed or anything that you feel I should know that you haven't shared at this point.

Question #7: Now that we have completed the questions for this interview, I have one final item to ask you. Based on what you have shared with me, tell me the top three "take away" messages that you feel are the most important for me to know about your experience of being induced.

APPENDIX F: Level I & II Coding

Pre-Induction Interview Transcripts

Level II Category:	**Conversation to Schedule IOL**
Level I Codes:	Patient Initiated, Patient Suggest-Provider Agree, Patient Suggest-Provider Disagree, Provider Initiated, Provider Suggest-Patient Agree, Provider Suggest-Patient Disagree, Brief Conversation, Rationale, Safety of Baby, Women's Trust in their Provider
Level II Category:	**Benefits of IOL-Pre-IOL**
Level I Codes:	Address Medical Condition, Control, Less Stress and Anxiety, Prevent Risks of Medical Condition, Timing of Onset of Labor, Safety of Baby
Level II Category:	**Risks of IOL-Pre-IOL**
Level I Codes:	C-Section, Impact on Baby, Increased Pain Intensity, Not Natural, No Risks, Diminish Risks
Level II Category:	**Feelings-Decision before IOL**
Level I Codes:	Anxious-Nervous, Best Interest of Baby, Excited, Happy, Have Control, Not trying to think about it, Prefer Natural, Recognize not knowing everything, Relieved, Want to see baby, Know Day & Time, Want Healthy Baby, Concern about a C-Section, Pain Control-Intensity, Scared, Women's Trust in their Provider
Level II Category:	**Helpful Information**
Level I Codes:	Nothing, Provider Rationale, Relief of Discomfort, Reassurance from Provider, Personal Preferences, Safety of Baby, Helpful Information
Level II Category:	**Not Helpful Information**
Level I Codes:	Childbirth Classes, Nothing, Ultrasounds, Internet, Provider
Level II Category:	**Other Influence**
Level I Codes:	Birth Stories, Books, Common Procedure, Family, Friends, Internet, Personal Research
Level II Category:	**Influence Childbirth Classes**
Level I Codes:	Negative-Not Helpful, Positive-Helpful

Level II Category: **Reason No Childbirth Class**
Level I Codes: Already an Expert, Lack of Interest, Money, Time

Level II Category: **Information Wanted Before IOL**
Level I Codes: C-Section, Logistics, Risks-Benefits, Nothing, Options, Medications, Pain

Level II Category: **Thoughts about Upcoming Induction**
Level I Codes: Anxious-Nervous, Control, C-Section, Drugs Used for IOL, Excited, Get to see Baby, Health Baby, Health Mom, Length of Time-IOL, Length of Time-IOL to birth, Logistics, Pain, Unknown, Questioning Decision to be induced, Possibility of a Vaginal Birth, Complications, Relieved, Know Time and Day, Possibility of labor without IOL

Level II Category: **Expectations before IOL**
Level I Codes: Have Baby, Have Control, Long Process, None, Pain Intensity, Quick Process, Healthy Baby, Safe Delivery, Birth Plan Followed, Can't Have a Plan, Natural Birth, Won't have Control, Interaction with Staff, Epidural-Pain Management, Logistics

Level II Category: **Informed about Upcoming IOL**
Level I Codes: Moderate-Drugs for IOL, Moderate-Logistics, Moderate- No Info Wanted, Moderate-Risks, Not at all-Drugs for IOL, Not at all-Logistics, Not at all-Risks, Well Informed-Drugs for IOL, Well Informed-Logistics, Well Informed- No Info Wanted, Well Informed-Risks

Level II Category: **Factors that Influence IOL-Pre-IOL Interview**
Level I Codes: Baby at a Safe Gestational Age, Benefit to Baby, Benefit to Mom, Patient Anxiety-Nervousness, Patient Control, Patient Discomfort, Perceived Potential Positive Outcome, Prevent Harm to Baby, Provider Expert, Provider Rationale, Provider Trust, Risk of Medical Condition on Baby, Risk of Post-Term on Baby, Timing of Birth, Timing of Onset of Labor, Frequent Testing, Ready to be Done with Pregnancy, women's Trust in their Provider

Level II Category: **Sources of Evidence**
Level I Codes: Books, Childbirth Classes, Friends & Family, Internet, Phone App, Provider, Personal Knowledge-Medical Expertise, Videos, Brochure-Pamphlet, Birth Stories

Level II Category: **Understanding of Evidence**
Level I Codes: From Other Sources, From Personal Research, From Provider, Personal Knowledge

Post-Induction Interview Transcripts

Level II Category: **Birth Experience**
Level I Codes: Positive, Negative

Level II Category: **Expectations-Reflection after IOL**
Level I Codes: Have Control, Long IOL, Long L & D, None-No Plan, Pain Control, Pain Intensity, Quick IOL, Quick L & D, Vaginal Birth, Established Provider Present for Birth, Better than Expected, Women's Trust in their Provider

Level II Category: **Unexpected from Birth Experience**
Level I Codes: C-Section, Impact on Baby, Long IOL, Long L & D, Quick IOL, Quick L & D, Blood Loss, Pain Intensity, Can't Eat, Limited Mobility, Nothing, No IOL, Trusted Provider

Level II Category: **Impact of IOL on Labor & Birth**
Level I Codes: Negative Impact, Positive Impact, Unknown, No Impact, Possible

Level II Category: **Impact of Spontaneous Labor on Birth**
Level I Codes: Negative Impact, Positive Impact

Level II Category: **Benefits of IOL-Reflection**
Level I Codes: Control, End Discomfort, Quick, Safety of Baby, Safety of Mom, Meet Baby Soon, Knowing when and where labor begins, Safety of being at hospital

Level II Category: **Risks of IOL-Reflections**
Level I Codes: Amount of Time to Birth Baby, C-Section, Diminish Risks, Impact on Baby, Long, Not Natural Labor, Pain, Impact on Mom, Medications

Level II Category: **Relationship of IOL on Labor & Birth**
Level I Codes: No Relationship IOL and Baby Response, No Relationship IOL and C-Section, No Relationship IOL and Pain Intensity, Potential Relationship IOL and Baby Response, Potential Relationship IOL and C-

	Section, Potential Relationship IOL and Pain Intensity, Relationship IOL and Baby Response, Relationship IOL and Baby Response, Relationship IOL and Pain Intensity
Level II Category:	**Decision of IOL-Reflection**
Level I Codes:	Negative-Regrets, Positive-No Regrets
Level II Category:	**Self-Induce**
Level I Codes:	Intercourse, Tea, Walking
Level II Category:	**IOL Step-Checklist**
Level I Codes:	No, Yes
Level II Category:	**Prepared for IOL-Reflection**
Level I Codes:	A lot, Moderate, Not at all, Women's Trust in their Provider, Not Informed
Level II Category:	**Didn't Know what they Didn't Know**
Level I Code:	Didn't Know what they Didn't Know, Women's Trust in their Provider
Level II Category:	**Research Done Before IOL Re: Rationale for IOL**
Level I Codes:	No, Yes
Level II Category:	**No Research-Trust Provider**
Level I Codes:	No Research-No Trust Provider, No Research-No Time
Level II Category:	**Info Should Have Received-Reflection**
Level I Codes:	Algorithim, C-Section, Drugs, Length of Time for IOL to work, Risks to Baby, Risks to Mom, Nothing, Options, Logistics-Process
Level II Category:	**Potential of Information that should Have Received-Reflection**
Level I Codes:	None-But would be informed, None-Do it again, Would not be induced-Go natural
Level II Category:	**Reason Why Other Women Decide to be Induced**
Level I Codes:	Control-Fear of Unknown, Control-Timing, Discomfort, Medical Reasons, Cosmetic-Body Issues, Info from Internet, Be Better Prepared-Plan Better, Birth Stories, Provider Information, Women's Trust in their Provider

Level II Category: **Anxiety and Fear Influence IOL Decision**
Level I Codes: No, Yes

Level II Category: **Other Women Should Know**
Level I Codes: Be Flexible, Benefits for Baby, Benefits for Mom, Length of Time for IOL, Listen to Provider, Options-IOL (Know about them), Pain, Risks for Baby, Risks for Mom, Natural is better, Logistics, Medications for IOL, Limited Mobility, Can't Eat, General Risks and Benefits

Level II Category: **Recommended Resources**
Level I Codes: Apps for Phone, Our Bodies Ourselves Book, Provider, Internet, Other Women, Brochure-Packet, Childbirth Classes

Level II Category: **Best Way to Communicate Benefits & Risks of IOL**
Level I Codes: Brochure, Classes, Internet, Multiple Approaches, Phone App, Provider, Reinforcement-Multiple Attempts, Single Approach, Single Attempt, Social Media, Verbal, With other Pregnant Women

Level II Category: **Mechanism to Share Information**
Level I Codes: Brochures, Classes, Internet, Nurse, Phone App, Provider, Social Media

Level II Category: **Role of Classes to Educate IOL**
Level I Codes: Needs to be Updated, No-Who goes to these classes, Yes-Great opportunity to Educate

Level II Category: **Providers Should Tell Women-Reflection**
Level I Codes: Benefits to Baby, Benefits to Mom, C-Section Rates, Intensity of Pain, Length of Time for IOL, Limited Mobility, Logistics, Possible Drugs, Risks to Baby, Risks to Mom, Side Effects of Drugs, Signs & Symptoms C-Section is Needed, Signs & Symptoms Failed Induction, Won't Be Able to Eat, General Details, Nothing-Provider did a good job

Level II Category: **Provider Info Given Via**
Level I Codes: Brochures, Verbal, Website, Video

Level II Category: **Multiple Times Verbally**
Level I Codes: Yes, No

Level II Category: **Take Away Messages**

Level I Codes: Childbirth Classes, Impact on Baby, Pain Intensity, Length of IOL, Be Flexible, Epidural, C-Section, Timing of Information, Research IOL in advance, IOL-positive experience, Felt prepared/relaxed, Wouldn't change decision, RNs were great, Education, Felt part of the healthcare team, Have Options

Level II Category: **Factors that Influence IOL-Post-IOL Interview**

Level I Codes: Baby at a Safe Gestational Age, Benefit to Baby, Benefit to Mom, Patient Anxiety-Nervousness, Patient Control, Patient Discomfort, Perceived Potential Positive Outcome, Prevent Harm to Baby, Provider Expert, Provider Rationale, Provider Trust, Risk of Medical Condition on Baby, Risk of Post-Term on Baby, Timing of Birth, Timing of Onset of Labor, Frequent Testing, Ready to be Done with Pregnancy

Level II Category: **Understanding of Evidence**

Level I Codes: From Other Sources, From Personal Research, From Provider, Personal Knowledge

APPENDIX G: Examples of Linkages between Level II Categories & Level III Major Themes Through Coding Process

Pre-Induction Interview

Example of Narrative Passages	Level II Categories	Level III Major Theme
Basically what he said to me was that at 39 weeks the baby has reached all of the benefits from being inside of me. And then he, you know, told me that he would feel comfortable inducing me because of the potential problems with blood pressure. He thought that it would be necessary to induce so it wouldn't become an emergent situation. But I felt, like, rushed. And I didn't feel like I had enough time to think through it. And I couldn't ask the questions that I knew that would come but I don't want to put my baby at risk.	Factors that Influence IOL, Conversation to Schedule IOL, Benefits of IOL, Feelings about Decision, Helpful Information, Sources of Evidence, Understanding of Evidence	Safety of Baby
My doctor brought it up and said that she thought it would probably be a good idea. That was kind of like, what sold me on it. Completely. Her professional opinion.	Factors that Influence IOL, Sources of Evidence, Conversation to Schedule IOL, Feelings about Decision, Helpful Information, Sources of Evidence	Women's Trust in their Provider
I wish that it could happen sooner. I am just done being pregnant. I know that sounds terrible. You know, the fact that we know that she is growing fine, I am ready. It is time. I did ask if it could be earlier and she said no I cannot do it until 38 weeks. I am just uncomfortable which, unfortunately, is not an indication to do an induction. I am disappointed about that.	Benefits of IOL, Feelings about Decision, Thoughts about Upcoming IOL, Factors that Influence	Relief of Discomfort and/or Anxiety
When they said that since I am already dilated to 2 centimeters and that she should react pretty good to the pitocin, I wasn't worried about the c-section. I am already dilated and she is doing good and doing what she is supposed to be doing so I feel ok about the risks.	Conversation to Schedule IOL, Risks of IOL, Sources of Evidence, Understanding of Evidence	Diminish Potential or Actual Risks
Essentially she just scheduled it and didn't ask us about whether we wanted it or not. It was her decision. Basically, she just said that she doesn't want me to go past 38 weeks because I have twins. She wanted to schedule it. She said things can happen with the babies. That is it…nothing more was said.	Conversation to Schedule IOL, Benefits of IOL, Risks of IOL, Helpful Information, Sources of Evidence, Understanding of Evidence	Lack of Informed Decision Making

Post-Induction Interview

Example of Narrative Passages	Level II Minor Themes	Level III Major Theme
I hate to say it but the induction was kind of a non-decision. We were led to believe that the induction was what was needed to prevent risks to him because I was getting close to my due date. We were basically told that this is when the induction was going to happen. We were not presented with all of the information about the risks or the options. We were not informed and therefore we were not making a decision. It is not a decision if you are not informed. You are just simply going along with what your provider tells you. We were not prepared for any of it because we did not make the decision. We did not have the all of the information.	Decision of IOL, Prepared for IOL, Unexpected from Birth Experience, Take Away Messages	Lack of Informed Decision Making/Limited Patient Activation
Induction should not be treated as a protocol or a checklist. It isn't just a simple step. Women need to be provided with information. They need to make an informed decision, give informed consent. The process currently treats it like scheduling an ultrasound but it is far from a simple ultrasound. There are risks and options that women should know before agreeing to it.	Other Women Should Know, Information Should Have Received, Providers Should Tell Women, IOL Checklist, Take Away Messages,	IOL as Part of Checklist
I trusted my provider. I trusted my provider and the hospital to do the right thing and to tell me the correct information that was best for me and my baby.	Decision of IOL, Didn't Know What They Didn't Know, No Research-Trust Provider	Women's Trust in their Provider
I was just ready for him to be born. I was uncomfortable. He might have been comfortable but we were ready for him to be born. I didn't want to wait. I still feel like I would have done it again. It was the right thing to do because I was having pain and it just wasn't manageable.	Birth Experience, Benefits of IOL, Decision of IOL, Factors that Influence, Take Away Messages	Happy with IOL Decision
Women need to know the risks and benefits of doing something and the risks and benefits of not doing something. Once you have that information, then I feel that women can make their own decision. They can decide which option is more beneficial or riskier. I provide this type of information to my patients in advance so that they can make a decision that is best for them. [crying] I give them the time needed to think about it based on all of the information about the risks and benefits. After the decision is made to proceed, then it [information] is repeated with the nurse at the hospital. This should be done with inductions too. I don't see why not.	Decision of IOL, Information Should have Received, Other Women Should Know, Best Way to Communicate Benefits and Risks, Providers Should Tell Women, Take Away Messages	Opportunities to Improve the Experience of the IOL Process

APPENDIX H: Linkages between Level II Categories & Level III Major Themes

Pre-Induction Interview

Level II Categories	Level III Major Theme
Conversation to Schedule IOL Benefits of IOL Factors that Influence Feelings about Decision Helpful Information Risks of IOL Thoughts about Upcoming Induction Understanding of Evidence	Safety of Baby
Factors that Influence Feelings about Decision Helpful Information Sources of Evidence Understanding of Evidence	Women's Trust in their Provider
Benefits of IOL Factors that Influence Feelings about Decision Thoughts about Upcoming Induction	Relief of Discomfort and/or Anxiety
Conversation to Schedule IOL Feelings about Decision Information Wanted Before IOL Informed about Upcoming IOL Risks of IOL Thoughts about Upcoming Induction	Diminish Potential or Actual Risks
Conversation to Schedule IOL Benefits of IOL Helpful Information Information Wanted before IOL Informed about Upcoming IOL Risks of IOL Thoughts about Upcoming IOL Understanding of Evidence	Lack of Informed Decision Making

Post-Induction Interview

Level II Categories	Level III Major Theme
Best Way to Communicate Benefits & Risks Birth Experience Decision of IOL Didn't Know What They Didn't Know Expectations from Birth Experience Information Should have Received Other Women Should Know Prepared for IOL Providers Should Tell Women Reasons Why Other Women Decide to be Induced Take Away Messages	Lack of Informed Decision Making/Limited Patient Activation
Decision of IOL Didn't Know What They Didn't Know Information Should have Received IOL Checklist Other Women Should Know Prepared for IOL Providers Should Tell Women Take Away Messages	IOL as Part of a Checklist
Decision of IOL Didn't Know What They Didn't Know Expectations Information Should Have Received No Research-Trust Provider Prepared for IOL Reason Why Other Women Decide to be Induced Take Away Messages Unexpected from Birth Experience	Women's Trust in their Provider
Benefits of IOL Birth Experience Decision of IOL Didn't Know What They Didn't Know Impact of IOL on Labor & Birth Take Away Messages Unexpected from Birth Experience	Happy with IOL Decision
Best Way to Communicate Benefits & Risks of IOL Decision of IOL Didn't Know What They Didn't Know Information Should Have Received Mechanism to Share Information Other Women Should Know Prepared for IOL Provider Information Given Via Providers Should Tell Women Potential of Information that Should Have Received Role of Classes to Educate IOL Take Away Messages	Opportunities to Improve the Experience of IOL the Process

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